Stonestown Development Project

San Francisco Planning
Case No. **2021-012028ENV**
State Clearinghouse No. 2022040571

Draft EIR Publication Date:	December 14, 2022
Draft EIR Public Hearing Date:	February 9, 2023
Draft EIR Public Comment Period:	December 14, 2022–February 13, 2023
Final EIR Certification Hearing Date:	May 9, 2024

San Francisco Planning

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MEMORANDUM

Date:	April 24, 2024
Case No.:	**2021-012028ENV**
Project Title:	**Stonestown Development Project**
To:	Members of the Planning Commission and Interested Parties
From:	Lisa Gibson, Environmental Review Officer
Re:	Attached Responses to Comments on Draft Environmental Impact Report for the Stonestown Development Project (Planning Department File No. 2021-012028ENV)

Attached for your review please find a copy of the responses to comments document for the draft environmental impact report (EIR) for the above-referenced project. This document, along with the draft EIR, will be before the planning commission for final EIR certification on May 9, 2024. The planning commission will receive public testimony on the final EIR certification at the May 9, 2024, hearing. Please note that the public review period for the draft EIR ended on February 13, 2023. Comments received after the close of the public review period or at the final EIR certification hearing will not be responded to in writing. The agenda for the May 9, 2024, planning commission hearing showing the start time and order of items at the hearing will become available at https://sfplanning.org/hearings-cpc-grid, by close of business Friday, May 3, 2024.

The planning commission does not conduct a hearing to receive comments on the responses to comments document, and no such hearing is required by the California Environmental Quality Act. Interested parties, however, may always write to commission members or to the president of the commission at commissions.secretary@sfgov.org (preferred) or 49 South Van Ness Avenue, Suite 1400, and express an opinion on the responses to comments document, or the commission's decision to certify the Final EIR for this project.

This document, along with the draft EIR, constitute the final EIR. The draft EIR may be downloaded from https://sfplanning.org/environmental-review-documents. If you have any questions concerning the responses to comments document or the environmental review process, please contact Josh Pollak, EIR coordinator, at CPC.Stonestown@sfgov.org or 628.652.7493.

Thank you for your interest in this project and your consideration of this matter.

Stonestown Development Project

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CHAPTER 1
INTRODUCTION

1.A Purpose of the Responses to Comments Document

The purpose of this responses to comments (RTC) document is to present comments received on the draft environmental impact report (draft EIR) for the proposed Stonestown Development Project (proposed project), to respond in writing to comments on environmental issues, and to revise the draft EIR as necessary to provide additional clarity. Pursuant to the California Environmental Quality Act (CEQA) section 21091(d)(2)(A) and (B), the San Francisco Planning Department (planning department) has considered the comments received on the draft EIR, evaluated the issues raised, and is providing written responses that address each substantive environmental issue that was raised by commenters. In accordance with CEQA, the responses to comments focus on addressing physical environmental effects associated with the proposed project. Such effects include physical impacts or changes attributable to the proposed project.

None of the comments received provides new information that warrants recirculation of the draft EIR. The comments do not identify new significant impacts or a substantial increase in the severity of previously identified impacts. Furthermore, they do not identify or result in feasible project alternatives or mitigation measures that are considerably different from those analyzed in the draft EIR and/or that the project sponsor did not agree to implement. In addition, no significant new information that warrants recirculation of the draft EIR is reflected in the changes to the proposed project, variant, or revised variant either staff initiated or as response to comments, as described in Section 2.E, Environmental Analysis of the Revised Variant, p. 2-16.

The draft EIR together with this RTC document constitutes the final EIR for the proposed project in fulfillment of CEQA requirements and consistent with CEQA Guidelines section 15132. The final EIR was prepared in compliance with CEQA, including the CEQA Guidelines and San Francisco Administrative Code chapter 31. It is an informational document for use by (1) governmental agencies (such as the City and County of San Francisco) and the public to aid in the planning and decision-making process by disclosing the physical environmental effects of the project and identifying possible ways of reducing or avoiding the potentially significant impacts and (2) the San Francisco Planning Commission (planning commission) and other City entities (such as the San Francisco Board of Supervisors), where applicable, prior to their decisions to approve, disapprove, or modify the proposed project. If the planning commission and other City entities approve the proposed project, they would be required to adopt CEQA findings and a mitigation monitoring and reporting program (MMRP) to ensure that mitigation measures identified in the final EIR are implemented.

1.B Environmental Review Process

1.B.1 Notice of Preparation

The planning department, as lead agency responsible for administering the environmental review of projects within the City and County of San Francisco under CEQA, published a notice of preparation (NOP) of an EIR on April 27, 2022 (included as Appendix A in the draft EIR), to inform agencies and the general public that the draft EIR would be prepared based upon the criteria of CEQA Guidelines sections 15064 (Determining

Significant Effects) and 15065 (Mandatory Findings of Significance). A notice of availability of the NOP and the NOP were sent to the State Clearinghouse, governmental agencies, organizations, and persons who may have an interest in the proposed project. An NOP scoping meeting was held remotely on May 9, 2022, to explain the environmental review process for the proposed project and variant and to provide an opportunity to take public comment and concerns related to the proposed project or variant's environmental issues. A subsequent video of the NOP presentation and scoping meeting was posted on the planning department's webpage. The NOP announcement was also placed in a newspaper of general circulation in the project area.

1.B.2 Draft EIR

The planning department prepared the draft EIR for the proposed project in accordance with CEQA, the CEQA Guidelines, and San Francisco Administrative Code chapter 31. The draft EIR was published on December 14, 2022. An initial study was attached to the draft EIR (Appendix B). The draft EIR was circulated for a 60-day public review and comment period, which began on December 15, 2022, and ended on February 13, 2023.

The planning department distributed paper copies of the notice of public hearing and availability of the draft EIR to relevant state and regional agencies, organizations, and persons interested in the proposed project, including those listed on the planning department's standard distribution lists. The planning department also distributed the notice electronically, using email, to recipients who had provided email addresses; published notification of its availability in a newspaper of general circulation in San Francisco; and posted the Notice of Public Hearing and Availability of the EIR at the County Clerk's office and on the project site. Paper copies of the draft EIR were provided for public review at the San Francisco Permit Center, 49 South Van Ness Avenue, 2nd Floor, San Francisco, CA 94103. Electronic copies of the draft EIR were made available for review or download on the planning department's "Environmental Review Documents" webpage:

https://sfplanning.org/environmental-review-documents

During the draft EIR public review period, the planning department received written comments from four agencies, seven organizations, and 60 individuals.

During the public review period, the planning commission conducted a public hearing to receive oral comments on the draft EIR on February 9, 2023. Due to the COVID-19 emergency, this hearing was held in a hybrid format that included both in-person and remote attendees. A court reporter attended the remote public hearing to transcribe the oral comments verbatim and provide a written transcript (Attachment A).

Attachment B of this RTC document includes copies of the comment letters and emails submitted to the planning department on the draft EIR and at the public hearing.

1.B.3 Responses to Comments Document and Final EIR

The comments received during the public review period are the subject of this RTC document, which addresses all substantive written and oral comments on the draft EIR. Under CEQA Guidelines section 15201, members of the public may comment on any aspect of the project. Furthermore, CEQA Guidelines section 15204(a) states that the focus of public review should be on "the sufficiency of the [draft EIR] in identifying and analyzing the possible impacts on the environment and ways in which the significant effects

of the project might be avoided or mitigated." In addition, "when responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR." As discussed above, CEQA Guidelines section 15088 specifies that the lead agency is required to respond to comments that raise significant environmental issues during the public review period. Therefore, this RTC document is focused on the sufficiency and adequacy of the draft EIR with respect to disclosing the significance of the physical environmental impacts of the proposed project evaluated in the draft EIR.

The planning department distributed this RTC document for review to the planning commission, as well as to persons who commented on the draft EIR. The planning commission will consider the adequacy of the final EIR, consisting of the draft EIR and the RTC document, with respect to complying with the requirements of CEQA, the CEQA Guidelines, and San Francisco Administrative Code chapter 31. If the San Francisco Planning Commission finds that the final EIR is adequate, accurate, complete and in compliance with CEQA requirements, it will certify the final EIR and then consider the associated Mitigation Monitoring and Reporting Plan as well as the requested approvals for the proposed project.

Consistent with CEQA Guidelines section 15097, the MMRP is designed to ensure implementation of the mitigation measures identified in the final EIR and adopted by decision-makers to mitigate or avoid the proposed project's significant environmental effects. CEQA also requires the adoption of findings prior to approval of a project for which an EIR was certified. Because the draft EIR identified significant adverse impacts that cannot be mitigated to a less-than-significant level, the planning commission must adopt findings that include a statement of overriding considerations for those significant and unavoidable impacts, should they approve the proposed project (CEQA Guidelines section 15093(b)). The project sponsor is required to implement the MMRP as a condition of project approval.

1.C Document Organization

This RTC document consists of the following sections and attachments, as described below:

- **Chapter 1, Introduction**, discusses the purpose of the RTC document, the environmental review process for the EIR, and the organization of the RTC document.
- **Chapter 2, Revisions to the Project Description**, presents changes to the description of the proposed project and variant, as described in draft EIR Chapter 2. The outlined changes were initiated by the project sponsor since publication of the draft EIR in response to public and agency comments. Chapter 2 analyzes and concludes that these revisions and clarifications would not result in any new environmental impacts not already discussed in the draft EIR or a substantial increase in the severity of previously identified significant environmental impacts.
- **Chapter 3, List of Persons Commenting**, presents the names of persons who provided comments on the draft EIR during the public comment period. The list is organized into the following groups: public agencies and commissions, organizations, and individuals.
- **Chapter 4, Comments and Responses**, presents substantive comments, excerpted verbatim from a transcript of the hybrid planning commission public hearing and written correspondence. The complete transcript as well as the letters and emails with the comments are provided in Attachments A and B of this RTC document. The comments and responses in this section are organized by topic and, where appropriate, by subtopic, including the same environmental topics addressed in Chapter 3 of the draft

EIR and Section E of the initial study. Following each comment or group of comments on a topic are the planning department's responses. The responses generally clarify the text in the draft EIR. In some instances, the responses may result in revisions or additions to the draft EIR. Text changes are shown as indented text, with deleted material shown as ~~strikethrough~~ text and new text double underlined.

- **Chapter 5, Draft EIR Revisions**, presents staff-initiated text changes to the draft EIR that were made by the planning department to update, correct, or clarify the text of the draft EIR. These changes do not result in significant new information with respect to the proposed project, including the level of significance of project impacts or any new significant impacts. Therefore, recirculation of the draft EIR, pursuant to CEQA Guidelines section 15088.5, is not required.
- **Attachments**
  - Attachment A: Draft EIR Public Hearing Transcript
  - Attachment B: Draft EIR Comment Letters and Emails
  - Attachment C: Revised Variant Initial Study Topics Analysis
  - Attachment D: Revised Variant Transportation Analysis Memorandum
  - Attachment E: Revised Variant Air Quality and Health Risk Assessment Results
  - Attachment F: CEQA Air Quality and Health Risk Assessment Methodology
  - Attachment G: Revised Variant Wind Memorandum
  - Attachment H: Revised Variant Shadow Memorandum
  - Attachment I: Revised Variant Water Supply Assessment

CHAPTER 2
REVISIONS TO THE PROJECT DESCRIPTION

2.A Introduction

This chapter presents changes to the project description as well as to the draft EIR variant. The minor changes to the proposed project description are presented in Section 2.B below. In addition, and in response to public and agency comments, the project sponsor-initiated revisions to the Draft EIR Variant and are presented in Section 2.D. As such, this chapter summarizes these revisions, describes updates to the text of the draft EIR (deletions are shown in ~~strikethrough~~; new text is double-underlined), and describes the environmental impacts of the revisions, if any. Draft EIR text revisions are presented in this chapter only where they were made specifically in EIR Chapter 2. The strikethrough and double-underlined text are provided to show changes to the proposed project and variant descriptions in Sections 2.B and 2.C only. The analysis for the revised variant is presented separately, rather than as strikethrough or underline changes to the text of the draft EIR, for clarity and to provide a better comparison between the revised variant and the variant as analyzed in the draft EIR.

The revisions do not provide new information that would result in any new significant impacts that were not already identified in the draft EIR, nor would these changes increase the severity of any of the proposed project's impacts as identified in the draft EIR. Implementation of the mitigation measures identified in the draft EIR would still be required to reduce or avoid significant environmental impacts. In addition, no new mitigation measures beyond those already identified in the draft EIR would be required to mitigate the significant impacts of the proposed project or variant.

CEQA Guidelines section 15088.5 requires that an EIR be recirculated when "significant new information" is added to the EIR after publication of the draft EIR but before certification. The CEQA Guidelines state that information is "significant" if "the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project proponents have declined to implement." Section 15088.5 further defines "significant new information" that triggers a requirement for recirculation as including, for example, identification of a new significant impact; a substantial increase in the severity of an impact (unless mitigation is adopted to reduce the impact to a less-than-significant level); or a new feasible alternative or mitigation measure that would lessen the environmental impacts of the proposed project, but that the project sponsor is unwilling to adopt. CEQA Guidelines section 15088.5(b) states that recirculation is not required if "the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR."

This chapter is organized into five sections as follows:

- Section 2.A, Introduction
- Section 2.B, Summary of Revisions to the Proposed Project
- Section 2.C, Environmental Analysis of the Revisions to the Proposed Project
- Section 2.D, Summary of Revisions to the Variant

- Section 2.E, Environmental Analysis of the Revised Variant
- Section 2.F, Overall Conclusion of the Potential Environmental Impacts of the Revised Variant

The impact analyses of the changes to the proposed project, presented in Section 2.C, specifically address the environmental effects for those project elements that differ from the draft EIR project description. Similarly, the impact analyses of the revised variant, presented in Section 2.E, specifically address the environmental effects of the revised variant components that differ from the draft EIR variant.

As described below, the revisions to the variant would not introduce new characteristics or substantially modify previously proposed characteristics that would result in any new significant impacts not already identified for the proposed project or variant studied in the draft EIR. These changes also would not increase the severity of any identified significant impacts.

The information presented in Sections 2.C and 2.E provides the supporting analysis that indicates the following overall conclusions for the proposed project changes and revised variant:

1. No new significant effects or substantially more severe significant effects would result beyond those identified in the draft EIR.
2. No new mitigation measures are identified that would be required to mitigate new or more severe significant impacts.
3. With implementation of the mitigation measures identified in the EIR, no substantial increase in the severity of an environmental impact would result.
4. No additional alternatives from those presented and analyzed in the draft EIR are needed to satisfy CEQA requirements for environmental review of the revised variant.

2.B Summary of Revisions to the Proposed Project

Since publication of the draft EIR, the project sponsor made refinements to the proposed project related to the transportation and circulation plan description has been updated to reflect (1) the project sponsor's decision to retain the separated westbound right-turn lane on Winston Drive at 20th Avenue; (2) minor changes to lane configurations and street widths; and (3) clarifications or corrections made in response to comments. These revisions also apply to the draft EIR variant as well as the revised variant described in Section 2.D, below. Revised project description figures are provided in RTC Section 5.M, Revisions to Figures, p. 5-21.

The first paragraph on draft EIR p. 2-1 was revised to incorporate the public right-of-way area into the overall description of the project site:

> The project sponsor (Brookfield Properties ~~Development~~) would redevelop the approximately 27 acres of surface parking and surrounding structures in the ~~41~~ 43-acre Stonestown Galleria shopping mall site into a master-planned, multi-phased, mixed-use community as detailed below.

The last sentence on draft EIR p. 2-1 and the first line on p. 2-2 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

> … The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned, and a new ~~straightened and converted to a~~ two-way connection to 19th Avenue (Street A) would be created between Blocks E1 and E3. …

The first paragraph of draft EIR Section 2.C, Project Location and Existing Site Characteristics, p. 2-3, was revised to clarify and include the public right-of-way area into the overall description of the project site:

> The proposed Stonestown Development Project is located on an approximately ~~41~~ 43-acre site in the Lakeshore area in southwest San Francisco (see Figure 2-1). The project site is generally bounded by San Francisco State University (SFSU) Campus to the south; Lowell High School, SFSU housing, and Buckingham Way to the west; Stonestown Family YMCA, commercial uses, and Eucalyptus Drive to the north; and 19th Avenue to the east (see Figure 2-2, p. 2-5). The project site is fully developed and comprises the 11-acre Stonestown Galleria, approximately 27 acres of surface parking lots and operational uses, a vacant building, ~~and~~ 3 acres of privately owned streets, and 2 acres of public right-of-way.

In response to comments, the text under draft EIR Section 2.D, Project Characteristics and Components, p. 2-7, was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

> … Transportation and circulation changes would include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3 (shown as Street A in Figure 2-4). …

The private residential open space description was revised in Table 2-1, draft EIR p. 2-13 to be consistent with the proposed Special Use District as follows:

> Approximately ~~36~~ 27 sf per unit ~~if located on balcony, or approximately 48 sf per unit if commonly accessible to residents~~, or as otherwise refined in the planning code.

The proposed rezoning would also include portions of the site that are residential use districts. The proposed project would also create a Stonestown Special Sign District as part of the rezoning. Draft EIR Section 2.D.4, Design for Development, p. 2-14, was revised as follows:

> The proposed project would be rezoned from C-2 (Community Business Districts), RH-1(D) (Residential-House, One Family-Detached),and RM-1 (Residential-Mixed, Low Density) to a Special Use District (SUD) to establish land use controls and incorporate Design Standards and Guidelines (DSGs) to govern future development. In addition, the planning code would be amended to create a new Stonestown Special Sign District that would include the proposed project along with the existing Stonestown Galleria, and that would establish signage controls for the entire 43-acre site. …

In response to a comment, the first paragraph under Section 2.D.8, Transportation and Circulation Plan, draft EIR p. 2-20, was revised as follows for consistency:

> … The primary ~~and secondary~~ access point~~s~~ to the project site would continue to be at 19th Avenue at Winston Drive~~, and Eucalyptus Drive at 20th Avenue, respectively~~. Secondary access points would continue to be at Eucalyptus Drive and 20th Avenue, Winston Drive and Buckingham Way, and 19th Avenue and Buckingham Way. …

In response to comments, the last bullet point at the end of draft EIR p. 2-20 was revised to clarify the range of travel lanes on 20th Avenue:

- **20th Avenue.** The privately owned portion of 20th Avenue between Eucalyptus and Winston drives would be straightened, would have two to four travel lanes (predominantly one lane in each direction)~~,~~ and would range between 25 and ~~35~~ 44 feet in width. Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (one through lane in each direction and one lane in each direction for right turns). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one lane in each direction and one lane dedicated for left turns). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only. Conceptual illustrative street sections for 20th Avenue are shown in **Figure 2-14** to **Figure 29-17**, pp. 2-24 to 2-27.

In response to a comment, the first bullet on draft EIR p. 2-28 was revised as follows to clarify the range of travel lanes on Buckingham Way:

- **Buckingham Way.** Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to ~~two~~ three lanes ~~(one lane in each direction)~~ along the frontage of Block E5 near the intersection with 20th Avenue. West of Block E5, Buckingham Way would remain three travel lanes. Along Block E5, Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left-turn lane and one dedicated right-turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right-turn lane and one dedicated left-turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left-turn lane and one dedicated right-turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet. The conceptual illustrative street section for Buckingham Way North is shown in **Figure 2-18**.

In response to comments, the second bullet point on draft EIR p. 2-28 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

- **Street A.** The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be ~~straightened~~ abandoned and ~~converted to~~ a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3 (shown as Street A on Figure 2-12). The westbound approach at 20th Street along Street A would be a right-turn-only lane. Street A would be approximately ~~20~~22 feet wide.

The third bullet point on draft EIR p. 20–28 was revised as follows to reflect the project sponsor's decisions to retain the separated westbound right-turn lane:

- **Winston Drive.** Winston Drive between Block S3 and 20th Avenue would be reduced from four travel lanes (two lanes in each direction) to three lanes (two lanes westbound, one lane eastbound). The separated westbound right-turn lane on Winston Drive at 20th Avenue would be retained. The curved portion of Winston Drive at Block S3 would be converted to a 90-degree corner. The six travel lanes (three lanes in each direction) between 19th and 20th avenues would be maintained. Winston Drive would be 46 to 66 feet wide. Conceptual illustrative street sections for Winston Drive are shown in **Figure 2-19** and **Figure 2-20**, pp. 2-30 and 2-31.

The fourth bullet point on draft EIR p. 2-28 was revised as follows:

- **Street B.** A new street with two lanes (one lane in each direction) would extend east from 20th Avenue between Blocks E3 and E4~~, however it~~ but would not connect to 19th Avenue. Street B would provide vehicular and pedestrian access to Blocks E3 and E4 and would be approximately ~~26~~ 22 feet wide.

Draft EIR Figure 2-12 (p. 2-22), Figures 2-14 through 2-17 (pp. 2-24 to 2-27), Figures 2-18 through 2-20 (pp. 2-29 to 2-31), and Figure 2-21 (p. 2-33) were updated to reflect the transportation and circulation updates above and to clarify whether the roadways are public or private right-of-way.

The first sentence under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to include the Americans with Disabilities Act (ADA) pathway improvements through Rolph Nichol Jr. Playground.

> Pedestrian and bicycle access would be provided through the northwest portion of the project site, connecting to Rolph Nicol Jr. Playground as shown in Figure 2-21 and Figure 2-22, p. 2-34, respectively. Landscaping and two new Americans with Disabilities Act (ADA) pathway improvements would be included through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive.

The first sentence of the second paragraph under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to clarify the type of class IV bicycle facilities:

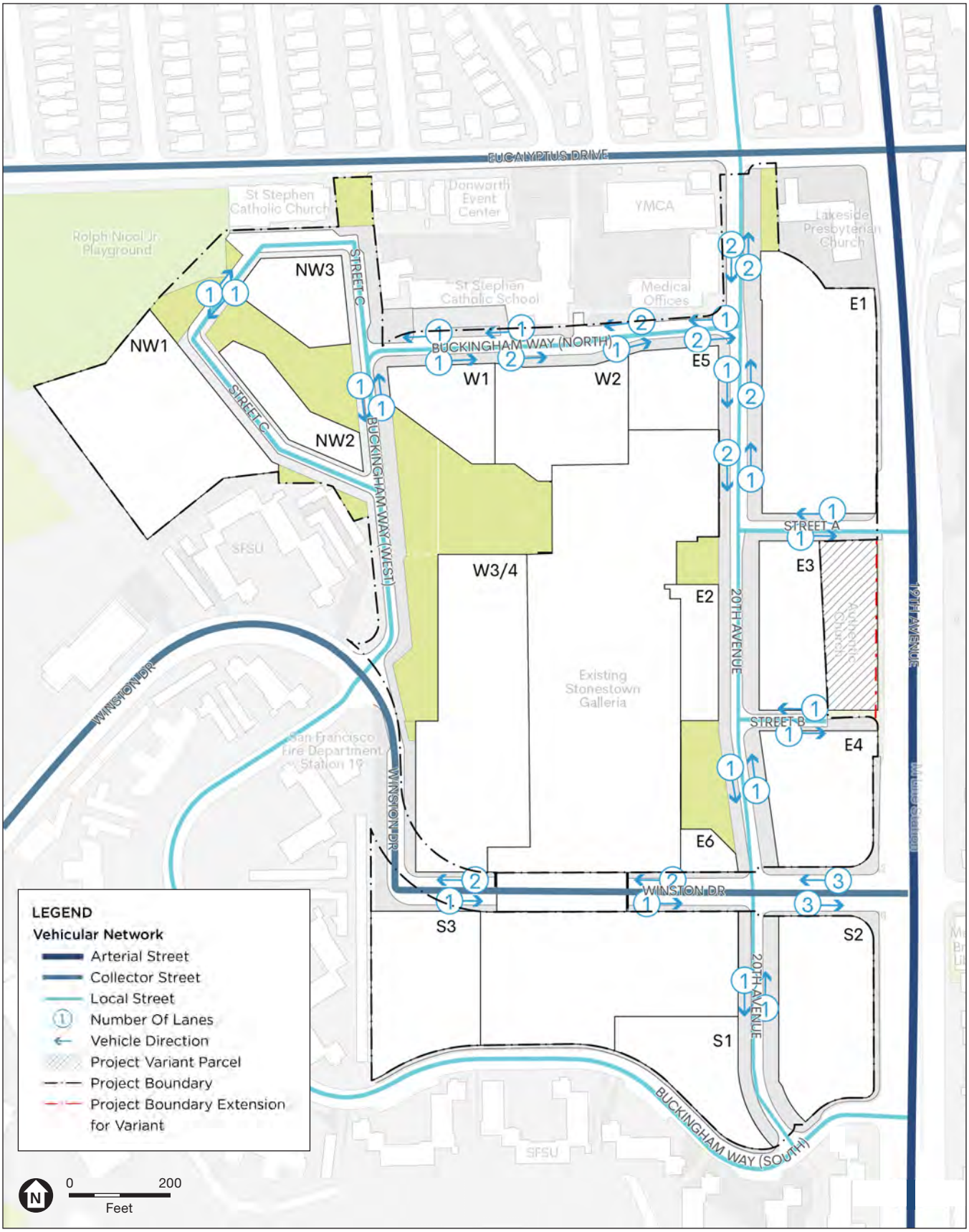
> Two-way (combined or separated) class IV bicycle facilities (protected bike lanes) are proposed on Buckingham Way, 20th Avenue, and Winston Drive.[17] …

The first bullet point on draft EIR p. 2-36 was revised to provide clarification regarding the recycled water system:

- **Recycled Water.** The project site is located within a designated recycled water use area, and the proposed project would ~~provide the piping needed to distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance~~ comply with San Francisco's Recycled Water Use Ordinance by producing and distributing non-potable water on-site and distributing it to uses within specific buildings or within the project site. The proposed recycled water system would be private and not connected to future City recycled water systems.

In response to a comment, the text on draft EIR p. 2-36 was revised to clarify the non-potable supply uses to be consistent with the water supply assessment as follows:

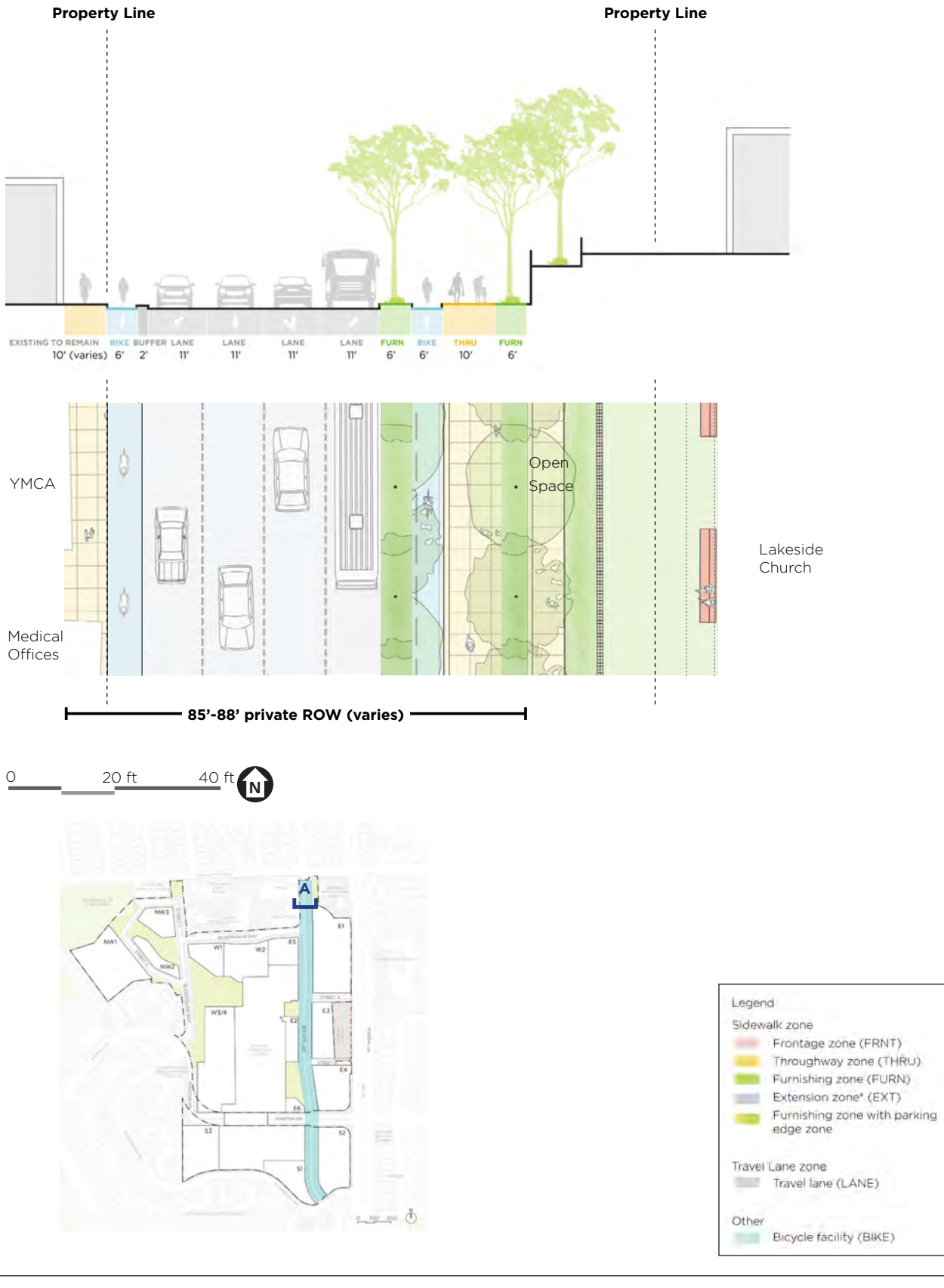
- **Non-potable Water.** Similarly, the proposed project would comply with San Francisco's Non-potable Water Ordinance and would include the diversion and reuse of water from HVAC/cooling systems, graywater,[20] blackwater,[21] and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas. The proposed project would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water to the project. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or decentralized treatment facilities located within certain buildings or phases as shown in **Figure 2-24** and **Figure 2-25**, p. 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the project site buildings.



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

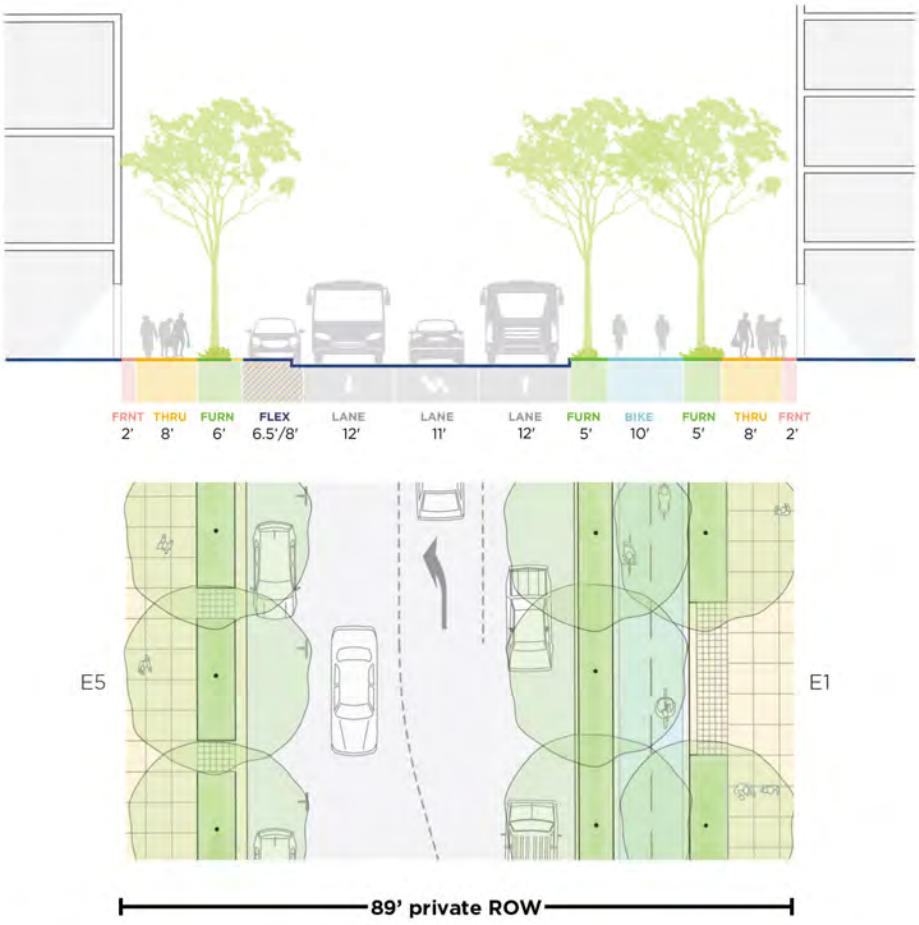
FIGURE 2-12
PROPOSED STREET PLAN (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

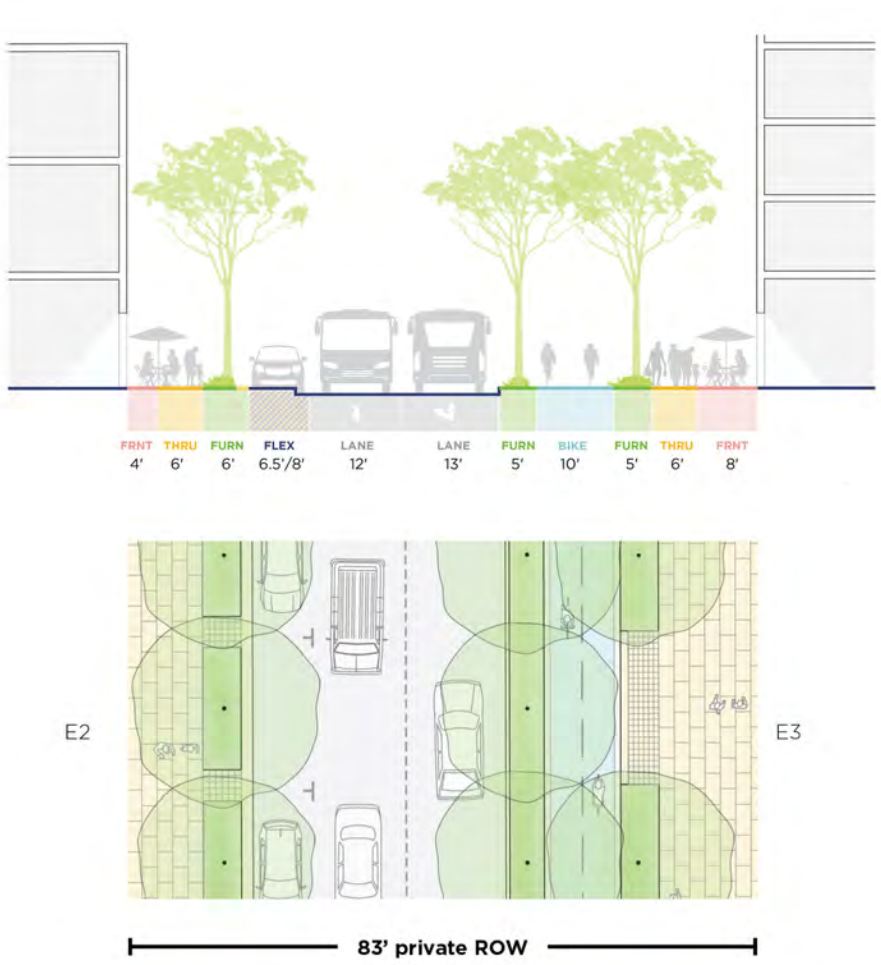
FIGURE 2-14
20TH AVENUE ILLUSTRATIVE SECTION A (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

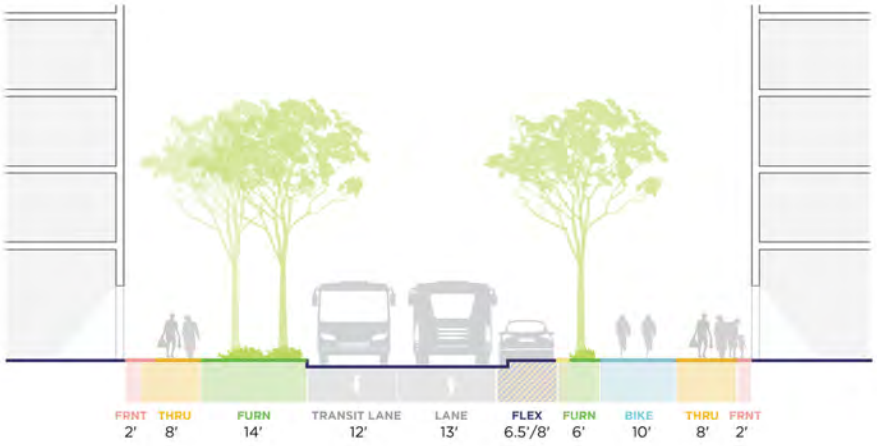
FIGURE 2-15
20TH AVENUE ILLUSTRATIVE SECTION B (REVISED)

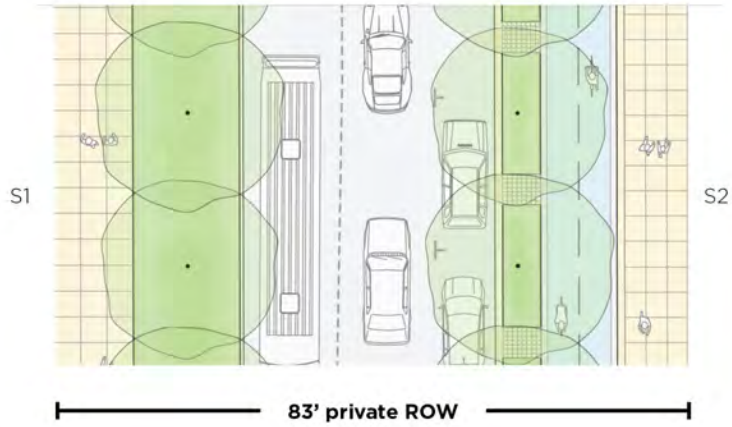


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-16
20TH AVENUE ILLUSTRATIVE SECTION C (REVISED)





SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-17
20TH AVENUE ILLUSTRATIVE SECTION D (REVISED)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

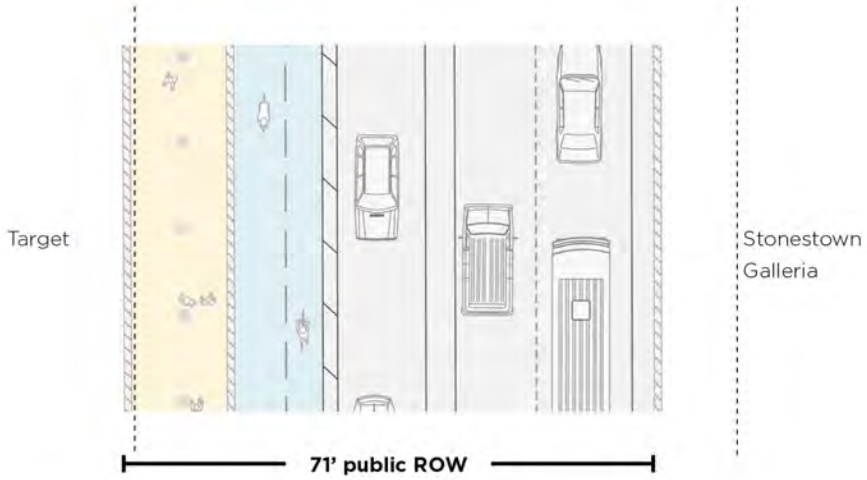
FIGURE 2-18

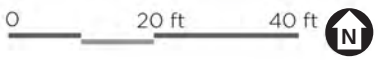
BUCKINGHAM WAY NORTH ILLUSTRATIVE SECTION (REVISED)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-19
WINSTON DRIVE ILLUSTRATIVE SECTION A (REVISED)

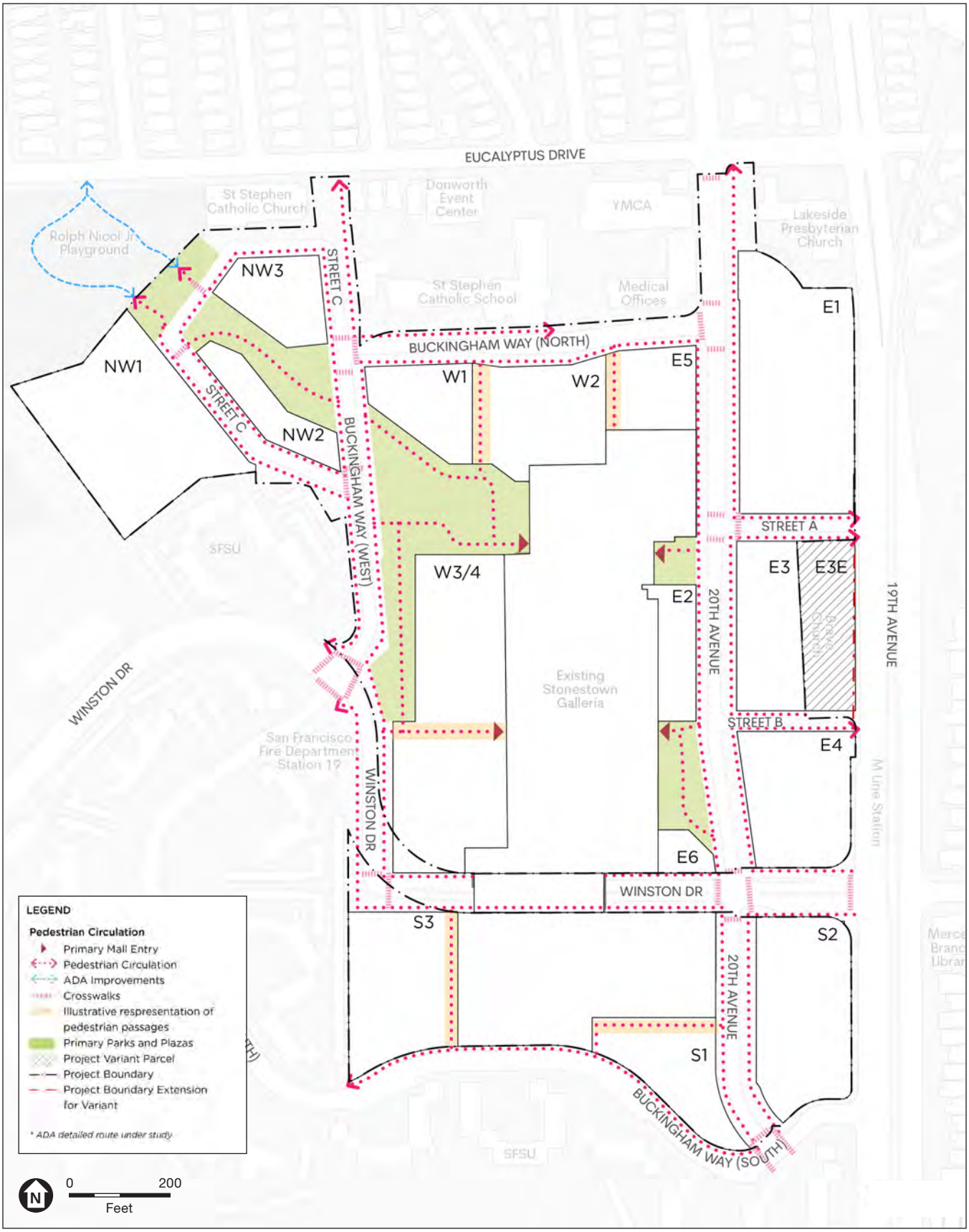




SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-20
WINSTON DRIVE ILLUSTRATIVE SECTION B (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2024

Stonestown Development Project

FIGURE 2-21
PROPOSED PEDESTRIAN NETWORK (REVISED)

2.C Environmental Analysis of the Revisions to the Proposed Project

The minor modifications described in Section 2.B above primarily include changes in lane widths, clarification on lane configuration, and ownership of the proposed recycled water system. The revisions to descriptions of 20th Avenue, Street A, Street B, Buckingham Way, and recycled water system are clarifications and corrections, and do not represent substantial changes from the proposed project and variant analyzed in the draft EIR, nor would they result in any changes to the site layout, proposed number of housing units, or construction assumptions as they are clarifications and corrections. In addition, based on the nature of the project description changes it was determined that these changes would not affect the impact analysis of environmental impacts discussed in the draft EIR. Therefore, these modifications would result in no changes to the assumptions, analysis, or conclusions described in the draft EIR assessment of environmental impacts of the proposed project as presented in draft EIR Chapter 3, Environmental Setting and Impacts, and draft EIR Appendix B with respect to any resource topics.

In particular, at the Winston Drive/20th Avenue intersection, the existing separated westbound right-turn lane would be retained and therefore the geometric conditions would match the existing conditions on this east leg (westbound approach) to the intersection. Under the proposed project analyzed in the draft EIR, this separated right-turn lane was proposed to be removed. With the separated westbound right-turn lane retained:

- There are no design features that would block sightlines or increase vehicle speeds.
- Drivers turning right at the intersection would need to wait until there is a sufficient gap in the flow of people walking to proceed with the right-turning movement.

Therefore, the impact of the proposed project related to potentially hazardous conditions would remain less than significant as described on draft EIR pp. 3.B-57 through 3.B-62. The approach and analysis for the remaining transportation-related impact categories would not be affected by the revisions and therefore the impact findings would be the same as concluded in the draft EIR.

2.D Summary of Revisions to the Draft EIR Variant

2.D.1 Introduction

This section of the responses to comments (RTC) document introduces the revised variant, which includes several changes from the draft EIR variant. Since publication of the draft EIR, and in response to public and agency comments, the project sponsor initiated revisions to the variant that would shift additional development to the northwest corner of the site from later phases of the project, increase the number of residential units, reduce non-retail sales and service uses, and remove the hotel use. The set of changes to the variant is referred to throughout this chapter as the “revised variant.” The revisions to the transportation and circulation plan for the proposed project (as described in Section 2.B, p. 2-2) would apply to the revised variant. This section includes new information pertaining to the revised variant, which modifies the variant analyzed in the draft EIR. The proposed changes to the draft EIR variant described below do not present significant new information with respect to the variant, would not result in any new significant environmental impacts or include new feasible alternatives or mitigation measures, and would not result in a substantial increase in the severity of a significant impact identified in the Chapters 3 and 5 of the draft EIR. Therefore, recirculation of the draft EIR pursuant to CEQA Guidelines section 15088.5 is not required.

2.D.2 Comparison of Draft EIR Variant and the Revised Variant

The revised variant would have the same overall characteristics and components as the draft EIR variant, including creating a new special use district (SUD) that would rezone the project site and establish development controls for construction of a multi-phase, mixed-use project. Like the variant, the revised variant would include amendments to the general plan and planning code to create the SUD and a Stonestown Special Sign District. The site layout and the general block and street networks would be generally the same for the revised variant as described in the draft EIR (pp. 2-5, 2-7, and 2-9). The predominant land uses, block configurations, and proposed height plan for the revised variant would be the same as presented on Figures 2-4 and 2-5 on draft EIR pp. 2-9 and 2-10.

The number of towers, residential square footage and unit count, non-retail sales and service uses, number of vehicle parking spaces, and number of bicycle parking spaces are the components of the revised variant that differ from the variant analyzed in the draft EIR. **RTC Table 2-1** shows the differences in uses between the draft EIR variant and the revised variant.

LAND USE PLAN

Under the revised variant, up to 3,491 residential units (3,534,000 square feet) would be developed in buildings ranging from 30 to 190 feet (see Figure 2-5 on draft EIR p. 2-10). The revised variant would add 411 residential units (including 201 senior housing units) compared to the draft EIR variant, increasing the total number of proposed residential units to 3,491.

The revised variant would achieve this increased density as follows: (i) converting residential units to 201 senior housing units; (ii) converting approximately 104,000 square feet of non-retail sales and service uses on Blocks E1, S1, and S2 to 100 residential units; (iii) converting the 100,000 square feet of hotel use on Block E3 to 96 residential units; and (iv) including an additional 130,000 square feet of residential space (totaling 125 residential units) by including five towers instead of four.

The building envelopes and heights would remain the same except the buildings on Block S3, Block NW2, and Block NW3. The developable footprint of Block NW2 would increase to allow for a flex zone such that the building can potentially accommodate additional residential units. The previously chamfered corner of Block NW2 would be squared off and the building would be extended closer to the western property line on Street C. This would increase the buildable area of Block NW2 by approximately 12,700 square feet, or about 76 residential units. The additional residential units on Block NW2 would be shifted from development in Phases 2 and 3 and would not change the square footage or residential unit counts for the overall development program. The boundary of Block NW3 would shift slightly to maintain the required separation between the buildings, however the development program of this block would not change. The change in footprint of Block NW2 and Block NW3 between the draft EIR variant and revised variant is shown in RTC Figure 2-1.[1] In addition, approximately 84 parking spaces would be added to Block NW1 and would also be shifted from proposed development in Phases 2 and 3. The proposed changes would not impact the overall construction schedule for the revised variant.

[1] As the Development Agreement (DA) was developed there are slight variations between the parcel shapes shown in the draft EIR and the DA figures. However, the analysis included in the draft EIR looked at the project as a whole; as such, the parcel shapes do not impact the overall findings of the draft EIR.

RTC Table 2-1 Draft EIR Variant Compared to the Revised Variant

Project Characteristics	Existing	Draft EIR Variant		Revised Variant		Variant Differences
PROPOSED LAND USE PROGRAM	**AREA (APPROXIMATE SQUARE FEET)**					
Residential Use	0	Up to 3,200,000 new		Up to 3,534,000		+334,000
Retail Sales and Service Use[a]	760,000 sf mall 13,300 sf, 30-foot-tall vacant theater 15,000 sf, 15- to 30-foot-tall commercial building	**Up to 160,000** 710,000[d] sf of the existing mall to be retained 13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished 81,700 sf net new		**Up to 160,000** 710,000[d] sf of the existing mall to be retained 13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished 81,700 sf net new		0
Non-Retail Sales and Service Use[b]	0	Up to 200,000 net new		Up to 96,000		-104,000
Hotel	0	Up to 100,000 (up to 200 rooms) net new		0		-100,000 (-200 rooms)
Institutional Use[c]	30,000 sf, 30-foot-tall church	**Up to 63,000** 30,000 sf church to be demolished 33,000 sf net new		**Up to 63,000** 30,000 sf church to be demolished 33,000 sf net new		**0**
PROPOSED DWELLING UNITS		**NUMBER (APPROXIMATE)**	**PERCENTAGE (APPROXIMATE)**	**NUMBER (APPROXIMATE)**	**PERCENTAGE (APPROXIMATE)**	
Studio	N/A	616	20%	658	19%	+42
1-bedroom	N/A	1,232	40%	1,316	38%	+84
2-bedroom	N/A	924	30%	987	28%	+63
3-bedroom	N/A	308	10%	329	9%	+21
Senior	N/A	N/A	N/A	201	6%	+201
Total Dwelling Units		***3,080***	***100%***	***3,491***		***+411***
PROPOSED PARKING	**NUMBER (APPROXIMATE)**					
Vehicle parking spaces:	**3,400** 2,450 surface parking spaces 700-space parking garage 250 spaces below shopping mall	**4,450** -700-space parking garage to be demolished -2,450 surface parking spaces to be removed 250 spaces below shopping mall to be retained +540 new spaces to be added for expanded parking below shopping mall		**4,861** -700-space parking garage to be demolished -2,450 surface parking spaces to be removed 250 spaces below shopping mall to be retained +540 new spaces to be added for expanded parking below shopping mall		**+411**

Project Characteristics	Existing	Draft EIR Variant	Revised Variant	Variant Differences
		+770-space new parking garage to be added +Remaining 2,890 spaces to be distributed throughout site *1,050 net new spaces*[e]	+770-space new parking garage to be added +Remaining 3,301 spaces to be distributed throughout site *1,461 net new spaces*[e]	
Car-share parking spaces	0	68	70	+2
BICYCLE PARKING	**NUMBER (APPROXIMATE)**			
Bicycle parking class 1	33	923	1,010	+87
Bicycle parking class 2	67	253	267	+14
Total Bicycle Parking	***100***	***1,176 (1,076 net new)***	***1,277 (1,177 net new)***	***+101***
OPEN SPACE	**AREA**			
Publicly accessible open space	1.6 acres	Approximately 6 net new acres		No change
Private residential open space	N/A	Approximately 27 sf per unit		No change
BUILDING CHARACTERISTICS				
Stories	1 to 3 stories	3 to 18 stories		No change
Height	15 to 65 feet	30 to 190 feet		No change
Ground floor	Retail sales and service	All blocks would include ground-floor active uses, which could include any combination of retail sales and service, non-retail sales and service, institutional, or residential space facing the street.		No change

ABBREVIATIONS: N/A = not applicable; sf = square feet

NOTES:

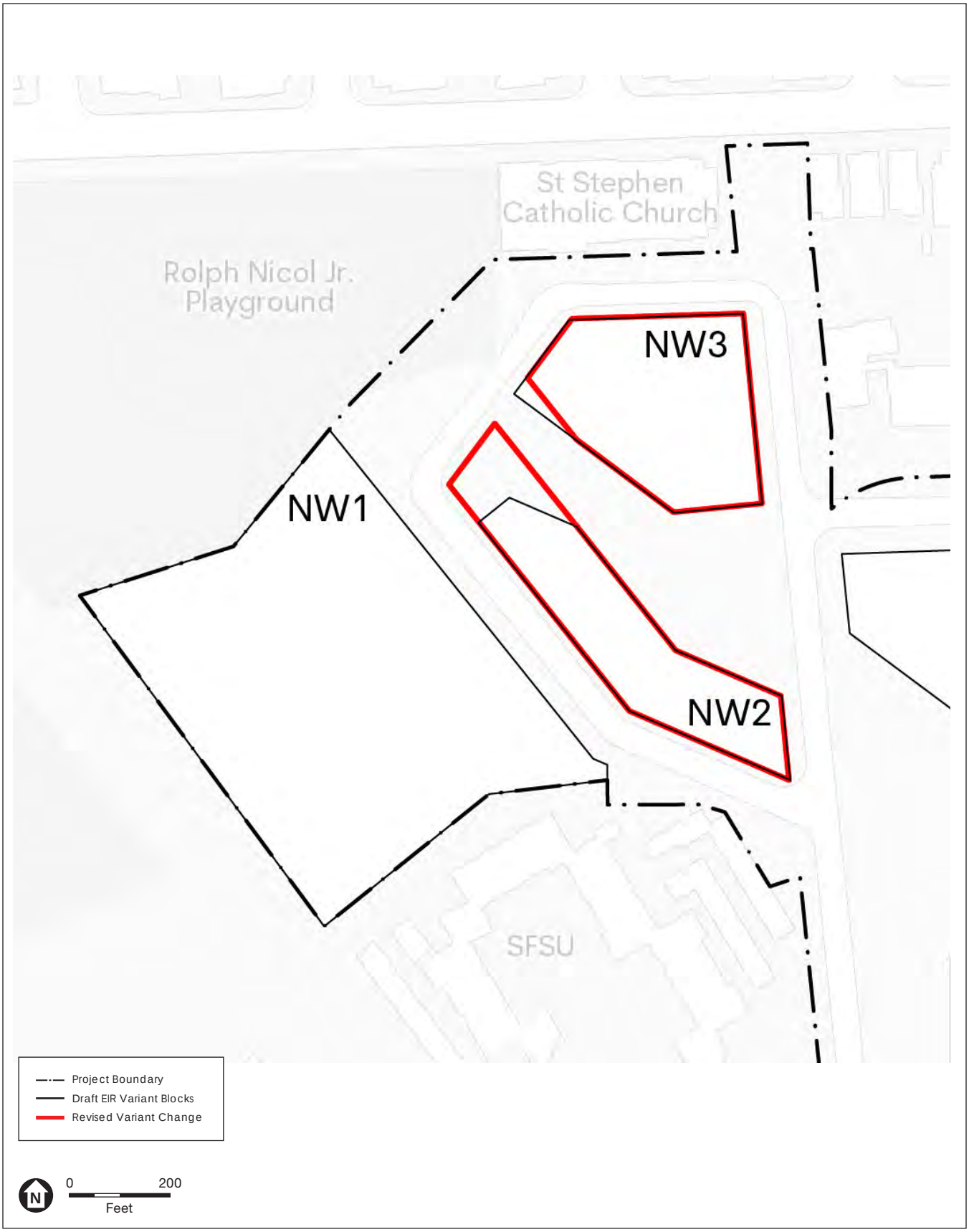
[a] "Retail Sales and Service Use" is a use category that includes but is not limited to the sale of goods, typically in small quantities, or services directly to the ultimate consumer or end user with some space for retail service onsite, excluding Retail Entertainment Arts and Recreation and Retail Automobile Uses, and including but not limited to Adult Business, Animal Hospital, Bar, Cannabis Retail, Chair and Foot Massage, Tourist Oriented Gift Store, General Grocery, Specialty Grocery, Gym 2 Hotel, Jewelry Store, Kennel, Laundromat, Liquor Store, Massage Establishment, Mortuary (Columbarium), Motel, Non-Auto Sales, Pharmacy, Restaurant, Limited Restaurant, General Retail Sales and Service, Financial Service, Fringe Financial Service, Limited Financial Service, Health Service, Personal Service, Retail Professional Service, Self-Storage, Tobacco Paraphernalia Establishment, and Trade Shop (planning code section 102).

[b] "Non-Retail Sales and Service Use" includes the sale of goods or services to other businesses rather than the end user, or that does not provide for direct sales to the consumer onsite. Uses in this category include but are not limited to Business Services, Catering, Commercial Storage, Design Professional, General Office, Laboratory, Life Science, Non-Retail Professional Service, Trade Office, Wholesale Sales, and Wholesale Storage (planning code section 102).

[c] "Institutional Use" includes Child Care Facility, Community Facility, Private Community Facility, Hospital, Job Training, Medical Cannabis Dispensary, Religious Institution, Residential Care Facility, Social Service or Philanthropic Facility, Post-Secondary Educational Institution, Public Facility, School, and Trade School (planning code section 102).

[d] The 50,000 sf CitySports building would be demolished and is subtracted from the existing mall square footage to be retained.

[e] The variant and revised variant would both retain the 250 spaces below the shopping mall. 4,450 variant spaces – 250 retained spaces = 4,200 new variant spaces. 4,200 variant spaces – 3,150 existing spaces to be removed = 1,050 net new spaces for the variant. 4,861 revised variant spaces – 250 retained spaces = 4,611 new variant spaces. 4,611 variant spaces – 3,150 existing spaces to be removed = 1,461 net new spaces for the variant.



SOURCE: Brookfield Properties and SITELAB urban studio, 2024

Stonestown Development Project

RTC FIGURE 2-1
NORTHWEST CORNER CHANGES

Block S3 would change from a midrise building to a tower building, for a total number of five towers in the revised variant (rather than the four proposed in the variant). The proposed project and variant analyzed in the draft EIR studied a potential fifth tower building on Block S3 in the wind and shadow modeling (see Figure 2-5 on draft EIR p. 2-10); however, the construction analysis analyzed a development program that assumed Block S3 was a midrise building and there were only four towers sitewide. Overall, the revised variant would represent an increase of 411 residential units (334,000 square feet), a 104,000-square-foot decrease in non-retail sales and service uses, and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant.

TRANSPORTATION AND CIRCULATION PLAN

The refinements and clarifications to the transportation and circulation plan described above in Section 2.B, p. 2-2, would apply to the revised variant.

VEHICLE PARKING AND BICYCLE PARKING

The revised variant would provide 4,861 vehicle parking spaces, which is 411 more spaces than under the draft EIR variant. As stated in the draft EIR on p. 2-18, the existing parking garage below the shopping mall would be retained and expanded under Blocks W3 and W4, a new parking garage would be constructed on Block W2, and vehicle spaces would be embedded within the proposed building podiums and/or below grade throughout the project site. In addition, the revised variant would relocate 84 parking spaces from Blocks W3, W4, E1, and E5 to Block NW1.

The revised variant would provide 1,010 class 1 bicycle parking spaces and 267 class 2 bicycle parking spaces. Similar to the draft EIR variant, the class 1 bicycle parking spaces would be located either on the ground floor of each residential building or in the first below-grade level of each residential building, and the class 2 spaces would be located in the right-of-way adjacent to each building or in publicly accessible open space areas.

INFRASTRUCTURE AND UTILITIES

The revised variant would have the same upgrades to the existing infrastructure and utility systems as described in draft EIR pp. 2-32 through 2-39. However, the revised variant would require an additional emergency generator for the tower at Block S3; therefore, the revised variant would have 13 emergency backup diesel generators to serve the residential blocks.

CONSTRUCTION SCHEDULE

The construction phasing for the revised variant would be similar to that for the variant analyzed in the draft EIR. The overall construction durations for Phases 1 through 5 would be the same as the draft EIR variant. Construction associated with the additional Block NW2 buildable area and relocated parking spaces to Block NW1 would increase the excavation duration of Phase 1 construction but would not change the overall duration. Compared to the draft EIR variant, the demolition and grading, shoring, and excavation subphases of Phase 6 of the revised variant would be shorter because less grading would be required[2]; the Phase 6 building construction subphase would increase by two months; the Phase 6 paving and architectural coating subphases would increase by a few days; and the sequencing would change slightly. Overall, these changes would extend the Phase 6 construction period by three months to accommodate the additional building

[2] Less grading is generally needed when excavating a large area because the larger size of the hole allows for a more gradual slope. This is consistent with the updated construction equipment, which removed the grader from the grading, shoring, excavating subphase in Phase 6.

construction required for the Block S3 tower. Approximately 26,890 cubic yards of additional excavation would be required for Block S3. **RTC Table 2-2** shows the changes to the construction schedule between the draft EIR variant and the revised variant.

RTC Table 2-2 Preliminary Estimated Construction Schedule for the Draft EIR Variant and the Revised Variant

	Draft EIR Variant			Revised Variant		
Construction Phase(s)	Start	Finish	Duration (Months)	Start	Finish	Duration (Months)
Phases 1 and 1B	Month 1	Month 45	45	No Change		45
Phase 2	Month 12	Month 56	44	No Change		44
Phase 3	Month 26	Month 54	28	No Change		28
Phase 4[a]	Month 36	Month 80	44	No Change		44
Phase 5	Month 48	Month 91	43	No Change		43
Phase 6	Month 60	Month 96	36	Month 60	Month 99	39
Total	***Month 1***	***Month 96***	***96***	***Month 1***	***Month 99***	***99 (+3 months)***

SOURCE: Data provided by Brookfield Properties Development in 2022 and 2023

NOTE:

[a] The construction of the Authentic Church parcel under the variant and revised variant would be accommodated within Phase 4.

2.E Environmental Analysis of the Revised Variant

Because revisions to the draft EIR variant would not apply to the proposed project analyzed in the draft EIR, the following environmental analysis is limited to a comparison of the revised variant to the draft EIR variant. For all impact topics, the environmental setting, regulatory framework, significance criteria, and approach to analysis are identical for the variant and revised variant; therefore, see draft EIR Chapter 4 and draft EIR Appendix B, Initial Study, for this information. For the cumulative impact analyses, the same list-based or projections-based approaches have been used for the revised variant depending on the environmental topic analyzed. Where the impacts and mitigation measures are substantially the same as for the variant, the following discussion summarizes the impact analysis, and draft EIR Chapter 3 and draft EIR Appendix B present the detailed analysis. The revised variant analysis of the draft EIR initial study topics is included as Attachment C to this RTC document. The analysis of the topics analyzed in the draft EIR (historic architectural resources, transportation and circulation, air quality, noise, wind, shadow, and utilities and service systems) are provided in this section.

2.E.1 Historic Architectural Resources

The impacts of the variant on historic architectural resources were described and analyzed in draft EIR Section 3.A, Historic Architectural Resources, pp. 3.A-1 through 3.A-28.

The draft EIR concluded that the variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5 because it would include the demolition of the former UA Stonestown Twin Theater (501 Buckingham Way), which is considered a historic resource under CEQA. The demolition of the theater would materially impair the historic architectural resource, which would

no longer retain the ability to convey its significance as a New Formalist–style theater. Implementation of Mitigation Measure M-CR-1a, Documentation of Historic Resources; Mitigation Measure M-CR-1b, Salvage Plan; and Mitigation Measure M-CR-1c, Public Interpretive Plan, would be required to partially compensate for impacts on the historic architectural resource through comprehensive documentation and memorialization. However, the impact on historic architectural resources would be significant and unavoidable with mitigation.

The revised variant would include the same predominant land uses, block configurations, and construction footprint as the variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of Block NW2, Block NW3, and a tower on Block S3, which would change from a midrise building to a tower building. The tower on Block S3 would not impact any historical resources, as none are present at that location and this change to the variant would not impact any historic architectural resources. Like the draft EIR variant, the revised variant would include demolition of the former UA Stonestown Twin Theater (501 Buckingham Way). The demolition of the theater would still occur with the expansion of Block NW2 towards Street C. Mitigation Measures M-CR-1a through M-CR-1c would be implemented for the revised variant, requiring that the historic architectural resource be documented, that a salvage plan be prepared, and that an interpretive program be created. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. Accordingly, the revised variant would result in the same impact on the historic architectural resource as the draft EIR variant, which would be significant and unavoidable with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to historic architectural resources.

CUMULATIVE IMPACTS

The draft EIR concluded that impacts of the cumulative projects would not combine with impacts of the variant related to historic architectural resources such that they would result in a significant cumulative impact, because the impact of the variant on historic architectural resources would be limited to the former UA Stonestown Twin Theater (501 Buckingham Way). The analyses in the draft EIR concluded that the variant would not combine with the cumulative projects to result in a significant cumulative impact on historic architectural resources, and no mitigation measures are required. This same conclusion applies to the revised variant because it would involve the same construction footprint as analyzed in the draft EIR for the variant. Therefore, the revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative historic architectural resources impacts.

2.E.2 Transportation and Circulation

The draft EIR variant's impacts on transportation and circulation are described and analyzed in draft EIR Section 3.B, Transportation and Circulation, pp. 3.B-1 through 3.B-85. The analysis found that under both project-level and cumulative level, the draft EIR variant would result in significant and unavoidable transit delay impact, less than significant construction impact and loading impact with mitigation, and less than significant impact in all remaining transportation-related impact categories. The transportation and circulation data cited in this section are based on the results of a memorandum prepared to analyze the transportation impacts of the revised variant (see Attachment C of this RTC document).[3]

[3] Kittelson & Associates, Inc., *Stonestown Galleria New Option Impact Analysis Memorandum*, January 8, 2024, prepared for San Francisco Planning Department.

The draft EIR identified the following mitigation measures for the variant:

- Mitigation Measure M-TR-1, Construction Coordination Plan
- Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips
- Mitigation Measure M-TR-4b, Transit Travel Time Reduction Measure
- Mitigation Measure M-TR-6, Develop Driveway and Loading Operations Plan
- Mitigation Measure M-C-TR-3, Signal Coordination and Transit Signal Priority along 19th Avenue

Mitigation Measure M-TR-1 would reduce construction-related direct and cumulative transportation and circulation impacts that would result from the project and variant to less-than-significant levels for the draft EIR variant.

The draft EIR identified two mitigation measures that would reduce project-level impacts related to public transit delay that would result from the variant. However, the delay reductions associated with Mitigation Measure M-TR-4a and the precise travel time (and thus the transit delay reduction) of any given segment cannot be guaranteed. Mitigation Measure M-TR-4b would apply to the delayed transit corridor (57 Parkmerced inbound route), but the measure's effectiveness would be subject to uncontrollable factors, including the arrival of buses within the traffic signal cycle and the location of buses in the traffic stream. Furthermore, the transit signal priority plan would be subject to approval by the San Francisco Municipal Transportation Agency (SFMTA). Therefore, these mitigation measures cannot be guaranteed to reduce the project-level impacts related to public transit delay to less-than-significant levels, and the impacts would be significant and unavoidable with mitigation.

Mitigation Measure M-TR-6 would reduce project-level and cumulative impacts related to freight and commercial and passenger loading.

Mitigation Measure M-C-TR-3 would apply to the project and variant under cumulative conditions in addition to Mitigation Measures M-TR-4a and M-TR-4b. These three mitigation measures would reduce cumulative impacts but cannot be guaranteed to reduce the impacts to less-than-significant levels. The effectiveness of Mitigation Measures M-TR-4a and M-TR-4b under cumulative conditions would be the same as described for project-level impacts above. Mitigation Measure M-C-TR-3 requires a fair-share contribution from the project sponsor but does not itself provide for the installation of the closed-circuit televisions (CCTVs). Furthermore, the CCTVs would allow SFMTA staff to make design changes to reduce delay but would not themselves guarantee delay reduction.

RTC Table 2-3 summarizes the estimated travel demand for the revised variant and the difference relative to the draft EIR variant. Proposed project trips are included in this table because the subsequent transit-delay impact discussion relies on a comparison between estimates of travel demand for the revised variant and the proposed project. As shown, the travel demand for the revised variant would result in fewer daily person-trips than for the draft EIR variant and more daily person-trips than for the proposed project. The revised variant would generate totals of approximately 55,110 daily person-trips and 5,035 person-trips during the weekday p.m. peak period. However, the number of daily and p.m.-peak-hour person-trips made in motor vehicles would be lower than with either the draft EIR variant or the proposed project. In the p.m. peak hour—for which the draft EIR variant's transit delay impact was identified—the revised variant would

generate 2,539 total automobile and taxi/transportation network company trips, compared to 2,640 for the draft EIR variant and 2,599 for the proposed project.

RTC Table 2-3 Travel Demand by Mode for the Proposed Project, Draft EIR Variant, and Revised Variant

Land Use or Property	Person-Trips by Mode					
	Auto	Taxi/TNC	Transit	Bicycle	Walk	Total
DAILY						
Proposed Project	27,404	1,323	8,793	1,138	16,354	***55,012***
Draft EIR Variant	27,838	1,360	8,997	1,183	16,722	***56,100***
Revised variant	26,611	1,284	9,350	1,233	16,632	***55,110***
Difference between Revised Variant and Draft EIR Variant	***(1,227)***	***(76)***	***353***	***50***	***(90)***	***(990)***
WEEKDAY P.M. PEAK HOUR						
Proposed Project	2,480	119	805	106	1,488	***4,998***
Draft EIR Variant	2,518	122	823	110	1,520	***5,093***
Revised variant	2,422	117	855	115	1,526	***5,035***
Difference between Revised Variant and Draft EIR Variant	***(96)***	***(5)***	***32***	***5***	***6***	***(58)***

SOURCES: Kittelson & Associates, Inc., 2022 and 2024; SF Workbook, 2018; ITE, 11th edition, 2021; NCHRP 8-51 Internal Trip Capture Estimation Tool

ABBREVIATION: TNC = transportation network company

RTC Table 2-4 compares vehicle trips generated by the proposed project, draft EIR variant, and revised variant. The revised variant would generate 14,204 daily external vehicle trips, 6.2 percent fewer trips than the draft EIR variant. During the weekday p.m. peak period, the revised variant would generate 1,152 external vehicle trips, 5.7 percent fewer trips than the draft EIR variant and 3.8 percent fewer than the proposed project.

These changes in daily and total person-trips are consistent with the increase in residential units, decrease in non-retail sales and service use, and removal of the hotel component under the revised variant. The reduction in external vehicle trips is mainly attributable to two factors as discussed below.

On a per-square-foot basis, land uses generate different numbers of daily and p.m.-peak-period trips. For example, approximately 1,000 square feet of hotel, office, and residential uses generate 16.8, 15.7, and 6.8 person-trips per day, respectively, according to the planning department's Transportation Impact Analysis Guidelines for Environmental Review.[4,5] Therefore, the residential land uses proposed under the revised variant would generate fewer trips on a per-square-foot basis than the hotel and office land uses that were proposed under the draft EIR variant, which have been replaced by residential land uses with the revised variant.

[4] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update: Summary of Changes Memorandum,* February 14, 2019, last updated October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines, accessed May 30, 2023.

[5] The analysis used the office trip generation rates for the site's non-retail sales and service uses.

RTC Table 2-4 Vehicle Trips of the Proposed Project, Draft EIR Variant, and Revised Variant

Land Use or Property	Total Vehicle Trips[a]	Internal Vehicle Trip Reduction Percentage	External Vehicle Trips
DAILY			
Proposed project	17,811	17%	14,865
Draft EIR Variant	18,110	16%	15,147
Revised variant	16,998	16%	14,204
Difference between Revised Variant and Draft EIR Variant	***(1,112)***	***N/A***	***(943)***
WEEKDAY P.M. PEAK HOUR			
Proposed project	1,524	21%	1,198
Draft EIR Variant	1,550	21%	1,221
Revised variant	1,462	21%	1,152
Difference between Revised Variant and Draft EIR Variant	***(88)***	***N/A***	***(69)***

SOURCES: Kittelson & Associates, Inc., 2022 and 2024; SF Workbook, 2018; ITE, 11th edition, 2021; NCHRP 8-51 Internal Trip Capture Estimation Tool
ABBREVIATION: N/A = not applicable
NOTES:
[a] Vehicle trips include auto and taxi/transportation network company trips.

Residential land use in the project vicinity has a lower automobile mode split than office and hotel uses. The mode split was obtained directly from the Transportation Impact Analysis Guidelines for Environmental Review, which is calculated based on the project site's transportation analysis zone (TAZ 918), neighborhood (Sunset District), and place type (3, urban low density). In this geography, the percentage of person-trips traveling by automobile is as follows: residential, 39 percent; office, 84 percent; and hotel, 54 percent.

Draft EIR Appendix D.1, Travel Demand Memorandum, presents the detailed methodology for trip generation, mode split, and internal trip capture.

CONSTRUCTION IMPACTS

The revised variant would include more residential use and less non-retail sales and service use than the variant analyzed in the draft EIR and would not include the hotel component. However, the total number of buildings and structures to be constructed on the site would be the same as under the draft EIR variant, but the building typology of one of the proposed buildings would change from a midrise building to a tower building for a total number of tower buildings sitewide of five in the revised variant (rather than the four proposed in the draft EIR variant). Requirements for coordination with city agencies and compliance with applicable city, state, and federal codes, rules, and regulations would apply to the revised variant as they would to the draft EIR variant. Overall, differences in the construction schedule, the nature of construction activities, and the potential effects on pedestrian, bicycle, and vehicle circulation and access (and associated hazards) under the revised variant would be negligible. Similar to the draft EIR variant, some portions of the revised variant are located on private right-of-way and would not be subject to City requirements, which could cause significant disruptions. Thus, construction activities within the private right-of-way could potentially cause substantial interference with emergency access or conflicts with people walking, bicycling, or driving or public transit operations to result in a significant impact. Therefore, Mitigation Measure M-TR-1

would apply to the revised variant in order to reduce construction-related transportation impacts to less-than-significant levels.

POTENTIALLY HAZARDOUS CONDITIONS

Like the draft EIR variant, the revised variant would result in an increase in vehicle travel within the project site and on the surrounding roadway network. The addition of project-generated trips would result in queue lengths that are longer than existing levels, with potential queues spilling back to adjacent intersections at 19th Avenue/Winston Drive and 19th Avenue/Eucalyptus Drive during the weekday p.m. peak hour. However, these effects are not expected to create potentially hazardous conditions for people walking or bicycling from high speeds or limited visibility, as the revised variant would include the same design features as the draft EIR variant (e.g., lane reduction and right-turn slip lane closure) to promote slower speeds along roadways and at conflicting points. In addition, as shown in RTC Table 2-4 p. 2-26, the revised variant would generate fewer vehicle trips during the weekday p.m. peak hour than the variant. Therefore, impacts under the revised variant with respect to potentially hazardous conditions would be similar to or less than those under the draft EIR variant and would be less than significant.

ACCESSIBILITY AND EMERGENCY ACCESS

Relative to the draft EIR variant, the revised variant would generate a similar level of pedestrian activity, including walk trips to and from the Stonestown Galleria shopping mall and some trips to and from nearby complementary land uses. As shown in RTC Table 2-3 and RTC Table 2-4, pp. 2-25 and 2-26, compared to the draft EIR variant, pedestrian activity under the revised variant would be slightly higher during the weekday p.m. peak hour, with fewer vehicle trips.

Relevant design standards and guidelines that would apply to the draft EIR variant, such as the Americans with Disabilities Act and the Better Streets Plan, would also apply to the revised variant. Like the draft EIR variant, the revised variant would provide continuous sidewalks within the project site, along with street trees, accessible ramps, and other streetscape elements to enhance pedestrian connectivity and encourage walking. Accordingly, differences in pedestrian activity, safety, accessibility, and access would be negligible. Pedestrian impacts under the revised variant would be similar to those under the draft EIR variant and would be less than significant.

The revised variant would generate a slightly greater number of bicycle trips during the weekday p.m. peak hours than the draft EIR variant. As discussed above, the revised variant would generate fewer vehicle trips than the draft EIR variant, and the internal circulation network and associated changes to the external circulation network under the revised variant would be as described for the draft EIR variant.[6] As with the draft EIR variant, a bikeway network within the project site would connect to nearby bikeway facilities and reduce potential hazards to bicyclists by providing protection and reducing bicycle/vehicle conflicts. Accordingly, differences in bicycle safety and access between the revised variant and the draft EIR variant would be negligible, and would not affect the analysis or conclusions presented for the draft EIR variant. Bicycle impacts under the revised variant would be similar to those under the variant and would be less than significant.

As with the draft EIR variant, proposed streetscape changes would maintain sufficient clearance for emergency vehicles and would not preclude or inhibit emergency vehicle access. Final roadway designs would be approved by the San Francisco Fire Department before construction to ensure compliance with the

[6] The revised variant would include 101 more bicycle parking spaces than the draft EIR variant.

San Francisco Fire Code. Therefore, impacts of the revised variant related to emergency vehicle access would be similar to impacts of the draft EIR variant and would be less than significant.

TRANSIT DELAY IMPACTS

Transit delay is associated with the project-generated peak-hour vehicle traffic because traffic congestion associated with traffic increases would slow transit vehicles. Additionally, transit vehicles at bus stops would need to wait longer to pull out and reenter the traffic flow. As shown in RTC Table 2-4, p. 2-26, the revised variant would result in approximately 6 percent fewer p.m.-peak vehicle trips than the draft EIR variant and 4 percent fewer trips than the proposed project. That trip reduction would result in an approximately 6 percent lower contribution to all vehicle movements through project study intersections than under the draft EIR variant and 4 percent fewer than under the proposed project.

In addition, the revised variant would also relocate 84 parking spaces from Blocks W3, W4, E1, and E5 to Block NW1. The parking relocation would address the significant and unavoidable transit delay impact to the 57 Parkmerced inbound line identified under the draft EIR variant. The location of vehicle parking governs the onsite origin and destination of vehicle trips and the associated routes drivers take to and from the project site. As presented under draft EIR Section 3.B.4 and in draft EIR Appendix D.2, Transit Delay Analysis Memorandum, project vehicle trips traveling northbound along 20th Avenue would increase the traffic demand at already-congested intersections. Relocating parking away from 20th Avenue would encourage travel routes that could avoid these intersections and roadways could help reduce additional demand and redistribute vehicle trip routes away from locations where they would contribute most to the identified transit delays.

As shown in **RTC Table 2-5**, the revised variant would result in a reduced additional delay from 4.8 minutes to 2.8 minutes to the 57 Parkmerced inbound line compared to the draft EIR variant and the level of delay of all transit lines analyzed would be lower than the delay threshold of 4 minutes. Therefore, the revised variant would result in less-than-significant project-level transit delay impacts, as with the proposed project described in the draft EIR. However, Mitigation Measures M-TR-4a would still be required for the revised variant to mitigate impacts on air quality and greenhouse gas emission impacts and are discussed in Sections 2.E.3 below and Attachment C of this RTC, respectively.

RTC Table 2-5 Project-Level Transit Delay of the Proposed Project, Draft EIR Variant, and Revised Variant

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)		
					Existing plus Proposed Project	Draft EIR Variant	Revised Variant
28 19th Avenue	IB	10	5	4.0	0.5	0.6	0.5
	OB	10	5	4.0	2.1	2.1	1.3
28R 19th Avenue Rapid	IB	10	5	4.0	0.5	0.5	0.5
	OB	10	5	4.0	1.2	1.2	0.4
57 Parkmerced	IB	20	10	4.0	3.9	**4.8**	2.8
	OB	20	10	4.0	2.5	3.0	1.2
58 Lake Merced	IB	30	15	4.0	1.1	1.4	1.0
	OB	30	15	4.0	0.4	0.5	0.4
28 + 28R Combined	NB	5	2.5	2.5	0.5	0.6	0.5
	SB	5	2.5	2.5	2.1	2.1	1.3
122 SamTrans	NB	20	10	4	1.3	1.5	1.0
	SB	20	10	4	0.8	0.8	0.8

SOURCES: Kittelson & Associates, Inc., 2022 and 2024

ABBREVIATIONS:

IB = inbound; OB = outbound; NB = northbound; SB = southbound; WB = westbound; EB = eastbound

NOTE:

Orange highlighted cells indicate delay values above the significance threshold.

Unlike the draft EIR variant, which would have a significant and unavoidable impact with mitigation, transit delay impacts under the revised variant would be less than significant.

VEHICLE MILES TRAVELED IMPACTS

The revised variant would be similar to the draft EIR variant in terms of the type of land uses proposed, although the revised variant would increase the building area and number of parking spaces compared to the draft EIR variant. The impacts related to vehicle miles traveled (VMT) and induced automobile travel would remain less than significant for the following reasons:

- As discussed in the draft EIR under Impact TR-5, pp. 3.B-70 through 3.5-72, the project site is located in an area (TAZ 918) where existing VMT per capita for the proposed uses is more than 15 percent below the existing and future regional averages for residential, office, and retail land uses. The revised variant would not include hotel uses, would provide more residential land use, and would reduce non-retail sales and service land use. The analysis considers VMT as an efficiency metric and whether the project is located within an area with VMT below significant thresholds. Because the revised variant contemplates similar land uses in the same locations within the City, the revised variant's VMT conclusions would not change: the revised variant, like the draft EIR variant, is screened out from further VMT analysis.

- The revised variant would result in a total net increase of 130,000 square feet of new building area compared to the draft EIR variant. The revised variant would provide approximately 3,853,000 square feet of new building area in addition to the 760,000 square feet retained, which would result in a floor area ratio of 2.59, which is greater than the 0.75 screening threshold.[7]
- The revised variant would add 411 parking spaces to the 1,050 net new spaces provided in the draft EIR variant. Therefore, the revised variant would provide 1,461 net new parking spaces and 4,861 in total. The revised variant would add 3,794,700 net new square footage (4,613,000 square feet in total). The marginal contribution rate would be 0.4 parking spaces per 1,000 square feet. In total, the revised variant would have 1.1 parking spaces per 1,000 square feet, which is 3.1 or 74 percent lower than the existing parking ratio of 4.2 parking spaces per 1,000 square feet. Therefore, similar to the draft EIR variant, the revised variant would meet the screening criterion for a lower parking supply ratio compared to existing conditions and would not substantially induce additional VMT.

In addition, like the draft EIR variant, the revised variant would include features that would qualify as "Active Transportation, Rightsizing, and Transit Projects" and "Other Minor Transportation Projects" and would fit within the general types of projects that would not substantially induce automobile travel (see draft EIR p. 3.B-71). Therefore, impacts of the revised variant related to vehicle miles traveled would be similar to those of the draft EIR variant and would be less than significant.

LOADING IMPACTS

As with the draft EIR variant, localized loading supply information is not available for the revised variant. Therefore, estimated demand cannot be compared with the proposed loading supply for each parcel. Unmet demand could result in secondary effects on public transit buses or on people walking, biking, or driving, such as blocking, creating queues, and/or resulting in conflicts at sidewalks, crosswalks, Muni routes, and bike facilities. Similar to the impact determination for the draft EIR variant, it is conservatively assumed that the revised variant could result in significant loading impacts. Mitigation Measure M-TR-6 requires development of a plan to satisfy freight and commercial and passenger loading demand through loading supply and management at each phase or building, to reduce the associated secondary impacts to less-than-significant levels.

OVERALL PROJECT-LEVEL CONCLUSION

The revised variant would not result in new or greater impacts than those discussed for the draft EIR variant. However, the revised variant would result in less of an impact related to transit delay. Because the vehicle traffic associated with the revised variant would be less than vehicle traffic generated by the draft EIR variant, the revised variant would have a lower contribution to transit delay impacts. Therefore, Mitigation Measures M-TR-4a and M-TR-4b, which were identified for the draft EIR variant, would not be required to reduce transit impacts for the revised variant.

[7] San Francisco Planning Department, *Vehicle Miles Traveled (VMT)/ Induced Automobile Travel,* February 14, 2019, last updated October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines, accessed September 18, 2023. Table 2 on p. L-14 states that the proposed project needs to have a floor area ratio of greater than or equal to 0.75 to meet additional screening criterion 2 (proximity to transit stations) for a detailed VMT analysis,

Other mitigation measures related to construction and loading impacts described in the draft EIR (and as listed above in the introduction to this transportation and circulation analysis) would also apply to the revised variant.

CUMULATIVE IMPACTS

POTENTIALLY HAZARDOUS CONDITIONS, ACCESSIBILITY AND EMERGENCY ACCESS, AND VEHICLE MILES TRAVELED IMPACTS

The land use program under the revised variant would result in minimal changes to transportation and circulation effects related to potentially hazardous conditions, accessibility of pedestrians and bicycles, emergency vehicle access, and vehicle miles traveled under cumulative conditions, compared to the draft EIR variant. Thus, the impact analysis set forth in the draft EIR for the variant would also apply to the revised variant. For this reason, cumulative impacts related to these topics under the revised variant would be substantially similar to the corresponding cumulative impacts under the draft EIR variant and would be less than significant.

CONSTRUCTION IMPACTS

The revised variant would require construction activities and phasing similar to those of the draft EIR variant. The construction duration, intensity, and number of workers and truck trips accessing the project site would not change significantly. As described for the draft EIR variant, portions of the project site under the revised variant would also be located within both public and private rights-of-way. The portions within the public right-of-way would be subject to City regulations that would require coordination and review with public works and SFMTA to avoid transportation-related construction impacts. However, the portions within the private right-of-way would not be subject to those City regulations, and the draft EIR concluded that construction activities on those portions could interfere with emergency access or substantially conflict with people walking, bicycling, or driving or public transit operations to result in a significant impact. The significant cumulative impacts would also occur under the revised variant. Therefore, implementation of Mitigation Measure M-TR-1 is required to reduce the impact to less than significant.

TRANSIT DELAY IMPACTS

The draft EIR concluded that the proposed variant, in combination with cumulative projects in the vicinity of the project site, would contribute considerably to a substantial cumulative delay to the 57 Parkmerced route (inbound and outbound), the 28 19th Avenue and 28R 19th Avenue combined route (southbound), and SamTrans Route 122 (northbound). The revised variant's impact would be significant and unavoidable even with the implementation of Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3.

These significant cumulative impacts would also occur under the revised variant. Because the revised variant would generate fewer weekday p.m.-peak-hour external vehicle trips and would generate less traffic on 20th Avenue by relocating parking spaces, it would contribute less to the cumulative transit delay than the draft EIR variant. However, the reduction in vehicle trips (5.7 percent from the draft EIR variant, 3.8 percent from the proposed project) would not reduce the significant cumulative impact to a less-than-significant level, and the revised variant's contribution would be cumulatively considerable.

Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3 would apply to the revised variant as they would to the draft EIR variant. However, as described in the draft EIR, the effectiveness of these mitigation measures

cannot be guaranteed. The delay reductions associated with Mitigation Measure M-TR-4a would apply, and the precise travel time (and thus the transit delay reduction) of any given segment cannot be quantified. Mitigation Measure M-TR-4b would apply to the corridor of Muni Route 57, but the effectiveness would be subject to uncontrollable factors including the arrival of buses within the traffic signal cycle and the location of buses in the traffic stream. Furthermore, the transit signal priority plan would be subject to SFMTA's approval. Mitigation Measure M-TR-3 requires a fair-share contribution from the project sponsor but does not itself provide for the installation of the CCTVs. The CCTVs allow SFMTA staff to make design changes to reduce delay but do not themselves guarantee delay reduction. For these reasons, this impact would be significant and unavoidable with mitigation, as under the draft EIR variant.

LOADING IMPACTS

Given the absence of localized loading supply information, the draft EIR conservatively assumed that the draft EIR variant, in combination with the cumulative projects, could have significant loading impacts, such as blocking bus routes and/or bicycle facilities. The characteristics of the revised variant would not affect the draft EIR's significant findings for the variant. As with the draft EIR variant, implementation of Mitigation Measure M-TR-6 would be required to reduce the revised variant's associated secondary impacts to less-than-significant levels.

OVERALL CUMULATIVE CONCLUSION

Under cumulative conditions, the revised variant would not result in new or otherwise different conclusions regarding the significance of potential impacts from those discussed in the draft EIR for the variant. Because of the reduction in external vehicle trips under the revised variant, cumulative transit delay impacts would be reduced compared to the draft EIR variant but would be significant and unavoidable. All mitigation measures described for the draft EIR variant in the draft EIR would also apply to the revised variant and cumulative impact significance findings would be the same as with the draft EIR variant.

2.E.3 Air Quality

The draft EIR variant's impacts on air quality are described and analyzed in draft EIR Section 3D, Air Quality, pp. 3.D-1 through 3.D-86. The air quality data cited in this section are based on the results of memorandums prepared to analyze the air quality impacts of the revised variant (see Attachment E of this RTC document).

CRITERIA POLLUTANT EMISSIONS

The draft EIR concluded that the variant would generate emissions of criteria pollutants and precursors during periods when construction would overlap with operations that would contribute a cumulatively considerable amount of non-attainment criteria pollutants. Overlapping construction-related and operational activities during years 2028 through 2032 would result in a cumulatively considerable net increase in criteria pollutants that would be significant. The draft EIR identified the following mitigation measures for the variant:

- Mitigation Measure M-AQ-1a, Clean Off-Road Construction Equipment
- Mitigation Measure M-AQ-1b, Super-compliant VOC Architectural Coatings during Construction
- Mitigation Measure M-AQ-1c, Clean On-Road Construction Trucks
- Mitigation Measure M-AQ-1d, Super-Compliant VOC Architectural Coatings during Operation

- Mitigation Measure M-AQ-1e, Best Available Emissions Controls for Stationary Emergency Generators
- Mitigation Measure M-AQ-1f, Promote Use of Green Consumer Products
- Mitigation Measure M-AQ-1g, Operational Truck Emissions Reduction
- Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure
- Mitigation Measure M-AQ-1i, Electric Landscaping Equipment
- Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips
- Mitigation Measure M-AQ-1j, Offset Remaining ROG Emissions

Mitigation Measures M-AQ-1a through M-AQ-1d would be implemented to reduce the variant's construction-related emissions of reactive organic gases (ROG) to the greatest extent feasible. Implementing this mitigation would reduce overlapping construction-related and operational emissions for the variant to less than significant for years 2028 through 2030. Mitigation Measures M-AQ-1e through M-AQ-1j and M-TR-4a would reduce the draft EIR variant's operational emissions to the greatest extent feasible. However, even with implementation of those mitigation measures, the draft EIR variant would cause a cumulatively considerable net increase in emissions of non-attainment criteria air pollutants during years 2031 and 2032, when construction and operation would overlap. Therefore, the overall impact of the draft EIR variant would be significant and unavoidable with mitigation.

Compared to the draft EIR variant, the revised variant represents an increase of 411 residential units, a 104,000-square-foot decrease in non-retail sales and service use, and the removal of 100,000 square feet of hotel uses, for a total net increase of 130,000 square feet of new building area. The 130,000-square-foot increase in new residential space would add 125 residential units by including five towers instead of four. This would not increase the footprint but would provide additional square footage as additional floors and units on Block S3.

CONSTRUCTION AND INTERIM-YEAR COMBINED CONSTRUCTION-RELATED AND OPERATIONAL EMISSIONS

The revised variant does not include any changes to the predominant land uses, block configurations, or proposed height plan, with the exception of a tower on Block S3, Block NW2, and Block NW3. Under the revised variant development on Block NW2 would increase by approximately 12,700 square feet (76 residential units) and require additional excavation for 84 parking spaces in Block NW1. The additional development and excavation at Blocks NW2 and NW1 in Phase 1 would be shifted from Phases 2 and 3 and would not change the overall construction duration. There would be no change to the development program or construction schedule for Block NW3. In addition, Block S3 would shift from a midrise building to a tower building and would add 411 residential units to the revised variant. **RTC Table 2-6 through RTC Table 2-9** present the emissions from the revised variant compared to the emissions from the variant as presented in the draft EIR.

RTC Table 2-6 Construction and Net New Interim Operational Emissions by Year for the Draft EIR Variant and Revised Variant

Year	Average Daily Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds/day)[a,b,c]							
	Draft EIR Variant				Revised Variant			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
2024 (construction only)	0.92	15	1.4	0.5	1.0	17	1.6	0.57
2025 (construction only)	3.1	18	3.1	0.8	3.1	17	3.0	0.80
2026 (construction only)	18	23	6.3	1.5	19	23	6.3	1.4
2027 (construction only)	45	31	13	3.4	45	30	13	3.4
2028 (construction and operations)	**78**	36	19	4.1	**78**	36	19	4.1
2029 (construction and operations)	**82**	41	33	6.6	**82**	39	33	6.6
2030 (construction and operations)	**106**	41	35	6.9	**105**	39	35	6.9
2031 (construction and operations)	**124**	46	48	8.7	**127**	46	48	8.8
2032 (construction and operations)	**122**	42	56	10	**125**	41	57	10
Significance Thresholds	54	54	82	54	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NOx = nitrogen oxides; PM = particulate matter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[c] Draft EIR variant construction emissions are presented in draft EIR Appendix F, Tables 18 and 19. Net operational emissions were calculated by subtracting the emissions from the existing conditions from the variant emissions, as reported in draft EIR Table 3.D-13, p. 3.D-58. Revised variant construction emissions are presented in RTC Attachment E, Tables 18 and 36. Net operational emissions were calculated by subtracting the emissions from the existing conditions from the revised variant remissions as reported in RTC Attachment E Tables 34a and 34b.

RTC Table 2-7 Mitigated Construction and Net New Interim Operational Emissions by Year for the Draft EIR Variant and Revised Variant

Year	Mitigated Average Daily Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds/day)[a,b,c]							
	Draft EIR Variant[d]				Revised Variant			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2024 (construction only)	0.4	1.5	0.9	0.2	0.39	1.8	1.0	0.19
2025 (construction only)	1.4	2.6	2.5	0.5	1.4	2.5	2.5	0.45
2026 (construction only)	4.7	5.5	5.7	1.0	4.7	5.4	5.6	1.0
2027 (construction only)	8.9	7.8	8.7	1.6	9.0	7.7	8.7	1.6
2028 (construction and operations)	24	~~15~~13	18	~~3.3~~3.2	24	13	19	3.3
2029 (construction and operations)	48	~~24~~22	28	~~5.1~~5.0	48	22	32	5.7
2030 (construction and operations)	53	~~27~~24	31	~~5.6~~5.5	53	23	34	6.1
2031 (construction and operations)	**72**	~~36~~31	43	~~7.8~~7.6	**72**	31	43	7.7
2032 (construction and operations)	**83**	~~35~~28	50	~~9.0~~8.8	**83**	28	51	9.0
Significance Thresholds	54	54	82	54	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NOx = nitrogen oxides; PM = particulate matter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[C] Net mitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the draft EIR variant, as reported in draft EIR Table 3.D-13, p. 3.D-58. For the revised variant, net mitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the revised variant emissions, as reported in RTC Attachment E Tables 35a and 35b.
[d] The mitigated operational emissions in the draft EIR incorrectly included the unmitigated emissions from the emergency generators. The draft EIR variant emissions from 2028 through 2032 are corrected with mitigated emissions from the emergency generators. Deletions are shown in strikethrough; new text is double-underlined.

RTC Table 2-8 Net New Operational Emissions for the Draft EIR Variant and Revised Variant at Buildout

Emissions Source	Criteria Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]				Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISITING CONDITIONS [c]																
Architectural Coating	0.1	0	0	0	0.5	0	0	0	0.1	0	0	0	0.5	0	0	0
Consumer Products	0.4	0	0	0	2.2	0	0	0	0.4	0	0	0	2.2	0	0	0
Landscaping	<0.1	0	0	0	0.3	0	0	0	<0.1	0	0	0	0.3	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
Total Existing Emissions	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*
FULL BUILDOUT EMISSIONS (2032)																
Architectural Coating	2.6	0	0	0	14	0	0	0	2.7	0	0	0	15	0	0	0
Consumer Products	11	0	0	0	59	0	0	0	11	0	0	0	61	0	0	0
Landscaping	3.0	0.2	<0.1	<0.1	16	1.3	0.1	0.1	3.0	0.2	<0.1	<0.1	16	1.3	0.1	0.1
Mobile	4.9	5.5	10.2	1.8	27	30	56	9.7	4.8	5.6	11	1.9	27	31	59	10
Emergency Generators	0.1	1.4	<0.1	<0.1	0.6	7.9	0.3	0.3	0.1	1.5	<0.1	<0.1	0.60	8.1	0.3	0.3
Total Variant Emissions	*21*	*7*	*10*	*1.8*	*117*	*39*	*56*	*10*	*22*	*7.3*	*11*	*1.9*	*120*	*40*	*59*	*11*

Emissions Source	Criteria Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]				Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
NET NEW EMISSIONS (2032)[d]																
Net New Variant Emissions	***21***	*7.1*	*10*	*1.8*	***114***	*39*	*56*	*10*	***21***	*7.2*	*11*	*1.9*	***117***	*40*	*59*	*11*
Significance Threshold	10	10	15	10	54	54	82	54	10	10	15	10	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NOx = nitrogen oxides; PM = particulate matter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[C] Operational emissions from existing conditions were calculated using CalEEMod default data and emission factors based on the existing land use types provided by the project sponsor and CalEEMod defaults.
[D] Net new emissions were calculated as the difference between full buildout variant emissions and existing condition emissions.

RTC Table 2-9 Net New Mitigated Operational Emissions for the Draft EIR Variant and Revised Variant at Buildout

Emissions Source or Year	Criteria Air Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	(tons/year)				(pounds/day)[b]				(tons/year)				(pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISTING CONDITIONS [c]																
Architectural Coating	<0.1	0	0	0	0.5	0	0	0	<0.1	0	0	0	0.5	0	0	0
Consumer Products	0.4	0	0	0	2.2	0	0	0	0.4	0	0	0	2.2	0	0	0
Landscaping	<0.1	0	0	0	0.3	0	0	0	<0.1	0	0	0	0.3	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
Total Existing Emissions	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*
MITIGATED FULL BUILDOUT EMISSIONS (2032)																
Architectural Coating	0.3	0	0	0	2	0	0	0	0.30	0	0	0	1.6	0	0	0
Consumer Products	11	0	0	0	59	0	0	0	11	0	0	0	61	0	0	0
Landscaping	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	4.4	4.9	9.1	1.6	24	27	50	8.7	4.4	5.0	9.7	1.7	24	28	53	9.2
Emergency Generators[e]	≤0.1	~~1.4~~0.2	<0.1	<0.1	~~0.6~~0.4	~~7.9~~1.0	~~0.3~~<0.1	~~0.3~~<0.1	<0.1	0.2	<0.1	<0.1	0.4	1.1	<0.1	<0.1
Total Mitigated Variant Emissions	*16*	*~~6.4~~5.1*	*~~9.2~~9.1*	*1.6*	*~~86~~85*	*~~35~~28*	*50*	*~~9.0~~8.8*	*16*	*5.2*	*9.7*	*1.7*	*87*	*29*	*53*	*9.3*

Emissions Source or Year	Criteria Air Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	(tons/year)				(pounds/day)[b]				(tons/year)				(pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
MITIGATED NET NEW EMISSIONS (2032) [D]																
Net New Mitigated Variant Emissions	***15***	*~~6.3~~ 5.0*	*~~9.2~~ 9.1*	*1.6*	***~~83~~ 82***	*~~35~~ 28*	*50*	*~~9.0~~ 8.8*	***15***	*5.2*	*9.7*	*1.7*	***84***	*28*	*53*	*9.3*
Significance Threshold	10	10	15	10	54	54	82	54	10	10	15	10	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[C] Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use type and energy use rates provided by the project sponsor.
[D] Net new emissions were calculated as the difference between partial buildout emissions for each year and existing-condition emissions.
[E] The mitigated emissions in the draft EIR incorrectly included the unmitigated emissions from the emergency generators. The draft EIR variant emissions here are corrected with mitigated emissions from the emergency generators. Deletions are shown in ~~strikethrough~~; new text is <u>double-underlined</u>.

The construction activity analyzed for the revised variant would change for (1) Phases 1-3 to account for the northwest corner changes described above, and (2) Phase 6 to account for the conversion change from a residential mid-rise building to a tower (Block S3). The construction activities in Phase 1 would take place from 2024 through 2027 and Phase 6 would take place from 2029 through 2032, as with the draft EIR variant. Phase 6 would require an additional three months, as described further below. The construction schedule for all other phases would remain the same as analyzed for the draft EIR variant. The daily activities during excavation in Phase 1 would slightly increase to account for the increase in underground parking spaces and daily activity during excavation in Phases 2 and 3 would slightly decrease due to the reduction in parking spaces. Compared to the draft EIR variant, construction-related impacts on air quality between 2024 and 2027 would change slightly under the revised variant due to the shift in parking between Phases 1, 2, and 3. Operational emissions in 2028 would increase slightly. Phase 1 becomes operational earlier in 2028 than Phases 2 and 3. The shift of dwelling units from Phases 2 and 3 to Phase 1 results in more dwelling units being online for more of the year. As a result, as shown in RTC Table 2-6 and similar to the draft EIR variant, this would not exceed the thresholds for years 2024 through 2027.

Compared to the draft EIR variant, the demolition and grading, shoring, and excavation subphases of Phase 6 of the revised variant would be shorter; the Phase 6 building construction subphase would increase by two months; the Phase 6 paving and architectural coating subphases would increase by a few days; and the sequencing would change slightly. Overall, these changes would extend the Phase 6 construction period by three months.

Diesel equipment horsepower-hours would decrease during Phase 6 of the revised variant because an electric tower crane[8] would be used instead of the diesel crane analyzed for Phase 6 of the variant. In addition, the revised variant proposes more excavation and less grading during Phase 6 than the variant, because with excavation for the tower, the site would not need a level, graded surface.[9] Therefore, the grader would not be needed for Phase 6 and was removed from the equipment list. All other changes to construction equipment use would result from changes to the schedule duration as discussed above. In summary, construction equipment changes would occur in Phase 6 only where graders are removed and cranes are electrified.

In addition, compared to the draft EIR variant, onsite truck emissions would change slightly in Phase 6 because the updates to the construction schedule would change the calculated truck run and idle hours, trips, and vehicle miles traveled for each year. Hauling trips would increase in Phase 6 to reflect the off-hauling of additional 26,890 cubic yards of excavated material.

Thus, like the draft EIR variant, the revised variant's construction-related impacts on air quality, when overlapping with operational impacts in years 2031 and 2032, would be significant and unavoidable with mitigation. Mitigation Measures M-AQ-1e through M-AQ-1j and M-TR-4a as identified in the draft EIR and discussed above would also apply to the revised variant.

As discussed in the draft EIR, the average daily operational emissions for the variant would exceed thresholds for ROG at full buildout. Mitigation Measures M-AQ-1d through M-AQ-1j and M-TR-4a would reduce

[8] Tower cranes are always electric and would be powered from the existing electrical grid.
[9] Less grading is generally needed when excavating a large area because the larger size of the hole allows for a more gradual slope. This is consistent with the updated construction equipment, which removed the grader from the grading, shoring, excavating subphase in Phase 6.

operational emissions, but the operational air quality impact would be significant and unavoidable with mitigation because ROG emissions would continue to exceed the thresholds.

Operational emissions of all criteria pollutants would change with the revised variant because of (1) the addition of one diesel emergency backup generator as a result of the increased height of the building at Block S3, and (2) the additional vehicle miles traveled associated with more residential units.

Unmitigated nitrogen oxides (NOx) emissions would increase from the draft EIR variant to the revised variant because of the addition of the diesel emergency backup generator, while emissions of particulate less than 10 microns and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$) would increase because of the additional residential VMT. For the mitigated scenario, NOx emissions would decrease from the draft EIR variant to the revised variant. Mitigated PM_{10} and $PM_{2.5}$ emissions show an increase from the draft EIR variant to the revised variant, similar to the draft EIR unmitigated emissions, as a result of the increase in residential vehicle trips. Emissions in 2028 would also increase because more units will be operational sooner with the shift in units from Phases 2 and 3 to Phase 1. Note that Table 3.D-9 (p. 3.D-50) and Table 3.D-14 (p. 3.D-59) incorrectly reported unmitigated generator emissions instead of mitigated emissions for the variant. These corrections are shown in RTC Table 2-8, p. 2-36, and RTC Table 2-10, p. 2-44, in ~~strikethrough~~ and double underline for the reader's reference.

With the revised variant, ROG emissions associated with consumer products would increase slightly as compared to the draft EIR variant because of the increase in building square footage to add additional units for Phase 6, and thus would also exceed the thresholds of significance. Mitigation Measures M-AQ-1d through M-AQ-1j and M-TR-4a would be required to reduce ROG emissions; however, the impact of the revised variant would be significant and unavoidable with mitigation, the same impact conclusion as reported in the draft EIR for the variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to construction and operational emissions of all criteria pollutants.

SENSITIVE RECEPTORS AND POLLUTANT CONCENTRATIONS

The draft EIR analyzed the potential excess cancer risk and $PM_{2.5}$ concentration from the draft EIR variant and concluded that the variant could generate emissions that could expose sensitive receptors to substantial pollutant concentrations, but that with identified mitigation measures, the impact would be reduced to less than significant. The following analyzes the revised variant's excess cancer risk and $PM_{2.5}$ concentration.

EXCESS CANCER RISK

The draft EIR determined that construction-related and operational activities for the variant would result in increases in emissions of diesel particulate matter that would affect the lifetime excess cancer risk for both onsite and offsite sensitive receptors. The draft EIR concluded that the maximum excess cancer risk for the variant at offsite and onsite sensitive receptors would exceed the thresholds of significance. However, the maximum excess cancer risk would be below the thresholds after implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. Therefore, the lifetime excess cancer risk associated with exposure to diesel particulate matter emissions and vehicle exhaust generated during construction, and from diesel emergency backup generators during operations, would be less than significant with mitigation for the draft EIR variant.

With the exceptions discussed above on p. 2-33, the revised variant would involve mostly the same amount of construction activity as previously analyzed for the draft EIR variant, but it would shift some of the construction activity from Phases 2 and 3 to Phase 1 in the northwest corner of the project site. The height, width, and length dimensions of Phase 6 would remain the same, with the exception of the tower on Block S3 and the changes to grading and equipment described above. The changes to grading and equipment resulted in less equipment activity and emissions compared to the draft EIR variant for Phase 6. The height change would require one additional diesel emergency backup generator for operations, which would slightly counteract the decrease in emissions from construction.

For the unmitigated scenario, the addition of the diesel emergency backup generator and removal of diesel construction equipment would affect the location of the maximum modeled worker impact for Phase 6. Before the addition of the generator, the maximum worker impact would be driven by the diesel construction equipment and would occur closer to the source. The reduction in unmitigated emissions from Phase 6 reduced health impacts in this area. With the revised variant, the diesel emergency backup generator would drive the maximum modeled worker impact. Because of the buoyant exhaust plume emitted by the generator, the increase in operational emissions from the additional generator increased concentrations at locations farther from the source. This, in combination with the emissions from the other phases, caused the maximum modeled worker impact for the unmitigated scenario to be farther from Phase 6.

As with the draft EIR variant, the lifetime excess cancer risk from the revised variant would also be reduced to less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to lifetime excess cancer risk.

$PM_{2.5}$ CONCENTRATION

The draft EIR concluded that the impact of the variant on annual average concentrations of $PM_{2.5}$ from construction and operation of emergency backup generators would be less than significant. In terms of building square footage, the amount of construction would be the same for the revised variant as for the draft EIR variant, with the minor differences described above. One additional diesel emergency backup generator would be required for operations because of the tower on Block S3, but this would not substantially add to the annual average $PM_{2.5}$ concentrations. Therefore, the impact from the revised variant would be the same as the impact from the draft EIR variant: less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to annual average concentrations of $PM_{2.5}$.

RTC Table 2-10 through RTC Table 2-13 present the lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for the revised variant compared to those from the variant.

ODORS

The draft EIR concluded that both construction-related and operational odor impacts would be less than significant. The revised variant and the draft EIR variant would use the same construction equipment and application of architectural coatings. As with the draft EIR variant, odors from these sources with the revised variant would be localized and generally confined to the immediate area surrounding the development area. After buildout of the revised variant, localized odors would be emitted by the same sources as under the variant, such as solid waste collection, food preparation, and maintenance activities. Odors from these

sources should have minimal effects on onsite and offsite sensitive receptors. Therefore, odor impacts from the revised variant would be the same as those from the draft EIR variant and would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to odors.

RTC Table 2-10 Lifetime Excess Cancer Risk for the Draft EIR Variant and Revised Variant

	Lifetime Excess Cancer Risk (chances per 1 million)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
Emissions Source	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Coordinates (UTM X, UTM Y)	(546300, 4176000)	(546240, 4176040)	(546320, 4175960)	(546020, 4175620)	(546240, 4175980)	(546240, 4175980)	(546300, 4176000)	(546240, 4176040)	(546320, 4175960)	(546060, 4175900)	(546240, 4175980)	(546240, 4175980)
Existing Lifetime Excess Cancer Risk (2020)	125	86	94	27	91	91	125	86	94	30	91	91
Meets APEZ Criteria?	Yes	No	No	No	No	No	Yes	No	No	No	No	No
Variant Cancer Risk	**24.4**	6.4	**13.2**	5.1	**18.3**	**13.9**	**23.5**	6.1	**12.8**	4.8	**18.9**	**14.7**
Exposure Scenario[a]	S3	S3	S3	S1	S12	S12	S3	S3	S2	S1	S12	S12
Existing + Variant Cancer Risk[b]	149	92	107	32	109	105	148	92	106	36	110	105
Meets APEZ Criteria with Variant Contribution?	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes
THRESHOLDS FOR DRAFT EIR VARIANT AND REVISED VARIANT CONTRIBUTION [c]												
Significance Threshold	7	10	10	10	10	10	7	10	10	10	10	10
Threshold Exceeded?	**Yes**	No	**Yes**	No	**Yes**	**Yes**	**Yes**	No	**Yes**	No	**Yes**	**Yes**

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; S1 = Scenario 1; S2 = Scenario 2; S3 = Scenario 3; S12 = Scenario 12; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance.

NOTES:

Bold values = threshold exceedance

[a] S1 = Scenario 1: Exposure to construction beginning at the start of construction plus exposure to operation after construction is completed; S2 = Scenario 2: Exposure to construction beginning at the start of Phase 2 plus exposure to operation after construction is completed; S3 = Scenario 3: Exposure to construction beginning at the start of Phase 3 plus exposure to operation after construction is completed; S12 = Scenario 12: Exposure to full buildout operations once construction is complete.

[B] Existing + Proposed Project and Existing + Variant Total risk may not appear to add due to rounding.

[C] These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

RTC Table 2-11 Annual Average $PM_{2.5}$ Concentrations for the Draft EIR Variant and Revised Variant

	Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
Emissions Source	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing $PM_{2.5}$ concentration (2020)	8.2	9.1	9.5	8.3	8.3	8.2	8.2	9.1	9.5	8.3	8.2	8.2
Meets APEZ Criteria?	No	No	No	No	No	No	No	No	No	No	No	No
Variant $PM_{2.5}$ concentration	0.33	0.29	0.20	0.59	0.28	0.15	0.28	0.29	0.20	0.50	0.25	0.15
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7	S1	S1	S1	S1	S8	S7
Existing + Variant Annual Average $PM_{2.5}$ concentration[b]	8.6	9.4	9.7	8.8	8.6	8.4	8.5	9.4	9.7	8.8	8.5	8.4
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No	No	No	No	No	No	No
THRESHOLDS FOR DRAFT EIR VARIANT AND REVISED VARIANT CONTRIBUTION[c]												
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No[c]	No	No	No[c]	No	No	No[c]	No	No	No[c]	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: $\mu g/m^3$ = micrograms per cubic meters; APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; S1 = Scenario 1; S7 = Scenario 7; S8 = Scenario 8; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance.

NOTES:

[a] S1 = Scenario 1: Exposure to construction beginning at the start of construction plus exposure to operation after construction is completed; S7 = Scenario 7: Phase 1 occupants: Exposure to subsequent construction beginning after Phase 1 construction is complete plus exposure to operation of completed phases; S8 = Scenario 8: Phase 2 occupants: Exposure to subsequent construction beginning after Phase 2 construction is complete plus exposure to operation of completed phases.

B Existing + Proposed Project and Existing + Variant Total $PM_{2.5}$ concentration may not appear to add due to rounding.

C These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

RTC Table 2-12 Mitigated Lifetime Excess Cancer Risk for the Draft EIR Variant and Revised Variant

	Lifetime Excess Cancer Risk (chances per 1 million)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
Scenario/Receptor Type	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Location (UTM X, UTM Y)	(546220, 4175500)	(546240, 4176040)	(546320, 4175940)	(546160, 4175600)	(546220, 4175640)	(546220, 4175900)	(546220, 4175500)	(546240, 4176040)	(546320, 4175940)	(546160, 4175600)	(546220, 4175640)	(546220, 4175900)
Existing Lifetime Excess Cancer Risk (2020)	57	86	94	45	71	66	57	86	94	45	71	66
Meets APEZ Criteria?	No	No	No	No	No	No	No	No	No	No	No	No
Variant Cancer Risk	8.9	2.9	4.4	2.9	6.2	4.0	8.9	2.8	4.4	2.9	6.2	4.0
Exposure Scenario[a]	S6	S3	S3	S2	S10	S9	S6	S3	S3	S2	S10	S9
Existing + Variant Cancer Risk[b]	66	89	98	48	77	70	66	89	98	48	77	70
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No	No	No	No	No	No	No
THRESHOLDS FOR DRAFT VARIANT AND REVISED VARIANT CONTRIBUTION[c]												
Significance Threshold	10	10	10	10	10	10	10	10	10	10	10	10
Threshold Exceeded?	No	No	No	No	No	No	No	No	No	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: µg/m^3 = micrograms per cubic meters; APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; S2 = Scenario 2; S3 = Scenario 3; S6 = Scenario 6; S9 = Scenario 9; S10 = Scenario 10; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance

NOTES:

[a] S2 = Scenario 2: Exposure to construction beginning at the start of Phase 2 plus exposure to operation after construction is completed; S3 = Scenario 3: Exposure to construction beginning at the start of Phase 3 plus exposure to operation after construction is completed; S6 = Scenario 6: Exposure to construction beginning at the start of Phase 6 plus exposure to operation after construction is completed; S9 = Scenario 9: Phase 3 occupants: exposure to subsequent construction beginning after Phase 3 construction is complete plus exposure to operation of completed phases; S10 = Scenario 10: Phase 4 occupants: Exposure to subsequent construction beginning after Phase 4 construction is complete plus exposure to operation of completed phases.

[b] Existing + Proposed Project and Existing + Variant Total cancer risk may not appear to add due to rounding.

[c] These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

RTC Table 2-13 Mitigated Annual Average $PM_{2.5}$ Concentrations for the Draft EIR Variant and Revised Variant

Scenario/Receptor Type	Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing Annual Average $PM_{2.5}$ Concentration (2020)	8.3	9.1	9.5	8.3	8.3	8.2	8.2	9.4	9.5	8.3	8.2	8.2
Meets APEZ Criteria?	No	No	No	No	No	No	No	No	No	No	No	No
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7	S1	S1	S1	S1	S8	S7
Variant Annual Average $PM_{2.5}$ Concentration	0.28	0.24	0.17	0.51	0.24	0.14	0.24	0.24	0.17	0.43	0.22	0.14
Existing + Variant Annual Average $PM_{2.5}$ Concentration[b]	8.6	9.3	9.6	8.8	8.5	8.4	8.4	9.6	9.7	8.7	8.4	8.4
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No	No	No	No	No	No	No
THRESHOLDS FOR DRAFT EIR VARIANT AND REVISED VARIANT CONTRIBUTION[c]												
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No	No	No	No[c]	No	No	No	No	No	No[c]	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: $\mu g/m^3$ = micrograms per cubic meters; APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; S1 = Scenario 1; S7 = Scenario 7; S8 = Scenario 8; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance

NOTES:

[a] S1 = Scenario 1: Exposure to construction beginning at the start of construction plus exposure to operation after construction is completed; S7 = Scenario 7: Phase 1 occupants: Exposure to subsequent construction beginning after Phase 1 construction is complete plus exposure to operation of completed phases; S8 = Scenario 8: Phase 2 occupants: Exposure to subsequent construction beginning after Phase 2 construction is complete plus exposure to operation of completed phases.

[b] Existing + Proposed Project Total risk may not appear to add due to rounding.

[c] These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

OVERALL PROJECT-LEVEL CONCLUSION

Overall, impacts of the revised variant would be the same as the draft EIR variant's impacts and would not result in any new or more severe impacts. As described on draft EIR p. 3.D-83, the air district's project-level criteria air pollutant thresholds are based on levels below which new sources would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in non-attainment. The draft EIR concluded that the variant would result in a cumulatively considerable impact on regional air quality despite implementation of Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a. The draft EIR also concluded that the lifetime excess cancer risk from the variant would also be reduced to less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. As stated above, the revised variant would result in generally the same impacts as the draft EIR variant, and thus, the mitigation measures described above would also apply to the revised variant. These measures would reduce the emissions and health risks associated with the revised variant. However, like the draft EIR variant, the revised variant would result in a cumulatively considerable impact on regional air quality that would be significant and unavoidable.

CUMULATIVE IMPACTS

As discussed above, the potential for the revised variant to result in significant criteria air pollutant emissions, and therefore a cumulatively considerable contribution to non-attainment criteria pollutants, is addressed above. Therefore, no separate analysis of cumulative criteria air pollutant emissions is required.

The draft EIR concluded that the variant would emit DPM and $PM_{2.5}$ emissions that would lead to a significant health risk impact. This impact, combined with the health risk impact from DPM and $PM_{2.5}$ emissions from the construction and operation of cumulative projects, would result in a significant cumulative health risk impact and mitigation is required.

As discussed above, for all offsite and onsite MEI receptors, with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the revised variant would not exceed the excess lifetime cancer risk and annual average $PM_{2.5}$ concentration thresholds. As with the draft EIR variant, because the existing background cancer risk and annual average $PM_{2.5}$ concentrations at the mitigated MEI locations are well below Air Pollutant Exposure Zone (APEZ) criteria, the health risks from cumulative projects would need to be substantial to cause the MEI to meet the APEZ criteria. Similar to the draft EIR variant, for all offsite and onsite MEI receptors, with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the excess lifetime cancer risk and annual average $PM_{2.5}$ concentrations would not exceed significance thresholds for the revised variant. Because the existing background cancer risk and annual average $PM_{2.5}$ concentrations at the mitigated MEI locations are well below the APEZ criteria, the cumulative project health risk contribution would need to be substantial to cause the MEI locations to meet the APEZ criteria. This is unlikely given the size, timing, and characteristics of the cumulative projects.

Therefore, like the draft EIR variant, with mitigation, the revised variant would not result in a considerable contribution to significant cumulative health risk impacts and the impact would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative air quality impacts.

2.E.4 Noise and Vibration

The noise and vibration impacts of the proposed project and variant are described and analyzed in draft EIR Section 3.C, Noise and Vibration, pp. 3.C-1 through 3.C-58.

CONSTRUCTION NOISE AND VIBRATION IMPACTS

The draft EIR, on pp. 3.C-21 through 3.C-34, concluded that construction noise impacts for the variant would be significant and unavoidable with mitigation, as construction noise levels would exceed 10 dBA-weighted decibels (dBA) above the ambient noise level at the nearest sensitive receptors for multiple phases of project construction during daytime hours. Nighttime construction noise impacts were also identified as significant and unavoidable, as estimated interior noise levels at the nearest residential sensitive receptors would reach or exceed the 45 dBA interior standard for a substantial duration of time. Mitigation Measure M-NO-1, Construction Noise Control, would reduce the severity of construction-related noise on sensitive receptors; however, the impact would be significant and unavoidable with mitigation.

Like the draft EIR variant, the revised variant would involve demolition, site preparation, excavation/grading, building construction, and paving. These construction activities would generate temporary noise increases in the project vicinity for the duration of construction work. The revised variant does not propose any changes to building locations on the project site. The building envelopes would be the same as for the variant, with the exception of Block NW2 and Block S3, and slight shift in the southeast boundary of Block NW3. The revised variant would involve (1) additional excavation at Block NW1 and additional construction for the extended building on Block NW2 during Phase 1 and (2) additional vertical construction during Phase 6 for the tower on Block S3 to accommodate additional residential units. Construction activities for Blocks NW1 and NW2 would not change the distance to existing and proposed sensitive receptors or resulting calculated noise levels as analyzed in the draft EIR. The construction activities for Block S3 would be elevated, would occur farther from existing and proposed sensitive receptors, and would require an estimated three additional months of construction time. Therefore, the draft EIR variant and the revised variant would involve the same construction activities, level of construction intensity and equipment (i.e., noise sources), and closest distances between these noise- and vibration-producing activities and the nearest representative noise-sensitive receptors studied in the draft EIR.

The revised variant would have the same significant construction noise impacts because the maximum combined noise levels from operation of the two noisiest pieces of equipment associated with each construction phase would be the same as with the draft EIR variant. Mitigation Measure M-NO-1 would be required for the revised variant; however, as with the variant, construction noise impacts would be significant and unavoidable with mitigation.

Draft EIR Section 3.C, Noise and Vibration, pp. 3.C-36 through 3.C-36, concluded that construction vibration impacts would be less than significant, as the vibration levels would not exceed the 0.3 peak particle velocity (PPV) threshold for older structures and the 0.25 PPV threshold for historic structures. Construction for the revised variant would occur within the same footprint as the draft EIR variant; thus, the distances to the closest structures would be the same as with the draft EIR variant. In addition, the revised variant would use the same construction equipment as the draft EIR variant and therefore would not result in more vibration. Construction vibration levels for construction equipment would therefore have the same less-than-significant construction vibration impacts and no mitigation measures would be required under the revised

variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the construction noise impacts.

OPERATIONAL IMPACTS—STATIONARY NOISE SOURCES

The draft EIR, on pp. 3.C-38 through 3.C-40, concluded that the primary difference for the variant with respect to operational noise is that the Authentic Church would not be a sensitive receptor with respect to potential operational noise increases, as it would be demolished and developed as part of Block E3. Under the draft EIR variant, other adjacent sensitive receptors, including those for the proposed project, would still have the potential to experience a significant impact because stationary equipment could exceed the standards of the San Francisco Noise Ordinance. Implementation of Mitigation Measure M-NO-4, Noise Analysis and Attenuation, was identified to reduce mechanical equipment noise to meet the standards of noise ordinance sections 2909(a), 2909(b), and 2909(d). Noise impacts on sensitive receptors associated with the operation of stationary equipment under the draft EIR variant would be less than significant with mitigation.

Compared to the draft EIR variant, operation of the revised variant would generally add a similar increase in stationary-source noise sources to the area, such as individual heating, ventilation, and air conditioning (HVAC) equipment for the residential units. Conversion of the hotel use to residential use under the revised variant and conversion of commercial/office to residential uses would likely result in smaller HVAC units with lower noise-generating potential. The proposed residential tower on Block S3 under the revised variant would result in the operation of rooftop HVAC systems at increased height compared to the buildings described for the variant in the draft EIR, so they would be farther away from sensitive receptors. Block S3 would require an additional diesel emergency backup generator because of the increased building height. As with the draft EIR variant, the emergency generators used under the revised variant would be subject to weekly testing. Although these generators would be temporary, the potential for multiple generators to be operated within 100 to 200 feet of each other could substantially increase noise levels if operations were to overlap. Consequently, the land use changes under the revised variant would have stationary-source noise impacts similar to those discussed on draft EIR pp. 3.C-38 through 3.C-40. Mitigation Measure M-NO-4 would apply to the revised variant and would reduce mechanical equipment noise to meet the standards of noise ordinance sections 2909(a), 2909(b), and 2909(d). Therefore, impacts would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the operation of stationary equipment.

OPERATIONAL IMPACTS—AMPLIFIED SOUND

The draft EIR concluded that operational noise associated with crowd gatherings and amplified music at the two open space areas for events (Town Square and the Commons) may result in potentially significant noise impacts on nearby sensitive receptors in excess of standards established in the noise ordinance. Mitigation Measure M-NO-5, Noise Limits for Outdoor Amplified Sound, would be implemented to require specific performance standards consistent with the restrictions of the police code to ensure that events employing amplified sound would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or expose persons to noise levels in excess of the standards in the noise ordinance. Therefore, this impact would be less than significant with mitigation for the draft EIR variant.

The revised variant would have the same amount of open space as the variant in the same locations. Therefore, the revised variant would have the same potentially significant impact with respect to amplified

sound as the draft EIR variant and would require implementation of Mitigation Measure M-NO-5. Therefore, the impact of periodic and temporary noise increases from amplified sound associated with various proposed events under the revised variant would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to noise increases from amplified sound.

OPERATIONAL IMPACTS—TRAFFIC AND LOADING

Draft EIR pp. 3.C-43 through 3.C-50 concluded that traffic-generated noise increases on the roadway links most affected by the variant would be less than significant and no mitigation measures are required. Similarly, on-street loading activities would be temporary and intermittent when they do occur, and noise from this activity would not substantially increase ambient noise levels by 3 dBA or more. Therefore, the draft EIR determined that increases in truck loading activities from the draft EIR variant would be less than significant and no mitigation measures are required.

The revised variant would replace some of the commercial uses and all of the hotel uses with residential uses. Similar to the draft EIR variant, the revised variant would increase traffic volumes on local roadways used to access the project site as well as the surrounding roadway network. However, the revised variant's traffic noise increases along the roadway segments would not exceed the 3 dBA or 5 dBA standards for the applicable noise compatibility standards, as shown in **RTC Table 2-14**.[10] As discussed in Section 3.D.4, Transportation and Circulation, p. 2-23, the revised variant would generate 7.4 percent fewer vehicle trips than the variant analyzed in the draft EIR because the non-retail sales and service and hotel uses displaced by residential uses have higher trip generation rates. Therefore, similar to the draft EIR variant, increases in roadway traffic noise from operation of the revised variant would be less than significant and no mitigation measures are required.

The revised variant would reduce non-retail sales and service uses and remove the hotel use. As a result, less on-street loading would occur than under the variant analyzed in the draft EIR. Therefore, onsite loading impacts of the revised variant would be similar to or less than the draft EIR variant and the impact would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to traffic-generated noise increases or onsite loading operations.

OVERALL REVISED VARIANT-LEVEL CONCLUSION

Overall, impacts of the revised variant would be similar to the draft EIR variant. The revised variant would result in similar significant and unavoidable construction noise impacts, less-than-significant vibration impacts, operational impacts for stationary equipment and amplified sound that would be less than significant with mitigation, and less-than-significant traffic and loading impacts.

[10] Kittelson & Associates, *Stonestown Volume Spreadsheets for Noise,* May 31, 2023.

RTC Table 2-14 P.M. Peak-Hour Traffic Noise Level increases of the Draft EIR Variant and Revised Variant in the Vicinity of the Project

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Eucalyptus Drive from Middlefield Drive to 25th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	57.7	0.0	No
Eucalyptus Drive from 25th to 19th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	57.7	0.0	No
Eucalyptus Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	59.9	3.8	59.7	3.6	No
19th Avenue from Sloat Boulevard to Eucalyptus Drive	Residential	60	68.7	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.3	69.0	0.3	No
19th Avenue from Eucalyptus Drive to Buckingham Way	Residential/ Commercial	60	70.1	3 dBA increase in an area >60 dBA L_{dn}	70.4	0.3	70.4	0.3	No
19th Avenue from Buckingham Way to Holloway Avenue	Residential/ University	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	70.8	0.2	No
19th Avenue from Holloway Avenue Junipero Serra Boulevard	Residential	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	70.8	0.2	No
Holloway Avenue from Font Boulevard to 19th Avenue	Residential/ University	60	55.3	5 dBA increase in an area <60 dBA L_{dn}	55.3	0.0	55.3	0.0	No
Holloway Avenue from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	56.1	0.0	56.1	0.0	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Winston Drive from Lake Merced Boulevard to Buckingham Way	Residential/ University	60	59.5	3 dBA increase in an area >60 dBA L_{dn}	62.0	2.5	61.9	2.4	No
Winston Drive from Buckingham Way to 19th Avenue	Commercial	75	62.8	5 dBA increase in an area <75 dBA L_{dn}	63.4	0.6	63.4	0.6	No
Winston Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	58.9	5 dBA increase in an area <60 dBA L_{dn}	60.1	1.2	60.0	1.1	No
Buckingham Way from Winston Drive to 19th Avenue	Residential/ University/ Commercial	60	58.4	5 dBA increase in an area <60 dBA L_{dn}	60.9	2.5	60.7	2.3	No
Lake Merced Boulevard from Sunset Boulevard to Winston Drive	Residential	60	69.5	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.2	69.7	0.2	No
20th Avenue from Ocean Avenue to Eucalyptus Drive	Residential	60	57.9	5 dBA increase in an area <60 dBA L_{dn}	58.3	0.4	58.2	0.3	No
Lake Merced Boulevard from Winston Drive to Font Boulevard	University, Golf Course	72	67.0	5 dBA increase in an area <72 dBA L_{dn}	67.2	0.2	67.2	0.2	No
Sunset Boulevard from Lake Merced Boulevard to Sloat Boulevard	Residential	60	68.0	3 dBA increase in an area >60 dBA L_{dn}	68.1	0.1	68.1	0.1	No
Lake Merced Boulevard from Sunset Boulevard to Skyline Boulevard	Residential	60	59.4	5 dBA increase in an area <60 dBA L_{dn}	59.4	0.0	59.4	0.0	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Lake Merced Boulevard from Font Boulevard to Higuera Avenue	Residential/ University	60	71.2	3 dBA increase in an area >60 dBA L_{dn}	71.4	0.2	71.4	0.2	No
Junipero Serra Boulevard from 19th Avenue to Font Boulevard	Residential	60	74.1	3 dBA increase in an area >60 dBA L_{dn}	74.3	0.2	74.3	0.2	No
19th Avenue from Santiago Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.4	0.3	69.4	0.3	No
19th Avenue from Ulloa Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.3	0.2	69.3	0.2	No
19th Avenue from Vicente Street to Ulloa Street	Residential/ Park	60	69.4	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.3	69.7	0.3	No
19th Avenue from Wawona Street to Vicente Street	Residential/ Park	60	69.6	3 dBA increase in an area >60 dBA L_{dn}	69.8	0.2	69.8	0.2	No
19th Avenue from Sloat Boulevard to Wawona Street	Park/ Institutional	70	69.7	5 dBA increase in an area <70 dBA L_{dn}	69.9	0.2	69.9	0.2	No
Sloat Boulevard from 19th Avenue to Junipero Serra Boulevard	Residential	60	67.0	3 dBA increase in an area >60 dBA L_{dn}	67.0	0.0	67.0	0.0	No
Portola Drive from 15th Avenue to Sloat Boulevard	Residential	60	69.0	3 dBA increase in an area >60 dBA L_{dn}	69.2	0.2	69.2	0.2	No
Junipero Serra Boulevard from Eucalyptus Drive to Sloat Boulevard	Residential/ School	60	68.1	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.9	69.0	0.9	No
Ocean Avenue from 19th Avenue to Aptos Avenue	Residential/ Park	60	62.6	5 dBA increase in an area <60 dBA L_{dn}	63.5	0.9	63.5	0.9	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Ocean Avenue from Aptos Avenue to Westgate Drive	Residential/ Park	60	62.6	3 dBA increase in an area >60 dBA L_{dn}	63.5	0.9	63.5	0.9	No

SOURCE: ESA 2022, 2023

ABBREVIATIONS:

dBA = A-weighted decibel; L_{dn} = day-night noise level; L_{eq} = average or constant sound level

NOTES:

[a] Road center to sensitive receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the algorithms of the Federal Highway Administration Traffic Noise Prediction Model.

[B] The analysis considered the vehicle mix based on truck percentages for 19th Avenue (State Route 1) as documented by the California Department of Transportation for the year 2020. Traffic speeds for all vehicle classes were set consistent with the City and County of San Francisco's interactive map of speed limits, https://data.sfgov.org/Transportation/Map-of-Speed-Limits/ttcm-fwt2.

[C] Compatibility standards are taken from the City and County of San Francisco's General Plan Noise Element.

CUMULATIVE IMPACTS

The draft EIR concluded that the variant's significant and unavoidable daytime construction and nighttime construction noise impacts could be exacerbated by other cumulative construction projects in the area, primarily the SFSU Future State 2035 long-term planning projects, and therefore the variant would result in a significant and unavoidable cumulative construction noise impact. As discussed above, the revised variant would have the same significant and unavoidable construction noise impacts as the draft EIR variant. Therefore, the revised variant would have a significant and unavoidable cumulative construction noise impact similar to the impact identified in the draft EIR for the variant.

The draft EIR concluded that the variant would result in a less-than-significant construction vibration impact and no mitigation measures are required. As discussed above, the revised variant's vibration levels from construction would be well below the 0.25 and 0.3 PPV thresholds and would have the same less-than-significant construction vibration impact as the variant analyzed in the draft EIR. Vibration from construction of other cumulative projects, even if those projects are located near the revised variant, would not combine to raise the maximum PPV, because there would be sufficient distance for attenuation, and it is unlikely that vibration peaks from separate construction sites would occur simultaneously. Therefore, the revised variant would also have a less-than-significant cumulative vibration impact. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative noise.

The draft EIR also concluded that, given the distance of the variant buildings from SFSU sites and the typical rate of noise attenuation, the potential for combined noise effects from operation of stationary equipment would be extremely limited, particularly considering that many of the existing SFSU housing units that would be replaced already have HVAC equipment. Therefore, the draft EIR variant, in combination with the cumulative projects, would not result in a significant cumulative noise impact from operation of stationary equipment. As discussed above, the revised variant would have operational noise impacts from stationary equipment similar to those assessed in the draft EIR for the variant. Therefore, cumulative noise impacts for the revised variant from stationary equipment would be less than significant.

The draft EIR concluded that traffic noise increases related to the variant along all 30 roadway segments analyzed in the project vicinity would not exceed the identified applicable standards, and that cumulative traffic noise impacts would be less than significant. As with the draft EIR variant, the traffic noise impacts related to the revised variant in combination with cumulative projects would not exceed the 3 dBA or 5 dBA standards for the applicable noise compatibility standards. Therefore, cumulative traffic noise impacts would be less than significant for the revised variant.

2.E.5 Wind

The impacts of the variant related to wind hazards have been described and analyzed in draft EIR Section 3.E, Wind, pp. 3.E-1 through 3.E-22. As described below, wind impacts of the revised variant would be the same as or similar to those of the variant.

The draft EIR determined that the variant could result in wind hazards in publicly accessible areas of substantial pedestrian use during partial buildout (Impact WI-1) and full buildout (Impact WI-2). As described in the draft EIR, Mitigation Measure M-WI-1a, Wind Safety Plan, would be implemented to reduce wind-related risks to the public from construction activities. Mitigation Measure M-WI-1b, Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet, would require that future buildings taller than 85 feet be

designed to reduce wind impacts at ground level. If the project sponsor cannot demonstrate that wind impacts of a future proposed building taller than 85 feet would not result in new exceedances of the wind hazard criterion, Mitigation Measure M-WI-1c, Maintenance Plan for Landscaping off the Project Site and Wind Baffling Measures in the Public Right-of-Way, and Mitigation Measure M-WI-1d, Maintenance Plan for Landscaping on the Project Site and Wind Baffling Measures in the Private Right-of-Way, would be implemented to ensure that the maintenance features required under Mitigation Measure M-WI-1b are implemented in perpetuity. However, the draft EIR concluded that it cannot be stated with certainty that future buildings could be feasibly designed in a way that would reduce hazardous wind speeds compared to the then-existing conditions, even with mitigation incorporated. Therefore, the draft EIR concluded that wind impacts for the variant would be significant and unavoidable with mitigation.

The revised variant would have the same overall characteristics and components as the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of changes in the building envelopes for Block NW2 and, potentially, Block NW3, and the addition of a tower on Block S3. However, with respect to the latter, as described in Section 3.C.2, Summary of the Draft EIR Variant and the Revised Variant, p. 2-17, the proposed project and variant analyzed in the draft EIR studied a total of five towers, including a potential tower on Block S3, in the wind modeling conducted for the draft EIR. Therefore, this change to the revised variant requires no further analysis.

A supplemental wind analysis was prepared to reflect the proposed changes for the northwest portion of the project site (Blocks NW2 and NW3; see Attachment G of this RTC document).[11] This supplemental analysis found that the changes in the revised variant, and notably the enlargement of the Block NW2 building envelope, are considered minor and "would (only) result in localized wind changes in the NW corner and would not substantially affect other portions of the proposed project." The number of locations and the total hours of potential hazard exceedances with the revised design of Blocks NW2 and NW3 would be similar to those shown in the previous wind tunnel tests. While wind speeds at two locations may increase with the revised design, wind conditions at two other locations would be expected to improve. The analysis further found that extension of the NW2 building massing northwesterly toward Rolph Nicol Jr. Playground would shield locations between Blocks NW2 and NW3 from the prevailing west-northwest and westerly winds. This would improve conditions at two locations where the draft EIR found that the pedestrian wind hazard criterion would be exceeded with the draft EIR variant (and the proposed project), potentially avoiding those wind hazard exceedances. Conversely, two test locations to the northwest would be expected to experience greater wind speeds, and the changes could potentially result in new wind hazard exceedances there. Wind speeds at other nearby wind hazard exceedances would continue to exceed the wind hazard criterion. The supplemental wind analysis concluded that the "Overall, the number of locations and the total hours of potential hazard exceedances with the revised design of Blocks NW2 and NW3 would be similar to those identified in the previous wind tunnel tests." Moreover, the analysis noted that, as stated in the draft EIR, architectural detail on project or variant buildings, such as setbacks and façade articulation—which was not included in the wind tunnel testing of simple building massing models—would likely result in improved wind conditions, compared to those reported in the draft EIR. Existing and proposed landscaping, also not included in the wind tunnel testing in accordance with standard Planning Department protocol, could further improve wind conditions on and around the project site.

[11] RWDI, Memorandum to Florentina Craciun, San Francisco Planning Department, "Stonestown Galleria – San Francisco, CA: Pedestrian Wind Study – Northwest Corner Update – Letter of Opinion," January 22, 2024 (see Attachment G of this RTC document).

Mitigation Measures M-WI-1a through M-WI-1d as identified for the variant in the draft EIR would also apply to the revised variant. As with the variant, it cannot be stated with certainty at this time that future buildings developed for the revised variant could be feasibly designed in a way that would reduce hazardous wind speeds as compared to the then-existing conditions, even with mitigation incorporated. Therefore, the revised variant would result in the same impact related to wind hazards as the variant, which would be significant and unavoidable with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to wind hazards.

CUMULATIVE IMPACTS

The draft EIR concluded that implementation of the cumulative projects would result in a significant cumulative impact related to wind hazards, and the proposed project or variant alone would be responsible for a considerable proportion of this cumulative impact. The draft EIR determined that implementation of Mitigation Measures M-WI-1a through M-WI-1d would reduce wind hazard exceedances to the maximum extent feasible, but that it cannot be stated with certainty that no wind hazard exceedances would result from implementation of the variant, in combination with the cumulative projects, and the cumulative impact would be significant and unavoidable with mitigation. Because the revised variant would occur at the same location and within the same building envelope as the variant, the revised variant would result in the same or very similar cumulative impacts related to wind hazards as the variant, which would be significant and unavoidable with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative wind hazard impacts.

2.E.6 Shadow

The impacts of the variant related to shadow have been described and analyzed in draft EIR Section 3.F, Shadow, pp. 3.F-1 through 3.F-42. The analysis determined that the draft EIR variant would cast shadow on parks and open spaces in the vicinity of the project site at different times of the day and year. In particular, draft EIR variant shadow would reach the Rolph Nicol Jr. Playground throughout the year in the morning and afternoon, and the Junipero Serra Playground during the late afternoon in late spring and early summer. The draft EIR concluded that shadow from the variant would not substantially or adversely affect the most used portions of these spaces. Thus, implementation of the draft EIR variant (which represents the maximum shadow impact) would not adversely or substantially affect the use and enjoyment of these open spaces, and the impact would be less than significant and no mitigation measures are required. The draft EIR also concluded that given the limited extent, duration, and time of year when cumulative shadow would occur on the Rolph Nichol Jr. Playground and Junipero Serra Playground, cumulative shadow on these open spaces would not substantially or adversely affect the use and enjoyment of these open spaces, and the cumulative impact would be less than significant and no mitigation measures are required.

The revised variant would have the same overall characteristics and components as the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a change in the building envelope for Block NW2, Block NW3, and a tower on Block S3.[12] An additional shadow study was prepared to evaluate changes in the northwest portion of the project site (see Attachment H of this RTC document).

[12] As described in the draft EIR a tower location at S3 was included in the shadow scenario, therefore no further analysis is required.

As described in Section 2.D.2, Comparison of Draft EIR Variant and the Revised Variant, p. 2-17, the proposed project and draft EIR variant analyzed in the draft EIR studied a total of five towers, including a potential tower on Block S3, in the shadow modeling conducted for the draft EIR. The increased massing for Block NW2 would result in a larger area of shadow coverage of Rolph Nichol Jr. Playground. Similar to the draft EIR variant, under the revised variant, the largest new area of shadow would occur in the early morning in December, at 8:15 a.m. on December 13 and 28, with very similar shadow on the winter solstice. The revised variant would shade approximately 86 percent of the park at that time, 12 percent more than the draft EIR variant. However, similar to the draft EIR variant, substantial portions of the park's grassy area would remain in sunshine throughout the morning even on the winter solstice, the day that would be most affected by shadow. At other times of the year, shadow effects would be less pronounced. Similar to the draft EIR variant, the revised variant would shade portions of the park from 6:47 a.m. to 1 p.m. on the summer solstice, from 7:57 a.m. to 3 p.m. on the spring/fall equinoxes, and from 8:30 a.m. to 3:55 p.m. on the winter solstice.

As with the draft EIR variant, shadow from the revised variant would not substantially or adversely affect the most used portions of Rolph Nichol Jr. Playground. Specifically, on the summer solstice, the revised variant would cast a maximum of 207 square feet more shadow on Rolph Nicol Jr. Playground than would the draft EIR variant at any given time. This added shadow, covering 0.16 percent of the park, would fall only near the southwest corner of the park, in one of the park's most densely forested areas. The revised variant would add no additional shadow beyond that from the draft EIR variant after 12 noon.

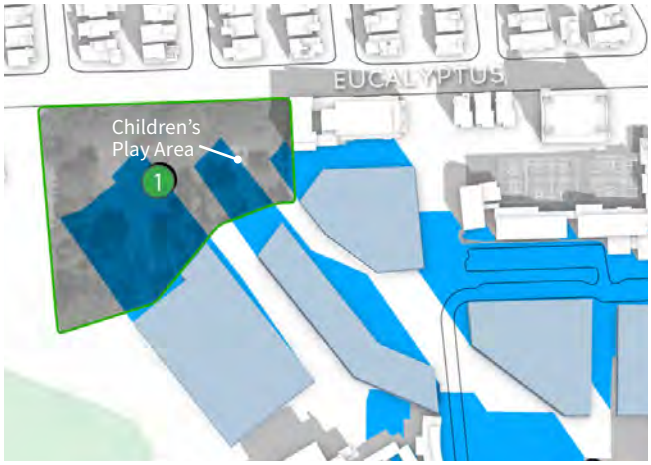
On the spring/fall equinoxes, the revised variant would add as much as 10 percent more shadow to the park, covering about 12,850 square feet, at any given time, compared to the draft EIR variant. This would occur at 8 a.m. The most substantial increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9 a.m., and nearly all of this added shadow would fall on the grove of trees along the park's southern edge. A small amount of added shadow would also fall on the southern portion of the pathway leading from the park to the project site. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 3 percent of the park area. The revised variant would not generate any additional shadow on the children's play area on the spring/fall equinoxes, compared to the draft EIR variant. As with the draft EIR variant, the revised variant shadow (cast by the building on Block NW3, not NW2) would leave the children's play area by 9 a.m. Also as with the draft EIR variant, the revised variant would cast very little shadow on the park's grassy area.

On the winter solstice, the revised variant would add as much as 12 percent more shadow to the park, covering about 15,500 square feet, at any given time, compared to the draft EIR variant. This would occur at 8:19 a.m. The largest increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9 a.m. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 4 percent of the park area. Added shadow from the revised variant, compared to the draft EIR variant, would fall primarily on the grassy area in the center of the park. Between about 9:45 and 11:15 a.m. on the winter solstice, the revised variant would cast new shadow on the children's play area when it would not be shaded by the draft EIR variant. During this time period the play area would be fully covered for a few minutes, but in general, the revised variant would shade it only partially at any given time. **RTC Figure 2-2** provides a comparison of the draft EIR variant and revised variant on the winter solstice.

Draft EIR Variant, 9:00 a.m.

Revised Variant, 9:00 a.m.

Draft EIR Variant, 10:00 a.m.



Revised Variant, 10:00 a.m.

Draft EIR Variant, 11:00 a.m.

Revised Variant, 11:00 a.m.

SOURCE: Fastcast, 2023

Stonestown Development Project

RTC FIGURE 2-2

SHADOW COMPARISON BETWEEN DRAFT EIR VARIANT AND REVISED VARIANT, WINTER SOLSTICE

On an annual basis, the greatest increase in shadow cast by the revised variant, compared to the draft EIR variant, would occur in February and October. The greatest instantaneous increment would occur on October 18, at 8:30 a.m., when the revised variant would shade nearly 20 percent more of the park (about 25,235 square feet) than would the draft EIR variant. The conditions on February 22 would be similar. This added shadow would fall primarily on the grassy area in the center of the park. The revised variant would cast no additional shadow on the children's play area on this date, compared to the draft EIR variant (see **RTC Figure 2-3**).

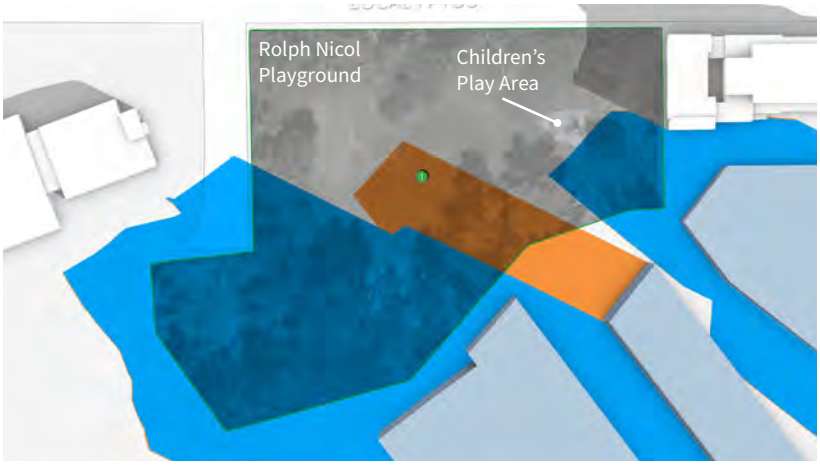
Based on the information above, the revised variant would result in similar less-than-significant project-specific and cumulative impacts related to shadow as the draft EIR variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to shadow.

2.E.7 Utilities and Service Systems

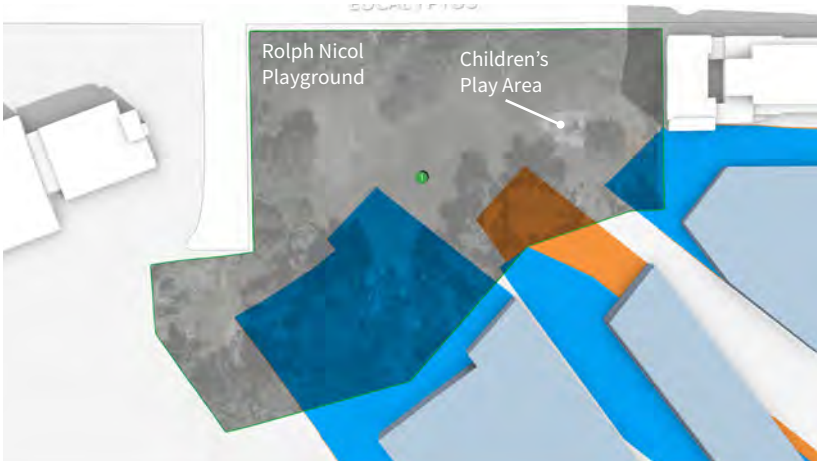
The impacts of the variant related to utilities and service systems have been described and analyzed in draft EIR Section 3.G, Utilities and Service Systems, pp. 3.G-1 through 3.G-28. The analysis concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to water supply; the need for new or expanded water, wastewater, or stormwater facilities; and generation of solid waste and no mitigation measures are required. As described below, the impacts of the revised variant related to utilities and service systems would be similar to those of the draft EIR variant.

The revised variant would complete the same upgrades to the existing infrastructure and utility systems as described in draft EIR pp. 2-32 through 2-39. However, the number of residential units would increase and the amount of non-retail sales and service uses and hotel uses would decrease under the revised variant. These changes would alter the project's overall water demand and the amount of wastewater and solid waste generated from the project. As presented in Section C.B, Population and Housing, p. C-2 of Attachment C, the revised variant would develop 3,491 residential units (411 more units than the variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant). The revised variant would reduce non-retail sales and service uses by 104,000 square feet and hotel uses by 100,000 square feet compared to the draft EIR variant. Thus, the revised variant would result in approximately 775 total employees at the project site, or 483 fewer employees than under the draft EIR variant.

The revised variant would Involve a similar amount of construction activity compared to the variant because it would not require changes to the building footprint previously analyzed for the variant in the draft EIR. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a tower on Block S3. The magnitude and duration of construction for the revised variant would be similar to that for the variant analyzed in the draft EIR. As presented in RTC Table 2-2, p. 2-22, construction phasing for the revised variant would also be similar to that for the variant. Phases 1 through 5 would be the same, and Phase 6 would be extended by 3 months because of the additional vertical construction required for the tower on Block S3. As with the variant analyzed in the draft EIR, the maximum number of construction workers for the revised variant would range from 349 to 610 workers per day. Therefore, the revised variant would result in less-than-significant construction-related impacts on utilities and service systems similar to the impacts identified for the variant in the draft EIR. Accordingly, and unless otherwise noted, the following analysis compares the operational impacts of the variant and the revised variant related to utilities and service systems.



9:00 a.m.



10:00 a.m.

11:00 a.m.

SOURCE: Fastcast, 2023

Stonestown Development Project

RTC FIGURE 2-3

DRAFT EIR VARIANT AND REVISED VARIANT SHADOW, OCTOBER 18 (DAY OF MAXIMUM REVISED VARIANT SHADOW; FEBRUARY 22 SIMILAR)

WATER SUPPLY

The revised variant would require water for irrigation, HVAC/cooling, and residential and commercial uses, such as toilets, lavatory faucets, and kitchen faucets. Like the variant, the revised variant would include the diversion, treatment, and reuse of graywater and blackwater for urinals, irrigation, and cooling towers. Graywater and blackwater collected from showers and washing machines would be treated at a treatment plant or facility on the project site before being reused onsite. The potable water demand and total water demand of the draft EIR and revised variant are shown in **RTC Table 2-15** and further described below.

RTC Table 2-15 Draft EIR and Revised Variant Water Demand

	Draft EIR Variant	Revised Variant
Potable Water Demand	0.152 mgd	0.191 mgd
Total Water Demand	***0.249 mgd***	***0.309 mgd***

As described on draft EIR p. 3.G-19, the water supply assessment determined that the variant's potable water demand, 0.152 million gallons per day (mgd), would contribute 0.19 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045.[13] The variant's total water demand, 0.249 mgd, which does not account for the 0.097 mgd of savings anticipated through compliance with the non-potable water ordinance, would represent 0.31 percent of the city's 2045 total demand. Thus, the draft EIR concluded that the variant represents a small fraction of the total projected water demand in San Francisco through 2045. The revised variant's potable water demand, 0.191 mgd, would contribute 0.24 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045. The revised variant's estimated total water demand would be 0.309 mgd, which does not account for 0.118 mgd of savings anticipated through the non-potable water ordinance compliance,[14] and would represent 0.38 percent of the city's projected 2045 total demand. Like the draft EIR variant, the revised variant would result in less-than-significant project-specific and cumulative impacts related to water supply, as the potential increase represents a small fraction of the total projected water demand in San Francisco. The updated water supply assessment prepared concluded that water supplies would be available to meet the demand of the revised variant in combination with both existing development and projected growth in San Francisco through 2045 under each of the water supply scenarios with varying levels of rationing during dry years.[15] The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to water supply.

WATER TREATMENT AND TRANSMISSION FACILITIES

For the same reasons as discussed for the variant in the draft EIR, the revised variant's potable water demand is already accounted for in overall San Francisco retail water demands, which are the basis for the capacity of regional water treatment and transmission facilities. As described in Section C.B, Population and Housing, p. C-2 of Attachment C, the revised variant's population and employment growth is within the city's projected growth level, which is the basis for ongoing improvements to the emergency firefighting water system.

[13] A water supply assessment was prepared for the project using the draft EIR variant's projected demand because it represented the most conservative buildout for the project site from a water demand perspective.
[14] Non-potable demands were estimated using the San Francisco Public Utilities Commission's Non-potable Water Calculator included in San Francisco Public Utilities Commission, *Revised Water Supply Assessment for the 3251 20th Avenue (Stonestown) Project,* September 26, 2023; approved by Resolution No. 23-0194, October 24, 2023.
[15] Ibid.

As discussed on draft EIR p. 3.G-14, the draft EIR variant would connect proposed low-pressure water distribution pipelines to existing water transmission and distribution pipelines in Winston Drive, 19th Avenue, and Eucalyptus Drive/20th Avenue. Fire flow was simulated using a model based in part on field flow tests conducted by the San Francisco Fire Department to assess whether the proposed system would meet industry and SFPUC standards for flow and pressure. Fire flow demands of 2,000gallons per minute (consistent with San Francisco Fire Department requirements) would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch for the draft EIR variant. The draft EIR concluded that the variant would not require new or expanded low-pressure water system infrastructure. Fire flow simulations for the revised variant were conducted and would meet a higher fire flow demand of 2,500 gallons per minute[16] at a pressure requirement of 20 pounds per square inch.[17] Like the draft EIR variant, the revised variant would not require construction of new or expanded water facilities. Therefore, as with the draft EIR variant, both project-specific and cumulative impacts of the revised variant related to water treatment and transmission facilities would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to water treatment and transmission facilities.

WASTEWATER

The project site would generate wastewater from residential toilet flushes and drainage from sinks. This wastewater would be conveyed through the combined sewer system to the Oceanside Treatment Plant, which operates under a National Pollutant Discharge Elimination System permit from the regional board (Order No. R2-2019-0028, December 10, 2019). As described in the draft EIR (p. 3.G-23), estimated wastewater demand is approximately 230,720 gallons per day (approximately 0.2 mgd) for an average-day dry-weather flow. By comparison, estimated wastewater demand for the revised variant is approximately 290,400 gallons per day (approximately 0.3 mgd) for an average-day dry-weather flow.[18] As described in the draft EIR, the Oceanside Treatment Plant is permitted to treat an average dry-weather influent flow of up to 43 mgd, and in 2020 the average dry-weather flow to the treatment plant was 12 mgd. The plant has sufficient available capacity for anticipated wastewater flows from the project site. Therefore, like the draft EIR variant, the revised variant would not require the construction of new or expanded wastewater treatment facilities.

As described on draft EIR p. 3.G-23, the San Francisco Public Utilities Commission's infrastructure capacity plans account for projected population and employment growth relative to the capacity of its collection, storage, and treatment system.

With implementation of the revised variant, wastewater from the project site would continue to discharge to the existing combined sewer system facility via infrastructure located beneath Lowell High School, and wastewater south of Winston Drive would be conveyed through existing combined sewer system facilities within Buckingham Way. As discussed in the draft EIR, the existing combined sewer system is sized to accommodate both daily wastewater flows and stormwater runoff from a five-year storm. The design storm at the project site generates approximately 1.45 million gallons of runoff during a three-hour period (i.e.,

[16] The San Francisco Fire Department requires that the available fire flow capacity be no less than 2,000 gpm at a residual pressure of 20 pounds per square inch for the development. The National Fire Protection Association requires that sprinklers for buildings with car stacking or electric vehicle parking supply 3,500 gpm at a residual pressure of 20 pounds per square inch. Because it is currently unknown which buildings in the development will have car stacking or electric vehicle parking, all hydrants within the development were modeled to demand 2,500 gpm for fire flow scenarios to demonstrate compliance with the San Francisco Fire Department requirements.
[17] Carlson, Barbee & Gibson, Inc., Draft Infrastructure Plan, April 2024.
[18] Ibid.

1.45 mgd).[19] Therefore, the revised variant's estimated wastewater demand, 0.3 mgd (compared to the variant's 0.2 mgd), is a fraction of the capacity of the existing combined sewer system facilities. Like the variant, the revised variant would include green infrastructure for stormwater treatment, in compliance with the Stormwater Management Ordinance, to reduce peak flows from the site before discharging into the combined sewer system. Therefore, the existing combined sewer system would have sufficient capacity to accommodate the new wastewater flows from the revised variant.

As with the draft EIR variant, operation of the revised variant would not result in a determination that the combined sewer system or the Oceanside Treatment Plant has inadequate capacity to serve the project's anticipated wastewater demand. Like the draft EIR variant, the revised variant would not require construction of new or expanded wastewater facilities, and project-specific and cumulative impacts would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to wastewater facilities.

STORMWATER

The project site is currently paved, and stormwater and wastewater from the project site drain to the city's combined sewer system. Like the draft EIR variant, the revised variant would include new combined sewer system pipelines throughout the site to serve the new buildings as shown on draft EIR Figure 2-19, p. 2-39. The combined sewer system pipelines would collect wastewater and stormwater from the project site and connect to the combined sewer system's existing surrounding infrastructure. Stormwater from the project site would continue to discharge to the existing combined sewer system facilities; however, like the draft EIR variant, the revised variant would be required to implement runoff reduction measures consistent with the City's Stormwater Management Requirements and Design Guidelines, which would reduce the amount of stormwater runoff entering the combined sewer system compared with existing conditions. Like the draft EIR variant, the revised variant would reduce the amount of stormwater runoff entering the combined sewer system compared with existing conditions. No new or expanded stormwater drainage facilities other than those proposed as part of the revised variant would be required. As with the draft EIR variant, this impact would be less than significant at both a project-specific and a cumulative level. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to stormwater facilities.

SOLID WASTE

At buildout of the revised variant, up to 21 tons of waste per day could be generated at the project site (compared to 20 tons per day for the variant),[20] which is within the allowable total tonnage per day of many nearby landfills, including the Recology Hay Road Landfill, and represents far less than 1 percent of the Recology Hay Road Landfill's capacity. As with the draft EIR variant, the total operational solid waste generated under the revised variant that would require disposal in a landfill would represent less than 1 percent of the combined 38,046-ton maximum throughput per day for the Recology Hay Road Landfill. In addition, with implementation of the revised variant, as with the draft EIR variant, residents, employees, and

[19] This design storm generates 1.3 inches of rain over a three-hour period. At the 43-acre project site, this would amount to 1.45 million gallons during a design storm. San Francisco Public Utilities Commission, *SFPUC Sewer System Management Plan*, September 2021.

[20] The variant described in the draft EIR would result in a larger number of residents and employees at the project site. Under the variant, there would be 7,269 residents and 1,258 employees. Assuming the California Department of Resources Recycling and Recovery's 2019 solid waste production rates of 4.5 pounds per person per day for residents and 5.3 pounds per person per day for employees, residents and employees combined would generate approximately 39,378 pounds (19.7 tons) per day of solid waste. Under the revised variant, there would be 8,239 residents and 775 employees. Assuming the same solid waste production rates (4.5 pounds per person per day for residents and 5.3 pounds per person per day for employees), residents and employees combined would generate approximately 41,184 pounds (20.5 tons) per day of solid waste under the revised variant.

visitors to the project site would be required to separate waste materials consistent with the San Francisco Mandatory Recycling and Composting Ordinance, California's Mandatory Commercial Recycling Law, and California Public Resources Code section 42649.8.

The revised variant would not include features that would impede compliance with these requirements. Therefore, as with the variant, the impact of the revised variant related to solid waste would be less than significant at both a project-specific and a cumulative level. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to solid waste.

2.E.8 Alternatives

Draft EIR Chapter 5, Alternatives, satisfies all CEQA requirements for alternatives analysis with respect to the revised variant as well as the variant, and no additional alternatives analysis is warranted. As described above, when compared to the variant, the revised variant would not result in any new significant project-level or cumulative impacts, nor would it substantially increase the severity of any impacts previously identified in the draft EIR. For this reason, no new alternatives need to be analyzed. The findings in draft EIR Chapter 5 remain valid and are applicable to the revised variant.

2.F Overall Conclusion of the Potential Environmental Impacts of the Revised Variant

The revised variant would not result in any new significant or potentially significant impacts that were not already identified for the variant in the draft EIR or the initial study, included as draft EIR Appendix B, nor would the revised variant substantially increase the severity of any impacts identified for the variant in the draft EIR or the initial study. The same mitigation measures identified in the draft EIR and initial study for the variant would remain required to reduce or avoid the significant environmental impacts of the revised variant, except that Mitigation Measures M-TR-4a and M-TR-4b would not apply to the revised variant for transit delay because the four-minute transit delay threshold would not be exceeded. However, Mitigation Measure M-TR-4a would still be required for air quality and GHG impacts. No new or modified measures would be required to mitigate the significant impacts identified for the variant in the draft EIR. In addition, because there are no changes to the cumulative projects identified in the draft EIR, and the project-level impacts of the revised variant have been determined to be similar to the project-level impacts of the variant, the cumulative impacts of the revised variant would be similar to the cumulative impacts of the variant for all topics analyzed in the draft EIR. Therefore, references to the variant in this RTC document shall be interpreted to include and incorporate any changes proposed by the revised variant, unless otherwise noted. Specific references to the revised variant will be included where necessary for clarity in this RTC document.

CHAPTER 3
LIST OF PERSONS COMMENTING

3.A Public Agencies and Commissions and Individuals Commenting on the Draft EIR

This RTC document includes responses to all comments received on the draft EIR, including written comments submitted by letter or email, as well as oral comments presented at the public hearing that was held on February 9, 2023. This section lists all public agencies and commissions and individuals who submitted comments on the draft EIR. **RTC Table 3-1** lists the commenters' names, along with the corresponding commenter codes used in Chapter 4, Comments and Responses, to denote each set of comments received by category and date received by the planning department. Oral comments given at the planning commission hearing are included in Attachment A, Draft EIR Hearing Transcript. All written and oral comments submitted on the draft EIR are included in Attachment B, Draft EIR Comment Letters and Emails.

- Comments from public agencies and commissions are designated by "A-" and the agency's name or acronym.
- Comments from individuals are designated by "I-" and the commenter's last name.
- Comments from organization are designated by "O-" and the organization's name or acronym.

RTC Table 3-1 Persons Commenting on the Draft EIR

Comment Letter Code	Name and Title of Commenter	Agency/Organization	Comment Format	Comment Date
PUBLIC AGENCIES AND COMMISSIONS				
A-Caltrans	Yusheng Luo	Caltrans	Letter	February 8, 2023
A-CPC-Diamond	Commissioner Diamond	Planning Commission	Transcript	February 9, 2023
A-CPC-Koppel	Commissioner Koppel	Planning Commission	Transcript	February 9, 2023
A-CPC-Moore	Commissioner Moore	Planning Commission	Transcript	February 9, 2023
A-CPC-Tanner	Commissioner Tanner	Planning Commission	Transcript	February 9, 2023
A-HPC	Historic Preservation Commission	HPC	Letter	February 7, 2023
A-SFPUC	Monica Wu	SFPUC	Letter	January 18, 2023
INDIVIDUALS				
I-Anthony	Bob and Maha Anthony		Letter	February 7, 2023
I-Arbulu	Antonio Arbulu		Letter	February 11, 2023
I-Aslanian-Williams	Dena Aslanian-Williams		Transcript	February 9, 2023
I-Berman	Laurie Berman		Letter	February 8, 2023

Comment Letter Code	Name and Title of Commenter	Agency/Organization	Comment Format	Comment Date
I-Boken	Eileen Boken		Transcript	February 9, 2023
I-Cenpai	Cenpai		Letter	February 8, 2023
I-Chang	Mary Chang		Letter	February 7, 2023
I-Chou	Su-Syin Chou		Letter	February 12, 2023
I-Clee	Chen Young Lee		Transcript	February 9, 2023
I-Conroy1	Paul Conroy		Letter	January 5, 2023
I-Conroy2	Paul Conroy		Letter	February 13, 2023
I-DeBaun	Barbara and Robert DeBaun		Letter	February 9, 2023
I-EBirsinger	Eugene Bersinger		Letter	February 9, 2023
I-Finnegan	Lynn Finnegan		Letter	February 9, 2023
I-Full	David Full		Letter	February 12, 2023
I-Gardner	Karen Gardner		Letter	February 10, 2023
I-Goodman	Aaron Goodman		Letter	January 11, 2023
I-Hardeman	Donald Hardeman		Letter	February 7, 2023
I-Hardesty	Tara Hardesty		Transcript	February 9, 2023
I-Herlihy1	James P. Herlihy		Letter	January 14, 2023
I-Herlihy2	James P. Herlihy		Letter	February 8, 2023
I-Herlihy3	Jim Herlihy		Transcript	February 9, 2023
I-Herzfeld	Debbie Herzfeld		Letter	February 9, 2023
I-Ho	Hyesoon Ho		Letter	N/A
I-Hong	Dennis Hong		Letter	February 6, 2023
I-Howe	Donna Keuper Howe		Letter	January 14, 2023
I-Iwata	Jerry Iwata		Letter	February 7, 2023
I-Kashi	Kevin Kashi		Letter	February 8, 2023
I-Kiong	Mee Mee Kiong		Letter	January 27, 2023
I-Kiong2	Mee Mee Kiong		Transcript	February 9, 2023
I-LBirsinger	Laura Birsinger		Letter	February 5, 2023
I-Lee	Marie Lee		Letter	February 9, 2023
I-Lewis	Michele Ho Lewis		Letter	February 11, 2023
I-LG	LG		Letter	February 13, 2023
I-Lifur	Jeff Lifur		Letter	February 12, 2023
I-Lo	Cynthia Lo		Letter	February 11, 2023

Comment Letter Code	Name and Title of Commenter	Agency/Organization	Comment Format	Comment Date
I-Maldonado	Roland Maldonado		Transcript	February 9, 2023
I-Marzo	Steve Marzo		Transcript	February 9, 2023
I-Moore	Andrew Moore		Letter	N/A
I-Munoz	Martin Munoz		Transcript	February 9, 2023
I-Naraghi	Nasrin Naraghi		Letter	February 9, 2023
I-Parthasarathy	Hemai Parthasarathy		Letter	February 9, 2023
I-Pilpel	David Pilpel		Letter	February 13, 2023
I-Ressl	Jan Ressl and Ajith Ramanathan		Letter	February 13, 2023
I-Riley	Christine Riley		Letter	February 8, 2023
I-Schneider	William Schneider		Letter	February 8, 2023
I-Seratti	Karen Seratti		Transcript	February 9, 2023
I-Strassner	Howard Strassner		Letter	January 26, 2023
I-Troxel	Suzanne Troxel		Letter	February 11, 2023
I-Tsakalakis	Kath Tsakalakis		Letter	December 23, 2022
I-Tsang	D.W. Tsang		Letter	February 8, 2023
I-Will	Tina Will		Letter	February 3, 2023
I-Wong	Grace Wong		Letter	February 9, 2023
I-Zhou	Peiling Zhou		Letter	February 8, 2023
ORGANIZATION				
O-HAC-1	Jake Price	Housing Action Coalition	Transcript	February 9, 2023
O-ITHA	Mark V. Scardina	Ingleside Terraces Home Association	Letter	February 10, 2023
O-NorthernNeighbors	Jonathan Bunemann	Northern Neighbors	Transcript	February 9, 2023
O-SFSU	Jason Porth	SFSU	Letter	February 13, 2023
O-SierraClub	Howard Strassner	Sierra Club	Letter	January 27, 2023
O-SPEAK	Eileen Boken	Sunset-Parkside Education and Action Committee	Letter	February 13, 2023
O-WTPCC	Stephen Martin-Pinto	West of Twin Peaks Central Council	Letter	N/A

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CHAPTER 4
COMMENTS AND RESPONSES

4.A Introduction

This chapter presents the substantive comments received on the draft EIR and initial study and responses to those comments. The comments and responses are organized by subject and are generally in the same order as presented in the draft EIR and initial study. General comments pertinent to CEQA and the draft EIR and general comments not pertinent to CEQA and the draft EIR are grouped accordingly at the end of this chapter. The order of the comments and responses in this chapter is shown in **RTC Table 4-1**, along with the corresponding section number, prefix to the topic code, and page of this chapter on which the comments and responses start.

RTC Table 4-1 Comment Organization

Section	Topic	Topic Code	Page No.
4.B	Project Description	PD	4-2
4.C	Cumulative Analysis	CU	4-12
4.D	Historic Architectural Resources	CR	4-12
4.E	Transportation and Circulation	TR	4-16
4.F	Noise and Vibration	NO	4-43
4.G	Air Quality	AQ	4-50
4.H	Shadow	SH	4-53
4.I	Utilities and Service Systems	UT	4-59
4.J	Other CEQA Considerations	OC	4-74
4.K	Alternatives	AL	4-75
4.L	Plans and Policies	PP	4-86
4.M	Aesthetics	AE	4-90
4.N	Greenhouse Gas Emissions	GHG	4-95
4.O	Recreation	RE	4-97
4.P	Public Services	PS	4-101
4.Q	Biological Resources	BI	4-108
4.R	Geology and Soils	GE	4-109
4.S	Hazards and Hazardous Materials	HZ	4-111
4.T	General Comments (CEQA)	GC-CEQA	4-113
4.U	General Comments (Non-CEQA)	GC NON-CEQA	4-126

Within each topic, similar comments are grouped together under subheadings, designated by a topic code and sequential number. For example, the comments in Section 4.B, Project Description, coded as "PD," are organized under subheading PD-1.

Under each subheading, the applicable comments are listed by comment code, as described in Chapter 3, List of Persons Commenting. Each comment is then presented verbatim and concludes with the commenter's name and, if applicable, title and affiliation; the comment source (i.e., public hearing transcript, letter, email); and the comment date. Following each comment or group of comments, a comprehensive response is provided to address environmental issues raised in the comments and clarify or augment information in the draft EIR, as appropriate. Response numbers correspond to the topic code; for example, the response to Comment PD-1 is presented under Response PD-1. The responses may clarify the draft EIR text or revise or add text to the Final EIR. To avoid unnecessary repetition, the impact analyses refer extensively to the information and analysis presented in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, where the environmental impacts would be substantially the same as those of the variant analyzed in the draft EIR. New or revised text, including text changes initiated by planning department staff, is <u>double underlined</u>; deleted material is shown in ~~strikethrough~~ (also see Chapter 5, Draft EIR Revisions). References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

4.B Project Description [PD]

The comments and corresponding responses in this section cover the subjects included in draft EIR Chapter 2, Project Description. The comment topics relate to:

- PD-1: Project Description Comments/Questions

4.B.1 Comment PD-1: Project Description Comments/Questions

This response addresses the following comments, which are quoted below:

A-CPC-Diamond-1

A-CPC-Koppel-1

A-CPC-Tanner-1

A-SFPUC-1

I-Full-3

I-Full-5

I-Full-7

I-Full-9

"We're at this pivotal point in time where not only is CEQA a very important consideration in the approval of the project, which is not yet in front of us, but we are also now dealing with a new Housing Element that's been adopted and certified that mandates that we find room for 82,000 additional units with the focus being on the west side. And this is one of the prime opportunity sites where we can really add a significant amount

of housing so long as it is done in an appropriate manner with Urban Design and with the appropriate infrastructure, in part, to ensure that whatever we add here is still beautiful and livable and adds to the quality of life in the city.

But approving units on paper doesn't do us any good. We need the developer to actually build them. And so I am hoping that when we get to the next stage, that the elements for this project will build in necessary flexibility that will allow the developer to pursue various parts of this project at appropriate times to meet market demand and to make changes as necessary.

And so what I am curious about is whether or not -- is really the limits of the existing analysis that's been done to allow for that flexibility in the future. And let me just give a couple of examples.

If they decide not to build the hotel and to add housing units instead, is the EIR, as currently drafted, adequate to handle that without the need for, you know, a supplemental EIR? Same thing if they decide to take out some of the retailers institutional uses and add in more housing units instead to go above the 3,000, even with the variant, or if they decide to add an extra floor or two, or three or four, or whatever it is on various parts of the project, because that's what makes sense from an economic perspective in order to move it forward without having to do a supplemental EIR.

So really the CEQA question that I have, that I'm hoping you can respond to is that, at the limits of this document, how far it can go in terms of providing coverage for the entitlements. And I'm -- as I say, entitlements that include flexibility to allow for shifts among the various uses." *(Sue Diamond, Commissioner, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Diamond-1, PD-1])*

"Yeah. Thanks again to the environmental review staff. You guys always do a very thorough job. So thanks again.

But I would like to echo the comments of Commissioner Diamond. You said it best when you said opportunity site. I mean, 20 acres in this seven-by-seven-mile-wide city is a huge opportunity. I just want to make sure we're not limited, with our limited horizontal footprint, in what we can do going upwards." *(Joel Koppel, Commissioner, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Koppel-1, PD-1])*

"I'll align myself with those comments as well. In particular, thinking about some of the, you know, mega multi-phase projects we have in this city that, you know, get going, and then they run into a problem and then need to rethink what they're doing and how the EIR does or does not allow that type of flexibility for, you know, a future that's unknown, and that we're trying to plan for as best we can. So having, you know, a ceiling that's higher, maybe, than we need it to be in terms of, you know, dwelling units, in order to shift as needed or shift space around. Maybe it is a hotel or proposed as another use now but dwelling units make a better -- better proposition in the future." *(Rachael Tanner, President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Tanner-1, PD-1])*

"Section 2.D.9, Infrastructure and Utilities, page 154 (2-36), paragraph 2. Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a

non-potable use as it is required. Also, the Water Supply Assessment indicates that residential laundry would be another end use for non-potable supply in addition to toilet and urinal flushing, irrigation, and cooling tower. Please list all anticipated end uses of non-potable supply.

Section 2.D.9, Infrastructure and Utilities, pages 155–156 (2-27 through 2-38). Why are the figures not showing non-potable water piping extending to building NW1?" *(Monica Wu, SFPUC BEM Coordinator, Letter, 1/18/2023 [A-SFPUC-1, PD-1])*

"Page 2-5, Figure 2-2. This figure showing the Project Site and Adjacent Land Uses is the same that was provided during the scoping process. I commented on that figure at the time and pointed out numerous errors in the figure. It was not updated or corrected. It is difficult to have confidence in the CEQA process when comments are not addressed and basic errors are not corrected.

Page 2-7, Section 2.D. The characterization of the northeast portion of Buckingham Way is misleading. This portion of Buckingham Way is not being 'straightened'. This portion of Buckingham Way is being abandoned and a new street is being created. Characterizing it is a street being 'straightened' is misleading.

Page 2-15, Figure 2-7. The legend includes something called 'CEQA Heights'. However, this term is not defined. Without such information, how is it possible to understand the importance of this term and what the blue line means?

Page 2-18, Section 2.D.6. The text indicates the proposed project would provide 2,940 vehicle parking spaces embedded within the proposed building podiums and/or below grade (or 3,140 parking spaces with the variant). However, this information is not consistent with Table 2-1 on page 2-12. How can environmental analysis be completed when inconsistent information is provided?

Page 2-20, Section 2.D.8. The EIR continues to indicate that secondary access to the project site is at Eucalyptus Drive and 20th Avenue. However, data provided in Appendix D.1 shows that traffic volumes at the intersection of Buckingham Way and Winston Drive are actually greater than at Eucalyptus Drive and 20th Avenue. Characterizing the intersection of Eucalyptus Drive and 20th Avenue as the secondary access point is misleading.

Page 2-20, Section 2.D.8, bullet #1. The text indicates that 20th Avenue would have two travel lanes (one lane in each direction) between Eucalyptus and Winston Drives. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction. Which is it? What was used in the travel analysis and trip generation?" *(Dave Full, Letter, 2/12/2023 [I-Full-3, PD-1])*

"Page 2-24, Figure 2-14. This figure shows that 20th Avenue would have two travel lanes in the southbound direction and one travel lane in the northbound direction. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction, or with the text presented on page 2-20.

Section 2.D.8, bullet #1 (see comment above). Given that this segment of 20th Avenue leads to the 'secondary access point' for the proposed project, why is there such contradictory information provided in

the EIR. It simply is not possible to understand what is being proposed and what is being analyzed in the EIR when such inconsistencies are presented in the EIR.

Page 2-28, bullet #1. The description on the number of travel lanes on Buckingham Way between 20th Avenue and Winston Drive is not consistent with Figure 2-12 on page 2-22 or Figure 2-18 on page 2-29.

Page 2-28, bullet #2. The description of Street A is misleading in indicating that it 'straightens' Buckingham Way. This is a new street and should be described as a new street in the EIR.

Page 2-28, paragraph 2. This paragraph indicates that there will be a traffic signal at Buckingham Way and Winston Drive. However, Figure 2-13 on page 2-23 indicates that this will be a stop-sign-controlled intersection. Which is it? What was assumed when doing the traffic analysis in the EIR?" *(Dave Full, Letter, 2/12/2023 [I-Full-5, PD-1])*

"Pages 2-35 through 2-39, Figures 2-23 through 2-26. Each of these figures mislabels 20th Avenue north of Buckingham Way." *(Dave Full, Letter, 2/12/2023 [I-Full-7, PD-1])*

"Page 2-40, Table 2-3. This table does not provide any information on the construction of roadway improvements. This table only describes the construction schedule for buildings. Given that roadway and intersection improvements are an integral part of the proposed project, this information needs to be provided.

Page 2-40, Section 2.E.1, paragraph 2. This paragraph basically states that construction can occur any time, day or night. There needs to be some assurance as to when construction will occur." *(Dave Full, Letter, 2/12/2023 [I-Full-9, PD-1])*

RESPONSE PD-1

The comments relate to the proposed project and draft EIR variant described in Chapter 2, Project Description, in the draft EIR. The comments ask if there is flexibility in the development program to increase the number of housing units or adjust other uses and request clarification regarding the non-potable water infrastructure description. The comments also ask questions or provide comments regarding the project description text and figures and the overall development program.

The response is organized as follows:

- Flexibility in the Overall Development Program
- Non-Potable Water Use Description
- Project Description Text and Figures

FLEXIBILITY IN THE OVERALL DEVELOPMENT PROGRAM

Comments ask whether there is flexibility in the proposed project or variant to allow the developer to adjust for future market conditions, such as increasing the number of housing units; reducing or shifting hotel, retail, or institutional uses to residential; or adding vertical height.

In response to comments, the project sponsor elected to revise the draft EIR variant to increase the number of residential units on site and remove the proposed hotel use. The revised variant would include 201 senior housing units. Residential units would also be added to other blocks on the project site by converting commercial space to residential space and modifying a midrise building to a tower building on Block S3. Overall, the revised variant would include an additional 411 residential units (334,000 square feet), an additional 411 parking spaces, no hotel use, and 104,000 square feet less office use at the project site compared to the draft EIR variant.

A description of the revised variant, its environmental impacts, and a comparison to the draft EIR variant, is presented in Chapter 2 of this RTC document. The analysis of the revised variant in Chapter 2 of this RTC document concludes that the revised variant's impacts would be similar to the draft EIR variant and would not result in any new significant impacts not already identified in the draft EIR, nor would the changes substantially increase the severity of impacts identified in the draft EIR.

As presented in Section 2.D.2, Comparison of Draft EIR Variant and the Revised Variant, of this RTC document, the revised variant would have the same overall characteristics and components as the draft EIR variant, including creating a new special use district (SUD) and Height and Bulk District that would rezone the project site and establish development controls for construction of a multi-phase, mixed-use project and a Special Sign District (SSD) that would establish site specific signage controls for the project, along with the Stonestown Galleria Mall. As is the case with the proposed project and the draft EIR variant, the revised variant would also include approval of a development agreement[21] between the project sponsor and the City. While there is some flexibility built into the SUD and development agreement approval process, should the project sponsor elect to make future changes to the scope of the approved project that are beyond the scope of the SUD, Height and Bulk District, SSD and/or the development agreement, the changes would be subject to further environmental review, as applicable, at such time they are proposed.

In addition, the proposed project, draft EIR variant, or revised variant scenarios proposed in the draft EIR and this document do not preclude the project sponsor from implementing variations of the approved project or to phase project construction in response to market needs. Per CEQA Guidelines Section 15160, lead agencies may use EIR variations consistent with the Guidelines to meet the needs of other circumstances, including preparation of a subsequent EIR pursuant to CEQA Guidelines section 15162, or preparation of a supplement to an EIR pursuant to CEQA Guidelines section 15163.

NON-POTABLE WATER USE DESCRIPTION

Comments state that all anticipated end uses of non-potable supply should be included in draft EIR Section 2.D.9, Infrastructure and Utilities, and ask why the non-potable water piping is not shown extending

[21] Development agreements ("DAs") are contracts between the City and a developer that lay out development rights and commitments; project rules and regulations; additional public benefits of the project; and implementation. City agencies work closely to ensure that development agreements contain community benefits that address the need for equitable outcomes, including significant affordable housing and local employment components. San Francisco Planning Department, 2020, Development Agreements, https://shorturl.at/ouPSW, Accessed September 14, 2023.

to NW1. In response to the comment, the text on draft EIR p. 2-36 was revised to clarify the non-potable supply uses to be consistent with the water supply assessment as follows:

- **Non-potable Water.** Similarly, the proposed project would comply with San Francisco's Non-potable Water Ordinance and would include the diversion and reuse of water from HVAC/cooling systems, graywater,[20] blackwater,[21] and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas. The proposed project would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water to the project. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or decentralized treatment facilities located within certain buildings as shown in **Figure 2-24** and **Figure 2-25**, p. 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the project site buildings.

Regarding Figures 2-25 and 2-26 on draft EIR pp. 2-37 and 2-38, these are intended to be high-level conceptual plans and do not show detailed connections. As noted on draft EIR p. 2-36 and above, the treated graywater would be distributed to all of the proposed buildings on the project site. Detailed plans showing infrastructure connections would be part of the infrastructure plan and master utility plans developed for the approved project. The master utility plans are subject to review and approval by the SFPUC prior to submittal of the basis of design or first street improvement plan approvals, before construction can begin. The infrastructure connections outlined above would not result in additional environmental impacts not analyzed in the draft EIR.

PROJECT DESCRIPTION TEXT AND FIGURES

Comments state that Figure 2-2 on draft EIR p. 2-5 contains errors pertaining to the land uses and has not been updated since the notice of preparation (NOP).

Figure 2-2 is intended to be a high-level general land use map indicating the primary uses in the area and does not necessarily correspond to the zoning designations. The existing zoning and height and bulk districts for the project site and immediate vicinity are presented in Figure 2-3, draft EIR p. 2-8. Regardless, Figure 2-2 (see p. 5-31) has been updated to address the comments.

In response to comments, the text under draft EIR Section 2.D, Project Characteristics and Components, p. 2-7, was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

> … Transportation and circulation changes would include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3 (shown as Street A in Figure 2-4). …

In response to comments, the last sentence on draft EIR p. 2-1 and the first line on p. 2-2 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

> … The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned, and a new ~~straightened and converted to a~~ two-way connection to 19th Avenue (Street A) would be created between Blocks E1 and E3. …

In response to comments, the second bullet point on draft EIR p. 2-28 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

- **Street A.** The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be ~~straightened~~ abandoned and ~~converted to~~ a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3 (shown as Street A on Figure 2-12). The westbound approach at 20th Street along Street A would be a right-turn-only lane. Street A would be approximately ~~20~~22 feet wide.

In response to comments, the second paragraph under Impact LU-1 on initial study p. 8 (see draft EIR Appendix B) was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

> Proposed modifications to existing streets include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3.

In response to a comment, the "CEQA Heights" noted on Figures 2-7 to 2-9 on draft EIR pp. 2-15 to 2-17 refer to the maximum building envelopes evaluated in the EIR, specifically for the wind and shadow analyses. Figures 2-7 to 2-9 (see pp. 5-32 to 5-34) were revised to clarify the definition of "CEQA Heights."

The following note has been added to the legends on Figures 2-7 to 2-9:

> ~~CEQA Heights~~ Maximum Building Envelope for Shadow and Wind Analyses

One comment seeks clarification about the vehicle parking spaces presented on draft EIR p. 2-18 and Table 2-1 on p. 2-12. The vehicle parking spaces in Table 2-1 show the spaces that would be retained, removed, and added to the project site, while the description on draft EIR p. 2-18 is for the total proposed for the project and variant without the net change comparisons. The 2,940 and 3,140 vehicle parking spaces for the proposed project and variant described on draft EIR p. 2-18 and in Table 2-2 on draft EIR p. 2-20 is inclusive of the 250 spaces retained under the shopping mall. In addition, the 540 vehicle parking spaces under Blocks W3/W4 would include both retail and residential spaces. The vehicle parking spaces in Tables 2-1 and 2-2 on draft EIR pp. 2-12 and 2-20, respectively, and text on p. 2-18 have been updated to clarify and correct the information.

In addition, as described in Chapter 2 of this RTC, the revised variant would add 411 parking spaces compared to the proposed project and draft EIR variant. For the sake of clarity, this response will address the specific elements of the revised variant where it differs from the variant.

As noted in Section D.4, Aesthetics and Parking (see draft EIR Appendix B, p. 7), the proposed project or draft EIR variant meets all of the criteria of CEQA section 21099. The revised variant also meets all of the criteria, for the same reasons described in the draft EIR. Therefore, the analysis does not consider parking in determining the significance of project impacts under CEQA. The text changes below do not change the analysis and are intended to present the vehicle parking information consistently.

The "vehicle parking spaces" row in Table 2-1 on draft EIR p. 2-12 was revised as follows:

Project Characteristics	Existing	Proposed Project	Proposed Project Including Variant
PROPOSED PARKING	**NUMBER (APPROXIMATE)**		
Vehicle parking spaces:	**3,400** 2,450 surface parking spaces 700-space parking garage 250 spaces below shopping mall	**4,250** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,040~~ 2,690 spaces distributed throughout site *850 net new spaces*[e]	**4,450** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,240~~ 2,890 spaces distributed throughout site *1,050 net new spaces*[e]
Car-share parking spaces	0	66	68

The text under Section 2.D.6, Vehicle Parking on draft EIR p. 2-18 was revised as follows:

> In addition to the 250 spaces retained under the shopping mall, expanded 540-space parking garage below the shopping mall and the new 770-space parking garage, the proposed project would provide ~~2,940~~ 2,690 vehicle parking spaces embedded within the proposed building podiums and/or below grade throughout the site (see Figure 2-11). With the variant, ~~3,140~~ 2,890 vehicle parking spaces would be embedded within the proposed building podiums and/or below grade throughout the site, including an additional 200 parking spaces on Block E3E.

In addition, as described in Chapter 2 of this RTC, the revised variant would provide 4,861 vehicle parking spaces. As with the draft EIR variant, the revised variant would demolish the 700-space parking garage, remove 2,450 surface parking spaces, add 540 spaces for expanded parking below the shopping mall, and construct a new 770-space parking garage. The revised variant would add 411 spaces. Therefore, the remaining 3,301 spaces would be distributed throughout the site.

Table 2-2 on draft EIR p. 2-20 was revised as follows:

Block	Proposed Project Parking Spaces	Proposed Project Including Variant Parking Spaces
W2 Public Parking Garage	770	770
W3 and W4 Expanded Parking Garage Below Shopping Mall	540	540
Existing Shopping Mall Retained Parking	250	250
Parking spaces in remaining block podiums and/or below grade parking	~~2,940~~ 2,690	~~3,140~~ 2,890
Total	***4,250***	***4,450***

Comments state that indicating that the secondary access point for the project site is at Eucalyptus Drive and 20th Avenue is misleading. A project site can have multiple secondary access points and these are described in the third paragraph on draft EIR p. 2-6: "Secondary access points are located at Eucalyptus Drive and 20th Avenue at the north end of the site, Winston Drive and Buckingham Way at the west end of the site, and 19th Avenue and Buckingham Way at the south end of the site." In response to this comment, the first paragraph under Section 2.D.8, Transportation and Circulation Plan, draft EIR p. 2-20, was revised as follows for consistency:

> … The primary ~~and secondary~~ access point~~s~~ to the project site would continue to be at 19th Avenue at Winston Drive~~, and Eucalyptus Drive at 20th Avenue, respectively~~. Secondary access points would continue to be at Eucalyptus Drive and 20th Avenue, Winston Drive and Buckingham Way, and 19th Avenue and Buckingham Way. …

Comments state that the description of 20th Avenue on draft EIR p. 2-20 is not consistent with Figure 2-12 on p. 2-22. The analysis in the transportation and circulation section is based on the changes proposed by the proposed project or variant shown in Figure 2-12 and Figure 2-13, as noted on draft EIR p. 3.B-24. In response to these comments, the last bullet point on draft EIR p. 2-20 was revised as follows to clarify the range of travel lanes on 20th Avenue:

- **20th Avenue.** The privately owned portion of 20th Avenue between Eucalyptus and Winston drives would be straightened, would have two to four travel lanes (predominantly one lane in each direction)~~,~~ and would range between 25 and ~~35~~ 44 feet in width. Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (one through lane in each direction and one lane in each direction for right turns). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one lane in each direction and one lane dedicated for left turns). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only. Conceptual illustrative street sections for 20th Avenue are shown in **Figure 2-14** to **Figure 2-17**, pp. 2-14 to 2-27.

In response to comments regarding Figure 2-14 on draft EIR p. 2-14, these are noted as conceptual illustrative street sections. Figure 2-14 on draft EIR p. 2-14 has been updated to reflect project sponsor updates and to address the comments (see p. 5-37).

One comment states that the description of the number of travel lanes on Buckingham Way between 20th Avenue and Winston Drive is not consistent with Figure 2-12 and Figure 2-18 on draft EIR pp. 2-22 and 2-29, respectively. In response to the comment, the first bullet on draft EIR p. 2-28 was revised as follows to clarify the range of travel lanes on Buckingham Way:

- **Buckingham Way.** Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to ~~two~~ three lanes ~~(one lane in each direction)~~ along the frontage of Block E5 near the intersection with 20th Avenue. West of Block E5, Buckingham Way would remain three travel lanes. Along Block E5, Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left-turn lane and one dedicated right-turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right-turn lane and one dedicated left-turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left-turn lane and one dedicated right-turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet. The conceptual illustrative street section for Buckingham Way North is shown in **Figure 2-18**.

It should be noted that while the text was revised to clarify the range of travel lanes on Buckingham Way, the street configuration presented in draft EIR Figure 2-18 is what was analyzed in Section 3.B, Transportation and Circulation, of the draft EIR. The text was revised as a correction and refinement of information and is not a project change.

Comments request clarification regarding the traffic signal at Buckingham Way and Winston Drive. A traffic signal is proposed at Buckingham Way and Winston Drive. Figure 2-13 on draft EIR p. 2-23 has been corrected (see p. 5-36). A signalized intersection is assumed in the traffic analysis in the EIR, as noted on draft EIR p. 3.B-25 in the last bullet above the heading "Walking Network Features."

In response to comments, Figures 2-23 through 2-26 on draft EIR pp. 2-35 to 2-39 were revised to correct the street label for 20th Avenue (see pp. 5-45 to 5-48).

A comment states that Table 2-3 on draft EIR p. 2-40 does not provide information on the construction of roadway improvements. However, as noted in the last paragraph on draft EIR p. 2-40, "[e]ach phase would include demolition, site preparation, grading, excavation, infrastructure modifications, and building construction, with some phases overlapping." The roadway improvements would be constructed in the corresponding phases shown in Figure 2-27, draft EIR p. 2-41, and are included in the analysis for relevant resource topics.

A comment also claims that construction can occur at any time and there should be assurances as to when construction would occur. As noted in the last paragraph on draft EIR p. 2-40, construction would occur between the hours of 7 a.m. and 8 p.m., five days a week. The EIR identifies specific construction activities

that would extend beyond construction hours, "which include concrete pours, utility work, site maintenance activities and material delivery and handling." Nighttime construction noise is analyzed in Section 3.C, Noise and Vibration, on draft EIR pp. 3.C-33 to 3.C-34. As described on draft EIR p. 3.C-33, the analysis conservatively assumes concrete pours for each phase to be 24 to 48 hours in duration and concludes that even with implementation of Mitigation Measure M-NO-1, it would not reduce noise increases to below the 45 dBA interior standard; therefore, the nighttime construction impact is identified as significant and unavoidable with mitigation. As noted on draft EIR p. 3.C-33, noise level increases in excess of 5 dBA over the ambient noise levels during nighttime work require a special permit under section 2908(d) and are subject to approval by the director of public works or building inspection, who weigh in on factors such as noise and sleep disturbance effects, economic hardship, and general public interest. The permit would prescribe conditions under which nighttime construction could occur. Therefore, the project sponsor and its contractor(s) are subject to regulations and permit processes by which nighttime construction is allowed to occur and would not occur at any time as stated in the comment.

4.C Cumulative Analysis [CU]

The comments and corresponding response in this section cover the subjects included in Draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, related to cumulative projects. The comment topics relate to:

- CU-1: Cumulative Projects

4.C.1 Comment CU-1: Cumulative Projects

This response addresses the following comments, which are quoted below:

I-Boken-3

I-Full-12

"The cumulative impacts should include not only SF State housing and Park Merced but also Balboa Reservoir;" *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-3, CU-1])*

"Page 3-7, Table 3-1, Key No. 2, paragraph 2. The first sentence is not complete. It is not possible to understand the full scope of the Parkmerced project based on the information provided in this table." *(Dave Full, Letter, 2/12/2023 [I-Full-12, CU-1])*

RESPONSE CU-1

The comments relate to cumulative projects identified in the draft EIR, which are considered in the draft EIR's analysis of cumulative impacts.

A comment states that the cumulative projects considered in the draft EIR should include the Balboa Reservoir project.

In response to the comment, as discussed in the Approach to Cumulative Impact Analysis, pp. 3-5 through 3-6, in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, two approaches to a cumulative impact analysis are provided in CEQA Guidelines section 15130(b)(1). The analysis can be based on a list of present and probable future projects producing related or cumulative impacts, or a summary of projections contained in a general plan or related planning document. As discussed in the aforementioned approach to the cumulative impact analysis, the following factors have been used to determine an appropriate list of projects to be considered in the draft EIR's cumulative impact analysis:

- **Similar Environmental Impacts.** A relevant project contributes to effects on resources that are also affected by the proposed project. A relevant future project or plan is defined as one that is "reasonably foreseeable," such as a proposed project for which an application has been filed with the approving agency or has approved funding, or an approved plan that amended the land use controls applicable to an adjacent neighborhood.
- **Geographic Scope and Location.** A relevant project is located within the defined geographic scope for the cumulative effect.
- **Timing and Duration of Implementation.** Effects associated with activities for a relevant project (e.g., short-term construction or demolition, or long-term operations) would likely coincide in timing with the effects of the proposed project.

As further discussed in the aforementioned approach to the cumulative impact analysis, the analyses in the draft EIR and the initial study (included as Appendix B to the draft EIR) employ a list-based approach and projections-based approach, depending on the environmental topic analyzed. For instance, the cumulative analysis for noise considers individual projects that are anticipated to occur in the project site vicinity that may affect noise-sensitive receptors also affected by the proposed project (list-based approach). By comparison, the cumulative utilities analysis relies on a projection of overall citywide growth and other reasonably foreseeable projects, which is the typical methodology the planning department applies to analysis of utilities impacts (projections-based approach).

For the resource topics using the list-based approach, draft EIR Table 3-1, pp. 3-7 to 3-8, presents a comprehensive list of cumulative development and infrastructure projects generally located within a 0.5-mile radius of the project site that are considered in the various cumulative analyses. These cumulative projects are projects that are currently under review by the planning department or for which a building permit is on file or was approved by the San Francisco Department of Building Inspection (building department). The Balboa Reservoir project was approved in August 2020. The Balboa Reservoir project site is north of the Ocean Avenue commercial district, west of the City College of San Francisco Ocean Campus, east of the Westwood Park neighborhood, and south of Archbishop Riordan High School, approximately 1 mile east of the project site. The Balboa Reservoir project is not located within the defined geographic scope (i.e., within a 0.5-mile radius of the project site) for the analysis of cumulative effects and is therefore not included in the list of projects to be considered in the draft EIR cumulative impact analysis. The 0.5-mile radius for the list-based approach was determined by the planning department to be the appropriate geographic scope for localized cumulative effects because impacts beyond that geographic scope grow more diffuse and therefore unlikely with increased distance beyond the 0.5-mile radius. The Balboa Reservoir project is reflected in the projected citywide growth assumptions applicable to other topics such as utilities impacts or traffic growth.

A comment states that the first sentence of the second paragraph in the description of the Parkmerced project in Table 3-1 on draft EIR p. 3-7 is not complete, and it is not possible to understand the full scope of the Parkmerced project based on the information provided in this table.

In response to the comment, the comment correctly identifies that the first sentence of the second paragraph in the description of the Parkmerced project in draft EIR Table 3-1 is incomplete. This is a typographical error. In response to this comment, the description of the Parkmerced project in Table 3-1 on draft EIR p. 3-7 was revised as follows:

> **Parkmerced (2008.0021ENV)**
>
> Subsequent phases of the Parkmerced project would add up to 5,679 new residential units to the 152-acre site's existing 3,221 housing units. It would also provide new commercial and retail services and open space. The transportation plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood and would include rerouting of the M-line light rail through the development and five major intersection improvements (including State Route 1/19th Ave), and structured underground parking beneath each block.
>
> The full project has a 15- to 30-year construction horizon, and would include demolition of existing buildings, utility relocation, site clearance, and grading. At buildout, the project would consist of approximately 8,900 dwelling units (including approximately 5,679 new units), approximately 6,252 net new spaces, 310,000 gross square feet of commercial use, 25,000 square feet of educational use, and 164,000 gross square feet of other uses (100,000 square feet of building and maintenance use, and 64,000 square feet of recreation/fitness center/community center).

The commenter's assertion that it is not possible to understand the full scope of the Parkmerced project based on the information provided in Table 3-1 is not supported. The relevant details of the Parkmerced project are provided in Table 3-1 of the draft EIR, and the inadvertent typographical omission that site preparation would include utility relocation, site clearance, and grading, which are typical components of site development, does not preclude an understanding of the scope of the Parkmerced project as relevant to the draft EIR's analysis related to cumulative impacts. In addition, the Parkmerced project is reflected in the projected citywide growth assumptions and therefore accounted for in the draft EIR's analysis related to cumulative impacts.

4.D Historic Architectural Resources [CR]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.A, Historic Architectural Resources. The comment topics relate to:

- CR-1: Historic Architectural Resources Analysis
- CR-2: Original Purpose of the Stonestown Mall

4.D.1 Comment CR-1: Historic Architectural Resources Analysis

This response addresses the following comments, which are quoted below:

A-CPC-Moore-3

A-HPC-1

I-Full-13

I-Full-15

"The other thing -- and that is my own personal comment, probably not really a DEIR comment -- the New Formalist-styled theater and its value kind of somewhat eludes me. I will be very honest. I have looked at it. I've been there.

The site is complicated due to the fact that the theater is actually in a bowl, so to speak, which makes the usability of that particular site, even in -- under any theater configuration difficult because the theater, as it is built, does not meet ADA requirements of how you get there.

That said, I would like to see a slightly larger elaboration historically, with pictures or whatever, to explain the New Formalist style. Having practiced in my field and my entire education, which is quite extensive, in architecture and architectural history, et cetera, the style of New Formalist has never crossed my desk. And it may be a regional expression. There is obviously similar styles practiced by Eero Saarinen with concrete that takes form similar to what's attempted here.

Without trying to sound facetious, I would like to see a slightly more in-depth explanation of the value of this building and its stylistic importance." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-3, CR-1])*

"The HPC had no comments on the analysis of historic resources on the site and found the analysis to be accurate. Some commissioners expressed their preference regarding the architectural style of the theater." *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-1, CR-1])*

"Page 3.A-9, Section 3.A.3, paragraph 1. It is news to residents in the vicinity of Stonestown that the project site is in the Lakeshore area of San Francisco. This is basic information and does not lead to confidence in the quality of the EIR.

Page 3.A-9, Section 3.A.3, paragraph 2. There is a description of the single-family homes east of the project site and an indication that they are Category B properties. Why is there no similar description of the single-family homes of Merced Manor, immediately north of the project site. This neighborhood was developed in the 1930s and has greater potential for being considered historic than the neighborhood east of 19th Avenue that was developed in the 1930s. This is a major oversight in the EIR and an analysis of the Merced Manor neighborhood and the impacts to the historic character of the neighborhood needs to be addressed in the EIR.

Page 3.A-15, paragraph 3. Something is not quite right with the first sentence. How can the building function as a twin theater from 1970 through 2020 and also acknowledge that the single auditorium was bisected in 1973?" *(Dave Full, Letter, 2/12/2023 [I-Full-13, CR-1])*

"Page 3.A-24, Impact CR-2. This impact analysis is not complete. Given that the EIR does not recognize the potential for Merced Manor to be a neighborhood with historic and architectural resources, this analysis is not complete. The EIR needs to include such an analysis." *(Dave Full, Letter, 2/12/2023 [I-Full-15, CR-1])*

RESPONSE CR-1

The comments relate to the value of New Formalism as an architectural style and consideration of adjacent neighborhoods, specifically Merced Manor, as a historic resource. Comments request additional discussion regarding the architectural stye attributed to the UA Stonestown Twin Theater and note that the historic architectural resources analysis is accurate. Comments express concern for the adequacy of the analysis pertaining to impacts on Merced Manor, the neighborhood immediately north of the project site, and question the architectural terminology and phrasing used in discrete sentences in the draft EIR.

A comment pertains to the characterization of the UA Stonestown Twin Theater as an example of the New Formalism style of architecture. The stylistic designation of this building as New Formalist appeared in the 2011 *San Francisco Modern Architecture and Landscape Design 1935–1970 Historic Context Statement*,[22] and the 2022 historic resource evaluation continued to identify the theater as an example of the New Formalism style (see draft EIR Appendix C.1). As part of their review of the draft historic resource evaluation, planning department preservation staff requested that a more thorough discussion of the style be included in the final draft historic resource evaluation. A separate memo was prepared, and its contents were "inserted in full" into the final draft.[23] The commenter is directed to the historic context statement (specifically p. 134 and several other references throughout the document) and the final historic resource evaluation (see draft EIR Appendix C.1, specifically pp. 107–113) for more information about the national and international context for the New Formalism style of architecture embodied by the UA Stonestown Twin Theater.

In response to the comment, the text on draft EIR p. 3.A-15 was revised to expand upon the local use of New Formalism:

> Compared to many other midcentury modern styles of architecture defined in the *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, New Formalism buildings in San Francisco are relatively rare. This style was most often applied to banks designed from 1963 into the 1970s, including the buildings at 275 Ellis Street (built in 1963, extant), 4947 Third Street (built in 1964, extant), and 2500 Mission Street (built in 1968, extant).[52] Larger-scale examples of institutional buildings in San Francisco designed in the New Formalism style include Kendrick Hall at the University of San Francisco (2100 Fulton Street, built in 1962, extant) and St. Mark's Urban Life Center (1031 Franklin Street, built in 1965, extant).[53] Architects associated with the New Formalism style in San Francisco include George K. Raad (who designed the UA Stonestown Twin Theater at 501 Buckingham Way); Wurster, Bernardi & Emmons; and Milton Pflueger.[54]
>
> <u>The UA Stonestown Twin Theater illustrates the New Formalist style through its strict symmetry, the round-arch, groin-vaulted colonnade that encloses three sides of theater lobby, its flat projecting roofline, the use of extensive glazing to enclose the theater lobby, and the presence of a small</u>

[22] San Francisco Planning Department, *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, January 2011, p. 134.
[23] Page & Turnbull, "Additional Content on New Formalism and the UA Stonestown Twin Theater for Stonestown Galleria HRE," prepared for the San Francisco Planning Department, April 12, 2022, p. 1.

> sunken courtyard with large aggregate concrete hardscaping and landscaping within concrete planters. The theater demonstrates nearly all of the features that are considered characteristic of the style, apart from a use of high-quality materials like stone. While the building's stylistic elements are limited to its front portion which encloses the lobby, as a freestanding building with a front plaza, the building is more expressive of the formal nature of New Formalism, providing an open-air arcade along three faces of the lobby, articulating the cross-vaulted groined arches, and carrying these design elements into the interior with the inclusion of blind arches along the rear wall of the lobby. The building is an excellent example of the New Formalist style along its primary façade, while the rear of the building is entirely undecorated, in keeping with movie theater typologies that prioritize the decoration of the public-facing façades and entrances of the building.

Additionally, a comment notes a preference for the architectural style of the UA Stonestown Twin Theater and states that the analysis presented in draft EIR Section 3.A is accurate. The comment is noted, and no further response is required.

Comments pertain to the consideration of adjacent neighborhoods—specifically the Merced Manor neighborhood—to include potential historic architectural resources. On draft EIR p. 3.A-9, it is stated that "potential historic and identified historic resources in the project vicinity and within the project site are shown in Figure 3.A-1 and described below." The Merced Manor neighborhood, while not identified by name in draft EIR Section 3.A, Historic Architectural Resources, is subsequently described on draft EIR p. 3.A-11 as "Properties north of the project site include single family homes just north of Eucalyptus Avenue" and is also identified in Figure 3.A-1 as "Age-Eligible Potential Historic Architectural Resources." Such resources are considered by the planning department to be Category B properties, meaning that they are at least 50 years old and have not been evaluated for historic significance. Regarding potential impacts related to potential historic architectural resources adjacent to the project site, the commenter is directed to the analysis under Impact CR-2 on draft EIR pp. 3.A-24 through 3.A-26, which specifically analyzes whether the proposed project or variant would result in a substantial adverse change in the significance of an adjacent historical resource. As stated in the analysis, the proposed project or variant would not have a significant impact on the setting of adjacent potential historic architectural resources due to the distance between the potential historic architectural resources and the project site. Furthermore, as discussed on draft EIR p. 3.A-25, the overall size, scale, and location of the buildings proposed to be located along the northern boundary of the project site were determined by planning department preservation staff to be compatible with the scale and location of the surrounding properties and therefore would not have the potential to significantly impact any of these adjacent potential historic architectural resources. For these reasons, the Impact CR-2 analysis is complete, and no further response is required.

A comment also raises concerns regarding the nomenclature used in two discrete sentences in draft EIR Section 3.A. Regarding the name of the neighborhood where the project site is located, the planning department considers the project site and all areas surrounding Lake Merced as being located within the greater Lakeshore neighborhood.[24] The commenter is directed to the San Francisco Property Information Map available online at https://sfplanninggis.org/pim/map.html. Therefore, the draft EIR correctly identifies the geographic setting of the project site and vicinity and correctly refers to it by the planning department's

[24] San Francisco Planning Department, San Francisco Property Information Map, https://sfplanninggis.org/pim/map.html, accessed March 15, 2023. Under the "Property" tab, check the "Neighborhoods" box to see the planning department's recognized neighborhoods.

designation although it may also be known in the community or in other documents by different names in documents not associated with planning department classifications.

In response to a comment, the third paragraph of draft EIR p. 3.A-15 was revised for clarity:

> The building functioned continuously as ~~the UA Stonestown Twin Theater~~ a movie theater from 1970 to 2020, and it has been minimally altered. ~~In 1973~~ Originally known as the UA Cinema Stonestown Theater, the ~~original~~ single auditorium was bisected in 1973 to create two smaller auditoriums, and it was renamed the UA Stonestown Twin Theater at that time. In 1998, amenities including a drinking fountain and public telephone were added, and renovations including new auditorium doors and improved restrooms were completed. That same year, the primary (east) façade was altered to include a new accessible entrance. Most recently, the roof was covered with built-up roofing in 2016.

4.D.2 Comment CR-2: Original Purpose of the Stonestown Mall

This response addresses the following comment, which is quoted below:

> I-Conroy2-7
>
> ---
>
> "In the 'history' section of the Draft EIR, there is no discussion of the public process by which the Stonestown Mall was first established. The EIR should analyze the initial purpose of the Stonestown Mall as described in the Planning Department documents governing the establishment of the mall, consider the benefits to the surrounding neighborhoods as expressed in those documents, and determine the negative impacts caused by the deviation from the parameters originally established for the Stonestown Mall." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-7, CR-2])*
>
> ---

RESPONSE CR-2

Draft EIR Section 3.A presents a summary of the historic development of the Stonestown Galleria Complex, which is discussed in greater detail in the historic resource evaluation (see draft EIR Appendix C.1). For the purposes of CEQA, effects on the environment are assessed through comparison of the existing conditions to changed conditions that may result from a project. Draft EIR Section 3.A assesses environmental effects on historic architectural resources. As determined in the historic resource evaluation response (see draft EIR Appendix C.3), the Stonestown Galleria Complex is not considered a historic architectural resource for purposes of CEQA. Therefore, an analysis of the initial purpose or original approval process of the Stonestown Galleria Complex as compared to its current purpose and that of the proposed project is not included in draft EIR Section 3.A because the Stonestown Galleria Complex is not considered a historic architectural resource. No further response is required.

4.E Transportation and Circulation [TR]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.B, Transportation and Circulation. References to the variant in this section also apply for the

revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topics relate to:

- TR-1: VMT Analysis
- TR-2: Pedestrian and Bicycle Safety Impacts
- TR-3: Transit Impacts
- TR-4: Transportation Analysis Methodology
- TR-5: Construction Traffic Plan
- TR-6: Characterization of 20th Avenue

4.E.1 Comment TR-1: VMT Analysis

This response addresses the following comments, which are quoted below:

I-Full-24

I-Pilpel-10

I-Riley-2

"Page 3.B-70, Induced Automobile Travel, paragraph 2. The statement that the 'features fit within the general types of project that would not substantially induce automobile travel' is not supported by any evidence. This project includes all sorts of development that WOULD induce automobile travel. Much more evidence is needed to back up this statement because the traffic volumes presented in Appendix D.1 show that there would be an increase in traffic as a result of the proposed project. That is the very definition of 'induced automobile travel'. As a result, there is no way to conclude that the project would NOT significantly increase traffic on local streets. This is a major flaw in the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-24, TR-1])*

"9. I found no coherent discussion in the Draft EIR of Vehicles Miled Traveled (VMT), energy consumption from being stuck in traffic, or emergency evacuation methods and routes.

10. The Draft EIR implausibly claims that the Project would have no impacts on VMT. New high-rises with thousands of residential units will of course impact VMT, which must be analyzed and mitigated." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-10, TR-1])*

"However, after reviewing the Environmental Impact Report, and as a resident that lives directly across the street from the mall, I am deeply concerned with three specific areas that the development will have on our neighborhood. The addition of 2,930 residences and a hotel will surely impact traffic, public transportation and emergency services.

As a neighbor I have first hand experience in observing the congestion that currently exists, the air quality issues that additional vehicles will add, and the need for additional transportation options and staffing for

emergency responders. I recommend scaling the project down in size to be less invasive." *(Christine Riley, Letter, 2/13/2023 [I-Riley-2, TR-1])*

RESPONSE TR-1

Several commenters express concerns regarding the impact of project-generated traffic volume on area roadways and disagree with the draft EIR's less-than-significant determination of vehicle miles traveled (VMT) impact. Commenters state that the proposed land uses and project-generated traffic would affect traffic, public transit, and emergency services and seek analysis of the proposed project and variant's impact on evacuation routes. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

As discussed below, the draft EIR adequately analyzed the impact of project-generated traffic volume on VMT, induced automobile travel, emergency access, and public transportation in the study area. Comments regarding traffic and congestion associated with development of the proposed project are addressed under Response GC-NON-CEQA-5: Non-CEQA Transportation Impacts, p. 4-133.

One commentor incorrectly states that there is no coherent discussion of VMT, energy consumption from being stuck in traffic, or emergency evacuation methods and routes. To the contrary, the draft EIR analysis provides analysis and discussion of project effects on VMT in EIR pp. 3.B-70 through 3.B-71. Energy consumption from sitting in traffic is not relevant to CEQA findings because VMT is more directly related to environmental impacts.[25] Discussion of the adequacy of emergency evacuation routes is provided in Response TR-4.

The comments incorrectly state that the draft EIR lacks evidence to support the conclusions regarding VMT and induced automobile travel. The draft EIR analysis does not rely on total VMT to assess the VMT efficiency of the project. The analysis uses VMT efficiency metrics (per capita or per employee) for thresholds of significance, consistent with standard and accepted department practice.[26] VMT per capita reductions mean that individuals will, on average, travel less by automobile than previously but, because the population will continue to grow, it may not mean an overall reduction in the number of miles driven. Impact TR-5 on draft EIR pp. 3.B-70 through 3.B-71and Impact C-TR-4 on draft EIR p. 3.B-84 address how the proposed project or variant meets the department's VMT efficiency screening criteria, which demonstrates how the project or variant would not cause substantial additional VMT on a per-capita basis.

The draft EIR, on p.3.B-71, states that certain features of the proposed project or variant, which qualify as "Active Transportation, Rightsizing, and Transit Projects" and "Other Minor Transportation Projects," fit within the general types of projects that would not substantially induce automobile travel. The commenters incorrectly state that the statement is not supported by any evidence. Appendix L of the planning department's Transportation Impact Analysis Guidelines (SF transportation guidelines)[27] provides the

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[25] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA,* April 2018, https://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf.
[26] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update,* February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.
[27] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update,* February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.

substantial evidence that this type of infrastructure does not generate additional VMT.[28] The qualifying features are physical changes (transportation elements), as opposed to land use development. For these reasons, the analysis is adequate and meets CEQA requirements. VMT impacts under the revised variant are discussed in Chapter 2 of this RTC document.

A commenter opines that the proposed land uses would affect traffic, emergency access, and public transit, and recommends scaling down the project. The draft EIR follows the planning department's SF transportation guidelines to evaluate emergency access under Impact TR-3 (draft EIR pp. 3.B-63 through 3.B-65) and Impact C-TR-2 (draft EIR p. 3.B-78) and identified the impacts to be less than significant. The impact of increased demand for emergency services is discussed under Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105. For transit impacts, the draft EIR identified Mitigation Measures M-TR-4a, Reduce Project Vehicle Trips; M-TR-4b, Transit Travel Time Reduction Measure; and M-C-TR-3, Signal Coordination and Transit Signal Priority along 19th Avenue, to address the significant transit delay impacts identified under Impact TR-4 and Impact C-TR-3. Transit impacts under the revised variant are discussed in Chapter 2 of this RTC document. Under the revised variant, the project-level impact would be less than significant with mitigation, which is the same with the proposed project and different from the draft EIR variant. The cumulative impact would be the same as the proposed project and draft EIR variant and would be significant and unavoidable with mitigation. The comment does not provide evidence that the draft EIR's analysis on those topics is inadequate. The commenter is also referred to Response AL-4, Adequacy and Reasonable Range of Alternatives, on p. 4-86.

4.E.2 Comment TR-2: Pedestrian and Bicycle Safety Impacts

This response addresses the following comments, which are quoted below:

I-Chang-3

I-Full-6

I-Full-21

I-Kashi-2

I-LBirsinger-4

I-Will-1

O-SFSU-3

O-SFSU-4

I-Parthasarathy-1

I-Naraghi-1

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[28] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Appendix L Vehicle Miles Traveled (VMT)/ Induced Automobile Travel*, February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.
Page L-11 describes the methodology for assessing a transportation project's impacts to VMT. Existing research supporting the methodology are presented in Attachment C of the appendix.

"(3) We have a lot of foot traffic near the Stonestown mall, with the increase of traffic and populations, it will likely to have more car/pedestrians accidents." *(Mary Chang, Letter, 2/7/2023 [I-Chang-3, TR-2])*

"Page 2-34, Figure 2-22. An explanation is needed for how bicyclists will be safe when transitioning from one-way bikeway each of 20th Avenue on Winston Drive to a two-way bikeway west of 20th Avenue on Winston Drive. Will there be a separate traffic signal cycle for bicyclists traveling westbound through the intersection? Given the Safe Streets initiative in the City of San Francisco, this needs to be addressed. In a similar fashion explain the same transition at the intersection of 20th Avenue and Eucalyptus Drive and at the intersection of Buckingham Way and Winston Drive." *(Dave Full, Letter, 2/12/2023 [I-Full-6, TR-2])*

"Page 3.B-57, Impact TR-2. As stated in the comments on page 2-34, there is no analysis of the impacts associated with bicyclists needing to weave through intersections and the impact on the safety of bicyclists as a result of the location of the bike lanes. This analysis needs to be included in the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-21, TR-2])*

"If you review the record drawings for 19th Avenue, you would notice that the side slope from the back of the sidewalk towards the property lines on Lakeside is cut to a 1:1 slope over imported sand. This is why the sidewalk on 19th Avenue is useless and constantly covered with soil and vegetation. Public sidewalk should have been protected with retaining walls decades ago. Once again, deferred maintenence has made the sidewalk vulnerable which burdens the Stonestown Development." *(Kevin Kashi, Letter, 2/8/2023 [I-Kashi-2, TR-2])*

"**Section 3.2. Traffic**

- Of particular concern is for pedestrians crossing at the intersections of 19th and 20th Avenues at Winston and Eucalyptus. These pedestrians are students, shoppers, and residents walking to and from public transportation." *(Laura Birsinger, Letter, 2/5/2023 [I-LBirsinger-4, TR-2])*

"Please provide safe access during all phases of construction between the student-accessed pathway in Rolph Nichol park and the stop-sign controlled crosswalk on Buckingham Way in front of the existing movie theater for Lowell High School students to access the Stonestown Mall during the 10-years planned development. Lowell High School is a neighbor of the Stonestown mall, and is the biggest high school in San Francisco with 2,800 students. Lowell students are frequent mall customers both during lunch and after school." *(Tina Will, Letter, 2/3/2023 [I-Will-1, TR-2])*

"3) Pedestrian and Bicycle Connections: Currently, there is a great deal of pedestrian and bicycle activity between SF State and the project site. We expect this level of activity to increase significantly under the proposed project—both from residents and patrons of the Sonestown site, as well as residents and students at SF State. It will be critical that bike and pedestrian routes are mutually planned and

implanted to ensure safe and clear paths of travel. Ample bicycle parking will also be needed to support this effort." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-3, TR-2])*

"4) Street Configuration: Please assess the proposed layout of both Buckingham Way and Winston Drive, as they relate to the anticipated increase in travel between SF State and the project site. We expect that many students, faculty and staff who live on campus or who will live at the project site and walk to SF State will cross one or both of these streets. Safe passage, clear paths of travel, and appropriate vehicle signals will be critical to support this activity." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-4, TR-2])*

"Hello, I am a homeowner in Lakeside and am writing to express my concern about the environmental impact of the proposed Stonestown project. I am particularly concerned about the traffic on Winston Drive and 19th Avenue, the resulting decrease in air quality (which is already noticeable the closer you get to 19th avenue) and hazards to pedestrians. The traffic situation at the corner of Winston & 19th is already quite bad: I have witnessed multiple accidents and was personally almost run over by a car. I am particularly concerned for the many schoolchildren in the area." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-1, TR-2])*

"My family has been living in the Lakeside neighborhood since 2010 and like the close proximity to Stonestown and the other retail outlets in the area. As it is, the traffic congestion has become much more dense. We feel the Stonestown redevelopment will adversely affect the standard of living in our neighborhood due to the following factors:

1. Congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues." *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-1, TR-2])*

RESPONSE TR-2

The commenters express concerns regarding potential increases of pedestrian-related collisions due to additional vehicle traffic generated by the proposed project or variant and state that the project should provide safe bike and pedestrian access to the project site during construction and after project completion.

As discussed below, the draft EIR adequately analyzed the potential impacts to pedestrians and bicyclists that would result from the construction and operation of the proposed project and variant. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

Responses to comments are organized as follows:

- Construction Impacts

- Operational Impacts
  - Intersection Safety
  - Proposed Walking and Bicycling Infrastructure
  - Pedestrian Access

CONSTRUCTION IMPACTS

Commenters state that nearby school students access the Stonestown Galleria shopping mall during lunch time and after school and that the proposed project or variant should provide safe access to the mall during all phases of construction. Section 3.B, Transportation and Circulation, in the draft EIR documents the requirements regarding potentially hazardous conditions and accessibility during construction on pp. 3.B-51 to 3.B-53, which include providing a 4-foot-wide clear path of travel on any public sidewalk at all times when a sidewalk is closed during construction activities. The analysis also identifies Mitigation Measure M-TR-1 to apply to both public and private streets, which requires the project sponsor to submit a plan to the City for approval that would demonstrate how the proposed project or variant's construction contractor(s) would reduce potential conflicts with people walking or bicycling and minimize sidewalk closures.

OPERATIONAL IMPACTS

INTERSECTION SAFETY

Several comments refer to increased automobile, pedestrian, and bicycle activity under the proposed project or variant and express concern regarding collisions. The intersections of concern mentioned by the commenters are:

- 19th Avenue/Winston Drive
- 19th Avenue/Eucalyptus Drive
- 20th Avenue/Winston Drive
- 20th Avenue/Eucalyptus Drive
- Buckingham Way/Winston Drive

The draft EIR assesses whether the proposed project or variant would create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations under Impact TR-2 on pp. 3.B-57 through 3.B-63. For purposes of CEQA, an impact is considered significant if it would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. Hazardous conditions include engineering aspects of a project (e.g., speed, turning movements, complex designs, substantial distance between street crossings, sight lines) that may cause a greater risk of collisions that result in serious or fatal physical injury. Existing walking and bicycling conditions, including collision history and general impediments to walking, are described on draft EIR pp. 3.B-7 through 3.B-12. Existing walking impediments identified at the intersections mentioned above are lack of marked crosswalks (at the south leg of 19th Avenue/Winston Drive and the east leg of 20th Avenue/Winston Drive) and multiple turn lanes, which create long pedestrian crossing distances and increased exposure to risk for people walking compared to single turn lanes (at 19th Avenue/Winston Drive and 19th Avenue/Eucalyptus Drive).

The additional vehicle trips generated by the proposed project or variant have been considered and the five intersections mentioned by the commenters are analyzed in the draft EIR. The analysis identifies potential queue spillovers from 19th Avenue to 20th Avenue at both Winston Drive and Eucalyptus Drive intersections during weekday p.m. peak hour. However, because the proposed project or variant would not introduce design features that would block sightlines or increase vehicle speeds as compared to existing conditions, the draft EIR concludes that the proposed project or variant would not create potentially hazardous conditions and no mitigation measures are required. Furthermore, the project or variant proposes a series of modifications at those intersections (and other study area intersections and roadway segments) that would improve safety for people walking or biking. These modifications are described in Section 2.D.8, Transportation and Circulation Plan, on draft EIR pp. 2-20 to 2-32 and in Section 2.B, Summary of Revisions to the Proposed Project, on p. 2-2. and include:

- Removing existing channelized right-turn lanes ("slip lanes")
- Reducing lanes and restricting turning movements
- Providing additional crosswalks
- Providing bike facilities including Class I, Class III, and Class IV facilities

The modifications would be implemented with the proposed project or variant and would promote slower speeds along study area roadways and would reduce the number and type of potential conflicts among competing travel modes at the intersections where commenters raised concerns.

The revised variant would implement the same modifications except that it would retain the separated westbound right-turn on Winson Drive at 20th Avenue. As analyzed in Chapter 2 in this RTC, similar to the proposed project and draft EIR variant, the revised variant would not create potentially hazardous conditions and no mitigation measures are required.

PROPOSED WALKING AND BICYCLING INFRASTRUCTURE

Walking and bicycling accessibility to and within the project site are analyzed in the draft EIR under Impact TR-3 on pp. 3.B-63 through 3.B-65. As noted above, the proposed project or variant would provide infrastructure modifications that would enhance accessibility for people walking and bicycling to and through the project site.

One comment notes that ample bicycle parking will be necessary for the proposed project or variant but does not dispute the adequacy or accuracy of the draft EIR. The supply of bicycle parking is not a CEQA topic. For informational purposes, the draft EIR documents the proposed new bicycle parking spaces on p. 3.B-27 (1,130 in the proposed project and 1,176 in the draft EIR variant) and estimates weekday p.m. peak-hour bike trips on p. 3.B-34 (106 generated by the proposed project and 110 generated by the draft EIR variant). As presented in Chapter 2 of this RTC, the revised variant would provide 1,277 bicycle parking spaces (101 more than the draft EIR variant) and estimates 115 weekday p.m. peak-hour bike trips (five more than the draft EIR variant).

Several comments state that bicyclists would need to weave through intersections where one-way bike facilities transition into two-way bike facilities (or vice versa), and the draft EIR should analyze the corresponding safety impact. Contrary to these comments, this analysis is included in the draft EIR. As discussed under Impact TR-3 in the draft EIR, on pp. 3.B-63 through 3.B-65, the proposed project or variant

would provide signals to separate competing travel modes in space (dedicated paths) and/or time (dedicated signal phases) at intersections. This would also be provided under the revised variant, presented in Chapter 2 of this RTC document. The plans presented in the draft EIR are conceptual. As revised under Chapter 2 of this RTC, separated one-way and two-way bicycle lanes would be included. The project sponsor would also coordinate with SFMTA for detailed design to implement best practices and agency design standards that minimize the potential for conflict among competing travel modes at intersections. Based on this, the project, variant, or revised variant would not create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations.

A commenter opines on deferred sidewalk maintenance and states that the east side of 19th Avenue is covered by soil and vegetation. As discussed under draft EIR Impact TR-3 on p. 3.B-63, sidewalks provided by the proposed project or variant would conform to the Better Streets Plan, comply with the Americans with Disabilities Act (ADA), and provide streetscape elements to encourage walking. This comment addresses existing sidewalk conditions beyond the boundary of the project site and not the project impacts on sidewalks in the study area.

PEDESTRIAN ACCESS

A commenter states that many students, faculty, and staff of San Francisco State University (SFSU) would walk to and from the project site via Buckingham Way and Winston Drive. The commenter asks that the project provide safe pedestrian access along the two streets. As presented in draft EIR Table 3.B-10, on p. 3.B-34, walk trips (including those between SFSU and the project site) were considered in the trip generation and distribution process, and are reflected in the discussion of Impact TR-2, on draft EIR pp. 3.B-57 through 3.B-63, Impact TR-3, on draft EIR pp. 3.B-63 through 3.B-65, and Impact C-TR-2, on draft EIR p. 3.B-78. The draft EIR concludes that the proposed project or variant would not create potentially hazardous conditions for people walking and would not interfere with pedestrian accessibility to and from the site.

Furthermore, as part of the proposed project or variant, continuous sidewalks would be provided along Buckingham Way (North and South) and Winston Drive throughout the project site. The project or variant also proposes to add crosswalks at the following locations:

- North leg and east leg at 20th Avenue/Buckingham Way South
- North leg and east leg at Winston Drive/Winston Drive near Block S3
- North leg and west leg at Buckingham Way East/Street C

These features would reduce potential conflicts between pedestrians and other competing travel modes for pedestrians traveling between SFSU and the project site.

4.E.3 Comment TR-3: Transit Impacts

This response addresses the following comments, which are quoted below:

I-Chang-8

I-DeBaun-9

I-Full-23

I-Goodman-1

I-Goodman-3

I-Goodman-5

I-Herlihy1-12

I-Hong-2

I-Naraghi-12

I-Parthasarathy-13

I-Pilpel-3

I-Pilpel-4

I-Tsakalakis-3

O-SFSU-1

"(8) SFMTA streetcar platform is already at capacity during rush hours. can you address the impact of increased ridership." *(Mary Chang, Letter, 2/7/2023 [I-Chang-8, TR-3])*

"8. Section 3.2: The platform for the SFMTA streetcar on 19th Avenue and Holloway are already not adequate during peak times such as morning and evening rush hours. The impact this project will have on ridership must be addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-9, TR-3])*

"Page 3.B-65, MUNI Transit Service, paragraph 2. The 28R MUNI route has been suspended and should not be included in the transit analysis. In addition, Table 3-B-15 on page 3.B-66 and Table 3.B-19 on page 3.B-80 need to be revised to not include the 28R route to determine impacts associated with transit delay. The EIR preparers should search for '28R' and modify the analysis throughout the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-23, TR-3])*

"I attended the initial Stonestown proposal meetings and submitted comments in person on the need to look carefully at the transit options and alternatives to properly link and loop transit lines into and around the 3 major projects on the west side.

I also suggested and submitted some simple pencil sketches on an alternative for the M-Line and L-Taraval to be linked via SLOAT Blvd and the 20th Street being the connection point vs. the undergrounding of the M-Line through the Ocean Ave neighborhood and residential areas.

The suggestion was to help quicken the transit changes which have so far been negligent on all redevelopment projects since their inception.

The L-Taraval if linked back up Sloat deals with the loss of the ocean highway area and the need to bring the train line up to sunset blvd or loop the L-Taraval up sloat and to a 'T' intersection where the undergrounding could begin off of 19th Ave and on the broader sloat blvd area. The existing pumpkin patch site and Stern Grove music festival and outsidelands music festival could all benefit from the entry to stern grove and a mixed use redevelopment for access to the underground station at the pumpkin patch and run the train on 20th south into Stonestowns redevelopment area.

We had suggested the need to look at the YMCA (existing main facility) and the YMCA Annex and pet-co site as where the train would turn up along the existing ramp for cars exists, and bring it up level and alongside 19th Ave on the west side of the street across from Mercy HS. This could also become a new urban plaza with additional density and office space on both sides of the existing parking lot for the fitness sports center, and possible reworking of the church buildings as noted as possible future redevelopment sites.

There is a need to look comprehensively at ALL 3 projects and the lacking movement on the M-Line undergrounding or at or above grade. Using topography there is significant changes out to the Daly City BART station, and providing the direct linkage to Daly City BART is a key component of ANY mall redevelopment. The fact that Parkmerced and SFSU both ignored this entirely only making it a gesture with the SFMTA calling it Tier-5 future connections ignores the upfront need to get people out of there cars and onto the main transit linkages.

When this project and the other projects are in construction or moving forward, trucks, deliveries, and work crews will be at ALL sites, and it would be preferable to have access via public transportation already implemented vs lagging severely in changes and implementation.

We had discussed this also prior with Peter Albert who worked with the SFMTA on transit issues on the other initial projects.

The stonestown proposal cannot be expected to fix all the transit issues, but Parkmerced and SFSU also ignored the lacking MOU's an push and need to get a transit plan in place and moving forward. Due to the SFMTA being overly invested downtown they have missed a great opportunity to increase the linkages and equitable investment in transit on the westside of San Francisco.

The delays getting downtown and to other districts or future lines like the Geary system or future subway, and the presidio via sunset blvd indicates a lacking equitable policy on transit solutions across the board as a network system." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-1, TR-3])*

"The lack of traffic and transit coordination is highlighted by the turn at the Target, and Trader Joe's from Winston and the problems with timing and dangerous turning at this location, and the impacts of traffic flows from the sunset and 19th ave into and around the stonestown mall during school and work hours.

The other issue is the lack of forthright communication on the 1952 Interchange at Brotherhood Way, the Alemany 'fly-over' that connects to Daly City and south I-280 and the need to look at the Junniperro Serra intersection interchange out to daly city BART as a new entrance into SF and redevelopment project that addresses lacking transit connectivity, air-rights and redevelopment of Caltrans and BART property, and looks at including Daly City and there mall and office block tower area towards parkmerced and possibly plinthing over the freeway to improved pedestrian and housing options nearby. The Tier-5 level connection issues that are needed for federal funding and linkages and address of the older overpass clover-leaf and over-pass flyway is important as an egress route from the city, and infrastructure that is much older and needed to be changed and improved due to the pressures of redevelopment.

The cambon supermarket site also may cause a need for a station stop for muni at or above if it is redeveloped as a senior center and housing towers per John Jweinat's proposal, so the need to discuss the transit issues becomes a priority when you see the domino effect of redevelopment and lacking progress on the M-line or future extension to Daly City BART not even in initial planning for the M-Line or linkages to other bi-county transit hubs." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-3, TR-3])*

"I will attached any prior documents I have sent under separate email to be included in the comments for the EIR deadline for written comments.

Thank you for your time and consideration in the review of the SFMTA plans and the need to push all three developers to the table for a more robust and serious conversation on the transit changes that can help people get to the mall without a car, and connect other districts to the mall area." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-5, TR-3])*

"12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-12, TR-3])*

"After reviewing the document and as a shopper since the mid 1960's and ditching my car, I would like to entertain and see if Muni/MTA could make the 'M' some how make the stop at 19th and Winston a bit safer, i.e. run under ground in to the mall. Currently I believe there are plans to upgrade the 19th route. Currently there are several muni stops in the mall itself but are from the West Portal station and not from downtown via the tunnel. But lets save this for the RTC phase." *(Dennis Hong, Letter, 2/6/2023 [I-Hong-2, TR-3)*

"12) The impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-12,TR-3])*

"12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-13, TR-3])*

"3. The Draft EIR admits that the Project would cause 'significant and unavoidable impacts related to transportation and circulation, air quality, noise, historic architectural resources, and wind after implementation of mitigation measures.' The Draft EIR fails to fully address transportation and circulation impacts and air quality impacts. After admitting that the Project would 'substantially delay public transit,' the Draft EIR claims that impact is unavoidable. The Draft EIR does not adequately address or mitigate impacts on either automobiles or public transit." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-3, TR-3])*

"4. The environmental impacts must be addressed and not relegated to a Statement of Overriding Considerations (SOC). The impacts will have regional impacts, not just local impacts. 19th Avenue, part of State Route 1, connects the Golden Gate Bridge to Interstate 280 in Daly City." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-4, TR-3])*

"While there was discussion of public transportation in the EIR, there doesn't seem to be acknowledgement that the Mline is woefully inadequate today. **What will the Stonestown developers contribute financially to improving the Mline?** The Stonestown station has a small platform that barely accommodates passengers today. It also makes no sense for stations to be located above ground in the middle of the busy 6-lane 19th Avenue. The M-line should go underground from West Portal station so that trains can be longer and not muddle along with cars/ bicycles/ buses. Locating stations on the West side of 19th would remove the need for most passengers to cross 19th Avenue from the Mall. By comparison, there is relatively little demand for public transport from the low-density Lakeside district on the East side of 19th Avenue. The K should also go underground until at least after St. Francis Circle." *(Kath Tsakalakis, Letter, 12/23/2022 [I-Tsakalakis-3, TR-3])*

"1) Transit Services: With a significant increase in the anticipated number of transit riders on the SFMTA's M-Line, please analyze whether there may be value in any of the following approaches:

- A) extending platforms at stations along the corridor to permit three-car trains;
- B) extending the J-Church line to the Holloway/SFSU or Winston/Stonestown Stations, so that both the M and J lines can serve the project site and others in the vicinity." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-1, TR-3])*

RESPONSE TR-3

The comments opine on inadequate M Ocean View station platform capacity during peak hours and the approach to the transit analysis, and express concerns regarding lagging transit development and lack of coordination with existing land use and other proposed plans and suggest measures to improve transit service.

As discussed below, the EIR adequately analyzes the potential transit impacts that would result from the proposed project, draft EIR variant, and revised variant. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

The response is organized as follows:

- Muni Route 28R
- Transit Station Capacity
- Transit Mitigation Measures
- Cumulative Transit Impacts

MUNI ROUTE 28R

One commenter questions why the suspended Muni route 28R was included in the transit delay analysis.

As discussed in Appendix D.2, Transit Analysis Memorandum, the selection of transit routes to analyze, including the suspended Muni route 28R, were coordinated with SFMTA and were documented in the scope of work attached to the memorandum. The transit analysis memorandum scope of work states that a description of transit lines and stops would "reflect conditions prior to the COVID-19 pandemic (i.e., before March 2020), except for the changes the MTA made to the 57 and 58 during the pandemic and anticipates keeping after the pandemic." At the time the analysis conducted, the MTA anticipated Muni route 28R would be in service by fall 2023, well before the time the earliest phase of the Stonestown project is in operation (currently in 2028).[29] As of September 2023, Muni route 28R is in service.

TRANSIT STATION CAPACITY

Some comments seek impact analysis on Muni M Ocean View station capacity and associated measures to address issues, citing over-capacity conditions at the two stations near the project site (Stonestown/Lakeside/Winston and 19th Avenue and Holloway Avenue) during peak travel times.

Transit capacity or transit station capacity is not used to determine the significance of a transportation impact, by itself. This is consistent with guidance from the Governor's Office of Planning and Research, which recommends not treating the addition of new users on a transit system as a significant impact. As stated by the Governor's Office's Technical Advisory on Evaluating Transportation Impacts in CEQA:[30]

> *"When evaluating impacts to multimodal transportation networks, lead agencies generally should not treat the addition of new transit users as an adverse impact. An infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network."*

[29] Smith, Adam, Transportation Planner, San Francisco Municipal Transportation Agency, e-mail correspondence with Kei Zushi, Senior Planner, San Francisco Planning Department, October 12, 2023.
[30] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA,* April 2018, https://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf.

However, the addition of new transit users was considered for the draft EIR transit delay impact analysis in two ways:

1. As described on draft EIR pp. 3.B-42 and 3.B-43, passenger boarding delay is one of three components factored in the analysis. Table 11 in Draft EIR Appendix D.2, Transit Delay Analysis shows these detailed delays for each study transit route.
2. In addition, Draft EIR Appendix D.2, Transit Analysis Memorandum, assessed if the proposed project or variant may contribute increased transit ridership that would cause a transit line or route to exceed its 100 percent or "crush" capacity, requiring a reassessment of the estimated project mode share. The analysis shows that the increased ridership demand from the proposed project or variant would not cause ridership on K Ingleside Bus, T Third Street, or M Ocean View to exceed capacity. As shown in Table 17 in Draft EIR Appendix D.2, the proposed project and variant would add approximately 10 to 15 percent to existing ridership during the weekday p.m. peak hour at these platforms.

TRANSIT MITIGATION MEASURES

One comment questions how the project would mitigate the transit delay impacts. The draft EIR follows the planning department's SF transportation guidelines[31] to evaluate transit impacts and identified Mitigation Measures M-TR-4a, Reduce Project Vehicle Trips; M-TR-4b, Transit Travel Time Reduction Measure; and M-C-TR-3, Signal Coordination and Transit Signal Priority along 19th Avenue, to address the significant transit delay impacts identified under Impact TR-4 and Impact C-TR-3, which would apply to the proposed project, draft EIR variant, and revised variant. The proposed project's project-level impacts are less than significant but cumulative impacts are significant and unavoidable with mitigation. For the draft EIR variant, the impacts remain significant and unavoidable after mitigation at the project-level and cumulative conditions. The revised variant, as with the proposed project, has less-than-significant project-level transit delay impacts but would be significant and unavoidable with mitigation under cumulative conditions. Mitigation measures M-TR-4a, M-TR-4b, and M-C-TR-3 apply to the proposed project, draft EIR variant, and revised variant. The comments received on the draft EIR do not present evidence that the transportation analysis was inadequate, or that there would be any new significant impacts not addressed in the draft EIR or a substantial increase in the severity of impacts identified in the draft EIR.

Several comments propose measures to reduce transit delay and increase Muni Metro Rail station capacity or additional transit design features. The commenters propose a series of other possible measures or design features, as shown below:

- Underground K Ingleside Bus and/or M Ocean View
- Extend station platforms to permit three-car trains
- Extend J Church line to serve stations near the project site
- Financial contribution to Muni M-Ocean View route

As discussed below, the commenters do not raise feasible mitigation measures to address the project's significant environmental effects.

[31] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update,* February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.

CEQA Guidelines section 15126.2 states that "[a]n EIR shall identify and focus on the significant effects of the proposed project on the environment … the EIR shall also analyze any significant environmental effects the project might cause or risk exacerbating by bringing development and people into the area affected." In addition, under CEQA and US constitutional requirements, mitigation measures in an EIR must have an essential nexus (i.e., connection) between the mitigation measure and a legitimate government interest and the mitigation must be "roughly proportional" to the impacts of the project (CEQA Guidelines section 15126.4(a)(4)(A) and (B)). Mitigation measures are not required for effects that are not found to be significant (CEQA Guidelines section 15126.4(a)(3)).

The mitigation measures identified in the draft EIR meet these requirements. The Transit Analysis Memorandum identifies additional transit delay reduction strategies considered but rejected (p. 30).

Extending station platforms would improve passenger boarding and alighting time for Muni Metro Rail passengers. However, no significant delay impact was identified for the Muni Metro Rails in the draft EIR section. The suggestion would not be applicable to bus routes where significant delay was identified (Muni 57 Parkmerced, 28 19th Avenue and 28R 19th Avenue Rapid, and SamTrans 122). Similarly, other suggested measures (i.e., underground and extend Muni Metro Rail lines) would not reduce the significant delay identified on bus routes. The project sponsor cannot be required under CEQA to make a financial contribution to improve the operation of Muni M-Ocean View route because the project, variant, or revised variant would not result in a significant transit delay impact on the Muni route. However, for informational purposes, the project sponsor would be required to make a Transportation Sustainability Fee (TSF) contribution per Planning Code section 411A. TSF contributions are in place to fund the SFMTA and other regional transportation agencies in an effort to maintain the existing levels of transportation service as demands on the system grow.

CUMULATIVE TRANSIT IMPACTS

Several comments seek coordination with developers of Parkmerced and SFSU on transit improvements. As documented in draft EIR Table 3-1 on p. 3-7, both projects, along with other projects proposed within a 0.5-mile radius of the project site and other projects assumed in the future year projections, are considered under cumulative conditions in the analysis.

On draft EIR p. 3.B-83, the analysis also discusses an identified cumulative significant impact from the Parkmerced project on SamTrans Route 122 northbound. The Parkmerced EIR identified mitigation measures, including additional lane capacity along Lake Merced Boulevard and queue jump lanes along SamTrans Route 122.[32] If they were implemented, the significant cumulative impact would be reduced. However, as noted on draft EIR p. 3.B-83, the implementation of these mitigation measures cannot be guaranteed because they are tied to Parkmerced's construction and because the associated transit improvements have not been approved by public agencies (e.g., Caltrans) for construction at the time the Stonestown Development Project draft EIR was circulated for public review.

A commenter states that the draft EIR should address regional impacts on 19th Avenue. Cumulative transit delay is addressed under Impact C-TR-3 on draft EIR pp. 3.B-78 through 3.B-83. Under cumulative conditions, the proposed project or variant, in combination with anticipated future development, would increase transit delay and would exceed the significance threshold for Muni 57 Parkmerced, 28/28R combined, and SamTrans

[32] San Francisco Planning Department, *Parkmerced Project Final EIR*, November 18, 2010, https://sfplanning.org/project/parkmerced#info, accessed October 2, 2022.

Route 122. Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3 are identified to address the transit delay impact. However, the effectiveness of these mitigation measures cannot be guaranteed and, therefore, the draft EIR conservatively identifies the impact as significant and unavoidable. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated cumulative transit delay analysis related to the revised variant is provided in Chapter 2 of this RTC. Cumulative transit delay for Muni 57 Parkmerced, 28/28R combined, and SamTrans Route 122 under the revised variant would be slightly less than the proposed project or the draft EIR variant but would remain significant and unavoidable with mitigation.

Further transit coordination and infill development opportunities mentioned by commenters, such as rerouting transit lines and converting existing land use to high-density urban plaza, aims to address transit and land use challenges beyond the scope of the environmental impact analysis of a single project. The discussion about infrastructure project prioritization and citywide equitable investment also exceeds the scope of impacts of the proposed project. As mentioned in this response above, mitigation measures in an EIR must be "roughly proportional" to the impacts of the project. The changes proposed by the commenters are noted but are beyond the purview of this draft EIR and not required to be addressed under CEQA. Note that the department consulted with the SFMTA, SamTrans, and Caltrans on the draft EIR.

4.E.4 Comment TR-4: Transportation Analysis Methodology

This response addresses the following comments, which are quoted below:

I-Boken-4

I-Full-4

I-Full-16

I-Full-19

I-Full-22

I-Hardeman-7

I-Herlihy1-1

I-LG-1

O-ITHA-1

O-WTPCC-1

"the issue of limited evacuation routes from the site should be investigated;" *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-4, TR-4])*

"Page 2-23, Figure 2-13. This figure shows a traffic signal at the intersection of Eucalyptus Drive and 20th Avenue. Was a traffic signal warrant study conducted for this intersection to determine that a traffic signal is needed? Where is the result of that study in the EIR? Also, the intersection of Buckingham Way and Winston Drive is proposed to continue to be a stop-sign-controlled intersection. Given that the traffic volumes at this

intersection are similar (as presented in Appendix D.1), why does this intersection not need a traffic signal?" *(Dave Full, Letter, 2/12/2023 [I-Full-4, TR-4])*

"Page 3.B-1, Section 3.B.2, paragraph 2. The statement that there is an 'unlikelihood of the project or variant to result in significant transportation and circulation impacts in those areas' is not supported by any evidence. This statement is arbitrary and baseless without any information to back it up.

Page 3.B-2, Figure 3.B-1. Why were the intersections of 20th Avenue and Ocean Avenue and 20th Avenue and Sloat Boulevard not included as a study intersection. The EIR indicates that 20th Avenue and Eucalyptus Drive is a 'secondary access' to the project site yet the intersections immediately north of this 'secondary access' are not included as study intersections and other intersections much farther removed from the project site included (e.g., Ocean Avenue and Ashton Avenue). This is a major flaw in the approach to analyzing traffic impacts." *(Dave Full, Letter, 2/12/2023 [I-Full-16, TR-4])*

"Page 3.B-30, paragraph 4. The text indicates that a Sunday peak period was chosen based on 'the size and type of land uses proposed by the project, as well as travel characteristics of the study area'. As a resident in the vicinity of Stonestown, Saturday traffic volumes in the neighborhood appear to be greater than that on Sunday. Unfortunately, the EIR does not provide any specific rationale for choosing Sunday over Saturday. A comparison of traffic volumes on those days should be provided.

Page 3.B-36, Table 3.B-11. The text on the preceding page does not provide any details as to how the percent reduction in vehicle trips due to internal trip capture was calculated. There is no information to verify the assumptions that were made for this internal trip capture. This information needs to be provided in the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-19, TR-4])*

"Page 3.B-59, paragraph 2. The EIR indicates that traffic queues on Eucalyptus Drive approaching 19th Avenue could extend back to 20th Avenue. However, there is no indication that any analysis was done to address vehicles that would choose NOT to turn right (eastbound) on Eucalyptus Drive from northbound 20th Avenue. Appendix D.1 indicates that the number of vehicles turning right would be 471 during the p.m. peak hour (or about 8 vehicles per minute). Given the traffic signal timing at the intersection of 19th Avenue and Eucalyptus Drive and the capacity of the roadway, this queue would occur for every traffic signal cycle. Thus, there is the potential for drivers to choose to travel northbound on 20th Avenue toward Ocean Avenue and Sloat Boulevard. No analysis of the ability for eastbound vehicles to queue at either 19th Avenue and Ocean Avenue or at 19th Avenue and Sloat Boulevard has been presented. Given the 20 percent in traffic volumes on 20th Avenue north of Eucalyptus Drive, this analysis should be presented in the EIR. In addition, this increase of 20 percent is on a neighborhood residential street. In accordance with the Better Streets Plan, a '*Neighborhood Residential streets are quieter residential streets with relatively low traffic volumes and speeds. Though they have low levels of activity relative to other street types, they plan a key role to support the social life of a neighborhood*.' An analysis of the impacts to this residential street need to be included in the EIR and mitigation measures to preserve the character of a neighborhood residential street need to be identified and provided." *(Dave Full, Letter, 2/12/2023 [I-Full-22, TR-4])*

"**3) THE TRAFFIC STUDY IS INADEQUATE**

Lowell high school has the largest enrollment of any school in the SFUSD, and is directly adjacent to the proposed tower. As indicated, each school day our neighborhood is inundated with over 3,500 students, primarily using Eucalyptus Ave (2,786 students at Lowell High School, 466 students at Lakeshore Elementary, and 306 students at St. Stephens). The vehicle traffic creates gridlock on Eucalyptus Ave from 22nd avenue to Middlefield Ave, and the streets running perpendicular to Eucalyptus, particularly 24th, 25th 26th, Inverness and Forest View Avenues. Yet, the traffic study not only downplayed the vehicle traffic, it also stopped at 25th Avenue. While the project itself ends parallel to 25th Ave, the effect of the project extends well to the west. The EIR does not adequately address the increased traffic in the area which as noted, is already at gridlock twice a day." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-7, TR-4])*

"1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-1, TR-4])*

- "Cumulative effect of multiple construction projects on traffic and mass transit (Chapter 3). The report only considers projects within a .5 mile radius, however, new residents of the large Balboa Reservoir project (1000+ units) can also be expected to patronize Stonestown and increase traffic congestion on Ocean Avenue and Holloway Avenue from City College to 19th Avenue." *(LG, Letter, 2/13/2023 [I-LG-1, TR-4])*

- "We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [O-ITHA-1, TR-4])*

- "We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA." *(Stephen Martin-Pinto, President, West of Twin Peaks Central Council, Letter, no date [O-WTPCC-1, TR-4])*

RESPONSE TR-4

The commenters opine on the adequacy of the transportation analysis methodology, including the geographic boundary used to select study intersections and the use of Sunday versus Saturday to evaluate peak weekend traffic conditions. Some comments seek clarification and additional analysis on various topics covered in the analysis, including adequacy of emergency evacuation routes, intersection signal warrants, and queue backups at intersections near the project site. Comments regarding studying and monitoring congestion and automobile delay are addressed in Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, p. 4-137. The details of these comments are included in the response below.

References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. Responses are organized as follows:

- Signalized Intersections
- Study Period
- Scope of the Analysis
- Trip Internalization Methodology
- Trip Diversion
- Emergency Evacuation Routes

SIGNALIZED INTERSECTIONS

A commenter requests that a traffic signal study be provided for the 20th Avenue/Eucalyptus Drive intersection, which is proposed to be signalized as part of the project or variant. The commenter also questions why Buckingham Way/Winston Drive is not proposed to be signalized as part of the proposed project or variant. In response to the comment, the study of whether a signal is warranted would either be within the purview of the project sponsor in coordination with SFMTA (if on public property) or the purview of the project sponsor and their design team if on private property. Therefore, the draft EIR transportation analysis evaluated the intersection layouts and traffic controls as defined by the project sponsor and proposes mitigation measures if the project results in significant impacts. At the Buckingham Way/Winston Drive intersection, the project or variant proposes to add signal control at the intersection, which is presented correctly on draft EIR p. 3.B-62. Figure 2-13 has been corrected, as described under Response PD-1, Project Description Comments/Questions, p. 4-5.

STUDY PERIOD

A commenter seeks clarification regarding the Sunday peak hour being chosen as a study period as opposed to the Saturday peak hour. The rationale, discussed on draft EIR p. 3.B-30 and on p. 4 in Appendix D.2, Transit Analysis Memorandum, cites the abundance of retail and church-related activity in and around the project site, which would occur on Sunday. The commenter does not provide supporting evidence why the Saturday peak hour should be used as opposed to Sunday peak hour. The analysis is not intended to represent every hour of every day but to represent the impacts that may occur at other time periods.

SCOPE OF THE ANALYSIS

The commenters seek additional traffic analysis as it relates to congestion and diversion of project traffic at the following locations:

- Adjacent neighborhoods, including Lakeside and Merced Manor
- Eucalyptus Avenue, west of the project site
- 19th Avenue connection to South I-280
- 20th Avenue/Ocean Avenue and 20th Avenue/Sloat Boulevard intersections
- Ocean Avenue/Cerritos Avenue and Junipero Serra Boulevard/Winston Drive intersections
- Ocean Avenue and Holloway Avenue from City College to 19th Avenue

The basis for selecting intersections is based on substantial evidence, including a series of conservative assumptions about the number of project-related vehicle trips and the potential to result in significant impacts (e.g., substantial transit delay, potentially hazardous conditions, accessibility), and the hourly distribution and routing of those trips. As documented in draft EIR Appendix D.1, Travel Demand Memorandum, and in the draft EIR on p. 3.B-37, the analysis assumes drivers would use available project entries and exits and take the most convenient route to their destinations. Given the variation in trip lengths, origins, and destinations, the draft EIR assumption that all drivers would take the same route from the project boundary is likely overly conservative. Additionally, travel demand is elastic with respect to congestion (the travel cost of time). In the event of increased congestion, some drivers would likely shift their departure and arrival times to avoid peak congestion, again implying that the draft EIR analysis is conservative with respect to the peak-hour condition. Thus, the analysis conducted in the draft EIR reflects representative worst-case transit delay impacts from project-generated traffic and expanding the transportation study area to include additional study intersections is not necessary.

Similarly, a commenter states that drivers making northbound right turns at 20th Avenue/Eucalyptus Drive to travel east might divert to 20th Avenue due to queue spillover, resulting in a 20 percent increase in traffic on 20th Avenue north of Eucalyptus Drive, and the draft EIR should incorporate the diversion in trip assignment and impact analysis, including further queuing analysis. The commenter correctly cites numbers used in the draft EIR analysis for northbound vehicles turning right (east) from 20th Avenue onto Eucalyptus Drive under existing plus project conditions. However, the commenter does not provide supporting evidence for the 20 percent increase described in the comment.

Table 3.B-2 of the draft EIR presents the vehicular counts at the 17 study intersections. The selection criteria used to identify study intersections are presented on draft EIR p. 3.B-1. The location of the 17 intersections is where the proposed project or variant could potentially significantly affect localized transportation and circulation. Vehicular counts were collected at the additional intersections and used for the operational analysis conducted to evaluate transit delay but were not presented as they are outside the transportation study area.

Although some diversion is possible, it is speculative to assume that 20 percent of northbound drivers would divert to 20th Avenue north of Eucalyptus Drive. No delay analysis was conducted on 20th Avenue north of the project site because that portion of the roadway does not serve any transit line, and thus, as detailed in Response GC-NON-CEQA-5, p. 4-137, the travel time delay is not relevant for CEQA analysis. The other

locations referenced by the commenters are farther from the project site. It is unlikely that all project-generated trips would take the same route at the same time of day and would be concentrated at any intersection from the project site. Therefore, the draft EIR concludes that the proposed project or variant would not add a significant number of trips to intersections outside the study area or create potentially hazardous conditions or significant accessibility impacts. Further queue-related diversion analysis is not necessary.

A comment questions the adequacy of the 0.5-mile radius used to evaluate cumulative traffic and transit impacts, as it may not consider large projects such as Balboa Reservoir. As discussed under Cumulative Conditions on draft EIR pp. 3.B-45 through 3.B-49, the analysis of cumulative conditions includes both (1) growth projected by the regional travel demand model (SF-CHAMP) and (2) active development projects and transportation network changes within a 0.5-mile radius of the project site. The SF-CHAMP projections appropriately account for traffic growth due to reasonably foreseeable future development, which includes the referenced Balboa Reservoir development project as well as other infrastructure and land use development projects anticipated to occur by the year 2050. Inputs to the SF CHAMP model are detailed on draft EIR p. 3.B-45.

A commenter (noted in Section 4.U.5) questioned the utility of providing "total entering vehicles." Table 3.B-2 on p. 3.B-5 shows "total entering vehicles" rather than traffic delay or congestion information. As noted in draft EIR pp. 3.B-3 through 3.B-5, "total entering vehicles" provides context, allowing for a comparison of the relative magnitude of traffic volume served at the study intersections. These multimodal turning movement counts were collected to inform the description of existing conditions and understand the volume of vehicles, pedestrians, and bicyclists within the study area. The vehicle turning movement counts were also used as an input to the transit impact analysis and the analysis in draft EIR Section 3.D, Air Quality and draft EIR Section 3.C, Noise and Vibration.

TRIP INTERNALIZATION METHODOLOGY

Some commenters opine on the trip generation methodology used in the draft EIR. The comments seek clarification on trip internalization methodology.

The internal trip capture methodology is presented on draft EIR p. 3.B-35. The assumptions are documented in draft EIR Appendix A of Appendix D.1, Travel Demand Memorandum, on pp. 37 through 38, which include:

- The daily trip capture estimates were calculated based on the assumption that the p.m. peak hour represents 9 percent of daily travel (i.e., dividing p.m. peak-hour numbers by 0.09 to achieve a daily estimate). The daily factor is based on the ratio of p.m. peak-hour person trips to daily person trips (4,998 weekday p.m. peak-hour person trips divided by 55,012 daily person trips).
- Internal Trip Capture rates are typically calibrated for weekday a.m. and p.m. peak-hour trips. The Sunday p.m. trip capture rate factors are determined by using the Sunday peak-hour trip estimates (adjusted weekday p.m. peak-hour trips).

Detailed internal trip capture calculations and a step-by-step approach are included in Appendix E of draft EIR Appendix D.1, Travel Demand Memorandum, on pp. 42 through 47.

EMERGENCY EVACUATION ROUTES

A commenter stated that the analysis should investigate evacuation routes. However, the draft EIR did provide relevant information and discussion. Figure 2-12 on draft EIR p. 2-22 shows the multiple ingress and egress routes serving the project site. Furthermore, as discussed under Impact TR-3 on draft EIR p. 3.B-64, prior to finalizing the design and dimensions of the internal street network and onsite pedestrian network, the project sponsor would coordinate the design details with the police and fire departments for review and approval, as required, to minimize the potential for impacts on emergency access, including evacuation routes, to the project site or adjacent locations.

4.E.5 Comment TR-5: Construction

This response addresses the following comments, which are quoted below:

I-Full-11

I-Full-20

"Page 2-42, Section 2.E.3. This section does not provide any information regarding a construction traffic plan. Will construction vehicles be restricted to certain streets? What guarantee is there that construction trucks will not use residential streets to access the project site? A construction traffic plan needs to be provided for that purpose." *(Dave Full, Letter, 2/12/2023 [I-Full-11, TR-5])*

"Page 3.B-55. Mitigation Measure M-TR-1. This mitigation measure needs to be expanded to require the construction coordination plan to designate routes to be used by construction vehicles accessing the project site. This plan needs to guarantee that construction truck traffic would not use residential streets in the vicinity of the project site." *(Dave Full, Letter, 2/12/2023 [I-Full-20, TR-7])*

RESPONSE TR-5

The commenters express concern regarding construction trucks using residential streets and states that a construction traffic plan should be provided.

As described below, the draft EIR has adequately analyzed and documented potential construction impacts under Impact TR-1.

As stated under Impact TR-1 in the draft EIR on pp. 3.B-49 to 3.B-56, prior to construction, as part of the construction permit process the project sponsor and construction contractor(s) would be required to meet with San Francisco Public Works and SFMTA staff to develop and review the construction plans for compliance with the blue book.[33] The project sponsor or contractor(s) would also be required to submit truck routing plans for review if deemed necessary by SFMTA. Construction-related traffic entering and leaving the project site would be required to comply with SFMTA street restrictions. The preliminary haul routes are discussed on p. 3.B-52, which includes I-280, Junipero Serra Boulevard, and 19th Avenue. With regard to residential streets in the vicinity of the project site, per San Francisco Street Restrictions Effective

[33] San Francisco Municipal Transportation Authority, Regulations for Working in San Francisco Streets, 8th Edition, January 2012, https://www.sfmta.com/sites/default/files/reports-and-documents/2020/06/blue_book_8th_edition_6-23-20.pdf, accessed October 2023.

December 2017,[34] vehicles that weigh three tons or more are prohibited on Everglade Drive between Eucalyptus Drive and Sloat Avenue with limited exemptions. Other streets within the project study area do not have restrictions on commercial or oversize vehicles.

In response to the comment, the fourth paragraph on draft EIR p. 3.B-52 was revised as follows:

> … Vehicles that weigh three tons or more are prohibited on Everglade Drive between Eucalyptus Drive and Sloat Avenue with limited exemptions. None of the other streets within the project study area ~~are~~ is restricted to commercial or oversize vehicles. …

4.E.6 Comment TR-6: Characterization of 20th Avenue

This response addresses the following comment, which is quoted below:

> I-Full-17
>
> ---
>
> "Page 3.B-4, Table 3.B-1. In this table, the Better Streets Plan Classification for 20th Avenue is listed as N/A. In a short search on-line, it is evident that 20th Avenue north of Eucalyptus Drive is a 'Neighborhood Residential' street. The EIR incorrectly considers 20th Avenue only as a street within the project site. This street also exists between Eucalyptus Drive and Sloat Boulevard and no effort has been made in the EIR to properly characterize this street. For example, this table indicates that MUNI route 57 travels on 20th Avenue. It does, but only as far north as Eucalyptus Drive. The EIR needs to make a distinction between the 20th Avenue on the project site and the 20th Avenue north of Eucalyptus Drive. This designation as a 'Neighborhood Residential' street is important when considering the impacts of the proposed project." *(Dave Full, Letter, 2/12/2023 [I-Full-17, TR-6])*
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> ---

RESPONSE TR-6

The commenter opines on the characterization of 20th Avenue and seeks additional analysis of the portion north of Eucalyptus Drive, which is designated as a Neighborhood Residential Street. The draft EIR adequately analyzes 20th Avenue, and no additional analysis is required.

The following text revisions clarify the distinction between 20th Avenue north of Eucalyptus Drive and 20th Avenue south of Eucalyptus Drive but do not change any of the impact determinations in the draft EIR, nor do they require that any additional analysis be conducted.

[34] SFMTA, San Francisco Street Restrictions Effective December 2017. Available online at: https://www.sfmta.com/sites/default/files/pdf_map/2017/12/streetrestrictions.pdf. Accessed July 6, 2023.

In response to the comment, draft EIR Table 3.B-1 on p. 3.B-4 has been revised as follows:

Table 3.B-1 Roadway Facilities in the Study Area

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
19th Avenue	N-S	3[d]	Vision Zero Network	Residential Throughway	28, 29, M	N/A
~~20th Avenue~~	~~N-S~~	~~1~~	~~N/A~~	~~N/A~~	~~57~~	~~Class III~~
20th Avenue (North of Eucalyptus Drive)	N-S	1	N/A	Neighborhood Residential	N/A	Class III
20th Avenue (South of Eucalyptus Drive)	N-S	1	N/A	N/A	57	Class III
Buckingham Way (North and South)	E-W	1	N/A	Neighborhood Residential	N/A	Class III
Eucalyptus Drive	E-W	1	N/A	Neighborhood Residential	57	—
Font Boulevard	E-W	1	N/A	Boulevard	57	Class III
Holloway Avenue	E-W	1	N/A	Neighborhood Residential	29	Class II
Junipero Serra Boulevard	N-S	3	N/A	Residential Throughway	KT	N/A
Lake Merced Boulevard	N-S	3	Vision Zero Network	Park Edge	57, 58, 18, 29, 122	Class I
Mercedes Way	E-W	1	N/A	Neighborhood Residential	N/A	N/A
Middlefield Drive	N-S	1	N/A	N/A	N/A	N/A
Ocean Avenue	E-W	2	N/A	Residential Throughway/ Commercial Throughway	KT	Class III
Portola Drive	N-S	1	N/A	Residential Throughway	KT, M, 57	Class IV
Sloat Boulevard	E-W	3	N/A	Park Edge/Residential Throughway	18, 58	Class III/ class IV
Sunset Boulevard	N-S	2	Vision Zero Network	Parkway	29	Class I
Wawona Street	E-W	1	N/A	Park Edge/Paseo/ Neighborhood Residential	N/A	N/A
West Portal Avenue	N-S	3	N/A	Residential Throughway	KT, M, 57	N/A

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
Winston Drive	E-W	2	N/A	Neighborhood Residential/ Neighborhood Commercial	58, 122	Class III

SOURCES: *San Francisco General Plan*, 2017; San Francisco Vision Zero High Injury Network, 2017; *San Francisco Better Streets Plan*, 2010

ABBREVIATIONS:

E-W = east–west; N-S = north–south; N/A = value not applicable

NOTES:

The descriptions associated with each street (Vision Zero network, Better Streets Plan Classification, Transit Routes, etc.) are those that apply to some portion of the street near the project site and may not apply to the entire length of the street.

[a] Based on the 2017 Vision Zero Network. Obtained from the San Francisco Transportation Information Map, http://www.sfplanninggis.org/TIM/, accessed September 1, 2022.
[b] The transit routes are operated by Muni, except for the SamTrans Route 122 route.
[c] Bikeway class definitions are provided in the Bicycling Conditions discussion, beginning on p. 3.B-9.
[d] Three travel lanes in each travel direction, with a center-running Muni light-rail line for a portion.

4.F Noise and Vibration [NO]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.C, Noise and Vibration. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topics relate to:

- NO-1: Construction and Operational Noise
- NO-2: Noise Mitigation Measures
- NO-3: Construction Vibration Impacts

4.F.1 Comment NO-1: Construction and Operational Noise

This response addresses the following comments, which are quoted below:

I-Arbulu-1

I-Arbulu-4

I-Full-25

I-Full-26

I-Full-27

I-Herlihy1-4

I-Herzfeld-1

I-LBirsinger-1

I-Naraghi-4

I-Parthasarathy-5

"We reside in Merced Manor which is right across the street from Phase 1 of the project. We have just seen the plans for the parking lot near our home and are very concerned about the scope of the project and the construction noise that they estimate will take at least 4 years for Phase 1 alone, AND the noise and traffic that will be in our neighborhood forever." *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-1, NO-1])*

"Finally, the construction noise over a minimum of 4 years will be a terrible nuisance. Pile driving etc. Would YOU like to hear that from your home for 1/2 a decade? Of course not! So don't allow the developer to do that to us!" *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-4, NO-1])*

"Page 3.C-14, Construction Noise, paragraph 2. The text in this paragraph is not consistent with the information on Page 2-40, Section 2.E.1, paragraph 2, which states that construction could occur at any time. The EIR should identify when construction is to occur and to limit construction only to daytime hours.

Page 3.C-21, Daytime Construction Noise, paragraph 2 and Table 3.C-11 on page 3.C-22. The significance standard for construction noise impacts is 80 dBA at 100 feet. Stating that the use of the concrete saw is of 'limited duration' is misleading by trying to downplay the fact that it is significant. The 'limited duration' statement is irrelevant to the analysis. The concrete saw exceeds the 80 dBA at 100 feet and is, therefore, significant. Stating anything else or qualifying it should not be included in the EIR.

Page 3.C-25, Table 3.C-22. The heading of the sixth column in this table states 'Exceed 90 dBA Daytime Standard?' Where did this 90 dBA standard come from? The text on page 3.C-18 indicates that the threshold is 80 dBA. Which is correct? If it is 80 dBA, then many of the 'no' on this table need to be changed to 'yes'." *(Dave Full, Letter, 2/12/2023 [I-Full-25, NO-1])*

"Page 3.C-31, Mitigation Measure M-NO-1, paragraph 1. This is similar to the previous comment. Where did the 90 dBA standard come from? Why does the mitigation measure not require meeting the 80 dBA standard identified on page 3.C-18? This 90 dBA reference also is presented on page 3.C-32. *(Dave Full, Letter, 2/12/2023 [I-Full-26, NO1])*

"Page 3.C-33, Nighttime Construction, paragraph 4. The last sentence of this paragraph is meaningless. This states that some City employee can decide to grant permission to do nighttime construction at any time. This does not provide residents who may be affected by construction noise with any real remedy and actually creates greater uncertainty regarding the noise that will occur during construction. Given that construction is scheduled to occur over a seven-year period, it is not unreasonable to provide some better assurances as to when nighttime construction will occur. As written, there is no real mitigation associated with construction noise at nighttime hours. The EIR needs to address this issue.

Page 3.C-35, Impact NO-2. This analysis is inconsistent with other statements made in the EIR. The impact statement is related to an 'increase in ambient noise levels along access streets in the project vicinity'. Table 3.C-19 on the same page provides roadway noise levels associated with construction truck and worker traffic. The issue is that throughout the rest of the EIR, the intersection of 20th Avenue and Eucalyptus Drive is identified as a 'secondary access' to the project site. Yet, no analysis is provided for that access point. Unless there is a guarantee that this intersection will NOT be used for construction truck traffic or worker traffic, this analysis should be included. Or, a statement that this intersection will not be used needs to be included in the EIR. This is a major flaw of the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-27, NO-1])*

"4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-4, NO-1])*

"This plan is absurd. The impact on our neighborhood for noise construction parking cars and so many new redid we Mrs will not only negatively impact our quiet enjoyment of our homes but traffic and ability to transport from one part if the city to another." *(Debbie Herzfeld, Letter, 2/9/2023 [I-Herzfeld-1, NO-1])*

"**Section 3.c. Noise**

- Address how nearby residents can be assured that very early morning loud demolition/construction practices will not occur during the many phases of this project?
- Recent construction at Stonestown (tear down of Olive Garden and conversion to restaurant and bank) included frequent instances of very loud work between 2:00 and 6:00 am
- A point of contact is required should there be any such occurrences. This contact must be able to take action real time. (Relying on the police to control is not a viable solution.)." *(Laura Birsinger, Letter, 2/5/2023 [ILBirsinger1, NO1])*

"4) The construction and operational noise in the surrounding neighborhoods. Section 3.3" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-4, NO-1])*

"4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-5, NO-1])*

RESPONSE NO-1

The comments express concern about construction and traffic noise associated with the proposed project or variant, as well as construction-related vibration impacts. The comments also request clarification regarding noise impact thresholds, nighttime construction, construction truck routes, hours for daytime construction activities, and request a point of contact for complaints related to construction noise. The response below separately addresses construction and operational noise.

References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

CONSTRUCTION NOISE

Phase 1 is expected to take place over a 45-month span. Construction of the proposed project or variant is anticipated to occur between the hours of 7 a.m. and 8 p.m., five days a week. On p. 3.C-14, the draft EIR identifies that a nighttime construction permit would be required for any work that would take place between the hours of 8 p.m. and 7 a.m. Construction outside of those hours that generate over 5 dBA ambient noise levels at the nearest property line must apply for a nighttime construction permit from the City. Nighttime construction work (between 8 p.m. to 7 a.m.) would occur, as necessary, to avoid conflicts with the existing shopping mall loading dock operations, utilities connections and switchovers, and for concrete pours, which would require the granting of a special use permit by the city.

Early morning construction noise impacts (considered before 7 a.m. by the noise ordinance) are addressed on draft EIR pp. 3.C-33 and 3.C-34. As shown in Table 3.C-18, nighttime construction noise (8 p.m. to 7 a.m.) is projected to exceed 45 dBA at the closest residential receptors during phases 1, 2, 3, 4, and 6 of construction. These nighttime construction noise impacts are identified as significant and unavoidable with implementation of Mitigation Measure M-NO-1, Construction Noise Control. This mitigation measure (draft EIR pp. 3.C-31 to 3.C-32) contains specific measures to address potential nighttime construction noise impacts. These include notifying noise-sensitive receptors (e.g., residents) within 300 feet of project construction at least 30 days in advance of nighttime noise activities; posting a sign on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction; and requiring compliance noise monitoring during nighttime construction to determine the effectiveness of noise attenuation measures and, if necessary, implementing additional noise control measures. However, even with implementation of this mitigation measure, the nighttime construction noise impact is identified as significant and unavoidable.

With respect to the commenter's statement that a recent conversion project at the Stonestown Galleria resulted in very loud construction work in the early morning hours, the draft EIR analyzes all potential impacts resulting from construction noise with implementation of the proposed project and variant. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

Regarding specific construction methods, no impact or vibratory pile driving would be necessary for construction of the proposed project or variant. Foundations would be installed using drilled micro piles[35] as discussed on p. 2-42 of the draft EIR, which cause substantially less noise and vibration than impact pile driving. Therefore, pile-driving noise would not occur as part of project construction. In addition, concrete saws would be used for only approximately 4 workdays out of the entire 5-week-long period for demolition for each phase, which is a limited duration (approximately 10 percent) in the overall context of the demolition period for each phase. The use of concrete saws was analyzed as part of the overall construction noise of the project, and the results of that analysis were presented in Impact NO-1 of the draft EIR (pp. 3.C-21 to 3.C-34). Because concrete saws would be one of the noisiest pieces of equipment associated with demolition activities, their operation is included in the analysis of construction noise for all phases of construction, as shown in draft EIR Tables 3.C-12 through 3.C-17, pp. 3.C-25 through 3.C-30. The construction

[35] Micro piles are deep foundation elements constructed using high-strength, small-diameter steel casing and/or threaded bars.

noise impact is identified as significant and unavoidable even with implementation of Mitigation Measure M-NO-1, Construction Noise Control. Implementation of Mitigation Measure M-NO-1 would reduce the severity of the proposed project or variant's construction noise impacts on existing offsite sensitive receptors, including nearby residents. However, given the duration of construction activities and the increase in noise over existing ambient levels, the impact is identified as significant and unavoidable even with identified mitigation measures, as discussed on draft EIR pp. 3.C-32 and 3.C-33.

CONSTRUCTION NOISE CRITERIA

The daytime construction noise criterion is discussed in the methodology section on draft EIR p. 3.C-18. The tables cited by the commenter identify the daytime construction noise impacts using the 90 dBA daytime criterion assuming simultaneous operation of the two noisiest pieces of equipment, consistent with the general assessment methodology of the FTA. Therefore, these tables include an assessment of the potential to exceed the 90 dBA criteria for daytime construction operations. The 80 dBA threshold the commenter is referencing on p. 3.C-18 is related to noise ordinance section 2907(a), which establishes a noise-level limit of 80 dBA at 100 feet for *individual pieces of equipment*. Impacts associated with this noise ordinance provision are addressed in the second paragraph of draft EIR p. 3.C-21. The analysis includes construction noise levels generated by the proposed project or variant at offsite sensitive uses (Table 3.C-12 through Table 3.C-17).

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The conversion of the midrise building on Block S3 to a tower would require three additional months of construction compared to the draft EIR variant. The updated construction noise analysis related to the revised variant is provided in Section 2.E.4, Noise and Vibration, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, construction noise impacts of the proposed project, draft EIR variant, or revised variant would be significant and unavoidable with mitigation.

OPERATIONAL NOISE

With respect to the commenter's concern regarding operational traffic noise, noise impacts from project-generated traffic are addressed on draft EIR pp. 3.C-43 and 3.C-44. As discussed in the analysis, increases in noise due to project-generated traffic along the 30 roadway segments analyzed in the draft EIR would be less than the applicable significance threshold (5 dBA increase or a 3 dBA increase, depending on the existing conditions). Therefore, noise impacts related to project-generated traffic with implementation of the proposed project or variant are identified as less than significant. See Response GC-NON-CEQA-5, p. 4-137, regarding increases in traffic associated with the proposed project or variant.

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated operational noise analysis related to the revised variant is provided in Section 2.E.4, Noise and Vibration, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, operational traffic noise of the proposed project, draft EIR variant, or revised variant would be less than significant.

4.F.2 Comment NO-2: Noise Mitigation Measures

This response addresses the following comments, which are quoted below:

I-Full-26

O-ITHA-2

O-WTPCC-2

"Page 3.C-31, Mitigation Measure M-NO-1, paragraph 2. Prohibiting nighttime noise should be considered as a way to reduce sleep disturbance for residents in the vicinity of the project site. In addition, can the mitigation measure have financial penalties for exceeding noise levels? There needs to be a real consequence associated with disruptive noise events." *(Dave Full, Letter, 2/12/2023 [I-Full-26, NO-2])*

"1. We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a nonprofit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [O-ITHA-2, NO-2])*

"1. We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a nonprofit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-2, NO-2])*

RESPONSE NO-2

The comments request clarification regarding establishing a financial penalty for exceeding noise levels, and limiting amplified performances to daytime only as part of Mitigation Measure M-NO-5, Noise Limits for Outdoor Amplified Sound.

FINANCIAL PENALTIES

Noise ordinance section 2908 prohibits nighttime construction (between 8 p.m. and 7 a.m.) that generates noise exceeding the ambient noise level by 5 dBA at the nearest property line unless a special permit has been issued by the City. The noise ordinance allows for certain construction activities, like concrete pours or utility installation, to take place at night due to the operational needs for those types of activities that would make it technically infeasible to occur during daytime hours. For example, a concrete pour would need to take place at night to avoid potential conflicts with daytime shopping mall loading dock operations. As noted, the nighttime noise permit would be required for work during the hours of 8 p.m. to 7 a.m. that would

exceed the 45 dBA standard by more than 5 dBA. The permit would allow the applicant to exceed the 45 dBA levels. Penalties cannot be imposed if the project sponsor is conducting work that is allowed by the nighttime construction permit. In addition, a financial penalty is beyond the scope of CEQA and mitigation measures, as mitigation measures are aimed at avoiding or minimizing impacts, and a financial penalty would not reduce noise levels from construction activities.

AMPLIFIED NOISE

Mitigation Measure M-NO-5 on draft EIR p. 3.C-42 restricts amplified sound equipment use to the hours between 9 a.m. and 10 p.m., unless an amplified sound permit is received from the Entertainment Commission that would outline a different operation window, in compliance with existing regulations. The draft EIR analyzes potential impacts from amplified noise and covers all types of performance that may occur, including daytime community performances managed by a nonprofit as proposed by the project sponsor. As there is no specific programming proposed, any additional analysis or mitigation measures would be speculative and beyond the scope of CEQA.

4.F.3 Comment NO-3: Construction Vibration Impacts

This response addresses the following comments, which are quoted below:

I-Kashi-1

I-LBirsinger-2

"I reviewed the attached comments and like to add that the Stonestown project must include pre-construction survey, vibration monitoring devices, and noise monitoring stations in the Lakeside neighborhood. This responsibility must be shared by the designer, the owner, and the contractor.

The recent development by SFSU shook the ground severely and continuously for about three months. This happened during the demolition and caused damage to my house and the neighborhood. We have cracks throughout the house inside and outside and more than half of our windows do not open. I went through these damages with the SFSU staff, contractor, and their insurance companies. I asked SFSU staff to install vibration monitoring devices in the neighborhood for the entire duration but that was ignored.

I have a claim for $250k to repair the walls and cracks and replace a few windows. Like most claims SFSU, the general contractor, subcontractor, and their insurance companies are dragging their feet. Last I heard was that they were trying to decide if they were actually responsible.

The homes in Lakeside neighborhood were built in the early 30's. Walls were made with lath and plaster with canvas cover and a coat of paint over it. This system of construction is vulnerable to continuous vibrations. Vibrations delaminate the canvas and the plaster from the lath.

Do not make the same mistake. Take proactive action and hire structural engineers and architects and install monitoring devices. Broaden your perspective and consider the history in the neighborhood. This entire neighborhood was built on densely compacted dry sand that was imported from West Portal tunnel.

There is a muni wall at 19th Avenue and Wyton Lane. This wall has been cracked for many decades. The vibrations from SFSU demolition made this wall fail. Although this is not entirely the fault of SFSU team but

keep in mind that deferred maintenance and lack of attention by the City has made public infrastructures vulnerable. This burdens Stonestown Development with additional responsibilities." *(Kevin Kashi, Letter, 2/8/2023 [I-Kashi-1, NO-3])*

"**Section 3.c. Vibration**

- Address how nearby residents (plus churches and schools) can be assured that vibrations resulting from extensive construction don't damage the integrity of their structures? (Of particular concern is the potential damage resulting from the anchoring taller buildings may require, such as the possible hotel.)
- A point of contact must be provided to deal promptly with any structural issues which occur.
- Note that residents on Denslowe Drive reported cracks in their walls and other structural damage most likely caused by the recent SFSU major building project, so this concern is valid." *(Laura Birsinger, Letter, 2/5/2023 [ILBirsinger2, NO3])*

RESPONSE NO-3

The comments express concerns regarding construction-related vibration impacts on nearby structures. The draft EIR analyzed construction-related vibration impacts under Impact NO-3 on pp. 3.C-36 through 3.C-37. The standards and methodology are provided on draft EIR pp. 3.C-11 to 3.C-13 and pp. 3.C-18 to 3.C-19 and are based on the California Department of Transportation and Federal Transit Administration guidance. Table 3.C-8, Vibration Guidelines for Potential Damage to Structures, on draft EIR p 3.C-13 identifies the vibration level at which different structure types (i.e., from "extremely fragile historic buildings, ruins, ancient monuments" to "modern industrial/commercial buildings") would be subject to potential damage. As noted on draft EIR p. 3.C-36, construction equipment such as bulldozers and vibratory rollers could generate groundborne vibration. As shown in Table 3.C-20 on draft EIR p. 3.C-37, and under the proposed project, the greatest vibration level would be 0.2 PPV from the operation of a vibratory roller at a distance of 25 feet from the Authentic Church building. This vibration level would be below the 0.3 PPV threshold for an older structure. Other vibration levels at the other buildings within 90 feet of the project site would range between 0.013 and 0.064 PPV, which would be well below the 0.3 PPV threshold for older structures and the 0.25 PPV threshold for historic structures as stated on draft EIR p. 3.C-36. As such, and as concluded in the draft EIR, impacts due to construction vibration would be less than significant and no mitigation measures are needed.

The structural damage concerns identified by commenters are not related to the to the proposed project or variant implementation, as they are potentially the result of other projects in the area. Under CEQA, the described conditions are considered part of existing conditions. The areas described in the comments (19th Avenue/Wyton Lane and Denslowe Drive) are approximately 360 to 500 feet from the project site. The neighborhood on the east side of 19th Avenue is over 125 feet from the project site. As described above and as shown in Table 3.C-20 on draft EIR p. 3.C-37, construction vibration levels would be less than significant within 25 feet of the potential construction areas. Therefore, the potential for construction-related vibration impacts with respect to building damage is identified as less than significant and no mitigation measures, including installing vibration monitors on buildings, are required. Mitigation Measure M-NO-1 would require the project sponsor to have a complaint hotline number.

This determination is based on project-specific equipment and substantial evidence with respect to building damage

4.G Air Quality [AQ]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.D, Air Quality. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topic relates to:

- AQ-1: Air Quality Analysis

4.G.1 Comment AQ-1: Air Quality Analysis

This response addresses the following comments, which are quoted below:

I-Chang-4

I-Full-10

I-Full-28

I-Herlihy1-5

I-LG-6

I-Naraghi-5

I-Parthasarathy-6

I-Pilpel-8

I-Pilpel-11

O-SFSU-8

"(4) The air quality will get worsened with the proposed apartment and hotel construction." *(Mary Chang, Letter, 2/7/2023 [I-Chang-4, PS-1])*

"Page 2-42, Section 2.E.2. This section does not describe where excavated materials will be transported. Does the air quality analysis include the emissions associated with the use of trucks to transport this material? Without a destination of where excavated materials will be transported, how can the air quality analysis be considered complete?" *(Dave Full, Letter, 2/12/2023 [I-Full-10, AQ-1])*

"Page 3.D-13, paragraph 2. This paragraph identifies the 'sensitive receptors' near the project site. Why were the residential land uses west of the project site (i.e., the multi-story buildings along Buckingham Way and Winston Drive) not included? These are directly adjacent to the project site and should be considered 'sensitive receptors'. The analysis should be revised to include these land uses as 'sensitive receptors'.

Page 3.D-13, paragraph 3. The last sentence of this paragraph indicates that 'a small portion of the project site that borders 19th Avenue does meet the APEZ criteria' but does not actually indicate where this small portion is actually located. Figure 3D.-1 on page 3.D-14 does not provide any information in this regard.

Page 3.D-14, Figure 3.D-1. Why is this land use map so different from the one presented in Figure 2-2 on page 2-5? There are literally dozens of differences between these two land use maps and leads the reader to wonder which is correct. This lack of consistency in the EIR is most troubling because it is not possible to clearly understand the analysis when basic information is not reliable.

Page 3.D-14, Figure 3.D-1. Although this land use map actually acknowledges commercial uses along Ocean Avenue (compare with Figure 2-2 on page 2-5), there are still a variety of land uses that are not correct on this figure. For example, what is the 'commercial' land use on 21st Avenue? What is meant by the 'residential-mixed use' designation? This is not explained in the EIR. I, for one, can assure you that my residence on 20th Avenue, which is designated as 'residential-mixed use' on Figure 3.D-1 is a single-family home with no other land uses associated with it. Given the number of such parcels identified on this figure as 'residential-mixed use' within residential neighborhoods, it undermines any confidence that the preparers of the EIR did their due diligence in preparing the document." *(Dave Full, Letter, 2/12/2023 [I-Full-28, AQ-1])*

"5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-5, AQ-1])*

- "More detail about the risks of exposure to dust and toxic materials is needed. The Draft EIR seems to say that the anticipated risks of additional cancer cases and other morbidities are acceptable. However, considering the number of schools (pre-school through university) in the area, even a small increase would be tragic. (Appendix B. Section E. 17)." *(LG, Letter, 2/13/2023 [ILG6, AQ1])*

"5) The adverse effect of Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-5, AQ-1])*

"5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-6, AQ-1])*

"The Air Quality impacts are narrowed to include only construction impacts, which does not comply with CEQA." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-8, AQ-1])*

"11. I also found no coherent discussion or mitigation of how added traffic will affect long-term air quality. I found the air quality discussion to be mostly about construction air quality impacts." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-11, AQ-1])*

– "B) Please consider electric/battery generators, rather than gas-powered so as to reduce air pollution." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-8, AQ-1])*

RESPONSE AQ-1

Some comments relate to the adequacy of the draft EIR's analysis of air quality impacts during construction and operation of the proposed project or variant, while other comments provide a general statement of the air quality impacts that are disclosed in the draft EIR. The comments express concern about the proposed project or variant's air quality impacts, request additional detail of localized air quality impacts on nearby sensitive receptors from both construction and operational activities, provide comment on the figures in the draft EIR and on the mitigation measures.

Other comments express general concerns regarding wind and glare impacts. The draft EIR evaluates the wind impacts of the proposed project or variant in Section 3.E, Wind. Glare is addressed in Section E.14, Biological Resources, in draft EIR Appendix B. As noted on initial study p. 71, the proposed project or variant is subject to building standards, which limit glazing and lighting of the building.

This response is organized as follows:

- Air Quality Impacts
- Mobile Source Emissions
- Sensitive Receptors
- Air Quality Section Figure
- Air Quality Mitigation Measures

AIR QUALITY IMPACTS

One commenter states that the air quality impacts only address construction impacts. This is incorrect. The draft EIR does evaluate the air quality impacts of all phases of the proposed project or variant from construction through full build out of project operations. Draft EIR pp. 3.D-28 through 3.D-30 describes the methods used to model operational air quality impacts. Impact AQ-1 analyzes construction criteria air pollutant impacts in addition to operational emissions that would begin to occur as the proposed project or variant is constructed and portions of the project become operational. Starting in the fifth year of construction, portions of the site would become operational resulting in criteria air pollutants from both construction and operations (see draft EIR pp. 3.D-36 through 3.D-52). Impact AQ-2 then analyzes full build out operational criteria air pollutant emissions (draft EIR pp. 3.D-52 through 3.D-59), and Impact AQ-3 analyzes health risk impacts associated with TAC emissions from both construction and operation (draft EIR pp. 3.D-60 through 3.D-72).

Comments state that air quality will worsen with implementation of the proposed project or variant, and that any increase in human health risk, even if small, "would be tragic." The draft EIR does acknowledge that the proposed project or variant would affect air quality. The analysis under Impacts AQ-1 and AQ-2 on draft EIR pp. 3.D-36 through 3.D-59 identifies significant and unavoidable impacts from the proposed project or variant associated with construction and operational criteria pollutant emissions. Impact AQ-3 on draft EIR pp. 3.D-60 through 3.D-72 finds that the proposed project or variant would result in a significant health risk impact, but that this impact would be mitigated to a less-than-significant level with implementation of mitigation measures. Consequently, the draft EIR identifies air quality impacts from both construction activities and operations, and includes mitigation measures to reduce these impacts.

Impact AQ-3 finds that without mitigation, the health risk impacts associated with the proposed project or variant's TAC emissions during construction and operation would be significant (see draft EIR Table 3.D-15, p. 3.D-63 and Table 3.D-16, p. 3.D-64). With implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, all health risk impacts would be reduced to less-than-significant levels (see draft EIR Table 3.D-17, p. 3.D-68 and Table 3.D-18, p. 3.D-69). Comment I-LG-6 states that the draft EIR determined that these health risks are "acceptable." The draft EIR evaluates the proposed project and variant's health risk impacts against the City's thresholds of significance to determine whether the impacts would exceed the thresholds and would therefore be significant. This approach is consistent with CEQA Guidelines sections 15064and 15064.7. As defined in CEQA Guidelines section 15064(a), a "threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." Thresholds of significance "may assist lead agencies in determining whether a project may cause a significant impact. When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant" (CEQA Guidelines section 15064.7(c)). The thresholds of significance related to human health risk are discussed on draft EIR pp. 3.D-30 through 3.D-33. The draft EIR does not make any statement about acceptability of risk, but only discloses whether the risk values exceed the City's significance thresholds.

One comment requests additional detail regarding the health risks of exposure to dust and toxic air contaminants (TACs). Concerns regarding exposure to dust during construction are addressed under Impact AQ-1. Because the proposed project would be required to comply with the Construction Dust Control Ordinance, which requires implementation of a site-specific dust control plan that would include measures that effectively control dust during construction, the draft EIR determined construction dust impacts would be less than significant. Concerns regarding exposure to hazardous materials are addressed in Response HZ-1, p. 4-113.

MOBILE SOURCE EMISSIONS

One comment claims that the analysis does not consider the use of trucks to transport excavated materials. Draft EIR p. 3.D-27 discusses the modeling methods used to estimate criteria pollutant and TAC emissions associated with on-road construction trucks, including haul trucks exporting excavated material. Draft EIR Appendix F, Air Quality and Health Risk Assessment Results, presents the detailed modeling methods for this analysis (see draft EIR Appendix F, specifically Section 4.1.1, p. 5/19 and Section 4.1.2, p. 6/19). Draft EIR Appendix F Table 5 presents the assumptions used to model emissions associated with on-road construction vehicles, including haul trucks. As noted, heavy-duty haul trucks operating during the Grading, Shoring, and Excavating subphase would travel 28 miles per one-way trip. The 28-mile hauling trip length was provided by

the project sponsor, which reasonably assumed that all trucks would travel south down 19th Avenue, to the Bay Bridge or the San Mateo Bridge, and to San Leandro. The project sponsor obtained this information from its contractor, who has extensive experience and expertise in this area. The air dispersion modeling only models the route within 1,000 feet of the local receptors because TAC emissions typically decrease substantially or can even be indistinguishable from upwind background concentrations beyond approximately 1,000 feet from sensitive receptors (see draft EIR p. 3.D-83).[36] However, the entire truck trip length is modeled for the regional criteria air pollutant emissions analysis.

In response to a comment, the draft EIR does evaluate the operational air quality impacts from on-road mobile sources (i.e., traffic). Draft EIR pp. 3.D-28 through 3.D-29 discusses the methods used to evaluate operational on-road mobile sources. Impacts AQ-1, AQ-2, and AQ-3 evaluate the air quality impacts of proposed project and variant operations, which include mobile sources. For example, draft EIR Table 3.D-10 and Table 3.D-11 on pp. 3.D-53 and 3.D-54 show unmitigated criteria pollutant emissions for the category *Mobile*, which represents on-road vehicles added by the proposed project and variant, respectively. In addition, draft EIR Appendix F, Air Quality and Health Risk Assessment Results, presents detailed modeling methods and air quality analysis results associated with mobile sources (see Appendix Section 4.2.1, p. 8/19 and Section 4.5, p. 12/19). Health impacts from traffic are explicitly shown in Tables 40 through 45 of draft EIR Appendix F.

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The revised variant would increase the development on Block NW2 by approximately 12,700 square feet (76 residential units) and require additional excavation for 84 parking spaces in Block NW1. The additional development and excavation at Blocks NW1 and NW2 would be taken from Phases 2 and 3 and would not change construction durations. The conversion of the midrise building on Block S3 to a tower would require three additional months of construction compared to the draft EIR variant. The updated criterial air pollutant analysis related to the revised variant is provided in Section 2.E.3, Air Quality, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, construction and interim-year combined construction-related and operational emissions would be significant and unavoidable with mitigation, and would not result in any new of more severe impacts than those identified for the draft EIR variant.

SENSITIVE RECEPTORS

One comment expresses concern that certain sensitive receptors west of the project site were not included in the health risk assessment (HRA) and that the draft EIR does not adequately disclose receptor locations that meet the Air Pollution Exposure Zone (APEZ) criteria. In response to this comment, the residential land uses west of the project site, including SFSU apartment buildings along Buckingham Way and Winston Drive, are included in the air quality analysis. Figure 3.D-1 on draft EIR p. 3.D-14 shows all the modeled sensitive receptor locations. The areas shown in light yellow are classified as a residential sensitive receptor in the health risk assessment. This includes all residential locations to the west of the project site. As noted on draft EIR p. 3.D-60, all sensitive receptors within 1,000 meters of the project site have been evaluated in the health risk assessment. The 1,000-meter distance is discussed on draft EIR p. 3.D-35 and above on p. 4-56.

[36] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines Appendix A: Thresholds of Significance Justification, April 2023, p. A-37, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en, accessed September 20, 2023.

Several comments state that the air quality of the surrounding neighborhoods of Lakeside and 19th Avenue would be impacted. The draft EIR analyzes air quality impacts on the surrounding neighborhoods of Lakeside and 19th Avenue. Impacts are assessed under Impact AQ-3. As discussed above, all sensitive receptors within 1,000 meters of the project site have been evaluated in the health risk assessment, as presented in Figure 3.D-1 on draft EIR p. 3.D-14.

AIR QUALITY SECTION FIGURE

One comment identifies inconsistencies in land use types between Figure 3.D-1 on draft EIR p. 3.D-14 and Figure 2-2 on draft EIR p. 2-5. In response to the comment regarding the location of the APEZ, the commenter is correct that neither the draft EIR text nor Figure 3.D-1 on draft EIR p. 3.D-14 indicate the specific location of receptors that meet the APEZ criteria, only that a small portion of the project site that borders 19th Avenue does meet the APEZ criteria. To respond to this, Figure 3.D-1 was been revised to show the locations of the receptors that do not meet the APEZ criteria, which are located at the northeast portion of the site.

Regarding the differences between Figure 2-2 on draft EIR p. 2-5 and Figure 3.D-1 on draft EIR p. 3.D-14, the commenter does not identify any specific differences. The commenter could be referring to institutional land uses, which are different on the two figures. Figure 2-2 on draft EIR p. 2-5 shows the SFSU student housing as institutional; Figure 3.D-1 on draft EIR p. 3.D-14 shows the SFSU student housing as residential. This is because for the purposes of the health risk assessment, all SFSU student housing is conservatively considered residential. As explained in Response PD-1, p. 4-5, Figure 2-2 is intended to be a high-level general land use map indicating primary uses in the area and does not necessarily correspond to the detailed zoning district designations. However, Figure 2-2 on draft EIR p. 2-5 has been updated to respond to the commenter and is provided on p. 5-31 of this RTC document. In response to a comment regarding potential errors in Figure 3.D-1 on draft EIR p. 3.D-14, the commercial land use classification for the parcel on 21st Avenue near Sloat Boulevard is in fact a single-family residence. Figure 3.D-1 was corrected to show this as a residential land use type. Figure 3.D-1 has also been revised to separate “Residential” and “Mixed Use” designations. The Mixed Use designation refers to parcels that may include both residential and retail/commercial land use types. This does not affect the analysis, as these mixed-use receptors were conservatively analyzed as residential. **Revised Figure 3.D-1** is provided on p. 5-49.

AIR QUALITY MITIGATION MEASURES

One comment expresses concern that the draft EIR does not evaluate traffic-related air quality impacts and associated mitigation. Another comment requests that the City consider the use of electric or battery-powered backup emergency generators instead of diesel-fueled generators to reduce air quality impacts.

The draft EIR identifies mitigation measures to reduce the air quality impacts caused by proposed project or variant traffic. Mitigation Measure M-AQ-1g, Operational Truck Emissions Reduction, requires the project sponsor to incorporate specific project design features to reduce ROG emissions associated with operational trucks, along with the potential health risk caused by exposure to toxic air contaminants. Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure, requires the project sponsor to comply with the 2022 California Green Building Standards (CALGreen Code) Tier 2 voluntary electric vehicle (EV) charging requirements or the mandatory requirements of the most recently adopted version of the City building code, whichever is more stringent. The presence of EV charging stations would encourage residents to purchase and use battery electric and plug-in hybrid electric vehicles, which would eliminate tailpipe criteria pollutant

and TAC emissions from these vehicles.[37] Finally, Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips, would reduce criteria pollutant and TAC emissions associated with operational traffic (see draft EIR Section 3.B, Transportation and Circulation, Impact TR-4 on pp. 3.B-65 through 3.B-70) by reducing overall proposed project or variant single-occupancy vehicle trips and VMT through measures that encourage transit and other modes of travel, such as bicycling, walking, and ride-sharing.

In response to one of the comments, Mitigation Measure M AQ 1e, Best Available Emissions Controls for Stationary Emergency Generators, requires that as non-diesel-fueled emergency generator technology becomes readily available and cost effective in the future (subject to the fire department), non-diesel-fueled generators shall be installed in new buildings. These could include electric and battery generators. However, an electric generator would not serve the purpose of providing power in the event of an electric power outage. A battery-powered generator would also have a limited power-generating duration. Diesel fuel is a more reliable fuel source for a generator that is meant to provide an emergency source of power. After implementation of all identified mitigation measures, criteria pollutant impacts are identified as significant and unavoidable for ROG emissions (draft EIR Table 3.D-13, p. 3.D-58). However, diesel generators represent only 0.5 percent of total operational ROG emissions (0.38 pounds per day for generators compared to 83 pounds per day total for all operations, as reported in draft EIR Appendix F, Table 35a). Therefore, non-diesel generators would not reduce the criteria air pollutant impact to less-than-significant levels. In addition, health risk impacts would be reduced to less-than-significant levels with implementation of all identified mitigation measures (Impact AQ-3, pp. 3.D-60 to 3.D-72). Therefore, additional mitigation to reduce generator TAC emissions is not required.

The revised variant would require an additional diesel generator as a result of the increased height of the building at Block S3. The updated criterial air pollutant analysis related to the revised variant is provided in Section 2.E.3, Air Quality, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, construction and interim-year combined construction-related and operational emissions would be significant and unavoidable with mitigation, and would not result in any new of more severe impacts than those identified for the draft EIR variant.

4.H Shadow [SH]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.F, Shadow. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topic relates to:

- SH-1: Shadow Impacts

[37] California Energy Commission and National Renewable Energy Laboratory, *Quantifying the Tangible Value of Public Electric Vehicle Charging Infrastructure*, July 2020, https://www.nrel.gov/docs/fy21osti/70340.pdf, accessed September 20, 2023.

4.H.1 Comment SH-1: Shadow Impacts

This response addresses the following comments, which are quoted below:

I-DeBaun-4

I-Hardeman-2

I-Herlihy1-3

I-Lifur-1

I-Moore-3

I-Naraghi-3

I-Parthasarathy-4

I-Troxel-2

"3. Section 3.6: there are multiple schools in the area that will be impacted by shadows/loss of sunlight." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-4, SH-1])*

"* A small neighborhood park, Rolph Nicol is used daily by people in the neighborhood to walk their dogs, congregate, chat, and to enjoy a respite from the 3,500 students and their vehicles that inundate the neighborhood daily to attend school (see below). A tower situated immediately adjacent to the park, rising above the tree line, would permanently alter this sanctuary forever. The EIR acknowledges that the building would create shadows on the park" *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-2, SH-1])*

"3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-3, SH-1])*

"As a daily user of the Rolph Nicol Jr. park, I strongly object to the misleading and false conclusion stated in the draft Stonestown Development Project EIR that the increased shading of Rolph Nicol Jr. park would be 'less than significant' and 'would not be expected to substantially affect people's enjoyment of the park'. As a daily user of the park, the additional shading which will cast significant additional shading throughout most of the day including before 11 am and after 3 pm when I and many others in the Merced Manor neighborhood use the park will significantly adversely impact enjoyment of the park. Furthermore, the nature of shading of ninety feet tall buildings (NW1, NW2, NW3 and W1) is significantly different from the filtered light through the existing eucalyptus trees. No light passes through a building. The language in the EIR needs to reflect the actual impact on residents who use the park and not dismiss the impact as 'not substantial' which is simply not true. The sunlight in the colder morning and late afternoon hours, especially during the winter months is even more critical to the enjoyment of the park and this is completely disregarded by the draft report. The fact that the proposed buildings will block the southern exposure to light (up to 74% of the light at its peak in the early morning according to the report) will absolutely have a detrimental impact on the park and those of

us who use it. The proposed development, instead of ruining the park should add green space directly along the entire border of the park back for a distance of at least 2.5 times the height of the nearest building (i.e. at least 225 feet from the edge of the park in the case of 90-foot high buildings) to ensure natural light is not blocked at any time of the year." *(Jeff Lifur, Letter, 2/12/2023 [I-Lifur-1, SH-1])*

"Apart from the esthetics, these buildings would create permanent shadows during certain times of the day over dozens of homes on the first two streets in Lakeside to the east of 19th Avenue. (see map, Appendix H, page 14) While the report analyzes the impact of the shadows on the Junipero Serra Playground (which is enclosed by Lakeside), the permanent impact on the homes affected by the shadows created by the proposed buildings along 19th Avenue is not discussed." *(Andrew Moore, Letter, no date [I-Moore-3, SH-1])*

"3) Causing potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St. Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres). Section 3.6" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-3, SH-1])*

"3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres). Section 3.6" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-4, SH-1])*

"The Park is not only used by the adjacent neighborhoods of Merced Manor and Lakeshore Acres, but also by students and family of students attending Lowell High School, Lakeshore Elementary School, St. Stephens School and other neighborhood schools, families that visit or live near Stonestown and many others. Eight story buildings looming over the Park to its south will impact the light and sun that the Park receives and generally change its atmosphere. The weather in this neighborhood is often foggy and colder than other parts of San Francisco, so restricting the current light and sun that the Park receives will have an even more adverse impact on the Park." *(Suzanne Troxel, Letter, 2/11/2023 [I-Troxel-2, SH-1])*

RESPONSE SH-1

The comments address the draft EIR's analysis of shadow that would be cast by the proposed project or variant. One comment disputes the draft EIR's conclusion that "increased shading of Rolph Nicol Jr. park would be 'less than significant' and 'would not be expected to substantially affect people's enjoyment of the park.'" This comment states that the proposed project or variant "will cast significant additional shading throughout most of the day including before 11 a.m. and after 3 p.m. when I and many others in the Merced Manor neighborhood use the park will significantly adversely impact enjoyment of the park," and further states that shadow cast by proposed project or variant buildings would be different than the "filtered light" through the existing eucalyptus trees along the park's southern border. Other comments call attention to the shadow that that the proposed project or variant's eight-story buildings would cast on the park, altering light

and sun; another comment further states that the impact would be worsened by the neighborhood's often foggy and relatively colder weather. Several comments state that the draft EIR should address shadow impacts on nearby schools, churches, neighborhoods, and/or residences.

In regard to shadow that would be cast by the proposed project or variant on Rolph Nicol Jr. Playground, the draft EIR identifies shadow effects on this open space as less than significant because of the limited extent of shadow that would be cast by the proposed project or variant, in terms of both area covered and length of coverage, and because the shadow cast by the proposed project or variant would not fall on the park during times of heaviest use. In particular, shadow cast by the proposed project or variant on the children's play area would occur primarily in the early morning (before 9 a.m. most of the year), with a small amount of additional shadow between about 1 p.m. and 2 p.m. around the winter solstice. As can be seen in draft EIR Appendix H, Shadow Analysis Report, the children's playground would be mostly in sunlight even during this afternoon period. The draft EIR further finds that most of the large grassy area of the park would be unshaded between the hours of 11 a.m. and 3 p.m., when use of the park was observed to be at its highest. Although the draft EIR notes that the proposed project or variant would shade a maximum of nearly three-quarters of Rolph Nicol Playground in the early morning on the winter solstice, shadow coverage of the park would decrease to 61 percent by 9 a.m. to less than 35 percent by 10 a.m.; and, as noted on draft EIR p. 3.F-24, as revised herein, to 17.8 percent by noon. Moreover, as can be seen in draft EIR Figures 3.F-12 and 3.F-13, pp. 3.F-18 and 3.F-19, substantial portions of the park's grassy area would remain in sunshine throughout the morning. This means that a park user seeking sunshine would be able to find it in the grassy area of Rolph Nicol Jr. Playground even on the winter solstice, the day that would be most affected by shadow from the proposed project or variant. At other times of the year, shadow effects would be less pronounced. Accordingly, the draft EIR's conclusion, that "As a result of the limited extent of potential net new shadow that would be cast by the proposed project or variant, both in terms of area covered and length of time on any given day, and because the new shadow would not affect the park during times of heaviest use, new shadow would not be expected to substantially affect people's enjoyment of the park" (draft EIR p. 3.F-24), remains valid.

As presented in Chapter 2 of this RTC, the revised variant would include a larger building envelope for Block NW2. The updated shadow analysis related to the revised variant is provided in Section 2.E.6, Shadow, of this RTC. As explained there, the revised variant would cast somewhat more shadow on Rolph Nicol Jr. Playground than would the proposed project or draft EIR variant. Similar to the proposed project and the draft EIR variant, under the revised variant, the largest new area of shadow would occur at 8:19 a.m. on the winter solstice; however, the revised variant would shade just over 86 percent of the park at that time, 12 percent more than the proposed project or draft EIR variant. However, even with the revised variant, substantial portions of the park's grassy area would remain in sunshine throughout the morning even on the winter solstice, the day that would be most affected by shadow. At other times of the year, increased shadow would be less pronounced. As concluded in the draft EIR and Chapter 2 of this RTC, the revised variant would not result in any new or substantially more severe impacts than those identified for the draft EIR variant.

Concerning shadows on schools, churches, neighborhoods, and/or residences, as set forth on draft EIR p. 3.F-4, under Significance Criteria, the proposed project or variant would have a significant effect with respect to shadow if it would "[c]reate new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces." The City does not consider shadow on spaces other than publicly accessible open spaces to be subject to shadow impacts under CEQA; therefore, schools, churches, residences, and neighborhoods in general are not analyzed in the draft EIR. Nevertheless, draft EIR

Figures 3.F-2 through 3.F16, pp. 3.F-8 through 3.F-22, provide the reader with information as to where shadow from the proposed project or variant would be cast in relation to these spaces. No further response is required.

4.I Utilities and Service Systems [UT]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.G, Utilities and Service Systems. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topics relate to:

- UT-1: Water Supply Analysis
- UT-2: Utilities Infrastructure
- UT-3: Increase in Trash Impacts

4.I.1 Comment UT-1: Water Supply Analysis

This response addresses the following comments, which are quoted below:

A-SFPUC-2

I-Boken-6

O-ITHA-3

O-SFSU-9

O-WTPCC-3

"Section 3.G.2, Environmental Setting, page 501 (3.G-1), paragraph 2. Edit paragraph to align with 2020 UWMP:

- Remove 'Hetch Hetchy' in first sentence
- Change to 26 wholesale customers instead of 27
- Revised last sentence as follows: 'Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, and recycled water, and non-potable water.'

Section 3.G.2, Environmental Setting, page 502 (3.G-2), paragraph 2. Last sentence of paragraph may be redundant since similar to next paragraph. Suggest removing. If not, revise as follows to align with 2020 UWMP: 'During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed.'

Section 3.G.2, Environmental Setting, page 502 (3.G-2), paragraph 3. Revise sentence as follows to align with WSA language: 'Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~ corresponding to water use reductions throughout the SFPUC's regional water system service area, including San Francisco.'

Section 3.G.2, Environmental Setting, page 503 (3.G-3), paragraph 1. At top of page, add following language before sentence that reads 'To date, those negotiations are ongoing': 'On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the State environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement.'

Section 3.G.2, Environmental Setting, page 503 (3.G-3), paragraph 3. Edit last sentence as follows: 'The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant and the 2020 plan~~.'

Section 3.G.3, Regulatory Framework, page 508 (3.G-8), paragraphs 4–5. Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a non-potable use as it is required.

Section 3.G.4, Impacts and Mitigation Measures, page 512 (3.G-12), paragraph 2. Discussion of the Non-potable Ordinance requirements differs from what is described on page 508 (3.G-8). These should be consistent with each other and should follow the language on page 508.

Section 3.G.4, Impacts and Mitigation Measures, page 512 (3.G-12), paragraphs 2–3. The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.

Section 3.G.4, Impacts and Mitigation Measures, page 513 (3.6-13), paragraph 5. The existing wording suggests that the regional treatment and distribution system is sized to meet the growing water demands, but that might be misleading. Revise sentence as follows: 'The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections, ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities.'

Section 3.G.4, Impacts and Mitigation Measures, page 514 (3.6-14), paragraph 3. Similar comment as above. The existing wording suggests that system capacity is sized based on the projected demands, but that is incorrect. Revise sentence as follows: 'The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water demand projections ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~, supplies for which would be accommodated by the existing regional water treatment and transmission facilities.'

Section 3.G.4, Impacts and Mitigation Measures, page 515 (3.G-15), paragraph 3. Under 'Operation', the description of how the project plans to comply with the Non-potable Ordinance should be consistent with how it's described above on page 508 (3.G-8). Currently the description is inconsistent.

Section 3.G.4, Impacts and Mitigation Measures, page 515 (3.G-15), paragraph 3. Same comment as above regarding difference in resident and employee estimates. The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.

Section 3.G.4, Impacts and Mitigation Measures, page 515 (3.G-15), paragraph 5. The Water Supply Assessment does not make any determination based on the potable portion of the project's demand estimate. The assessment is based on the total project demand. Revise sentences as follows: 'The water supply assessment determined that the ~~variant's potable water demand of 0.152 mgd would contribute 0.19 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045. The~~ variant's total water demand of 0.249 mgd, which does not account for the 0.097 mgd savings anticipated through compliance with the non-potable water ordinance, would represent 0.31 percent of 2045 total demand for the city.'" *(Monica Wu, SFPUC BEM Coordinator, Letter, 1/18/2023 [A-SFPUC-2, UT-1])*

"Besides catastrophic fires, the issue of the project's impact on drinking water has not been adequately addressed. This city has experienced water rationing, and a large project would have impacts on the water system even further.

It should be noted that the City has commissioned a report by USRS to identify sites for a desalination facility. The preferred site in the RS report is the Oceanside treatment facility not far from the project site." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-6, UT-1])*

- "We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA3, UT1])*

  - "C) The project considers water demand for landscape irrigation and cooling. Please assess whether there might be an opportunity to access recycled water via purple pipes from nearby sources. Extension of such infrastructure to the project site may benefit other projects as well." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-9, UT-1])*

- "We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-3, UT-1])*

RESPONSE UT-1

The comments relate to the draft EIR water supply and water distribution infrastructure impact discussions. Some comments suggest text revisions to the draft EIR's summary of water supply information. Other comments request further analysis regarding water supply or water supply infrastructure, or discuss other

water supply information. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

This response is organized as follows:

- Updated Water Demand Estimates
- Water Supply and Water Supply Infrastructure Impacts
- Recycled Water Availability

UPDATED WATER DEMAND ESTIMATES

A comment generally contains text revisions recommended by the SFPUC and states that the resident and employee estimates in Section E.2, Population and Housing, of the initial study (see draft EIR Appendix B) are not the same as the estimates used for the water supply assessment. Edits to the project description in response to the commenter are provided in Response PD-1, p. 4-6. The suggested text revisions have generally been accepted and are shown at the end of this response. None of the text revisions provide substantial new information or identify new significant impacts or a substantial increase in the severity of previously identified impacts in the draft EIR. Furthermore, the text changes do not include new feasible project alternatives or mitigation measures that are considerably different from those that were analyzed in the draft EIR.

In response to comments, the persons per household unit in the water demand calculator was updated to match the 2.36 persons per household used in initial study Section E.2, Population and Housing. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The City has updated the estimated project water demand based on these two changes (see Section 2.E.7, Utilities and Service Systems of this RTC). The updated water supply analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, in Chapter 2 of this RTC. The revised variant would have 775 employees, or about 483 fewer employees than the draft EIR variant using the employee generation numbers in initial study Table 1 on p. 14 (draft EIR Appendix B). The water demand calculator and Section E.2, Population and Housing, both use Leadership in Energy and Environmental Design (LEED) building and design construction default occupancy numbers for employees. However, the employee numbers are different between the water demand calculator and the population and housing section because the calculator also factors in employee occupancy rates from the 2019 California Plumbing Code and transient occupancy rates based on other studies to estimate full-time equivalents (FTEs) and transients (visitors, customers, or temporary users).[38] Visitors, customers, or temporary users are not considered in the population and housing analysis. The water demand calculator estimates 1,208 FTEs and 1,894 transients to estimate onsite demands for the proposed buildings. As such, the revised variant demand projections represent the most conservative buildout for the project site from a water demand perspective.

In response to the comment, the second paragraph on draft EIR p. 3.G-1 was revised as follows:

> San Francisco's ~~Hetch Hetchy~~ regional water system, operated by the San Francisco Public Utilities Commission (SFPUC), supplies water to approximately 2.7 million people. The system supplies both retail customers—primarily in San Francisco—and ~~27~~ 26 wholesale customers in Alameda, Santa

[38] SFPUC, District Scale Non-Potable Water Calculator Version 9.1, April 8, 2022.

Clara, and San Mateo counties. The system supplies an average of 85 percent of its water from the Tuolumne River watershed, stored in the Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent from local surface waters in the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on hydrological conditions and operational circumstances. Separate from the regional water system, the SFPUC owns and operates an In-city distribution system that serves retail customers in San Francisco. Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, ~~and~~ recycled water, and non-potable water.

In response to the comment, the second paragraph on draft EIR p. 3.G-2 was revised as follows:

In December 2018, the State Water Resources Control Board (state water board) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment), to establish water quality objectives with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. Specifically, the Bay-Delta Plan Amendment requires the release of 30 to 50 percent of the unimpaired flow[39] from the three tributaries from February through June every year, whether it is wet or dry. In SFPUC modeling of the new flow standard, it is assumed that the required release from the Tuolumne River is 40 percent of unimpaired flow. During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed.

In response to the comment, the third paragraph on p. 3.G-2 was revised as follows:

If the Bay-Delta Plan Amendment is implemented, the SFPUC would be able to meet the projected demand in normal years but would experience supply shortages in single dry years and multiple dry years. Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~ and corresponding water use reductions throughout the SFPUC's regional water system service area, including San Francisco. Without the implementation of the Bay-Delta Plan Amendment, the SFPUC would not experience shortages until the fourth and fifth year of a multi-year drought at 2045 levels of projected demand.

In response to the comment, the last paragraph on draft EIR p. 3.G-2 was revised as follows:

In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the state water board directed its staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the [state water board] as early as possible after December 1, 2019." In accordance with the state water board's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a substitute agreement with the state water board that would serve as an alternative path to implementing the Bay-Delta Plan's objectives. On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the

[39] "Unimpaired flow" represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.

> state environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement. To date, those negotiations are ongoing.

In response to the comment, the third paragraph and footnote 284 on draft EIR p. 3.G-3 was revised as follows:

> The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would improve overall water supply resilience through the Alternative Water Supply Planning Program. Developing these supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant[284] and the 2020 plan~~.
>
> ~~[284] A water supply assessment was prepared for the project using the variant projected demand because it represents the most conservative buildout for the project site from a water demand perspective.~~

In response to the comment, the last paragraph on draft EIR p. 3.G-8 was revised as follows:

> The proposed project or variant would include the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to the comment, the first full paragraph on draft EIR p. 3.G-12 was revised as follows:

> The SFPUC adopted a water supply assessment for the proposed project on October 24, 2022.[25] The water supply assessment for the variant identifies the project's total water demand, including a breakdown of potable and non-potable water demands.[26] The proposed project or variant is subject to San Francisco's Non-potable Water Ordinance (San Francisco Health Code article 12C). The Non-potable Water Ordinance requires new ~~commercial, mixed-use, and multi-family residential~~ development projects ~~with 250,000~~ of 100,000 gross square feet or more ~~of gross floor area~~ to install and operate an onsite non-potable water system and meet certain water demands with the onsite non-potable water. ~~Such projects must meet their toilet and urinal flushing and irrigation demands through the collection, treatment, and use of available graywater, rainwater, and foundation drainage. While not required, projects may use treated blackwater or stormwater if desired.~~ Commercial buildings that install building-by-building alternate water source systems must meet toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate (water vapor collected from air conditioning systems). Residential and mixed-use buildings must meet toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. Furthermore, projects may choose to apply non-potable water to other non-potable water uses, such as cooling tower blowdown and industrial processes, but are not required to do so under the ordinance. The proposed project or variant would meet the requirements of the Non-potable Water Ordinance ~~by using treated commercial blackwater, graywater, and rainwater for toilet and urinal flushing and irrigation~~ with the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to the comment, the last paragraph on draft EIR p. 3.G-13 was revised as follows:

> Potable water to meet the site's potable water and fire flow demands would be supplied to the project site from the SFPUC's regional water system, via the in-city low-pressure water distribution system, described above. The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections,[27] ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities. Therefore, the proposed project or variant would not require construction of new or expanded potable water distribution facilities.

In response to the comment, the last paragraph on draft EIR p. 3.G-14 was revised as follows:

> The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~ demand projections, supplies for which would be accommodated by the existing regional water treatment and transmission facilities. The proposed project or variant's population and employment growth is within the projected growth that is the basis for ongoing improvements to the emergency firefighting water system. The proposed project or variant would reduce stormwater flows to existing combined sewer system facilities consistent with the City's Stormwater Management Requirements and Design Guidelines. For these reasons, the proposed project or variant would not require construction of new or expanded water or stormwater drainage facilities during construction or operation, and this impact would be ***less than significant***.

In response to the comment, the first paragraph under "Operation" on draft EIR p. 3.G-15 was revised as follows:

> Water use at full buildout is estimated at 90.74 million gallons per year,[40] and would include irrigation, HVAC/cooling, and residential and commercial uses, such as toilets, lavatory faucets, and kitchen faucets. The proposed project or variant would ~~include the diversion, treatment, and reuse of graywater and blackwater for urinals, irrigation, and cooling towers. Graywater and blackwater collected from showers and washing machines would be treated prior to reuse onsite at a treatment plant or facility located within the project site~~ meet the requirements on the Non-potable Water Ordinance by the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas.

WATER SUPPLY AND WATER SUPPLY INFRASTRUCTURE IMPACTS

A comment states that the proposed project or variant's impacts on water supply have not been adequately addressed and that the City has commissioned a report to identify sites for a desalination facility. Draft EIR Impact UT-2, starting on draft EIR p. 3.G-15, discusses the variant's[41] water supply impacts, which are identified as less than significant. As noted on draft EIR p. 3.G-17, no single development project alone in San

[40] This discussion evaluates water use at full buildout of the proposed variant because the variant includes more residential units and institutional space, and consequently greater water use, than the proposed project.
[41] As noted in footnote number 310 on draft EIR p. 3.G-15, the water supply assessment was prepared using the variant demand projections because it represents the most conservative buildout for the project site from a water demand perspective.

Francisco would require the development of new or expanded water supply facilities or require the SFPUC to take other actions, such as imposing a higher level of rationing across the city in the event of a supply shortage in dry years.

Comments state that the impact on the city's water supply was considered as a percentage of the total water available to the city, and request that further analysis be performed on both the volume and pressure impacts on the surrounding neighborhoods and if necessary, identify mitigation measures. The effects of project operation on the local low-pressure water system are evaluated under Impact UT-1 on draft EIR p. 3.G-14. As noted on draft EIR p. 3.G-4, the low-pressure water system distributes potable water within San Francisco. A fire flow demand analysis was conducted for the proposed project or variant, which as discussed in draft EIR p. 3.G-14 concludes that the low-pressure water system would provide minimum residual pressures of at least 20 pounds per square inch during fire flow use. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated potable water demand analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, in Chapter 2 of this RTC. While the potable water demand estimates have increased with the revised variant, the increased potable demand would not result in as much instantaneous draw on the low-pressure water system as during fire flow use; therefore, as concluded in the draft EIR and Chapter 2 of this RTC, new or expanded low-pressure water system infrastructure would not be required to meet the proposed project, variant, or revised variant's demand.

RECYCLED WATER AVAILABILITY

A comment requests that the City assess whether there is an opportunity to access recycled water via purple pipes from nearby sources for landscape irrigation and cooling at the project site, and states that extension of such infrastructure to the site may benefit other projects as well. As of the date of this RTC document, SFPUC's Westside Enhanced Water Recycling Project provides approximately 8 miles of recycled water pipelines from the Oceanside Wastewater Treatment Plant to irrigated areas in Golden Gate Park.[42] The project site is not currently served by this SFPUC project. The proposed project or variant is subject to the City's Non-Potable Water Ordinance and Recycled Water Ordinance. The proposed project or variant would comply with the Non-Potable Water Ordinance and Recycled Water Ordinance by producing its own non-potable water on-site and distributing it to non-potable uses within specific buildings or within the project site, as applicable per the Infrastructure Plan. The proposed system(s) would be private and not connected to future City recycled water systems, should they ever be extended to the vicinity of the project. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

[42] SFPUC, FAQ Overview Westside Enhanced Water Recycling Project, August 2022, https://www.sfpuc.org/sites/default/files/documents/Westside-Enhanced-Water-Recycling-Project_Aug_2022_0.pdf, accessed April 17, 2023.

4.I.2 Comment UT-2: Utilities Infrastructure

This response addresses the following comments, which are quoted below:

I-Boken-5

I-Chang-7

I-Herlihy1-13

I-Ho-1

I-LG-2

I-Naraghi-13

I-Parthasarathy-14

I-Tsang-1

O-ITHA-4

O-SFSU-7

O-SPEAK-4

O-WTPCC-4

"the issues of resiliency and climate change, as the project will have dedicated emergency firefighting water pipes, but the City has stated that there aren't funds to connect them to the city's pipeline network." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-5, UT-2])*

"(7) This project has a significant impact on increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore." *(Mary Chang, Letter, 2/7/2023 [I-Chang-7, UT-2])*

"13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-13, UT-2])*

"I just wanted to notify my concern on the Sonestown Redevelopment Project. The size of the project is too large for the existing infrastructure." *(Hyesoon Ho, Letter, no date [I-Ho-1, UT-2])*

- "Increased demand on outdated infrastructure (electric, water, sewer) (Section 3.7) Although the developer proposes to build new infrastructure on the project site, it will be connected to existing resources. Considering frequent drought conditions, flooding and sewage spills, is it safe to add thousands of new residents without clear plans and funding to upgrade infrastructure?" *(LG, Letter, 2/13/2023 [ILG2, UT2])*

"13) The impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-13, UT-2])*

"13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-14, UT-2])*

"The infrastructure required to support the increased population density and activities is huge and will adversely impact the neighborhood." *(D.W Tsang, Letter, 2/8/2023 [I-Tsang-2, UT-2])*

- "We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA4, UT2])*

"7) Utilities:

- A) SF State occasionally experiences power outages and we are considering methods whereby we may have access to redundant power supplies from differing sources. Please consider whether the project site has ample access to utilities and whether additional sources are needed to support this growth." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-7, UT-2])*

"UTILITIES AND SERVICE SYSTEMS

The project proposes to construct independent Emergency Firefighting Water System (EFWS) pipes onsite.

However, the Draft EIR states that the nearest hookup to the City's EFWS pipeline network is Ocean Avenue and San Fernando Way.

Although geographically closest, this hookup location doesn't appear to deliver the maximum benefits of EFWS.

Besides high volume, EFWS pipes and hydrants are designed to utilize high pressure.

The typical residential water pressure is 60 psi. The EFWS system can reach a maximum pressure of 328 psi.

However, this is dependent on EFWS hydrants and pumping stations.

There are currently two (2) EFWS pumping stations on the Eastside of the City.

For the Stonestown EFWS to operate effectively, there needs to be an ocean water pump station.

To achieve this, a possible configuration is hooking up to the EFWS pipe and hydrant on 19th Avenue at Ulloa and extending it to 19th Avenue and Buckingham Way.

This could connect to another section of EFWS pipes and hydrants from 19th Avenue and Sloat to Sloat and the Great Highway.

The ocean water pump station could be located in the vicinity of the Oceanside Treatment Facility.

An affiliate of Brookfield Properties is Brookfield Infrastructure. Brookfield Infrastructure should be well positioned to implement this EFWS expansion as part of the Stonestown Development Agreement.

A subsidiary of Brookfield Infrastructure is Poseidon Water.

Poseidon Water is the owner/operator of a desalination (desal) facility in San Diego County. The engineering firm for this facility is IDE Technologies.

It has been confirmed by IDE Technologies that it is technically feasible to engineer a combined EFWS ocean water pump station and a desal facility.

The structure would function as a desal facility during normal operations and bypass the desal process in an emergency to provide ocean water directly to the EFWS system.

This could also be included in the Development Agreement." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-4, UT-2])*

- "We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-4, UT-2])*

RESPONSE UT-2

The comments relate to the capacity of existing infrastructure in the area. Some comments state that the EIR should address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods. Other comments are more general and state that the proposed project or variant is too large for existing infrastructure. Comments also suggest changes to the project to include expansion of the emergency firefighting water system. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

This response is organized as follows:

- General Infrastructure Capacity
- Wastewater and Water Infrastructure Impacts
- Power Supply
- Emergency Firefighting Water System

GENERAL INFRASTRUCTURE CAPACITY

Comments express concern that the proposed project or variant is too large for existing infrastructure, and that upgrades to infrastructure would be needed, or that infrastructure improvements could adversely affect the neighborhood. A comment requests consideration of whether the project site has ample access to utilities and whether additional sources are needed to support the proposed project or variant. The proposed project or variant's potential impacts related to utilities and service systems infrastructure, including impacts related to new or expanded water or stormwater drainage facilities, water supplies, wastewater treatment capacity, and solid waste, are addressed under draft EIR Impact UT-1 (pp. 3.G-13 to 3.G-14) and Impact C-UT-2 (pp. 3.G-27 to 3.G-28). Detailed responses regarding the infrastructure impacts are provided below.

WASTEWATER AND WATER INFRASTRUCTURE IMPACTS

Comments request that the EIR address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods. Impact UT-3 on draft EIR pp. 3.G-22 and 3.G-23 analyzes impacts associated with the proposed project or variant to exceed the capacity of existing wastewater treatment facilities that would result in the need for new or expanded wastewater treatment facilities. As stated under Impact UT-3 on draft EIR p. 3.G-23, the Oceanside Treatment Plant is permitted to treat an average dry-weather influent flow of up to 43 mgd, and in 2020 the average dry-weather flow to the treatment plant was 12 mgd. The proposed project or variant would be subject to regulations that require onsite water reuse and decreasing the amount of stormwater runoff from the project site. In addition, the combined sewer and stormwater peak flows from the project site into each existing combined sewer system point of connection[43] would be reduced compared to existing conditions. For example, in compliance with the City's stormwater management ordinance, the proposed project or variant would be required to reduce the stormwater rate and volume by 25 percent for the smaller 2-year, 24-hour storm, which would result in a decrease in total flow from the project site to the combined sewer system during this storm condition. Therefore, the proposed project or draft EIR variant would not require new or expanded combined sewer system facilities in the surrounding neighborhoods or at the Oceanside Treatment Plant and this impact would be less than significant.

The project sponsor's infrastructure plan describes the required infrastructure improvements to be constructed to support the proposed project and variant. The infrastructure plan presents the existing and proposed infrastructure components and systems, including demolition, corrective geotechnical measures, site grading, street and multi–modal transportation systems, open space improvements, sustainability and resiliency considerations, potable water system, auxiliary water system, non-potable water system, combined sewer system, stormwater management controls, and dry utility system. The infrastructure plan also identifies the responsible parties for the design, construction, and maintenance of the infrastructure. The infrastructure plan includes requirements to prevent the proposed project or variant from exacerbating

[43] Points of connection are near Lowell High School, Buckingham Way at the intersection with Winston Drive, Winston Drive at 20th Avenue, and Buckingham Way along the southern border of the project site.

existing conditions. The infrastructure plan would be part of the development agreement that must be approved by the board of supervisors for the project to proceed, and the infrastructure design requirements would be a term within the agreement.

Comments request the inclusion of a data-based impact analysis that factors in runoff management and discusses how to prevent the morbidity of plants in parks and open spaces where treated water is used. Water treated by onsite treatment systems (also called alternate water source systems) would be required to comply with requirements of the City's Non-potable Water Ordinance, which are discussed on draft EIR p. 3.G-8. As discussed in health code article 12C, section 12C.5, the Director of Health shall issue rules and regulations regarding the operation of the alternate water source system to protect public health and safety, and the regulations must address at a minimum water quality criteria, monitoring and reporting content and frequencies, and operation and maintenance requirements. For further information on regulations applicable to non-potable water, recycled water, and stormwater management requirements, see draft EIR pp. 3.G-8 and 3.G-9.

Onsite treated water would also be required to comply with state requirements once such requirements are adopted. California Water Code section 13558 requires the state water board to adopt regulations for risk-based water quality standards for the onsite treatment and reuse of non-potable water for non-potable end uses in multifamily residential, commercial, and mixed-use buildings (such as the proposed project or variant). The state water board has not yet adopted such regulations, but has developed proposed regulations and plans to submit a Notice of Proposed Rulemaking to the Office of Administrative Law to start the rulemaking process in 2023.[44] The proposed regulations are pathogen risk-based water quality standards, and must include water quality monitoring requirements and reporting requirements.[45] Once approved by the Office of Administrative Law and filed with the Secretary of State, the regulations would be published in California Code of Regulations title 22, division 4, chapter 3.5, Onsite Treatment and Reuse of Nonpotable Water. In 2001, an estimated 525,460 acre-feet per year of recycled water was used in California. Between 2002 and 2015, that number increased to approximately 713,000 acre-feet per year of recycled water use in California, used primarily for agricultural and landscape irrigation.[46] Based on the recycled water regulatory requirements described above for agricultural and landscape irrigation, and proposed regulations including water quality monitoring, the use of treated water for landscape irrigation is not anticipated to adversely affect plants in parks and open spaces.

A comment states that the project or variant proposes to construct independent Emergency Firefighting Water System (EFWS) pipes onsite. A comment states that there needs to be an ocean water pump station for the Stonestown EFWS to operate effectively and suggests that the proposed project or variant include a combined desalination facility and ocean water pump station at Ocean Beach as part of the development agreement. A comment states that the City has stated that there are no funds to connect emergency firefighting water pipes at the project site to the City's pipeline network. The commenter is incorrect that the proposed project or variant would construct an independent EFWS onsite. The City's EFWS is described on draft EIR p. 3.G-4, which is managed by SFPUC and includes cisterns in the project vicinity. Improvements to the EFWS are planned as part of the City's capital planning process and funded through municipal bonds. In

[44] California State Water Resources Control Board, SBDDW-22-001 Regulations for Onsite Treatment and Reuse of Nonpotable Water, https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/onsite_nonpotable_reuse_regulations.html, accessed April 10, 2023.
[45] California State Water Resources Control Board, Fact Sheet: Frequently Asked Questions Regulations for Onsite Treatment and Reuse of Nonpotable Water, last updated September 29, 2022.
[46] Olivieri, A.W., B. Pecson, J. Crook, and R. Hultquist, 2020. California water reuse – Past, present, and future perspectives. *Advances in Chemical Pollution, Environmental Management and Protection*, Vol. 5.

2018, the SFPUC completed a study analyzing options for high-pressure fire suppression for the Richmond, Seacliff, and Sunset districts. To better cover the west side of the city with pressurized water for emergency firefighting purposes, San Francisco envisions a Potable Emergency Firefighting Water System consisting of over 14 miles of new, seismically resilient high-pressure pipelines. The looping pipeline network would be supplied with four water sources at two strategic locations with delivery expected in two phases.[47]

As discussed on draft EIR p. 3.G-14, the proposed project or draft EIR variant would connect proposed low-pressure water distribution pipelines to existing water transmission and distribution pipelines in Winston Drive, 19th Avenue, and Eucalyptus Drive/20th Avenue. Fire flow was simulated using a model based in part on field flow tests conducted by the San Francisco Fire Department to assess whether the proposed project system would meet industry and SFPUC standard for flow and pressure. Fire flow demands of 2,000 gallons per minute would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch and the impact would be less than significant.

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. Overall, the revised variant would result in an increase in water demand and wastewater generation. The updated analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, of this RTC. The proposed project, draft EIR variant, or revised variant would not require new or expanded low-pressure water system infrastructure and the impact would be less than significant. The comment will be transmitted to City decision-makers for consideration in their deliberations on whether to approve the project.

4.I.3 Comment UT-3: Increase in Trash Impacts

This response addresses the following comment, which is quoted below:

I-LG-5

- "Impact of project (cumulative) on cleanliness, public health and quality of life. The images of the proposed project are pristine, but the reality is that 19th Avenue is covered with graffiti and trash is dumped everywhere. What will prevent this project from attracting more of the same?" *(LG, Letter, 2/13/2023 [ILG5, UT3])*

RESPONSE UT-3

A comment states that the proposed project or variant would have cumulative impacts on cleanliness, public health, and quality of life and states that 19th Avenue is covered with graffiti and trash. As discussed in initial study Section D.4, Aesthetics and Parking (see draft EIR Appendix B), aesthetics shall not be considered in determining whether a project has the potential to result in significant environmental effects if the project is in a transit priority area, on an infill site, and is residential, mixed-use residential, or an employment center. The project meets these criteria, and therefore, the initial study and EIR do not consider aesthetics in determining the significance of project impacts under CEQA. Draft EIR Impact UT-4 pp. 3.G-24 through 3.G-26 discusses the project's impacts related to solid waste standards and solid waste reduction goals. As discussed there, the

[47] City and County of San Francisco, City and County of San Francisco Capital Plan for Fiscal Years 2022–2031, https://www.onesanfrancisco.org/the-plan-2022/overview, accessed April 7, 2023.

proposed project or variant would not include features that would impede compliance with local and state solid waste management requirements. Cumulative impacts of the proposed project or variant are analyzed in the respective section of the draft EIR for each resource topic. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.J Other CEQA Considerations [OC]

4.J.1 Comment OC-1: Areas of Controversy and Unresolved Issues

This response addresses the following comment, which is quoted below:

I-Full-29

"Page 4-5, Section 4.D. It is difficult to understand why the EIR preparers chose to identify so many 'potential areas of controversy and unresolved issues'. Is it not the intent of the EIR to actually analyze the impacts of the project? For example, the third bullet identifies 'project and cumulative impacts on traffic congestion and parking'. This should not be an 'unresolved issue'. This very topic was included in scoping comments as being requested to be analyzed and included in the EIR. However, no such analysis was conducted. The only reason this is an 'unresolved issue' is because the EIR preparers chose not to conduct the analysis. In reviewing Appendix D, all of the information is available regarding the number of vehicle trips through 28 intersections in the vicinity of the project site. Providing information regarding the level of service (LOS) at these intersections could have been provided, but was not. Many of the other topics on this list were either focused out of the EIR in the Notice of Preparation or have been analyzed in the EIR. Why are these on this list?" *(Dave Full, Letter, 2/12/2023 [I-Full-29, OC-1])*

RESPONSE OC-1

The comment relates to Section 4.D, Areas of Known Controversy and Issues to Be Resolved, on draft EIR pp. 4-5 through 4-6. The commenter expresses difficulty understanding the content of this section. The commenter asserts that "project and cumulative impacts on traffic congestion and parking" should not be included in this section, and this and other topics were inappropriately excluded from analysis in the draft EIR.

A comment asks why the list of potential areas of controversy and issues to be resolved for the proposed project or variant provided in draft EIR Section 4.D includes issues that were either "focused out of the draft EIR in the NOP" or have been analyzed in the draft EIR. As specified in CEQA Guidelines section 15123, an EIR shall contain a brief summary of the proposed action and its consequences, and the summary shall identify areas of controversy known to the lead agency, including issues raised by agencies and the public and issues to be resolved. Accordingly, potential areas of controversy and issues to be resolved for the proposed project or variant, as expressed by agencies and community members in response to the notice of preparation (NOP) for the draft EIR published by the planning department on April 27, 2022, are identified in draft EIR Section 4.D, Areas of Known Controversy and Issues to Be Resolved. As stated in draft EIR Section 4.D, to the extent the comments received on the NOP relate to environmental issues, they are addressed in the draft EIR and initial study (included as draft EIR Appendix B). As further stated in draft EIR Section 4.D, any comments

related to the proposed project or variant's merits that cannot be addressed through the CEQA process will be provided to decision-makers as part of the entitlement process.

The commenter's assertion that scoping comments related to project and cumulative impacts on traffic congestion and parking were not addressed in the draft EIR is incorrect. Draft EIR Section 3.B, Transportation and Circulation, analyzes the potential project-level and cumulative impacts related to transportation in accordance with CEQA. Refer to Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, p. 4-137, which explains that automobile delay (traffic congestion) described by level of service is no longer used as a performance metric under CEQA. Response GC-NON-CEQA-5 also explains that parking is no longer considered an environmental impact under CEQA. Response CU-1, Cumulative Projects, p. 4-12, explains the projections taken into account for cumulative conditions.

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.K Alternatives [AL]

The comments and corresponding responses in this section cover the subjects included in draft EIR Chapter 5, Alternatives. The comment topics relate to:

- AL-1: Preservation Alternatives
- AL-2: Partial Preservation Alternative Transportation Analysis
- AL-3: Alternatives Comparison Table
- AL-4: Adequacy and Reasonable Range of Alternatives

4.K.1 Comment AL-1: Preservation Alternatives

This response addresses the following comments, which are quoted below:

A-CPC-Moore-2

A-HPC-3

I-Full-14

I-Full-30

I-Goodman-4

"The one thing I would like to suggest is that the graphics, which show the theater, punch out the theater more strongly because your eye gets lost, given the line weight of how that particular object -- which is much of the alternatives -- pops into your eye when you look at the alternatives. It may be the smallness of what the EIR shows, but I would strongly suggest that it is more strongly delineated and popped out in the graphics." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-2, AL-1])*

- Commissioner Black inquired why the additional building W5 added to the Full Preservation Alternative was also not incorporated within the Partial Preservation Alternative. She thought the partial preservation alternative that saved the theater lobby was successful and supported it over the full preservation alternative.
- Commissioner Johns found the changes made to the partial preservation alternative to be acceptable.
- Commissioner So requested clarification as to whether or not the project team explored the possibility of constructing above the theater or explored reduction of other non-residential square footages on the site to increase the residential units under the preservation alternatives." *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-3, AL-1])*

"Page 3.A-22, Mitigation Measure M-CR-1. Why is there not the possibility of incorporating the façade of the theater into a building to be developed on the project site? Could this minimize the impact associated with the impairment of the architectural resource? This should be considered as a measure for mitigating this impact to a historic resource." *(Dave Full, Letter, 2/12/2023 [I-Full-14, AL-1])*

"Page 5-26, Section 5.C.3. Why does this alternative include two very different aspects of the proposed project? The partial preservation of the theater mitigates very different impacts than the relocation of parking. Putting them in one alternative does not make sense and undermines the intent behind the alternatives process." *(Dave Full, Letter, 2/12/2023 [I-Full-30, AL-1])*

"The stonestown theater is I believe a great façade and front that should be re-utilized in any future plaza or housing concept. The back theater portion may be torn down and a new building attached on the back side, of the theater. The need for a central community space, digital zone for school kids from Lowell who often hang at the mall, and the new housing could be a wonderful pop-concept for the front of the theater with some space for seating and protected shelter areas for youth and entertainment for them after school including a green-scaped area, and food services that promote better after hours public spaces and lighting alongside treescapes and a revitalized theater entry zone. This could also serve after hours community organizations and meetings if designed as a community hub. I strongly support the preservation of the front portion of the stonestown theater into a more positive public/private area that is available and useable by youth and seniors in the community." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-4, AL-1])*

RESPONSE AL-1

The comments relate primarily to alternatives described and evaluated in the draft EIR to reduce or avoid significant impacts on historic architectural resources. A comment suggests that the former UA Stonestown Twin Theater should be more strongly delineated in the alternatives graphics (i.e., figures) in the draft EIR. In response to the comment, Figure 5-1, Alternative B: Full Preservation and Relocated Parking Alternative (draft EIR p. 5-16) and Figure 5-2, Alternative C: Partial Preservation Alternative (draft EIR p. 5-27) were revised to delineate the theater. The revised figures are provided on pp. 5-50 and 5-51.

A comment asks why the new 100-unit residential building at Block W5 added to Alternative B, Full Preservation Alternative, was not also incorporated within Alternative C, Partial Preservation and Relocated Parking Alternative. A comment requests clarification as to whether construction above the former UA Stonestown Twin Theater or reduction of other non-residential square footages on the project site to increase the residential units under the preservation alternatives was considered.

In response to a comment, Alternatives B and C as presented in the draft EIR are the result of refinements made in response to comments on the original preservation alternatives presented to the San Francisco Historic Preservation Commission (HPC) on September 7, 2022 (see draft EIR pp. 5-6 to 5-7). Strategies to avoid or lessen significant impacts on historic architectural resources would include retaining all or some of the theater building, resulting in Alternatives B and C, which were carried forward in the draft EIR. As discussed in draft EIR Section 5.A.1, CEQA Requirements for Alternatives Analysis, p. 5-1, in accordance with CEQA Guidelines section 15126.6(a), the draft EIR describes and evaluates a reasonable range of alternatives to the proposed project or variant that would feasibly attain most of the basic objectives of the proposed project or variant, but would avoid or substantially lessen any identified significant adverse environmental effects of the proposed project or variant. As also discussed in draft EIR Section 5.A.1, an EIR is not required to consider every conceivable alternative to a project or alternatives that are considered infeasible. Rather, it must consider a reasonable range of potentially feasible alternatives to foster informed decision-making and public participation. Alternative C is therefore not required to include a new Block W5 similar to Alternative B. Insofar as Alternatives B and C would avoid or substantially lessen some of the significant effects of the proposed project or variant, these alternatives meet the CEQA requirements for alternatives and appropriately represent a range of historic preservation scenarios.

In response to a comment, an alternative was considered that included rehabilitation of the theater and construction of an addition on top of the building to recoup the loss of dwelling units, based on recommendations by the HPC. As discussed on draft EIR p. 5-88, this concept was rejected due to the extent of changes to the historic resource that would be required to build on top of the structure. The structure of the theater building would not support any sizable addition. To erect an addition over the existing building, either the rear half of the building would need to be reconstructed with steel framing and an addition built on top of it, or, if an addition were located over the theater's lobby, installation of structural steel within the lobby would be required to support an addition overhead. These alterations would create a substantial visual impact on the interior and exterior of the historic resource, altering its overall massing, and affecting the historic lobby by disrupting its open quality with additional structural supports. This alternative was rejected from further consideration because it would not avoid or lessen the significant impact on the historic resource.

Comments discuss retention and reuse of the façade of the former UA Stonestown Twin Theater. A comment expresses support for incorporation of the theater façade into a future plaza, housing concept, or other area available and useable by youth and seniors. A comment asserts that incorporation of the theater façade into the proposed project or variant should be considered in the mitigation measures included in the draft EIR to reduce impacts of the proposed project or variant on the historic resource.

The proposed project or variant as described in draft EIR Chapter 2, Project Description, includes the demolition of the theater. Impacts on the historic architectural resource and mitigation measures are identified under Impact CR-1, draft EIR pp. 3.A-22 through 3.A-24. To mitigate impacts associated with demolition of the historic architectural resource, Mitigation Measures M-CR-1a (Documentation of Historic Resources), M-CR-1b (Salvage Plan), and M-CR-1c (Public Interpretive Plan) are identified; however, impacts

are identified as significant and unavoidable. Retention and incorporation of the theater façade into the proposed project or variant are not part of the mitigation measures.

The draft EIR describes and evaluates a full preservation and partial preservation alternative that would attain most of the basic objectives but avoid or substantially lessen the significant historic architectural resources impact of the proposed project or variant. Specifically, as discussed in draft EIR Section 5.C.3, pp. 5-26 to 5-29, Alternative C, Partial Preservation and Relocated Parking Alternative, was developed to reduce the significant and unavoidable impact on a historic architectural resource (i.e., the former UA Stonestown Twin Theater) that would occur under the proposed project or variant. As discussed in draft EIR Section 5.C.3, Alternative C would retain 4,000 square feet of the theater building, including the primary façade and the sunken entry plaza, while removing the rear auditorium volume and stucco-clad hyphen to develop an eight-story residential building. As discussed in draft EIR Section 5.C.3, pp. 5-28 to 529, while Alternative C would retain some character-defining features of the historic resource and would reduce the identified historic resource impact, the impact of this alternative related to the demolition of a historic resource is identified as significant and unavoidable, similar to the proposed project or variant. As discussed in draft EIR Section 5.C.3, implementation of Mitigation Measures M-CR-1a through M-CR-1c would be required to reduce impacts. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. As such, as discussed in draft EIR Section 5.C.3, while Alternative C would reduce impacts on the historic theater building in comparison with the proposed project or variant, the impact on historic architectural resources is identified as significant and unavoidable with mitigation. Other preservation alternatives related to the former UA Stonestown Twin Theater were considered but rejected and described in draft EIR Section 5.E.2. Refer to Response AL-4, p. 4-86 regarding the adequacy and reasonable range of alternatives. Consequently, the draft EIR appropriately considers incorporation of the theater façade as a measure to avoid or substantially lessen identified significant adverse environmental effects of the proposed project or variant.

A comment relates to Alternative C, Partial Preservation and Relocated Parking Alternative. The commenter asserts that the alternative's purpose to reduce more than one identified significant impact of the proposed project or variant "does not make sense and undermines the intent behind the alternatives process." In response to this comment, as specified in CEQA Guidelines section 15126.6(a), an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives but avoid or substantially lessen any identified significant adverse environmental effects of the project. CEQA includes no prohibitions against an alternative addressing more than one identified significant adverse environmental effect of a project.

4.K.2 Comment AL-2: Partial Preservation Alternative Transportation Analysis

This response addresses the following comment, which is quoted below:

I-Full-31

"Page 5-28, paragraph 1. The second reason for this alternative is to 'redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue)'. This is curious because nowhere in the EIR does it acknowledge that there would be 'substantial vehicle delay' on either roadway. Where is this analysis? What is the 'substantial delay'? How can an alternative be based on information that has not been provided in the EIR?

Page 5-30, Table 5-3. There is a major mathematical error in this table. The net change in vehicle trips is 27, not 275 as stated in the table. In addition, without information regarding the level of service (LOS) of intersections on 19th Avenue and 20th Avenue, how is the reduction of 2.2% in vehicle trips meaningful? Without the background information on existing and future LOS, it is not possible to understand what this alternative would accomplish.

Page 5-31, Emergency Access Impacts. Paragraph 2 and Table 5-4 focuses on the intersection of Buckingham Way and Winston Drive. In the traffic analysis, the queue lengths on Eucalyptus Drive between 20th Avenue and 19th Avenue was considered to be an impact. Why was this intersection not included?" *(Dave Full, Letter, 2/12/2023 [I-Full-31, AL-2])*

RESPONSE AL-2

The comments relate to the analysis of transportation impacts for Alternative C, Partial Preservation and Relocated Parking Alternative.

A comment states that the draft EIR does not include information or analysis related to the vehicle delays and questions how an alternative can be based on information that has not been provided in the EIR. The draft EIR states on p. 5-62: "relocation of 200 retail parking spaces from Block E1 to Block S3 to redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue) and that are used by multiple transit routes under the proposed project or variant." Vehicle delays that would be caused by the proposed project or variant were considered in the analysis of the project's and variant's transit delay impact. Impact TR-5 on pp. 3.B-65 through 3.B-70 and Impact C-TR-4 on pp. 3.B-78 through 3.B-83 in draft EIR Section 3.B, Transportation and Circulation identifies significant transit delay impacts, which a major component would be vehicle delays. Alternative C, Partial Preservation and Relocated Parking Alternative, would meet most of the basic objectives of the project and substantially reduce the already less-than-significant transit delay impacts of the project. Transit delay impact as a result of redistribution of project-generated vehicle trips from Alternative C, Partial Preservation and Relocated Parking Alternative is summarized in pp. 5-29 through 5-33 in draft EIR Chapter 5, Alternatives.

A comment correctly identifies an error in draft EIR Table 5-3 in which the total net change of negative 27 estimated vehicle trips under Alternative C, Partial Preservation and Relocated Parking Alternative, is incorrectly identified as negative 275 estimated vehicle trips.

In response to the comment, draft EIR Table 5-3, p. 5-30, was revised as follows:

Table 5-3 Land Use Characteristics and Estimated Vehicle Trips, Alternative C: Partial Preservation and Relocated Parking Alternative

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative C Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	401	(6)
Retail Sales and Services Use	492	480	(12)
Non-Retail Sales and Service Use	172	172	0
Hotel	29	29	0
Institutional Use	117	108	(9)
Childcare	32	32	0
Total	***1,249***	***1,222***	***~~(275)~~ (27)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(2.2%)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

The estimated overall vehicle trip change of negative 2.2 percent identified in draft EIR Table 5-3 is correct and not affected by the above-noted typographical error. That is, the typographical error does not change the resulting transit delay analysis or conclusions.

A comment further questions how the reduction of 2.2 percent in vehicle trips is meaningful without information regarding the LOS of intersections on 19th Avenue and 20th Avenue. The commenter states that without the background information on existing and future LOS, it is not possible to understand what Alternative C, Partial Preservation and Relocated Parking Alternative would accomplish. In response to this comment, this information is meaningful to estimate the resulting transit delay impacts from Alternative C, Partial Preservation and Relocated Parking Alternative in relation to those impacts from the project and variant. Refer to the discussion and analysis of these effects on pp. 5-29 through 5-33 in draft EIR Chapter 5, Alternatives, and Appendix D.2, Transit Analysis Memorandum (see Transit Delay Analysis and Results section on pp. 21–30). Detailed LOS analysis which was used for the transit delay analysis is provided in Appendix Q of draft EIR Appendix D.2.

A comment notes that the discussion of emergency access impacts related to Alternative C on draft EIR p. 5-31 and in Table 5-4 focus on the intersection of Buckingham Way and Winston Drive and asks why queue

lengths on Eucalyptus Drive between 20th Avenue and 19th Avenue that were considered to be an impact in the traffic analysis were not included.

At the northeast portion of the project site (close to Block E1), including Eucalyptus Drive between 20th Avenue and 19th Avenue, as referenced by the commenter, Alternative C would produce fewer vehicle trips and shorter queue lengths than the proposed project or variant. The proposed project or variant resulted in less-than-significant impacts related to potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access at those locations, and, thus, so would Alternative C.

As stated on draft EIR p. 5-31, queuing at the Winston Drive/Buckingham Way intersection is analyzed because Alternative C proposes to relocate 200 retail parking spaces from Block E1 to Block S3. Vehicles that would access those parking spaces in the proposed project or variant were redistributed to southwest of the project site, which is closer to Block S3, for analysis. Detailed reasoning for the significance determination is presented under draft EIR Impact TR-2, on pp. 3.B-57 through 3.B-63, and Impact TR-3, on pp. 3.B-63 through 3.B-65. Additionally, queuing at the Winston Drive/Buckingham Way intersection is analyzed because of its proximity to San Francisco Fire Department Station 19. If vehicle queues were to extend to the fire station, they would block fire truck access. The vehicle queues are identified as having a less-than-significant impact on emergency vehicle access.

4.K.3 Comment AL-3: Alternatives Comparison Table

This response addresses the following comment, which is quoted below:

I-Full-32

"Page 5-65, Table 5-12. The CEQA significance determination notes on the table identify 'LSM' as less than significant with mitigation. The table actually uses the acronym LTSM. Is the reader to conclude that these are the same?" *(Dave Full, Letter, 2/12/2023 [I-Full-32, AL-3])*

RESPONSE AL-3

Comment I-Full-32 correctly identifies an error in draft EIR Table 5-12. As the comment notes, the abbreviation "LSM" is identified in the footnotes of the table as the significance determination code for "less than significant with mitigation" while the table entries identify "LTSM" for this same significance determination. The latter (LTSM) is the correct abbreviation.

In response to this comment, the footnotes of Table 5-12, pp. 5-65 through 5-77, were revised as follows:

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LTSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:
[a] See EIR Chapter 3 and Appendix B for complete impact statements.

4.K.4 Comment AL-4: Adequacy and Reasonable Range of Alternatives

This response addresses the following comments, which are quoted below:

A-CPC-Moore-1

A-HPC-2

I-Arbulu-5

I-Goodman-2

I-Herlihy2-1

I-Herlihy2-3

I-Herlihy3-1

I-Pilpel-1

I-Strassner-1

O-SierraClub-3

"I believe that the Draft EIR in front of us is accurate and complete. It has an unusually large number of alternatives; mostly, we see two or three. This really stretches it and gives everybody really the subtleties of what can happen. This is only -- these are comments for the Draft EIR, not an exchange between us and staff." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-1, AL-4])*

- "The HPC agreed that the DEIR analyzed a reasonable and appropriate range of preservation alternatives to address historic resource impacts. Some commissioners weighed the merits of the different alternatives and expressed a preference for one alternative over another. *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-2, AL-4])*

"The scope of Phase 1 must be scaled down to reduce the impact on the existing residents. This is not some remote parking lot that they want to develop with nothing around it, or in an empty downtown This is in the middle of our neighborhood. Please help us!" *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-5, AL-4])*

"I would like to see increased height of many of the proposed buildings along 19th Ave. possibly forming a better plaza across from mercy high school with the change in topography and inclusion of a plaza and transit entry point vs. just a big parking lot." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-2, AL-4])*

"CEQA Guidelines section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5-1 outlines alternatives B, C, D. E which range from 2890 dwelling units to 1758 dwelling units. Assuming 2 person occupancy per unit that would result in 5600 residents on the high side to 3500 residents on the low side on the Stonestown property where there are no residents today. Unavoidable negative impacts are noted in the draft on transit, traffic, emergency services and infrastructure (Sewer, water etc).

No consideration is given to an Alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure. Such an Alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor, Lakeshore and Ingleside Terraces to provide additional housing to San Franciscans." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-1, AL-4])*

"Table 5-1 Alternatives B,C,D,E show site maps of a towering wall of apartments on 19th Avenue stretching 0.25 miles on the West side of 19th Avenue from Eucalyptus Drive to Buckingham Way. The DEIR is silent on the environmental impact of this significant 'Western Wall' on 19th Avenue." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-3, AL-4])*

"CEQA guideline section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly obtain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This Draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5.1 outlines Alternatives (B), (C), (D), and (E), which range from 2,890 dwelling units to 1,758 dwelling units. Assuming two-person occupancy per unit, that would result in approximately 5,600 new residents, on the high end, or 3,500 new residents on the low end, on the Stonestown property. Today, there is no resident on that property.

Unavoidable negative impacts have been detailed in the DEIR and were also detailed by Miss Florentina. And those negative -- unavoidable negative impacts are noted in the Draft, and they impact transit, traffic, emergency services and infrastructure, including sewer and water. No consideration is given to an alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure. Such an alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor and Lakeshore." *(James P. Herlihy, Public Hearing, 2/9/2023 [I-Herlihy3-1, AL-4])*

"1. I urge that a new alternative be developed that would create fewer housing units, retail space, and other uses, and reduce density and height further than the Code Compliant or Reduced Density Alternatives. I believe that adding another alternative as described would increase the choice of alternatives and allow a better range of alternatives for analysis and decisionmaking on this important project on the west side of San Francisco." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-1, AL-4])*

"**On an Ideal Senior Housing Facility** –HS Jan/2023

This concept of an ideal facility was developed as I searched for my near future new home but I did discovered some close facsimiles in Oakland. The 18 story building proposed Stonestown would be my ideal is construction started five years ago.

But, it could be available for some ones future. The facility should be large, probably more than 200 units. This will allow for good management and many people meeting opportunities for residents. Residence in the facility should be limited to people who have started to collect social security to self-select for common interests because senior housing is more than just housing. Because seniors are trending downward in abilities and upward in needs for service the units should be proportionally allocated to a few people who only want to downsize and desire only limited services with the majority of units for people who need more services but are mostly independent. This means that all new residents must be able to walk in without assistance and that most people will age in place in the same unit or at least in the same building. I don't believe that those with an extreme loss of memory and/or very great needs for personal care should live in this facility. The latter should not mean that those who can and/do walk, wheel or motor themselves to facility functions should be required to move. The growing number of the latter group, over time, to enjoy the facility is another reason for a larger facility.

Seniors also come with a range of available finances and needs for space. Many can use a large studio, about 500 square feet. Many will only be able to afford a small studio. A few, perhaps couples, may feel a need for larger, separate one bedroom units. 'Murphy' beds, back to the 1920s, can make entertaining more feasible in small units. Kitchens should all be minimal: two burners, no oven, small microwave, small refrigerator and a little counter space and storage. Hopefully SF and developers can see that these small units make it easier for people to downsize and release their larger houses for families who need more space. This will allow most seniors to age in place and not have to move until near the end. In addition, many people who are ready to downsize from two or three bedrooms have a lower floor that can be improved to provide an additional housing unit.

The residence should include food service. A few residents will want 21 meals per week. Most will want the flexibility of 14 meals per week. Saving a few meal tickets to treat family to meal will be nice. Some residents will want very few senior meals per week and will pay a little more per meal. Residents should be able to change their food needs as they age. Maybe the dining room should have two sittings. All of the residents should contribute proportionally to the various kinds of common space. This might constitute a small subsidy for those with reduced means. Services should be available but elective. Weekly cleaning is nice but cleaning a small space can be better than doing a tai chi exercise on you tube. Again, choice is good but maybe except for recovery after illness a choice should be long term, to allow management to plan. Shuttle vans are also a good service.

An ideal location would have: good transit service nearby; accessible pleasant nearby walks in parks and neighborhoods and close by food shopping for those who elect to do some of their own cooking. These virtues are part of the 18 story building proposed for the Stonestown parking lot and the building can be designed to include all of the above virtues too. The problem is facility management. Senior facilities used to be owned and operated as non-profits. I suggest that the future residents pay the rent for their unit to Brookfield; in the typical supply and demand method. However, their payment for their share of the essential senior common spaces should be paid to a new carefully organized cooperative management organization. This organization will also provide the services and meals that the residents will choose. While the latter is difficult, it will have more benefits to the resident seniors and society in general than the growing

corporatization of senior facilities that used to be managed by nonprofit religious or other groups. The alternative to a cooperative would be close government supervision similar to a monopoly because seniors after they move in and age can't really move. Thus they become utility consumers." *(Howard Strassner, Letter, 1/26/2023 [I-Strassner-1, AL-4])*

"2) Because of SF's increasing numbers of elderly residents and our great need for market rate housing the study should have included as a partial alternative the impacts of using the eighteen story building as a senior 'independent living' residence. This alternative should note that many of the residents of this senior facility would be people who are ready to downsize from a two or three bedroom home or apartment but now see little advantage to moving. If they can move into a nearby senior residence they will release their larger, nearly empty, houses for families who need more space. In addition some of these homes have a lower floor that can be improved to provide a second housing unit, but, that is too big a project for an elderly person. An attachment is provided to show how this building might work as an Ideal senior residence.

3) Because of SF's great need of housing of all sorts the Study should have included an alternative of greater density and height (without shading an existing park) with up to the maximum number of units, with existing zoning, or more. This alternative would provide the developer with greater profits from the currently wasted parking lot land and more shoppers for the remaining shopping center. The studies discussion of the problems and benefits of increased density on this site might give the public and their elected representatives a chance to select a larger project or a better understanding of why the proposed size is just right." *(Howard Strassner, Member SF Group Executive Committee, Sierra Club, Letter, 1/27, 2023 [O-SierraClub-3, AL-4])*

RESPONSE AL-4

The comments relate to the adequacy and range of alternatives described and evaluated in the draft EIR.

Comments assert that the draft EIR fails to meet the CEQA requirement to describe and evaluate a reasonable range of alternatives. The comments assert that the draft EIR should consider an alternative that includes several hundred dwelling units with a lower population density that is less burdensome on traffic, transit, emergency services, and infrastructure. The comments assert that such an alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor, Lakeshore, and Ingleside Terraces. A comment requests consideration of an additional alternative that would include fewer housing units, retail space, and other uses, and reduce density and height further than Alternative D, Code Compliant Alternative, and Alternative E, Reduced Density Alternative, evaluated in the draft EIR. A comment asserts that adding this alternative would increase the choice of alternatives and allow a better range of alternatives for analysis and decision-making. A comment states that the scope of the proposed project or variant must be scaled down to reduce the impact on the existing residents.

In response to the comments that the draft EIR fails to meet the CEQA requirement to describe and evaluate a reasonable range of alternatives, the draft EIR alternatives analysis is consistent with CEQA Guidelines section 15126.6. Pursuant to CEQA Guidelines section 15126.6(a), an EIR is required to set forth alternatives necessary to permit a reasoned choice and shall be limited to alternatives that would avoid or substantially lessen any of the significant physical effects of the project on the environment and that would meet most of

the project sponsor's basic objectives. An EIR need not consider every conceivable alternative to a project but instead "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (CEQA Guidelines section 15126.6(a)). That is, an EIR does not have to identify and analyze alternatives that would not meet most of the project sponsor's basic objectives, nor does it have to discuss every possible variant or permutation of alternatives, or alternatives that do not further reduce or eliminate significant environmental impacts of the project. (Id.) Under the "rule of reason" governing the selection of the range of alternatives, the EIR is required "to set forth only those alternatives necessary to permit a reasoned choice" (CEQA Guidelines section 15126.6(f)). CEQA generally describes "feasible" to mean the ability to be accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors. Site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control may also be taken into consideration when assessing the feasibility of alternatives (CEQA Guidelines section 15126.6(f)(1)). The analysis presented in Chapter 5 of the draft EIR represents a reasonable range of alternatives and complies with the CEQA Guidelines. The main purpose of presenting a range of alternatives to a project is to focus on alternatives that are capable of reducing or eliminating any significant environmental effects of the proposed project identified in an EIR (CEQA Guidelines section 15126.6(b)), not to focus on other issues such as potential socioeconomic effects. Furthermore, as discussed in draft EIR Section 4.A, Growth Inducement, pp. 4-1 and 4-2, the project site is located within the 19th Avenue Priority Development Area (PDA), which includes Merced Manor and Parkmerced, and is bounded by Eucalyptus Drive and Sloat Boulevard to the north, 19th Avenue to the east, Wilshire Avenue to the south, and Lake Merced Boulevard to the west. PDAs as identified in Plan Bay Area 2050 call for an increasing percentage of Bay Area growth to occur as infill development in areas located near transit and where services necessary to daily living are provided in proximity to housing and jobs. As discussed in draft EIR Section 4.A, the new residents on the project site under the proposed project or variant would not be substantial for the city as a whole, as they would represent approximately 1.2 percent of the projected increase in citywide population growth of 591,359 by 2050. Therefore, as discussed in draft EIR Section 4.A, the population increase associated with the proposed project or variant is within the planned growth for San Francisco. Furthermore, as discussed in draft EIR Section 4.A, and as addressed under their respective topics in the draft EIR, project- or variant-related growth would be served by existing utilities, infrastructure, and public services. In summary, and as discussed in the draft EIR, the increase in the residential and employment population on the project site would not result in a substantial or unplanned increase in the population of the project vicinity or the city.

In response to the comment that the draft EIR neglected to consider an additional alternative of several hundred dwelling units with a lower population density and less impact on traffic, transit, emergency services and infrastructure, such analysis is not required by CEQA and would be inconsistent with the CEQA Guidelines. As specified in CEQA Guidelines section 15041(c), with respect to a project which includes housing development, a lead or responsible agency shall not reduce the proposed number of housing units as a mitigation measure or alternative to lessen a particular significant effect on the environment if that agency determines that there is another feasible, specific mitigation measure or alternative that would provide a comparable lessening of the significant effect. As discussed above and further below, the draft EIR examines a reasonable range of alternatives to the proposed project or variant, including alternatives that would result in reduced development and population compared to the proposed project or variant, and analysis of an additional alternative of several hundred dwelling units is neither required nor warranted.

In response to comments regarding a reduced-scale project, as discussed in draft EIR Section 5.B, Alternatives Screening and Selection, p. 5-5 and above, in accordance with CEQA Guidelines section 15126.6(a), the draft EIR examines a reasonable range of alternatives to the proposed project or variant. The planning department based the alternatives selection process on identifying alternative concepts that would avoid or lessen the significant and unavoidable impacts identified for the proposed project or variant, but which would feasibly attain most of the basic project objectives in compliance with CEQA Guidelines section 15126.6. Strategies to avoid or lessen significant environmental impacts primarily involved reducing the extent of development that could occur with implementation of the proposed project or variant, thereby reducing significant impacts. Accordingly, and as described in draft EIR Chapter 5, Alternatives, the alternatives described and evaluated in the draft EIR would result in reduced development and population increase compared to the proposed project or variant. The assertion that the draft EIR fails to meet CEQA Guidelines section 15126.6(a) is unsupported by evidence.

A comment states that draft EIR Table 5-1, Characteristics of the Proposed Project, Variant, and Alternatives, pp. 5-11 to 5-12, depicts a "towering wall" of apartments on 19th Avenue from Eucalyptus Drive to Buckingham Way and asserts that the draft EIR is silent on the impacts of this "Western Wall." The comment does not identify specific impacts for which the draft EIR is purportedly silent. In addition, as stated on draft EIR p. 2-1, the proposed project or variant (as well as the revised variant) would require amendments to the San Francisco General Plan, San Francisco Planning Code, and zoning map. The proposed rezoning would modify existing applicable height limits, including existing height limits within the portion of the project site referenced by the commenter. The draft EIR appropriately analyzes impacts associated with the height of the proposed buildings (e.g., draft EIR Section 3.E, Wind, and Section 3.F, Shadow).

A comment states that the draft EIR should have included and evaluated an alternative of greater density. Similarly, a comment expresses support for increasing the height of the buildings along 19th Avenue. As described above, the draft EIR examines a reasonable range of alternatives. A higher-density alternative with more housing units than included in the proposed project or variant would not address any of the significant and unavoidable environmental impacts identified for the proposed project and was thus rejected from further analysis in the draft EIR (draft EIR p. 5-87). However, as requested by commenters, the project sponsor has revised the draft EIR variant to include more housing than the proposed project or draft EIR variant. The revised variant is presented in Chapter 2 of this RTC document.

Comments support an alternative that includes senior independent living residences. As discussed above, the draft EIR alternatives analysis is consistent with CEQA Guidelines section 15126.6. Pursuant CEQA Guidelines section 15126.6(a), an EIR is required to set forth alternatives necessary to permit a reasoned choice and shall be limited to alternatives that would avoid or substantially lessen any of the significant physical effects of the project on the environment and that would meet most of the project sponsor's basic objectives. There is no requirement in CEQA to include an alternative that includes senior independent living residences. Nonetheless, as previously noted, the project sponsor revised the variant to increase the number of residential units, including senior housing. The commenters are referred to Chapter 2, Revisions to the Project Description, of this RTC document for an updated description and analysis of the revised variant.

4.L Plans and Policies [PP]

4.L.1 Comment PP-1: General Plan Consistency and Zoning Controls

This response addresses the following comments, which are quoted below:

I-Conroy2-5

I-Conroy2-6

"Despite public scoping comments, the Draft EIR has not addressed how the project deviates from the Urban Design Element of the General Plan. The Urban Design Element requires that projects be compatible with the views and vistas afforded by the existing city pattern.

The Draft EIR does not identify the project's inconsistencies with the Element's policies, as requested by the undersigned's EIR scoping letter as follows:

Policy No. 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.

The project will disrupt and block views of the Ocean, the shoreline and sunsets on the Ocean's horizon from the neighborhoods to the east of the project. The increased height will also disrupt views of Mount Davidson, Twin Peaks and other topographical features from areas west of the project, including, for example, views from Fort Funston.

Policy No. 1.3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

This policy provides that '…the relationships of building forms to one another and to other elements of the city pattern should be moderated so that the effects will be complementary and harmonious.' In other words, the buildings should fit with one another to produce a harmonious effect. The Draft EIR should, but does not, analyze to what extent the proposed increased height and bulk conflict with the existing topography and buildings.

Policy No. 2.6: Respect the character of older development nearby in the design of new buildings.

The Draft EIR does not consider whether the project's new buildings conflict with the pattern established by the existing buildings in the area, including the existing apartment buildings and adjoining residential neighborhoods: Policy 2.6 further states that, 'In some cases, formal height limits and other building controls may be required to assure that prevailing heights or building lines or the dominance of certain buildings and features will not be broken by new construction.'

Policy No. 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.

This policy, similar to Policy 2.6, must also be considered by the EIR in determining whether the heights proposed by the project are out of scale with the surrounding area, imposing a significant adverse environmental impact on the area.

Policy No. 4.1: Protect residential areas from the noise, pollution and physical danger of excessive traffic.

The EIR should evaluate the extent to which the proposed project will increase traffic through the neighborhoods and consider mitigating measures to be taken, such as those suggested by this policy." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-5, PP-1])*

"The project's proposed deviation from the existing zoning restrictions will set a precedent for similar departures from existing planning. This will encourage and enable similarly scaled projects that are inconsistent with the character of the City's southwestern quadrant. This and similarly scaled projects will permanently disrupt the existing broad skyline, which has always respected vistas of the ocean and topographical features from all parts of the city west of Twin Peaks. These adverse environmental impacts are not identified by the Draft EIR. While a zoning compliant alternative is presented by the Draft EIR, the adverse environmental consequences of a project that is not compliant with existing zoning are not, but should be discussed. This is necessary in order to adequately present the consequences of potential decisions made regarding this project." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-6, PP-1])*

RESPONSE PP-1

A comment states that the proposed project or variant is not consistent with the Urban Design Element of the San Francisco General Plan (general plan) and that this should be addressed in the draft EIR. A comment asserts that the proposed project or variant would encourage and enable projects that deviate from existing zoning and would result in adverse impacts on the character of the city's southwestern quadrant.

In response to comments, as discussed under Section E.1, Land Use and Planning, in the initial study (included as draft EIR Appendix B), pp. 9 through 10, the proposed project or variant would result in an impact related to land use and planning under CEQA if the proposed project or variant would substantially conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect, such that a substantial adverse physical change in the environment would result. Accordingly, the environmental effects of the proposed project or variant and applicable policies that relate to physical environmental issues are discussed in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study. In addition, as discussed under Section C, Compatibility with Existing Zoning and Plans, in the initial study, p. 1, the compatibility of the proposed project or variant with general plan policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision whether to approve or disapprove the proposed project or variant. To approve the proposed project or variant, the City would be required to make findings of project consistency with the general plan and other applicable plans and policies. Adoption of amendments to the general plan would resolve any conflicts between general plan objectives or policies and the proposed project or variant. Thus, as discussed under Section C, neither the proposed project nor the variant would be inconsistent with the general plan, including the Urban Design Element.

With regard to Urban Design Element policies 1.1, 1.3, 2.6, and 3.5, as discussed under Section D.4, Aesthetics and Parking, p.7, in the initial study, in accordance with CEQA section 21099, Modernization of

Transportation Analysis for Transit-Oriented Projects, aesthetics and parking shall not be considered in determining whether a project has the potential to result in significant environmental effects, provided the project meets all of the following three criteria:

a) The project is in a transit priority area;

b) The project is on an infill site; and

c) The project is residential, mixed-use residential, or an employment center.

The proposed project or variant meets each of the above criteria.[48] Therefore, in accordance with CEQA section 21099, the draft EIR, including the initial study, does not consider aesthetics in determining the significance of impacts related to the proposed project or variant. In addition, changes to neighborhood character are not considered significant environmental effects under CEQA unless the changes would result in a substantial adverse physical change in the environment. Physical environmental effects related to building heights, such as wind and shadow, are discussed in draft EIR Sections 3.E and 3.F, respectively.

With regard to Urban Design Element policy 4.1, as noted above, the environmental effects of the proposed project or variant and applicable policies that relate to physical environmental issues are discussed in Section E, Evaluation of Environmental Effects, of the initial study and in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures. Specifically, physical effects of the proposed project or variant related to transportation are addressed in draft EIR Section 3.B, Transportation and Circulation. Physical effects of the proposed project or variant related to noise are addressed in draft EIR Section 3.C, Noise and Vibration. Physical effects of the proposed project or variant related to air quality are addressed in draft EIR Section 3.D, Air Quality. Furthermore, an EIR is not required to discuss every relevant general plan policy, as the primary purpose of an EIR is to "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project" (CEQA section 21061). In the case of the proposed project or variant, which would require a general plan amendment, the planning commission and board of supervisors will consider potential conflicts with the general plan independently of the environmental review process. Thus, in addition to considering inconsistencies that affect environmental issues, the decision-makers consider other potential inconsistencies with the general plan as part of the decision to approve or disapprove a proposed project. Therefore, the City's process of considering the project for approval will involve a thorough review of applicable plans and policies beyond those that could result in physical effects.

In addition, p. 2 of the initial study (draft EIR Appendix B) acknowledges that the proposed project or variant would not be consistent with the existing zoning, which include the proposed residential density ratio and institutional uses and retail sales and service uses in the RH-1(D) and RM-1 Districts. In addition, hotels and public and private parking garages are permitted by conditional use authorization in the C-2 District. As described on p. 2 of the initial study, "the proposed project or variant would include amendments to the planning code and the zoning maps, creating a new Stonestown Special Use District (SUD). If approved by the planning commission and board of supervisors, the Special Use District would establish land use controls for the project site and incorporate design standards and guidelines (DSG)."

[48] San Francisco Planning Department, Eligibility Checklist for CEQA Section 21099: Modernization of Transportation Analysis, Stonestown Development Project (hereinafter "*CEQA section 21099 Checklist*"), December 9, 2022.

As discussed under Section E, Evaluation of Environmental Effects, in the initial study, p.9, potential conflicts with applicable land use policies or development regulations will be analyzed and considered by City decision-makers during their deliberations on the merits of the proposed project or variant and as part of their actions to approve, modify, or disapprove the proposed project or variant. Adoption of amendments to the general plan, planning code, and zoning map would eliminate conflicts between the proposed project or variant and applicable land use policies or development regulations. This same process would be implemented, as applicable, for other proposed development projects in the city's southwestern quadrant or anywhere else in the city. See also Response AE-1, p. 4-95, for additional responses to comments that relate to aesthetics.

4.M Aesthetics [AE]

4.M.1 Comment AE-1: Aesthetics

This response addresses the following comments, which are quoted below:

I-Conroy2-2

I-Conroy2-4

I-DeBaun-3

I-DeBaun-6

I-Hardeman-4

I-Herlihy1-2

I-Herlihy1-6

I-Herlihy3-3

I-Moore-2

I-Naraghi-2

I-Naraghi-6

I-Parthasarathy-3

I-Parthasarathy-7

I-Pilpel-7

O-ITHA-6

O-WTPCC-6

"This is particularly true with respect to the comments regarding the project's blocking of public vistas and view corridors." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-2, AE-1])*

"The Draft EIR does not even acknowledge blocked public vistas as significant adverse impacts on the surrounding neighborhoods and the City's southwestern quadrant. The Draft EIR does nothing to clarify the misleading depictions of the project contained in the developer's presentations - the developer's birds-eye

views and aerial renderings hide the true visual impact of the project's towers and mid-rise structures. In this respect the Draft EIR does not meet the requirement that it present sufficient information on this subject so that the public and the public agency decision-makers have sufficient information to assess the project's negative environmental impacts.

The Draft EIR should, but does not, contain photographs, renderings and depictions of the project's visual impact on public vistas and views from streets, sidewalks and other public areas within the surrounding neighborhoods. The disruption of views from public parks, including Lake Merced and Fort Funston, requires depiction, discussion and analysis of mitigating measures. The draft EIR does not discuss the fact that the existing ten story buildings to the west of the project are situated at a ground elevation much lower than the project. Those buildings therefore do not serve as a guide to how a ten story, much less a nineteen story building, will appear on the project site. The EIR should address the project sponsor's promotion of the project as a 'city within a city' and how that notion of a high-rise downtown in the midst of residential neighborhoods so close to the coastline will effect a major deviation from the area's overall city pattern." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-4, AE-1])*

"2. Section D-4: the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Holloway Drive and Buckingham way must be adequately addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-3, AE-1])*

"5. Section 3.1: how will the architectural style/height blend with the unique character of the homes in Lakeside and adjacent neighborhoods? Nearly 3,000 housing units and an 18-story hotel will dramatically alter the architectural character of the neighborhood" *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-6, AE-1])*

- "The neighborhoods immediately impacted by the project, Merced Manor and Lakeshore, consists of single story single homes. A 90 foot tower 300 feet from Eucalyptus Avenue would scar the skyline, rise above the trees in park and dominate the view for blocks. This is NOT the 19th avenue corridor---this is next to a small neighborhood park! The proximity of the proposed 90 foot high residential building will dramatically and irreversibly adversely affect our small park, creating a monolith looming over what has always been a haven of nature and quiet." *(Donald Hardeman, Letter, 2/7/2023 [IHardeman4, AE1])*

"2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-2, AE-1])*

"6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-6, AE-1])*

"And finally, the proposed -- it's essentially a towering wall of apartments which would go from Eucalyptus to Buckingham Way, approximately 0.25 miles, and no analysis has been done on the environmental impact of having a towering wall on the west side of 19th Avenue --" *(James P. Herlihy, Public Hearing, 2/9/2023 [I-Herlihy3-3, AE-1])*

"Setting aside the considerable direct impact that the project will have for some eight years on the lives of the residents of Lakeside (particularly noise, pollution, and congestion—for which there is no direct compensation), the size of the project is incompatible with the scale and the mass of buildings in the surrounding area. The plan calls for changing the zoning to raise the height limits to 90 feet (and 150 feet for a hotel). In particular there would be a string of buildings of 90 feet in height (and one of 150 feet) along 19th Avenue which would be a visually jarring Manhattanization of this thoroughfare. Other than a few buildings at San Francisco State (which are a mile away and not controlled by the City) there are no buildings along 19th Avenue (or its continuation as Park Presidio) which are close to 90 feet in height. People the world over visit San Francisco because much of it is beautiful—esthetics matter greatly." *(Andrew Moore, Letter, no date [I-Moore-2, AE-1])*

"2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4." *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-2, AE-1])*

"6) The architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-6, AE-1])*

"2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-3, AE-1])*

"6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-7, AE-1])*

"7. The Draft EIR dismisses the Project's impacts from changing the entire character of the area from two-story structures to include some 20-story structures. The Air Quality impacts are narrowed to include only construction impacts, which does not comply with CEQA." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-7, AE-1])*

- "**Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks,

streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA6, AE1])*

- "**Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks, streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-6, AE-1])*

RESPONSE AE-1

The comments relate primarily to aesthetic impacts of the proposed project or variant. Several comments express concerns regarding potential impacts of the proposed project or variant on public vistas, views, and visual character. Comments also express concerns regarding the extent and heights of buildings that would be developed with implementation of the proposed project or variant and resultant effects of this new development on neighborhood character in the project area and adjacent neighborhoods (.

Commenters are referred to Response CR-1, Historic Architectural Resources Analysis, p. 4-16, regarding the neighborhood's architectural character.

With regard to comments related to aesthetic impacts, as discussed under Section D.4, Aesthetics and Parking, p. 7, in the initial study (included as Appendix B of the draft EIR), and as discussed above, in accordance with CEQA section 21099, Modernization of Transportation Analysis for Transit-Oriented Projects, aesthetics and parking shall not be considered in determining whether a project has the potential to result in significant environmental effects, provided the project meets all of the following three criteria:

a) The project is in a transit priority area;

b) The project is on an infill site; and

c) The project is residential, mixed-use residential, or an employment center.

As discussed under initial study Section D.4, the proposed project or variant meets each of the above criteria.[49] Therefore, in accordance with CEQA section 21099, the draft EIR, including the initial study, does not consider aesthetics in determining the significance of impacts related to the proposed project or variant. Aesthetics impacts of a qualifying residential, mixed-use, or employment center project on an infill site located within a transit priority area are not, as a matter of law, considered significant impacts on the environment pursuant to CEQA section 21099; consequently, potential aesthetics effects on existing character, scenic vistas, or views are not considered in the CEQA analysis. However, CEQA section 21099(d)(2)(A) states that the lead agency may consider aesthetic impacts under local design review ordinances or other discretionary powers. In addition, changes to neighborhood character are not

[49] San Francisco Planning Department, Eligibility Checklist for CEQA Section 21099: Modernization of Transportation Analysis, Stonestown Development Project (hereinafter "*CEQA section 21099 Checklist*"), December 9, 2022.

considered significant environmental effects under CEQA unless the changes would result in a substantial adverse physical change in the environment. The environmental effects of the proposed project or variant are described and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in initial study Section E, Evaluation of Environmental Effects. Specifically, physical environmental effects related to building heights, such as wind and shadow, are discussed in draft EIR Sections 3.E and 3.F, respectively.

Alternatives D and E in the draft EIR were developed to reduce significant and unavoidable impacts related to transportation and circulation, noise and vibration, air quality, and wind that could occur under the proposed project or variant (see draft EIR pp. 5-39 and 5-52). The physical environmental impacts associated with these alternatives are analyzed in accordance with CEQA Guidelines section 15126.6. Although aesthetic impacts are not considered in the CEQA analysis for the reasons described above, the alternatives analysis evaluates the environmental effects of the shorter buildings.

The planning department recognizes that the public and decision-makers may be interested in information pertaining to the aesthetic effects of the project and therefore has included visual depictions of the proposed project or variant in draft EIR Chapter 2, Figures 2-28 through 2-31 (pp. 2-43 to 2-46). A conceptual axonometric diagram of the proposed project and variant building massings is depicted in Figure 2-6 of the draft EIR on p. 2-11. This information will be provided to the decision-makers for their consideration in taking any approval actions on the proposed project or variant.

The assertion by one of the comments that presentations or depictions related to the proposed project or variant provided by the project sponsor seek to mislead the public or hide the true visual impact of the proposed project or variant is unsupported by evidence. Similarly, other comments related to land elevation, project promotions, or deviations from the city's pattern are offered without factual support or environmentally relevant connection to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts. The environmental effects of the proposed project or variant are described and evaluated in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of the draft EIR and in Section E, Evaluation of Environmental Effects, of the initial study.

4.N Greenhouse Gas Emissions [GHG]

The comments and corresponding responses in this section cover the subjects included in Section E.8, Greenhouse Gas Emissions (draft EIR Appendix B). The comment topic relates to:

- GHG-1: Greenhouse Gas Emissions Analysis

4.N.1 Comment GHG-1: Greenhouse Gas Emissions Analysis

This response addresses the following comment, which is quoted below:

I-Pilpel-6

"6. Greenhouse gas (GHG) emissions must be analyzed in the DEIR. (see, e.g., IBC Business Owners for Sensible Development v. City of Irvine (2023) 2023 Cal.App.LEXIS at p. *28-35 [EIR must analyze project's incremental contribution to GHG, which may be cumulatively considerable even if it appears relatively small

compared to statewide, national, or global emissions; must also consider source of such emissions and total GHG emissions])" *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-6, GHG-1])*

RESPONSE GHG-1

One comment 6 relates to the adequacy of the draft EIR's analysis of greenhouse gas (GHG) impacts during construction and operation of the proposed project or variant. The commenter states that GHG emissions must be analyzed in the draft EIR.

The draft EIR does analyze GHG emissions impacts in initial study Section E.8, Greenhouse Gas Emissions (see draft EIR Appendix B), associated with implementation of the proposed project or variant. As described on p. 53 of the initial study, the proposed project or variant would have a significant effect if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases.

CEQA Guidelines section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. In accordance with section 15064.4, the significance of GHG impacts should consider the extent to which the proposed action would increase or reduce GHG emissions, exceed a locally applicable threshold of significance, or comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The CEQA Guidelines also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to reduce GHG emissions (section 15064(h)(3)). In compliance with CEQA Guidelines sections 15064.4 and 15064(h)(3), the GHG analysis provides a qualitative discussion of the degree to which the proposed project or variant would comply with regulations to reduce GHG emissions through the city's GHG Reduction Strategy. The analysis also evaluates the proposed project and variant against the air district's adopted GHG significance threshold that allows projects which are consistent with a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b) to conclude that the project's GHG impact is less than significant. As such, the analysis in initial study Section E.8, Greenhouse Gas Emissions meets the requirements of CEQA Guidelines section 15064.4 and a summary of that analysis is provided below.

In July 2021, the City adopted an updated GHG ordinance to demonstrate the City's commitment to the Paris Agreement by establishing GHG reduction targets for 2030, 2040, and 2050 and setting other critical sustainability goals.

To support the updated 2021 GHG ordinance, the City prepared the 2021 Climate Action Plan.[50] The 2021 Climate Action Plan is a roadmap for meeting the City's emissions reduction goals, which are:

- An interim target of cutting sector-based emissions 61 percent below 1990 levels by 2030; and
- Net-zero sector-based emissions by 2040, a 90 percent reduction from 1990 levels.

[50] City and County of San Francisco, *San Francisco's Climate Action Plan 2021*, https://sfenvironment.org/climateplan, accessed April 12, 2023.

These goals align with the updated GHG ordinance goals and are more ambitious than those set forth in Senate Bill 32 (e.g., a 61 percent reduction in sector-based GHG emissions compared to 1990 levels by 2030 rather than a 40 percent reduction by 2030) and Assembly Bill 1279 (e.g., achieving net zero GHG emissions by 2040 rather than by 2045).

San Francisco has developed many plans and programs for reducing the city's contribution to global climate change and for meeting the city's GHG reduction goals. As described on pp. 49 to 50 of the initial study, the city's GHG emissions reduction actions resulted in a 41 percent reduction in GHG emissions in 2019 compared with 1990 levels, which far exceeds the statewide 2020 target (1990 levels) and achieves the city's local 2025 target (40 percent below 1990 levels) six years in advance of the target year. Furthermore, the city's GHG emission reductions in 2019 also met the statewide 2030 target (40 percent below 1990 levels) more than 10 years in advance of the target year. This progress puts the City on the emission reduction trajectory to meet the 2030 target (61 percent below 1990 levels) and the 2045 target (90 percent below 1990 levels), as envisioned in the 2021 CAP.

The 2023 GHG Reduction Strategy Update[51] documents city actions related to pursuing cleaner energy, reducing energy consumption, supporting alternative transportation, and implementing solid waste policies. The 2023 GHG Reduction Strategy Update incorporates the 2021 Climate Action Plan's GHG emissions targets and strategies. The initial study was prepared before the 2023 GHG Reduction Strategy Update was completed. The 2017 GHG Reduction Strategy was the applicable plan when the initial study was prepared; however, as noted below, the project is also consistent with the 2023 GHG reduction strategy. The 2023 GHG Reduction Strategy Update includes updated regulations, the updated 2021 CAP, and the updated 2021 GHG ordinance. As discussed in the initial study, the project was evaluated using the most recent GHG checklist available at the time the initial study was prepared. The checklist includes all applicable regulations that reduce GHGs for the project. The City will continue to update its regulations and ordinances for new development to implement the GHG emission reduction strategies and measures in the 2021 CAP to achieve the City's 2030 and 2045 targets. These new regulations and ordinances will apply to the proposed project or variant, or portions of the proposed project or variant, as individual development applications are submitted to the City for approval. The City will update its GHG Reduction Strategy to incorporate these new regulations.

Because the city's GHG reduction targets are consistent with the statewide GHG goals for 2030 and 2045, actions that are consistent with the 2023 GHG Reduction Strategy Update and the 2021 CAP would be consistent with the state's GHG goals and would not conflict with an applicable plan or generate GHG emissions that would make a considerable contribution to global climate change. Because the proposed project or variant would be consistent with the City's 2023 GHG reduction strategy and 2021 CAP, the proposed project or variant would also be consistent with the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan, and would not conflict with these plans.

Additionally, on April 20, 2022, the air district adopted updated GHG thresholds.[52] Consistent with CEQA Guidelines sections 15064.4 and 15183.5, the updated GHG thresholds for land use projects, such as the proposed project or variant, maintains the air district's previous GHG threshold that allow projects that are

[51] San Francisco Planning Department, 2023 Greenhouse Gas Reduction Strategy Update, Revised October 2023, https://sfplanning.org/project/greenhouse-gas-reduction-strategies, accessed December 5, 2023.
[52] Bay Area Air Quality Management District, CEQA Thresholds and Guidelines Update, April 2023, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed June 6, 2022.

consistent with a GHG reduction strategy to conclude that the project's GHG impact is less than significant. Because the proposed project or variant would be consistent with San Francisco's 2017 GHG reduction strategy, which is a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b), the proposed project or variant would have a less-than-significant impact on GHG emissions.

The air district's updated GHG thresholds also include an alternative performance-based threshold. As discussed in the initial study, the proposed project or variant meets the air district's performance based GHG thresholds. As demonstrated in the GHG checklist for the proposed project or variant, the project does not include natural gas infrastructure. With implementation of Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure, the proposed project or variant would include 2019 CALGreen Tier 2 electric vehicle infrastructure standards (see draft EIR Section 3.D, Air Quality). The proposed project or variant would be in a VMT-efficient area where VMT per capita is more than 15 percent below the regional average. The proposed project or variant would meet planning code section 169 (TDM program) through implementation of Mitigation Measure M-TR-4a that would develop a TDM plan (see draft EIR Section 3.B, Transportation). Finally, the proposed project would not result in a wasteful, inefficient, or unnecessary use of energy (see EIR Section 3.19, Energy.

Because the proposed project or variant would be subject to regulations adopted to reduce GHG emissions, the proposed project or variant would be consistent with San Francisco's 2023 GHG reduction strategy and 2021 CAP and would neither generate significant GHG emissions nor conflict with state, regional, and local GHG reduction plans and regulations. As such, the proposed project or variant's impact would be less than significant with mitigation with respect to GHG emissions.

4.O Recreation [RE]

4.O.1 Comment RE-1: Park and Open Space Impacts

This response addresses the following comments, which are quoted below:

I-Hardeman-5

I-Lifur-2

I-Lo-1

O-SFSU-6

- "Reduction of the proposed building height to 40 feet, which the developer represented for years to the neighborhood, is a much better fit for the area, and would have much less of a negative impact on the park.
- Paragraph 4 of the EIR claims that the goal of the plan is to prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space 'to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to nature and to the existing surrounding residential neighborhood of Merced Manor.' In reality, the proposed 90 foot building will have the opposite effect; it will harm the open space and create a disconnect from Merced Manor. The originally proposed 40 foot building conforms with the neighborhood and will significantly reduce the impact on the park.

- Revision to the originally proposed 40 foot height for this particular building would have an insignificant impact on the total housing that will be built with this massive project, while the benefit to the park and the people who use it daily would be incredibly significant." *(Donald Hardeman, Letter, 2/7/2023 [IHardeman5, RE1])*

"Ensuring there is additional green space on both sides of the current border of the park will also ensure the ongoing presence of birds in the Rolph Nicol park which is home to hawks, owls, crows and numerous song birds. The small, peaceful park will naturally become much more congested with the influx of so many people living right next to it. This is bound to drive away the birds and will also increase the level of trash left in the park along with noise levels. Instead of leaving the small park to fend for itself, the developer should be required to expand the park on its side of the border allowing greater space to absorb the increased usage that will come with the greater population density. The City already has trouble maintaining Rolph Nicol park at its current level of usage. It was left for long periods without watering which largely eliminated the beautiful thick meadow used for play, and users of the park frequently have to spend time clearing litter from the park before and while using it. The increased usage will further strain the park. Expanding the green space along the park will help mitigate the worst impacts on the existing park and help ensure the quality of life for all residents that only sufficient park and green space areas can make possible.

Finally, the up to 2-year construction period for the project so close to the Rolph Nicol park with the unavoidable pollution, dust, and noise that accompany such massive projects, will also disrupt its animal life, quiet enjoyment of the park and the beautiful, quiet open space sanctuary that it currently is. Further set back from the park would help mitigate such disruption during the long construction period." *(Jeff Lifur, Letter, 2/12/2023 [I-Lifur-2, RE-1])*

"As a native San Franciscan, residents of Merced Manor for almost ten years now, my family, dog and I take pride in being able to take long walks around our spacious neighborhood. Our residential homes as well as nearby schools, church and YMCA are all set back from the street/sidewalk, creating a sense of comfort and relaxation. These low-rise buildings are not looking over our shoulders as we stroll.

Here at Merced Manor and Lakeshore, we are a close knit community. Beyond the hustle and bustle of school hours, Rolph Nicol Park is our neighborhood hangout; we gather here throughout the day. The park has no adjacent buildings on two sides and is filled with tall trees, shrubs, a large grass area and a small play structure, creating a zen-like environment. During the day, the sun will peak through the trees painting a perfect back-drop. During the night, the distant lights of Stonestown can be seen, like illuminating a dark room with reassuring night lights. The new plan of constructing 90- foot buildings behind the park will destroy the scenery, bring gloominess and impact the entire neighborhood." *(Cynthia Lo, Letter, 2/11/2023 [I-Lo-1, RE-1])*

"6) Open Space: As a public university, SF State is a beloved place to visit—to enjoy the quad, pathways and other spaces for outdoor recreation and enjoyment. With the addition of a large residential community please consider how the project's population will be provided with open space for outdoor recreation and enjoyment to complement those provided at the university and surrounding environs. Perhaps there are options that might include accessible rooftop gardens, which would provide views of the

ocean and the lake nearby." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-6, RE-1])*

RESPONSE RE-1

The comments address the draft EIR's analysis of potential proposed project or variant impacts on parks and recreation. One comment expresses concern over pollution, dust, noise, and related disruptions to Rolph Nicol Jr. Playground during construction, as well as the increase in usage of the park due to the proposed project or variant. Another comment expresses the desire for the proposed project or variant to consider how the project's population will be provided with open space for outdoor recreation and enjoyment to complement those provided at SFSU and the surrounding environment. A few comments express concern regarding the proposed project or variant's effect on the quality of the park user experience at Rolph Nicol Jr. Playground, and some comments request additional setbacks or reduced height.

Potential impacts related to parks and recreation are discussed in initial study Section E.11, Recreation (see draft EIR Appendix B). Potential direct impacts on parks are discussed under Impact RE-1 relative to potential substantial adverse physical impacts associated with the provision of new or physically altered park facilities, or the need for new or physically altered park facilities. Similarly, potential direct recreation impacts are discussed related to the accelerated substantial physical deterioration of recreational facilities and the construction/expansion of recreational facilities. As discussed under Impact RE-1, the proposed project or variant would result in an increase in the demand for recreational resources on the project site, in the project area, and at the citywide level. However, the anticipated use of recreational resources would not be expected to substantially increase or accelerate the physical deterioration or degradation of existing recreational resources and would not result in the need to provide new or expanded parks or recreational facilities, as the demand would be offset by the development of new recreational and open space facilities on the project site. Therefore, the proposed project or variant's impact on recreational resources is identified as less than significant.

Regarding an increase in usage of Rolph Nicol Jr. Playground due to the proposed project or variant, as described in Section E.11, Rolph Nicol Jr. Playground is a 3-acre park with a play structure, grass, and surrounded by eucalyptus trees. It is adjacent to the northwest corner of the project site. As stated under Impact RE-1, an increase in the local population could contribute to or accelerate the deterioration of existing parks and recreational facilities if the demand generated by the new residents were to lead to overuse of existing facilities that would result in the need for new or modified facilities. Under the variant, while there would be an increase in the demand for facilities, the proposed project or variant would include new open spaces throughout the project site, including parks, plazas, parkways, and landscaped alleys that would serve to offset the increased demand by project residents. Given the proposed network of new publicly accessible open spaces at the project site, along with new private residential open space as guided by planning code requirements, implementation of the proposed project or variant would result in an increase in the overall availability of a variety of publicly and privately accessible recreational facilities and open spaces on the project site. As such, impacts related to the substantial increase or acceleration of the physical deterioration or degradation of Rolph Nicol Jr. Playground are identified as less than significant.

Regarding concerns about pollution, dust, noise, and related disruptions to Rolph Nicol Jr. Playground during construction, construction-related impacts are discussed in the air quality section of the draft EIR (see

draft EIR Section 3.D, Air Quality) and in the noise section of the draft EIR (see draft EIR Section 3.C, Noise and Vibration). Regarding potential impacts on park wildlife during construction, as discussed in Draft EIR Section 3.C, wildlife may be sensitive to noise; however, the proposed project or variant is in an urban area and would not introduce new development near sensitive wildlife habitat (draft EIR p. 3.C-5). Additionally, as discussed in initial study Section E.14, Biological Resources (see draft EIR Appendix B), compliance with existing state and federal regulations would ensure that construction activities associated with the proposed project or variant would have less-than-significant impacts on nesting birds covered under the Migratory Bird Treaty Act and the California Fish and Game Code. The commenter is also referred to Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105, and Response BI-1, Biological Resources Impacts, p. 4-109.

As discussed under Impact RE-1, the proposed project or variant would provide approximately 6 acres of publicly accessible open space. The open space would comprise parks, plazas, and green spaces integrated into the project site ranging from 0.2 to 1 acre each, which would provide connections between the project site and adjacent uses. Furthermore, the proposed project or variant would also include private open space consisting of balconies or common space accessible only to building occupants. Private residential open space would be provided as set forth in the special use district and Design Standards and Guidelines process. Accordingly, the proposed project or variant would enhance and expand publicly available recreational and open spaces of various types at the project site.

Regarding the proposed project's effect on the quality of park user experience at Rolph Nicol Jr. Playground and requests for additional setbacks or reduced height, these comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.P Public Services [PS]

The comments and corresponding responses in this section cover the subjects included in initial study Section E.13, Public Services. The comment topics relate to:

- PS-1: Increase in Crime and Demand for Public Services
- PS-2: Impacts on School Facilities

4.P.1 Comment PS-1: Increase in Crime and Demand for Public Services

This response addresses the following comments, which are quoted below:

I-Cenpai-2

I-Chang-5

I-DeBaun-7

I-EBirsinger-2

I-Herlihy1-7

I-Herlihy1-10

I-LBirsinger-5

I-LG-3

I-Naraghi-7

I-Naraghi-10

I-Parthasarathy-8

I-Parthasarathy-11

O-ITHA-5

O-WTPCC-5

"Environmentally, more traffic in that area will increase trash and garbage within the area. In addition, having a tall building there where dogs and kids alike gather will make it less safe. Crime has been on a rise in the neighborhood, and with a tall building blocking everything, crime will definitely increase. Do we really need a second tenderloin in San Francisco? I don't think so. Please keep this residential area safe and spacious before building more things and causing higher human traffic." *(Inverness Cenpai, Letter, 2/8/2023 [I-Cenpai-2, PS-1])*

"(5) It will increase the demand and the response time for public services from fire protection, police and emergency services." *(Mary Chang, Letter, 2/7/2023 [I-Chang-5, HZ-1])*

"6. Section E.13: The need for increased police, fire, emergency and public services for the 2,900 new dwellings and the 18 story hotel must be addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-7, PS-1])*

"1) Section 5.C of the EIR Draft: Safety: Stonestown is a mess with crime. Shoplifting is rampant. Car break-ins occur all the time. Police protection is already inadequate. Does the EIR report address these issues?" *(Eugene Birsinger, Letter, 2/9/2023 [I-Ebirsinger-2, PS-1])*

"7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-7, PS-1])*

"10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-10, PS-1])*

"**Section 5.c. Safety/Crime (no increase in demand for public services-including Police)**

- Address how the draft EIR indication that there will be no additional need for public services (including Police) was measured.
- Stonestown is currently a mecca for shoplifting and car break ins. Each day's police blotter includes at least four instances within the Stonestown boundaries (mall, roads and parking areas). Those only reflect crimes actually reported. The security at the complex is already less than adequate.
- Due to the well-known lack of police presence city-wide in San Francisco, the developers must consider an alternative to keep shoppers, merchants and residents safe. What are the plans to ensure safety? Perhaps an enhanced private security team should be considered as a means of reducing the crime." *(Laura Birsinger, Letter, 2/5/2023 [ILbirsinger5, PS1])*

- "The increased demand for public services from fire protection, police and Emergency medical services is not adequately addressed (Appendix B Section E.13) The Initial Study (page 65) acknowledges that the Police Department is understaffed, yet concludes that the additional demands of 7,000 new residents (plus those from the additional near-by projects) would not have a significant impact. The statistics used to support this conclusion came from 2018-2021 (including 2 years of Covid restrictions)." *(LG, Letter, 2/13/2023 [ILG3, PS1])*

"7) The increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-7, PS-1])*

"10) The cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services." *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-10, PS-1])*

"7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-8, PS-1])*

"10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-11, PS-1])*

- "**Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact be identified, analyzed, and mitigated with additional staffing or a manned police sub-station.

- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA5, PS1])*

- "**Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact be identified, analyzed, and mitigated with additional staffing or a manned police sub-station.
- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-5, PS-1])*

RESPONSE PS-1

The comments relate to the analysis in initial study Section E.13, Public Services (draft EIR Appendix B). The comments express concern regarding an increase in crime, demand for or provision of police protection services, fire protection, and emergency services, and cumulative impacts on public services.

Comments regarding increased traffic and trash impacts are addressed in Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, p. 4-137, and Response UT-3, Increase in Trash Impacts, p. 4-74, respectively.

The response to the public services–related comments is organized as follows:

- Increase in Crime
- Increased Demand for Police Protection Services
- Increased Demand for Fire Protection and Emergency Response Services
- Cumulative Demand for Public Services

INCREASE IN CRIME

Comments express concern that there would be an increase in crime as a result of the proposed project or variant. Similarly, one comment asserts that there is an existing lack of security and safety on the project site, and that additional police protection, including private enhanced private security, should be considered.

The potential for an increase in crime, shoplifting, vehicle burglary, building defacement, vandalism, litter, graffiti, and other activities that may result in a diminished quality of life for neighborhood residents are not considered impacts on public services under CEQA unless such effects result in the need for the construction of new or physically altered governmental facilities in order to maintain acceptable levels of public services, and the construction of such facilities result in adverse physical environmental impacts. Similarly, comments related to the adequacy of existing private security services on the project site and requests for inclusion or consideration of enhanced private security under the proposed project or variant are not pertinent to the evaluation of impacts related to public services under CEQA. As identified in draft EIR Section 1.C, p.1-2, pursuant to CEQA Guidelines section 15161, the draft EIR focuses on changes in the environment that would result from construction and operation of the proposed project or variant. Neither actual nor purported unlawful actions under existing conditions are considerations under CEQA, and thus, they are not addressed in the draft EIR. These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

INCREASED DEMAND FOR POLICE SERVICES

Several comments express general concern regarding the increase in demand for and provision of police protection services associated with the proposed project or variant or state that it was not adequately addressed in the initial study. Comments assert that there would be police service impacts on the Taraval Police District and request mitigation consisting of additional staffing or a manned police substation. A comment questions why data from years with restrictions related to COVID-19 were used in the analysis of police protection services. Comments state that police protection is already inadequate and that shoplifting and car break-ins occur often at Stonestown and suggest increasing private security as a means to reduce crime.

In response to these comments, initial study Section E.13, Public Services (see draft EIR Appendix B pp. 64 to 65) discusses impacts related to the provision of police protection services associated with the proposed project or variant. As stated under Impact PS-1, the increased demand for police protection services would not be considered substantial, given the relatively low demand for such services at the district level and the ongoing staffing analysis and dynamic resource deployment that occurs on a citywide basis. In compliance with the City charter mandate, police department resources are regularly redeployed based on need in order to maintain charter-mandated staffing and acceptable service ratios. For these reasons, implementation of the proposed project or variant would not require the construction of new or alteration of existing police facilities. Therefore, the impact is identified as less than significant, and no mitigation measures are required.

In response to a comment regarding the years of data used in the analysis of police protection services, including those with restrictions related to COVID-19, the 2018–2021 data set was selected to capture existing baseline conditions related to police services at the time of issuance of the notice of preparation (NOP), with enough breadth to allow a general understanding of the environmental impacts of the proposed project or variant related to police services. The data for calls for police service and incidents were used to compare police district variations. Because restrictions related to COVID-19 affected all districts, the inclusion of data from 2020 and 2021 would not affect the calls for service or incidents data or analysis of impacts related to police services in any meaningful way.

INCREASED DEMAND FOR FIRE PROTECTION AND EMERGENCY RESPONSE SERVICES

Comments express general concern regarding the demand for and provision of fire protection and emergency response services associated with the proposed project or variant. Comments assert that the proposed project or variant, which would include high-rise structures and increased residential density, would be served by a single fire station, and the project area has no currently planned access to the Auxiliary Water Supply System (AWSS). Comments request that these issues be analyzed and potentially mitigated with additional staffing and specialized equipment.

In response to these comments, initial study Section E.13, Public Services (see draft EIR Appendix B), addresses impacts related to the provision of fire protection and emergency response services associated with the proposed project or variant (see pp. 63 to 64). As discussed in the initial study under Impact PS-1, the increased demand for fire protection and emergency response services associated with the proposed project or variant would be incremental, would be funded largely through project-related increases to the city's tax base, and would not be substantial given the overall demand for such services on a citywide basis. As further discussed under Impact PS-1, fire protection and medical emergency resources are regularly reassessed based on need in order to maintain acceptable service performance standards. The fire department and building department review building plans to ensure that proposed buildings comply with the latest California Building Code requirements for fire and life safety measures as specified in the San Francisco Fire Code, including measures related to emergency access and egress. Such review also includes evaluating the project site's circulation to ensure that emergency access and egress to adjacent sites are not affected. As discussed under Impact PS-1 in the initial study, the proposed project or variant would be required to comply with all applicable building and fire codes. For these reasons, implementation of the proposed project or variant would not require the construction of new or physically altered fire protection facilities; therefore, the impact is identified as less than significant, and no mitigation measures are required.

In response to comments, as discussed in draft EIR Section 3.G, Utilities and Service Systems, p. 3.G-14, the proposed project or variant would connect proposed low-pressure water distribution pipelines to existing water transmission and distribution pipelines in Winston Drive, 19th Avenue, and Eucalyptus Drive/20th Avenue. As discussed in draft EIR Section 3.G, fire flow was simulated using a model based in part on field flow tests conducted by the fire department to assess whether the proposed project or variant's system would meet industry and SFPUC standard for flow and pressure. As stated on draft EIR p. 3.G-14, fire flow demands would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, of this RTC. The proposed project or draft EIR variant, and revised variant would not require new or expanded low-pressure water system infrastructure.

As discussed in initial study Section E.13, Public Services, p. 64, the proposed project or variant would be required to comply with all applicable building and fire code requirements, which identify specific fire protection systems, including but not limited to the provision of state-mandated smoke alarms, fire alarm and sprinkler systems, fire extinguishers, required number and location of egress points with appropriate distance separation, and emergency response notification systems. The maximum height of most proposed buildings would be 90 to 190 feet and, for the purposes of fire protection, these buildings would be classified as high-rise buildings. As required by the fire code, buildings on these parcels would have two sources of firefighting water supply: street mains and onsite water tanks. As described on initial study p. 64 (see draft

EIR Appendix B), nine new fire hydrants would be located around the project site, connected to the low-pressure water system, and could connect to non-potable water storage tanks associated with either a centralized treatment plant or decentralized treatment facilities located within certain buildings or phases that would be constructed as part of the proposed project or variant. Regarding access to the EFWS and expediting future extension of these systems in the project vicinity, the SFPUC maintains the city's EFWS, and any future expansion would be compatible with the proposed project or variant. Consequently, implementation of the proposed project or variant would not require the construction of new or physically altered fire protection facilities; therefore, the impact is identified as less than significant, and no mitigation measures are required.

Also refer to Response UT-2, p. 4-71, regarding the EFWS.

CUMULATIVE DEMAND FOR PUBLIC SERVICES

In response to comments, initial study Section E.13, Public Services (see draft EIR Appendix B, p. 68), discusses the proposed project or variant's cumulative impacts related to public services. As discussed under Impact C-PS-1, cumulative development in the project vicinity (including long-term SFSU planning) would result in an intensification of land uses and a cumulative increase in the demand for fire protection, police protection, school services, and other public services. The fire and police departments, the school district, the libraries, and other City agencies respond to growth and other changing service needs through ongoing analysis of applicable metrics, such as staffing, capacity, response times, and call volumes. As a result, projected future development would not result in any service gap in citywide police, fire, emergency medical services, or other public services. For these reasons, the proposed project or variant would not combine with cumulative projects in the project vicinity to create a significant cumulative impact on public services. Therefore, this impact is identified as less than significant, and no mitigation measures are required.

4.P.2 Comment PS-2: Impacts on School Facilities

This response addresses the following comment, which is quoted below:

I-Chou-2

"The proposed building is also next to Saint Stephen Church and School. This quiet community will be impacted in many ways (to be addressed in the EIR in-depth). Saint Stephen School children will not receive the same quality of school environment/life/education as my children received from there as a dense neighborhood brings many adverse impacts to a safe environment." *(Su-Syin Chou, P.E., Letter, 2/12/2023 [I-Chou-2, PS-2])*

RESPONSE PS-2

The commenter expresses concern regarding potential impacts of the proposed project or variant on St. Stephen's Church and School and potential adverse effects on the "quality of school environment/life/education." The comment requests that the impacts on St. Stephen School be addressed "in-depth" in the EIR.

Potential impacts of the proposed project or variant on schools are discussed in initial study Section E.13, Public Services (see draft EIR Appendix B, pp. 66–67), in accordance with the requirements of CEQA. As discussed in the initial study and Response PS-1, p. 4-105, CEQA's treatment of public services impacts is narrowly defined to include only those impacts that would arise from the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental effects. The scope of the public services analysis is limited by definition to services that are publicly funded. St. Stephen Catholic School is a private PreK-8th grade school.

However, secondary impacts of the proposed project or variant on the St. Stephen Catholic Church and School are considered throughout the draft EIR. St. Stephen Catholic School is included as a "sensitive receptor" in draft EIR Section 3.D, Air Quality (see Figure 3.D-1 on p. 3.D-14) and as a "noise-sensitive receptor" in draft EIR Section 3.C, Noise and Vibration (see Figure 3.C-1 on p. 3.C-7). Impacts related to hazardous materials, substances, or waste in proximity to schools are also analyzed in the initial study Section E.17, Hazards and Hazardous Materials (see draft EIR Appendix B).

4.Q Biological Resources [BI]

4.Q.1 Comment BI-1: Biological Resources Impacts

This response addresses the following comments, which are quoted below:

I-Hardeman-3

I-Hardeman-6

- "The park and the adjoining open space includes an ecosystem for many species of birds, including songbirds, hawks, owls, and crows, as well as a pack of coyotes. The EIR does NOT address the impact of the project on this ecosystem." *(Donald Hardeman, Letter, 2/7/2023 [IHardeman3, BI1])*

"**2) THE EIR DOES NOT ADDRESS THE INTENTIONS OF THE DEVELOPER WITH RESPECT TO THE OPEN SPACE TO THE WEST OF THE FENCE LINE**

This open space, which extends from Winston Drive to Rolph Nicol park, serves as a continuation of the biodiversity and animal habitat of the park. How many trees will be cut down by the private developer? What is the impact of the development on this space? The EIR Is silent, and therefore inadequate." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-6, BI-1])*

RESPONSE BI-1

The comments assert that the draft EIR does not adequately address impacts of the proposed project or variant on birds and other animal species, trees, and open space in and in proximity to Rolph Nicol Jr. Playground, which is adjacent to the northwest corner of the project site. A comment also asks how many trees would be removed as part of the proposed project or variant.

In response to comments, Section E.14, Biological Resources, pp. 68 through 72, in the initial study (included as draft EIR Appendix B) adequately evaluates potential impacts on sensitive species and their habitats within and in the vicinity of the project site in accordance with CEQA and applicable federal, state, and local regulations pertaining to biological resources. The analysis determines that compliance with existing federal, state, and local regulations would ensure that construction and operation of the proposed project or variant would have less-than-significant impacts related to sensitive species or their habitats, and that no mitigation measures are required. The comments do not provide evidence to support claims that the draft EIR does not adequately address impacts related to biological resources, including impacts in and in proximity to Rolph Nicol Jr. Playground outside of the project site. With regard to tree removal, as discussed under Impact BI-3 of the initial study, pp. 71 to 72, while there are no landmark trees on the project site, the proposed project or variant would require removal of trees planted throughout the site and around the perimeter of the parking lots and structures proposed for demolition. The project sponsor would be required to submit a tree removal permit application for the removal and replacement of any protected trees to public works for review and approval, prior to issuance of a building permit. As discussed under Impact BI-3, the proposed project or variant would also comply with San Francisco Public Works code section 806(d)(2) requirements for street trees by replacing any street trees removed for construction. Thus, the proposed project or variant would not conflict with the city's local tree ordinance, and this impact is identified as less than significant, and no mitigation measures are required.

4.R Geology and Soils [GE]

4.R.1 Comment GE-1: Geology and Soils Impacts

This response addresses the following comments, which are quoted below:

I-Herlihy1-8

I-Naraghi-8

I-Parthasarathy-9

"8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-8, GE-1])*

"8) The geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of an unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-8, GE-1])*

"8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-9, GE-1])*

RESPONSE GE-1

Comments express concern regarding the potential for unstable soils at the project site, specifically, the presence of a "canyon" that was reportedly filled in with construction debris and trash and is believed to be an "unstable" landfill. The comments request that the EIR analyze the geology, soil composition, support for new buildings, and the risk of potential liquefaction, and how to reduce these hazards.

In response to comments, the draft EIR acknowledges that prior to the existing development, the project site had an east-to-west stream channel; this former stream channel is presumed to be the feature that the commenters refer to as a "canyon" or "landfill" (see draft EIR Appendix B, Initial Study, Section E.15, Geology and Soils, p. 74). This former channel was filled with up to 51 feet of non-engineered fill, consisting of silty sand with layers of clayey gravel, silty gravel, and gravelly clay. In addition, wood debris, rootlets, rock fragments, and other non-engineered material were encountered in isolated exploration locations in the former stream channel. The non-engineered fill is underlain by the Colma Formation to at least 120 feet below the ground surface, which consists of sand with varying amounts of silt fines.

The draft EIR acknowledges that the non-engineered fill would need to be addressed to prevent adverse impacts from unstable soils. As discussed in draft EIR Appendix B, Initial Study, Section E.15, Geology and Soils, under Impact GE-1 (pp. 76–80), GE-3 (pp. 81–82), and GE-4 (p. 83), the mandatory provisions of the California Building Code, state Seismic Hazards Mapping Act of 1990, and San Francisco Building Code would require that the site-specific geotechnical reports be prepared for the proposed project or variant to address the potential for unstable soils (e.g., liquefaction, lateral spreading, settlement, expansive soils). The building codes provide specifications for determining the potential for unstable soils and related hazards and assessing the potential consequences. Measures to address the effects of unstable soils must be recommended in the site-specific geotechnical reports and incorporated into the conditions of permit(s) issued for the site. Such measures must address the appropriate foundation type and depths and selection of the appropriate structural systems to accommodate anticipated ground conditions, and the foundation and structural design for buildings on the project site would be based on stabilized conditions. For this reason, impacts related to unstable soils and liquefaction are identified as less than significant and are adequately addressed in the draft EIR.

4.S Hazards and Hazardous Materials [HZ]

4.S.1 Comment HZ-1: Increase in Exposure to Hazardous Materials

This response addresses the following comments, which are quoted below:

I-Chang-6

I-DeBaun-8

I-Herlihy1-9

I-Naraghi-9

I-Parthasarathy-10

I-Schneider-1

"(6) Increase the risks posed by demolition of existing buildings for hazardous materials, directly affect our health for the existing local residents" *(Mary Chang, Letter, 2/7/2023 [I-Chang-6, UT-2])*

"7. Section E.17: What steps have been taken to evaluate the health and safety impacts of demolition of existing buildings?" *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-8, HA-1])*

"9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-9, HZ-1])*

"9) The risks posed by demolition of existing buildings for hazardous materials. The Petco site was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-9, HZ-1])*

"9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-10, HZ-1])*

"St Stevens church attempted to develop the land behind the Cinemas- 40 Years ago it was determined to be toxic and landfill that would not support tall buildings. Please research and respond." *(William Schneider, Letter, 2/8/2023 [I-Schneider-1, HZ-1])*

RESPONSE HZ-1

Comments express concerns regarding hazardous materials risks posed by the demolition of existing buildings and the risks from previous land uses that released contaminants in the soil.

Comments also allege that hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen Catholic School. The comments provide no substantial evidence to describe the condition or verify the allegation.

A comment expresses concern regarding whether the site can support "tall buildings." This portion of the comment is addressed above under Response GE-1.

Regarding the potential to encounter hazardous materials during building demolition and excavation for foundations, the draft EIR acknowledges that portions of some of the existing structures may contain hazardous building materials (see draft EIR Appendix B, Initial Study, Section E.17, Hazards and Hazardous Materials, subsection Historical and Current Land Uses, pp. 94). Based on the age of some of the buildings, hazardous building materials, such as asbestos-containing materials, lead-based paint, electrical transformers or hydraulic lifts containing PCBs, fluorescent light ballasts containing PCBs or bis (2-ethylhexyl) phthalate, and fluorescent light tubes containing mercury vapors may be present. In addition, the draft EIR acknowledges that certain portions of the project site may have residual levels of contaminants from previous land uses (e.g., a former dry cleaner and a former gasoline service station).

The draft EIR acknowledges that the removal of hazardous building materials and the potential to encounter contaminated soil would need to be addressed to prevent adverse impacts on construction workers, the public, and the environment. As discussed in draft EIR Appendix B, Initial Study, Section E.17, Hazard and Hazardous Materials, Impact HZ-2 (pp. 99–101), a site mitigation plan and a demolition and construction dust control plan must be prepared in compliance with Articles 22A and 22B of the San Francisco Health Code for review and approval by the San Francisco Department of Public Health, Environmental Health Branch, prior to demolition and construction. The construction dust control plan would include best management practices to reduce dust during construction, such as limiting travel on unpaved areas; wetting and tarping solid bulk material for offsite transport; and paving main access points to the project site. The site mitigation plan would describe known and potential environmental conditions, including the potential to encounter residual contamination from previous land uses and previous spill cleanup sites. The plan would include soil, groundwater, and stormwater management protocols such as sampling and proper disposal of any hazardous waste encountered during excavation. Implementation of a site mitigation plan would reduce any potential impacts prior to or during construction of the proposed project or variant to a less-than-significant level. Compliance with the plans would ensure that implementation of the proposed project or variant would not create a significant hazard to construction workers, the public, or the environment through reasonably foreseeable conditions involving the release of hazardous materials. For these reasons, impacts related to hazards and hazardous materials are identified as less than significant and are adequately addressed in the draft EIR.

4.T General Comments(CEQA) [GC-CEQA]

The comments and corresponding responses in this section cover the general issues related to CEQA. The comment topics relate to:

- GC-CEQA-1: Support for the Proposed Project and EIR
- GC-CEQA-2: Public Outreach
- GC-CEQA-3: NOP Noticing, Scoping, Public Review of EIR, and Administrative Record
- GC-CEQA-4: Draft EIR is Inadequate
- GC-CEQA-5: Use of Initial Study to Focus EIR

4.T.1 Comment GC-CEQA-1: Support for the Proposed Project and EIR

This response addresses the following comments, which are quoted below:

A-HPC-4

A-CPC-Moore-4

A-CPC-Tanner-2

I-Aslanian-Williams-1

I-CLee-1

I-Finnegan-1

I-Hardesty-1

I-Hong-1

I-Hong-3

I-Howe-1

I-Maldonado-1

I-Marzo-1

I-Muñoz-1

I-Riley-1

I-Seratti-1

I-Tsakalakis-1

O-HAC-1

O-NorthernNeighbors-1

O-SierraClub-1

- "Commissioner Foley expressed support for the proposed project and expressed the need for the City to construct housing." *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-4, GC-CEQA-1])*

"Those are my comments. Otherwise, I believe that the -- what's in front of us is very thorough and goes into all of the aspects that we need to consider." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-4, GC-CEQA-1])*

"But I just again want to thank the staff for their great work and again for the project sponsor for bringing it forward. We're very, very excited about this and really just want to commend a very transformative proposal that both keeps the mall and brings it into -- really a whole new part of this neighborhood into being.

So we're very excited and thank, again, staff and for members of the public, again, calling in." *(Rachael Tanner, President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Tanner-2, GC-CEQA-1])*

"And the only thing I came to say today is that this Draft EIR and the company has definitely presented itself to the community. They've been to West of Twin Peaks meetings a few times and presented the project. And I think that this Draft EIR is complete and should be approved.

There are questions and requests that we have, and we have sent a letter to that effect by the chair of our land use committee. So there are things to be answered, such as the infrastructure, mix of housing, et cetera. But as far as this Draft EIR, it should be approved." *(Dena Aslanian-Williams, Public Hearing, 2/9/2023 [I-Aslanian-Williams-1, GC-CEQA-1])*

"I am in support of the Stonestown Project and hope that it moves forward with the maximum amount of units and hope that the Planning Commission takes the necessary steps to move forward with the -- what's that? -- the EIR.

I spent my time going to the high school there on Eucalyptus, so I spent a lot of time walking back and forth between Stonestown and the high school. The space towards the -- toward [unintelligible] high school and the Ralph Nicol Park, they're unactivated space. When I was a student there, me and my friend, we've been mugged through that -- in that area because it's a very quiet area. So the intimacy [unintelligible] all residents and has a more accurate space. I think it's a great use of the [unintelligible] as of right now." *(Chen Young Lee, Public Hearing, 2/9/2023 [I-CLee-1, GC-CEQA-1])*

"Though my interpretation of the EIR is elementary, I endorse the draft EIR and am in support of the project offering much-needed additional housing. I believe that a project like this is perfect for all the current open and underutilized space and will attract more business and commerce to the west side of the City." *(Lynn Finnegan, Letter, 2/9/2023 [I-Finnegan-1, GC-CEQA-1])*

"I believe I'm calling in support for the Draft EIR. I've participated, over the last the several years, in community outreach efforts by the sponsor, and I've looked at these plans. I believe this is a really smart use of this land and a good place to build significant housing which we desperately need.

I'd like to encourage the Commission to take the next steps to approve -- or take -- approve the draft EIR and move forward in the next steps to having this development realized." *(Tara Hardesty, Public Hearing, 2/9/2023 [I-Hardesty-1, GC-CEQA-1])*

"Thank you for the opportunity to comment and support this Wonderful Project – the Stonestown Development project. I have been commenting on this Project's DEIR etc since February 4, 2021 both with the sponsors/workshops and the SF Planning Department. I'm a San Francisco native with 78+ years. I currently live in District 7 as a resident and home owner. I have been shopping here since the early 60's when it was an open mall. Currently, it is still a very unique mall, professionally maintained with many special and unique shops. Which in my opinion shows the credibility of the sponsors ability to maintain such a project. Because I use public transportation since I ditched my car it still meets and exceeds my shopping requirements. With the exception for the fog (Karl), the plan professionally address everything a mall should be including the additional 2,930 residential units on the west side of the city. Which will add to the 'SF Housing Element Plan.'

At this time I would like your support and approval for this phase. And to include my comments to the RTC phase.

OK, on to the next phase, my comments to the DEIR for the RTC due by February 13, 2023.

If anyone has any comments to my opinion/Email here please feel free to let me know.

A lot of the success to this project to date is due to the continued onsite work shops and the community out reach done to date." *(Dennis Hong, Letter, 2/6/2023 [I-Hong-1, GC-CEQA-1])*

"I also believe that this projects number of housing units will certainly help the SF Housing Element pan out nicely. I would also like to encourage that that project be expedited both in the process and the permit process as allowed." *(Dennis Hong, Letter, 2/6/2023 [I-Hong-3, GC-CEQA-1])*

"As a lifelong resident of San Francisco (age 69) and a near neighbor (Ingleside Terraces), I whole-heartedly support the plans submitted for changes to Stonestown. I believe it will be a positive change. The addition of housing, lodging, open space, improved traffic patterns and the temporary jobs that construction will bring are all things needed in this western part of the city. Yes, there will be some disruptions, but the positives outweigh the negatives. This is progress." *(Donna Keuper Howe, Letter, 1/14/2023 [I-Howe-1, GC-CEQA-1])*

"I'm calling in support of Stonestown Development EIR. This is -- the EIR is missing things like prospected environmental benefits instead of the short-term project environmental impact. This project provides sustainable alternatives for biking from Ingleside's Holloway Street through SF campus -- which I've done before, even walking through it -- to Stonestown beneath an Irish sunset. And it's pretty safe; right?

Moreover, this opportunity provides in-filling of housing space at affordable market rates to keep and grow the diversity of Ingleside, where Blacks were displaced before. And some callers against EIR approval are familiar with such history in the past.

This multi-development narrowly promotes SFMT ridership with the M-Line as well, buses, and even walking within the new 15-minute walkable neighborhood as well. Plus it's a multi-use neighborhood.

Please consider the future positive environmental impacts this project has going forward with this already satisfactory EIR document." *(Roland Maldonado, Public Hearing, 2/9/2023 [I-Maldonado-1, GC-CEQA-1])*

"Good afternoon, everyone. I'm calling in strong support. This is Steve Marzo. I'm a resident in the Ingleside neighborhood right down the street of the Stonestown Development. I go to this mall all the time. I'm a, you know, a big fan of the mall, and I strongly believe that it should be used for more housing.

And looking at the EIR, it looks to be adequate for the purposes of environmental review. And, you know, let's get it done. Let's get this passed so we can get more housing in San Francisco because we need it.

Thank you so much for your time. Please pass the EIR." *(Steve Marzo, Public Hearing, 2/9/2023 [I-Marzo-1, GC-CEQA-1])*

"I'm calling in support of the Draft EIR for the Stonestown redevelopment, particularly because a mall like Stonestown was built during a time in which a lot of development was car-centric. And unfortunately, this created huge scars throughout the city where, you know, it's not walkable. You can't really feel comfortable there unless you're in a car. And I think this will correct the wrongs of the past by adding housing, by adding walkable spaces, by adding green spaces. And importantly, it's on a Muni Metro line, which will be great for people.

Oftentimes, the West side has quoted a lot of opportunity, like great parking, great schools and not enough housing for the people to be able to take advantage of that. So this development will right those wrongs as well. And I hope you will agree and pass -- and approve this EIR." *(Martin Muñoz., Public Hearing, 2/9/2023 [I-Muñoz-1, GC-CEQA-1])*

"I have been keeping informed on the plans for the Stonestown Development Project for several years. The purpose of this message is to share my concerns with you.

I am not opposed to expanding the property to include housing and additional commercial and open space. I also applaud Brookfield Properties for keeping their neighbors informed as the project has evolved."
(Christine Riley, Letter, 2/13/2023 [I-Riley-1, GC-CEQA-1])

"And I can't tell you how excited I am to see something like this in our area that's so close. We lack housing, as everybody knows, in this city, and the -- so I'm absolutely thrilled with this proposal, and I -- for many

reasons: the housing, the walkable space, the proximity to San Francisco State. How fortunate for these college students to be so close to a proposed living and mixed-usage space as this one.

So I absolutely ask you to move forward to approve this EIR as it is. And I think it's a wonderful, wonderful contribution to our area. Thank you so much. And this'll make the west side so much more exciting and livable than it is right now." *(Karen Seratti, Public Hearing, 2/9/2023 [I-Seratti-1, GC-CEQA-1])*

"Firstly, I would like to say that I wholeheartedly support the Stonestown project. It will be a massive improvement to our neighborhood. In particular, the project will:

1. **Continue bringing Stonestown retail into this century**, building on the progress already made with the new anchor tenants (Whole Foods, Cinema, Sports Basement, and Target).
2. **Add a much-needed hotel to the west side** of San Francisco within easy reach of the airport and freeways. Currently people are forced to stay downtown or on the Peninsula.
3. **Add much-needed homes**. While there may be 61,000 empty homes in San Francisco today (due to an apparent supply-demand-price mismatch, source: kron4.com article), the only solution long-term to revive our small landlocked city is building up with higher density. I would like to see the maximum number of homes.
4. **Add more green space while adding parking spaces**. Today, the acres of above ground parking are an eyesore and throwback to a bygone era." *(Kath Tsakalakis, Letter, 12/23/2022 [I-Tsakalakis-1, GC-CEQA-1])*

"I'd like to first commend the interpretation team, the Planning Commission and the Planning staff for your flexibility earlier in this hearing.

I am here to offer support for the Stonestown Development Project and believe that the Draft EIR is sufficient and hope that the project moves forward with the maximum number of housing units that would not require an EIR re-submittal.

Our project review committee endorsed this project back in December of 2022 and gave especially high marks to the land use and density of the project. We are tremendously excited to see this innovative project revitalize the area and ask that the Commission move forward in approving this EIR at its earliest convenience." *(Jake Price, Housing Action Coalition, Public Hearing, 2/9/2023 [O-HAC-1, GC-CEQA-1])*

"And I'm calling in in support of this Stonestown Development draft EIR. The, you know, EIR is adequate and comprehensive. Let's not be -- let perfect be the enemy, you know, of the good here.

I think one of biggest issues in housing in San Francisco is that things get delayed over and over again and that the process takes forever. So let's make good progress here in the process, not delay it further, and approve the Draft EIR." *(Jonathan Bunemann, Public Hearing, 2/9/2023 [O-NorthernNeighbors-1, GC-CEQA-1])*

"Thank you for the opportunity to comment on the subject SEIR. The Sierra Club appreciates your electronic publishing of the DEIR to save paper, printing and mailing cost.

The subject document has over 600 pages that attempt to deal with prospective environmental failures. Thankfully, the Stonestown project, of dense housing near good transit is inherently a benefit to the environment by providing residents with thermally efficient housing and a more economic life of less driving. The Sierra Club has reviewed the subject Draft EIR and we have a few suggestions to improve the final EIR and make the ultimate project more even beneficial to the environment:" *(Howard Strassner, Member SF Group Executive Committee, Sierra Club, Letter, 1/27, 2023 [O-SierraClub-1, GC-CEQA-1])*

RESPONSE GC-CEQA-1

The comments express support for the proposed project or variant based on its merits, support for the need for housing in San Francisco, support of the proposed land uses, and/or support of the draft EIR.

These comments, in and of themselves, do not raise specific environmental issues about the adequacy or accuracy of the draft EIR's coverage of physical environmental impacts that require a response in this RTC document under CEQA Guidelines section 15088. Although general support of the proposed project or variant does not raise specific issues concerning the adequacy or accuracy of the draft EIR under CEQA, such comments, including recommendations for modifications to the project, may be considered and weighed by the decision-makers prior to rendering a final decision to approve, modify, or disapprove the proposed project or variant. This consideration is carried out independent of the environmental review process.

4.T.2 Comment GC-CEQA-2: Public Outreach

This response addresses the following comments, which are quoted below:

I-Arbulu-2

I-Boken-1

"It does not appear that the impact on our neighborhood has been adequately addressed. No one from the developer ever approached us for our input. They held open houses to say WHAT they were going to do— not for suggestions. Then in the final plan they changed the scope of Phase 1 with even bigger and taller buildings. The people they list as supporters do not live in the neighborhood. Of course they will support it because they will reap the benefits of visiting a massive new mall and then going home to their neighborhoods and leaving the noise and traffic to those who actually live here!" *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-2, GC-CEQA-2])*

"When this item was on the agenda for the February 2nd meeting, I was caught off guard for a number of different reasons. I've been following this project since pre-pandemic years, both attending in-person events and virtual meetings. Each of these involved only project sponsors and their consultants. Planning staff was never included. There is a community steering committee, but it's only by invitation.

The PIM website still lists Xinyu Liang as the assigned planner even though the department staff directory lists her as a current planner for District 6. The PIM website also states that the shadow study was placed on hold on September 7th of last year." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-1, GC-CEQA-2])*

RESPONSE GC-CEQA-2

The comments relate to public outreach and information related to the proposed project or variant.

A comment states that impacts of the proposed project or variant on the Merced Manor neighborhood are not adequately addressed in the draft EIR, that residents of the Merced Manor neighborhood were not offered the opportunity to provide input on the proposed project or variant, and that the proposed project or variant includes larger and taller buildings than previously identified. In response to this comment, the draft EIR accurately describes the proposed project or variant, and the environmental effects of the proposed project or variant are identified and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study (included as Appendix B to the draft EIR). The comment includes no specific issues or evidence to support the claim that impacts of the proposed project or variant on the Merced Manor neighborhood are not adequately addressed in the draft EIR.

The commenter's statement that residents of the Merced Manor neighborhood were not offered the opportunity to provide input on the proposed project or variant is also not supported. As presented in Section 1.B, Environmental Review Process, of this RTC document, the scoping, noticing, and public and agency review process for the EIR has been conducted in accordance with CEQA requirements. The planning department published a notice of preparation (NOP) of the draft EIR on April 27, 2022 (included as Appendix A in the draft EIR), to inform agencies and the general public that the draft EIR would be prepared. A notice of availability (NOA) of the NOP and the NOP were sent to the State Clearinghouse, governmental agencies, organizations, persons who may have an interest in the proposed project, and to owners and occupants within 300 feet of the project site. The NOP announcement was also placed in a newspaper of general circulation in the project area. An NOP scoping meeting was held remotely on May 9, 2022, to explain the environmental review process for the proposed project and variant and to provide an opportunity to take public comment and concerns related to the proposed project or variant's environmental issues. In accordance with CEQA, the draft EIR was circulated for a 60-day public review and comment period, starting on December 15, 2022, and ending on February 13, 2023. Members of the public were given ample time to review and comment on the draft EIR in accordance with CEQA requirements. This comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

A comment expresses concerns regarding public meetings and online information related to the proposed project or variant. The comment asserts that planning department staff were not in attendance at public meetings regarding the proposed project or variant. The comment also asserts that the San Francisco Property Information Map (PIM) website does not accurately identify the assigned planner for the proposed project or variant. The comment also asserts that the PIM website identifies that the shadow study for the proposed project was placed on hold. In response to this comment, as presented in Section 1.B,

Environmental Review Process, of this document, the scoping, noticing, and public and agency review process for the EIR has been conducted in accordance with CEQA requirements. Planning staff have been present in all public meetings for the proposed project or variant that have been conducted pursuant to CEQA requirements. With regard to the accuracy of information for the proposed project or variant on the PIM website, the PIM website shows the correct assigned planner for environmental review under 2021-012028ENV. It is unclear which planning application the commenter is referring to and where it has been indicated that the shadow study for the proposed project or variant was placed on hold. The shadow study prepared for the draft EIR is uploaded as part of the project file identified above under "related documents" on the PIM website and was included as Appendix H to the draft EIR. This comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.T.3 Comment GC-CEQA-3: NOP Noticing, Scoping, Public Review of EIR, and Administrative Record

This response addresses the following comments, which are quoted below:

I-Boken-2

I-Chou-3

I-Conroy1-1

I-Full-2

I-Lee-3

O-ITHA-7

O-SPEAK-3

O-WTPCC-7

"During the walking tour last year, the consultant stated that the UA cinema would be demolished. Navy report subsequently stated that the cinema had been -- had come before the Historic Preservation Commission, and even the HPC was not listed on the project website as a milestone.

That the public comment period for the Draft EIR started over the holidays on December 14th is a practice that the Department has been heavily criticized for in the past.

I would concur with the commissioner's comments from the February 2nd meeting on how this is late to come before the Commission, as half of the plans and half of the community benefits have already been completed." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-2, GC-CEQA-3])*

"As a professional Civil Engineer and over 30 years resident, I would like to request a copy of draft EIP for my review prior to its certification." *(Su-Syin Chou, P.E., Letter, 2/12/2023 [I-Chou-3, GC-CEQA-3])*

"1. I understood that the West of Twin Peaks Central Council (WTPCC) made written comments about the scope of the EIR before the deadline for public comment. However, I don't see any reference to comments by the WTPCC in the draft EIR. Were written comments received from the WTPCC?

2. The announcement of the availability of the Draft EIR for comment and the deadline for public comment, both in writing and at the hearing, is timed such that affected neighborhood organizations (that do not meet in December because of the holidays) are limited in their ability to discuss and develop responses to the Draft EIR before the February 13th deadline. How can this deadline be extended 30 days to permit considered responses?" *(Paul Conroy, Letter, 1/9/2023 [I-Conroy1-1, GC-CEQA-3])*

"General. Comments on the scope of the EIR were provided (see Appendix A). However, many of the comments were not addressed in the EIR and, in some cases, completely ignored. Why does the City and County of San Francisco offer the opportunity to provide scoping comments and then not acknowledge them or explain how those comments have been incorporated into the EIR? Merely printing the scoping comments may meet the requirements under the California Environmental Quality Act (CEQA), but it certainly is not within the spirit of engaging with the public regarding environmental concerns. The EIR fails to provide any information regarding how these comments were addressed." *(Dave Full, Letter, 2/12/2023 [I-Full-2, GC-CEQA-3])*

"I truly hope the city conducts surveys and research to make sure the neighbors will not be adversely affected by this project because that's the reason we moved to this neighborhood." *(Marie Lee, Letter, 2/9/2023 [I-Lee-3, GC-CEQA-3])*

- "**History:** We understand that in recognition of the potential impact of the original Stonestown Mall project on the surrounding neighborhoods, the original proposal was modified to protect the quality of life of these communities. We request that the EIR detail and examine the initial City approval process for Stonestown and the mitigating measures taken at that time and ensure that is maintained if still relevant to place this project in the proper historical context." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA7, GC-CEQA-3])*

"SPEAK is strongly opposing the proposed application for SB7 (Atkins) streamlining. SB7 (Atkins) is a deeply flawed reauthorization of a previous bill." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-3, GC-CEQA-3])*

- "**History:** We understand that in recognition of the potential impact of the original Stonestown Mall project on the surrounding neighborhoods, the original proposal was modified to protect the quality of life of these communities. We request that the EIR detail and examine the initial City approval process for Stonestown and the mitigating measures taken at that time and ensure that is maintained if still relevant to place this project in the proper historical context." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-7, GC-CEQA-3])*

RESPONSE GC-CEQA-3

The comments relate to noticing, scoping, and public review of the EIR, and the administrative record.

Comments state that the noticing, and public and agency review process for the draft EIR was timed to occur during the holidays to hinder public review and comment. As presented in Section 1.B, Environmental Review Process, of this document, the scoping, noticing, and public and agency review process for the draft EIR has been conducted in accordance with CEQA requirements identified in CEQA Guidelines section 15087 and Chapter 31 of the San Francisco Administrative Code. As provided in CEQA Guidelines section 15105(a), the public review period for a draft EIR shall not be less than 30 days nor should it be more than 60 days except under unusual circumstances. Furthermore, as stated in CEQA section 21091, if a state agency is the lead agency, a responsible agency, or a trustee agency; if a state agency otherwise has jurisdiction by law with respect to the project; or if the proposed project is of sufficient statewide, regional, or areawide significance as determined pursuant to the guidelines certified and adopted pursuant to Section 21083, the review period shall be at least 45 days. The draft EIR was circulated for a 60-day public review and comment period, starting on December 15, 2022, and ending on February 13, 2023. The planning department provided the maximum number of days for public review. There are no restrictions in CEQA for when a draft EIR can be published within a calendar year, and agencies and members of the public were given ample time to review and comment on the draft EIR in accordance with CEQA requirements.

In response to a comment, all persons who commented on the draft EIR will receive a notification of the RTC document's availability for review prior to EIR certification. An electronic copy of the draft EIR and all related project CEQA documents are available for review or download on the planning department's "Environmental Review Documents" web page: https://sfplanning.org/environmental-review-documents.

A comment asks whether the West of Twin Peaks Central Council submitted written comments regarding the scope of the EIR. The City did not receive written comments on the scope of the EIR from any organizations or individuals identified as the West of Twin Peaks Central Council during the NOP public review period.

A comment states that many comments submitted on the scope of the EIR were not addressed in the draft EIR. In response to this comment, the draft EIR addresses all substantive and environmentally relevant written and oral comments received on the scope of the EIR. A summary of the NOP scoping comments that relate to environmental issues and the locations in the draft EIR and initial study where they are addressed and analyzed is provided in draft EIR Table 1-1, pp. 1-4 through 1-8. Specific responses to this commenter and revisions made in response to them are addressed under Response PD-1, Project Description, p. 4-5.

A comment suggests that portions of the proposed project or variant have been completed or are underway. A comment expresses a hope that the City conducts surveys and research to ensure that neighbors will not be adversely affected by the proposed project or variant. Comments request that the draft EIR discuss the initial City approval process for the proposed project or variant. In response to a comment, no aspect of proposed project or variant development has been implemented, as the project has not been approved. As described on draft EIR p. 1-2, an EIR is an informational document and is intended to inform the public and decision-makers about a project's environmental impacts and ways to reduce or avoid a project's potential environmental effects, and to identify alternatives to a project that can avoid or reduce impacts. It is not the purpose of an EIR to recommend approval or denial of a project. The required project approvals are listed on draft EIR pp. 2-47 through 2-50. None of the approvals can proceed until the final EIR is certified and after the decision-makers take an approval action on the proposed project or variant.

A comment expresses opposition to the proposed application for SB 7 (Atkins) streamlining. This comment is noted. However, as described in Chapter 5, Draft EIR Revisions, of this RTC document, the project sponsor has elected to not pursue certification of the proposed project or variant as an environmental leadership development project under SB 7.

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.T.4 Comment GC-CEQA-4: Draft EIR is Inadequate

This response addresses the following comments, which are quoted below:

I-Conroy2-1

I-Conroy2-8

I-Full-1

I-LG-7

I-Moore-1

"The Draft EIR does not adequately address several of the significant negative impacts that would be created by the proposed Stonestown Development Project.

The Draft EIR fails to meet the requirement that an EIR 'contain sufficient information to understand the project's environmental impacts. (Dry Creek Citizens Coalition v. County of Tulare (1999) 70Cal.App.4th 20, 28.) 'Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal … and weigh other alternatives in the balance.' (County of Inyo, supra, 71Cal.App.3d at pp.192-193.)' Save Our Capitol! Vs Department of General Services (Opinion Filed January 18, 2023; No. C096617, California Court of Appeal, 3rd Dist., p.12)

The Draft EIR does not adequately inform the public and public agency decision-makers with respect to several environmental impacts, as addressed by comments from affected neighborhood associations. The Draft EIR does not address many of the earlier public comments regarding the scope of the EIR, other than to note that the comments were made." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-1, GC-CEQA-4])*

"The Draft EIR does not adequately inform the public of many of the adverse environmental consequences of the project. The Final EIR should address all significant environmental effects of the project, including those described above." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-8, GC-CEQA-4])*

"Thank you for the opportunity to review the Stonestown Development Project EIR. Provided below are my comments on the EIR. I have organized the comments by page number to assist in understanding my

comments and concerns. In general, the EIR is internally inconsistent, confusing, and lacking in critical analysis needed to determine the impacts of the proposed project. It is unfortunate that a much-needed housing project in the City and County of San Francisco did not garner more attention and care in preparing the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-1, GC-CEQA-4])*

- "The Draft EIR is limited to a few selected topics, but for those of us who live in the surrounding neighborhoods there are additional issues deemed insignificant that will have a huge impact on our homes and families. These issues are deserving of further study and efforts to mitigate. In addition, building these huge projects without definite plans and funding in place to improve infrastructure, public transit and public services in the area will affect both current and future residents." *(LG, Letter, 2/13/2023 [ILG7, GC-CEQA-4])*

"I am writing to state my objections to the draft environmental impact report for the Stonestown Development Project. While it is a heavy lift for a lay person to synthesize the intricacies of the EIR, the gist of what is proposed is problematic for the following reasons.

The report itself is clear from the outset that 'the proposed project or variant would result in **significant and unavoidable** impacts in the following areas, **even with implementation of feasible mitigation measures**.' (Summary, p. S-2, emphasis added) These areas are Historic Architectural Resources, Transportation and Circulation, Noise, Air Quality and Wind. In essence, the quality of life—both for those currently living in the area and those who might move to the area—would decline as a result of this project." *(Andrew Moore, Letter, no date [I-Moore-1, GC-CEQA-4])*

RESPONSE GC-CEQA-4

The comments pertain to the adequacy of the draft EIR. Comments state that the draft EIR does not adequately address several significant impacts that would result from implementation of the proposed project or variant and does not address many of the public comments regarding the scope of the EIR. A comment states that the draft EIR is internally inconsistent and confusing and does not include sufficient analysis to determine the impacts of the proposed project or variant. A comment states that the draft EIR is limited to a few selected topics and does not address all relevant and applicable environmental topics and associated impacts. A comment further states that projects in the city are implemented without required planning and funding for infrastructure or services. The commenter is referred to Response UT-2, Utilities Infrastructure, p. 4-71; Response TR-3, Transit Impacts, p. 4-30; and Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105.

A comment expresses objection to the draft EIR and states that the significant and unavoidable impacts with mitigation would result in a decline in the quality of life for residents in the area. The commenter is correct that the proposed project or variant would result in significant and unavoidable impacts related to historic architectural resources, transportation and circulation, noise, air quality, and wind. As explained under Response GC-CEQA-3, NOP Noticing, Scoping, Public Review of EIR, and Administrative Record, p. 4-123, an EIR is an informational document. CEQA does not prohibit lead agencies from approving projects with significant and unavoidable impacts on the environment. Per CEQA Guidelines section 15043, a public

agency may approve a project that would cause a significant effect on the environment if the agency makes a fully informed and publicly disclosed decision and determines that (a) there is no feasible way to lessen or avoid the significant effect and (b) the specifically identified expected benefits from the project outweigh the policy of reducing or avoiding the significant environmental impacts of the project. The agency must set forth the reasons for its action in a statement of overriding considerations that is based on the final EIR or other information in the record (CEQA section 21081(b)).

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.T.5 Comment GC-CEQA-5: Use of Initial Study to Focus EIR

This response addresses the following comment, which is quoted below:

I-Pilpel-5

"5. The Draft EIR cites to unsupported conclusions in the Initial Study (IS). The IS is not a substitute or exemption for the analysis and mitigation requirements covering those conclusions, including conclusions of no impacts to 'land use and land use planning, population and housing, cultural resources …, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous material, energy resources …, and wildfire.' The Project will clearly have impacts on land use, population, housing, greenhouse gas emissions, energy resources, and wildfire, and those impacts must be analyzed in the EIR and mitigated." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-5, GC-CEQA-5])*

RESPONSE GC-CEQA-5

The comment asserts that significant impacts of the proposed project or variant were improperly excluded from analysis in the draft EIR analysis through the preparation of the initial study (included as Appendix B to the draft EIR). In response to this comment, consistent with the provisions of CEQA Guidelines section 15060, Preliminary Review, the initial study was prepared to focus the draft EIR on the effects of the proposed project or variant determined to be significant. The initial study is part of the draft EIR through its inclusion as Appendix B. The initial study provides thorough analysis, and was circulated with the draft EIR for public review and comment. The public was able to, and did, provide comments on the initial study. Responses to those comments are provided in this RTC document. This approach, recommended by the CEQA Guidelines, is standard practice and has been upheld by the courts.

4.T.6 Comment GC-CEQA-6: Caltrans Coordination and Permits

This response addresses the following comment, which is quoted below:

A-Caltrans-1

"**Project Coordination**

Please specify the design and construction schedule of the proposed project. Please coordinate this project with the following adjacent Caltrans projects:

- Project 04-0AA62: 19th Ave Pave Rehab, design to be completed in June 2024
- Project 04-4W490: Traffic Signal Replacement (locations are pending to be finalized), design to be completed in FY 2026/27

Encroachment Permit

The following project elements identified in the DEIR will need the Caltrans-issued encroachment permit:

- Figure 2-22: the road approach and road connection off the State Highway System for the new streets
- Figure 2-23: the new proposed water line within the limits of Caltrans' Right of Way (ROW)
- Figure 2-26: the new private sewer line within the limits of Caltrans' ROW
- Figure 3.B-4: the proposed sidewalks within the limits of Caltrans' ROW" *(Yunsheng Luo, Associate Transportation Planner, California Department of Transportation, Letter, 2/8/23 [A-Caltrans-1, GC- CEQA-6])*

RESPONSE GC-CEQA-6

The comment requests coordination of the proposed project design and construction schedule with Caltrans projects specified in the comment and identifies project elements depicted in draft EIR Figures 2-22, 2-23, 2-26, and 3.B-4 that would require a Caltrans-issued encroachment permit. The comment is acknowledged. The proposed project or variant would include the requested coordination of the project design and construction schedule with the identified Caltrans projects and coordination regarding the required encroachment permits. Also note that draft EIR Section 2.G, Required Project Approvals (see Section 2.G.1, State and Regional Agencies, California Department of Transportation, p. 2-47), identifies the Caltrans encroachment permit requirement.

4.U General Comments (Non-CEQA) [GC-NON-CEQA]

Several comments are general comments unrelated to CEQA or unrelated to the topics studied in the CEQA Guidelines Appendix G checklist. Some comments suggest adding additional information unrelated to environmental impact analysis. Others are general concerns regarding the proposed project and variant or the analysis in the draft EIR but do not identify any particular deficiencies in the analysis or conclusions in the draft EIR regarding the physical environmental impacts of the proposed project or variant. Other comments are introductory in nature or do not present specific issues related to the proposed project or variant in the draft EIR.

The comment topics relate to:

- GC-NON-CEQA-1: Uses for the Project and Variant
- GC-NON-CEQA-2: Affordable Housing
- GC-NON-CEQA-3: Sustainability Plan
- GC-NON-CEQA-4: Building Heights
- GC-NON-CEQA-5: Non-CEQA Transportation Impacts
- GC-NON-CEQA-6: Effects from Other Projects
- GC-NON-CEQA-7: Opposition to the Proposed Project
- GC-NON-CEQA-8: Design of the Proposed Project
- GC-NON-CEQA-9: San Francisco Designation as Urban Heat Island
- GC-NON-CEQA-10: ParkMerced Ownership
- GC-NON-CEQA-11: Economic Feasibility and Workforce Considerations

4.U.1 Comment GC-NON-CEQA-1: Uses for the Project and Variant

This response addresses the following comments, which are quoted below:

I-Herlihy2-2

I-Herlihy3-2

O-SPEAK-1

O-SPEAK-2

"The proposed 18 story, 200 room hotel is inconsistent with the proposed mixed use residential and commercial nature of the project and should be eliminated from the project. San Francisco has an oversupply of hotel rooms as it is." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-2, GC-NON-CEQA-1])*

"I realize my time is up. Simply would like to close by saying that the proposed 18-story, 200-room hotel is inconsistent with their goal of mixed residential and commercial." *(James P. Herlihy, Public Hearing, 2/9/2023 [I-Herlihy3-2, GC-NON-CEQA-1])*

"The project proposal includes a 200 room hotel. The Westside is not a tourist or business destination. The hotel should be reassigned to housing.

The project proposal includes office space. The Westside is not a business destination. Also, there is a high commercial vacancy rate in the downtown core. The office space should be reassigned to housing." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-1, GC-NON-CEQA-1])*

"The project proposal includes an increase in retail space. With increases in online retail, this increase should be eliminated.

HEIGHT

The tallest structure in the proposed project is eighteen (18) storeys. The tallest structure in the SFSU student housing site is ten (10) storeys. The tallest structure in ParkMerced is fourteen (14) storeys but at a lower geographic elevation.

SPEAK is advocating for the tallest structure in the Stonestown project to be ten (10) storeys mirroring the adjacent structures in SFFU student housing." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-2, GC-NON-CEQA-1])*

RESPONSE GC-NON-CEQA-1

Comments relate to the overall development program and land uses proposed for the project and variant. One comment expresses an opinion that the proposed hotel use is inconsistent with the mixed residential and commercial uses. Another comment states that the west side of the city is not a tourist or business destination and therefore the proposed hotel and office space should be reassigned to housing and that the retail component should be eliminated due to the increase in online retail. The aforementioned comment also advocates for a maximum building height of 10 stories, similar to adjacent San Francisco State University (SFSU) housing structures. These comments do not raise significant environmental issues or allege inadequacies with the draft EIR. Potential environmental impacts from the proposed development, including building heights, are adequately analyzed in the draft EIR. The revised variant presented in Chapter 2 of this RTC document does not include the hotel. These comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.U.2 Comment GC-NON-CEQA-2: Affordable Housing

This response addresses the following comments, which are quoted below:

O-SierraClub-2

"1) Because of San Francisco's great need of additional affordable housing the Study should have included a statement about how many additional affordable units, of what kind, would be provided if an outside source of funding, of how much, was available." *(Howard Strassner, Member SF Group Executive Committee, Sierra Club, Letter, 1/27, 2023 [O-SierraClub-2, GC-NON-CEQA-2])*

RESPONSE GC-NON-CEQA-2

A comment states that the initial study should have included how many and what kind of affordable units would be provided, and if an outside source of funding is available. The inclusion of affordable units is not an environmental issue required to be analyzed under CEQA, and the amount of affordable housing included in

a project does not affect the analysis of environmental impacts. The project sponsor's commitment to the amount, type, and funding of affordable housing developed as part of the proposed project or variant would be part of the development agreement between the City and the project sponsor. The development agreement is one of the proposed project approvals. The development agreement requires approval by the board of supervisors, following recommendations for approval by the planning commission. Pursuant to the requirements of San Francisco Administrative Code chapter 56, the proposed development agreement is subject to noticing requirements and will be made available for public review prior to presentation to the planning commission for its consideration and recommendation to the board of supervisors per standard City procedures.

4.U.3 Comment CG-NON-CEQA-3: Sustainability Plan

This response addresses the following comment, which is quoted below:

I-Full-8

"Page 2-40, Section 2.D.10. Why is the sustainability plan not available for review? Could there be any impacts associated with the implementation of the sustainability plan? Without providing any information regarding the sustainability plan, it is not possible to provide any comments regarding potential impacts resulting from the implementation of the sustainability plan." *(Dave Full, Letter, 2/12/2023 [I-Full-8, GC-NON-CEQA-3])*

RESPONSE GC-NON-CEQA-3

The comment asks why the sustainability plan for the proposed project or variant is not available for review and whether there could be impacts associated with implementation of the sustainability plan.

In response to this comment, as stated in draft EIR Section 2.D.10, p. 2-40, the sustainability plan would be prepared to outline performance and monitoring criteria for operation of the proposed project or variant. The sustainability plan would describe how the proposed project or variant would achieve its required adherence to the state's Title 24 and San Francisco Green Building Code requirements for energy efficiency, renewable energy, and solar and living roofs. How the proposed project or variant would comply with Title 24 and the San Francisco Building Code is documented in the *Greenhouse Gas Analysis: Compliance Checklist for Stonestown Development Project* and described in Section E.8, Greenhouse Gas Emissions, in Appendix B of the draft EIR. As stated in draft EIR p. 2-40, the project sponsor would evaluate on-site renewable energy approaches as part of the sustainability plan to be included in the proposed project or variant. The sustainability plan would be an appendix to the design standards and guidelines and would include both sitewide and location-specific standards, guidelines and considerations related to project sustainability. The sustainability plan and its implementation would not result in project elements or environmental effects that have not already been described and evaluated in the draft EIR.

4.U.4 Comment CG-NON-CEQA-4: Building Heights

This response addresses the following comments, which are quoted below:

I-Chou-1

I-Gardner-1

I-Hardeman-1

I-Lo-3

I-Ressl-1

I-Troxel-1

"I, on behalf of my family, am sending in an objection to the Stonestown proposed development, specifically a 90-foot tall residential tower next to Rolph Nicol Park.

For years, we were informed that a 4-story building in that spot was proposed. Its Environmental Impact Report (EIR) will provide an overview of the project, in-depth studies of potential impacts, measures to reduce or avoid those impacts, maps and technical details of the project area and an analysis of alternatives to the project. Yet, a 90-foot residential tower has been inserted into the Draft EIR filed with the City on 12/14/2022. This is an dishonest move that breaks the Merced Manor and Lakeshore neighborhood's trust." *(Su-Syin Chou, P.E., Letter, 2/12/2023 [I-Chou-1, GC-NON-CEQA-4])*

"I would like to voice my opinion regarding the Stonestown developers plan to build a 90 foot tall residential tower near Stonestone mall directly next to Rolph Nicol Park. This was not communicated to the Lakeshore community and I do not agree with this development. This was originally a 4 story building and that was what we were told and approved. You have my vote 'NO' on this 90 foot tall residential tower." *(Karen Gardner, Letter, 2/10/2023 [I-Gardner-1, GC-NON-CEQA-4])*

"**1) OPPOSITION TO THE CONSTRUCTION OF A 90 FOOT RESIDENTIAL TOWER ADJACENT TO ROLPH NICOL PARK**

* For years, Brookfield Properties represented to the neighborhood that the building in the northwest corner of the existing parking lot, directly adjacent to Rolph Nicol park, would be 4 floors. Yet the draft EIR now indicate plans to build a 90 foot tower." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-1, GC-NON-CEQA-4])*

"In conclusion, erecting multiple 90-foot towers will significantly affect nearby residents and alter lifestyles in more ways imaginable. Please reconsider to previous plans of 4-story buildings." *(Cynthia Lo, Letter, 2/11/2023 [I-Lo-3, GC-NON-CEQA-4])*

"I'm writing to you to express my disappointment regarding the proposed residential tower to be built behind Stonestown Mall. My understanding was that the building was originally going to be 4 stories tall, but has now suddenly changed to 90 feet (almost 8 stories) without any consultation with the neighborhood. Given that the developer has made several assurances about the proposed work, on the basis of which we decided not to oppose the construction, my husband and I are very worried that the developer feels free to discard any promises they've made if it is to their convenience.

We think it is essential that the city deny their permit until such time as a transparent public hearing has been made on their proposed amendment to increase the height to 90 feet.

If they build it at the promised 4 stories, we would have no objection. But from our perspective, they are trying to pull a fast one. It would be unacceptable if the city allowed them to get away with it." *(Jan Ressl & Ajith Ramanathan, Letter, 2/13/2023 [I-Ressl-1, GC-NON-CEQA-4])*

"I am writing to express my concerns regarding recent changes that have been made to the Stonestown Development Plan (the Plan) as outlined in the EIR dated December 14, 2022. According to the Plan, and as confirmed by Reuel Cooke, Manager of Community Development for Brookfield Properties, there will now be three eight (8) story buildings adjacent to Rolph Nicol Park and Playground (the Park). The previous Plan indicated that the adjacent buildings would be four (4) stories in height. The proposed buildings are now twice their original proposed height." *(Suzanne Troxel, Letter, 2/11/2023 [I-Troxel-1, GC-NON-CEQA-4])*

RESPONSE CG-NON-CEQA-4

The comments state opposition to a proposed 90-foot-tall residential tower next to Rolph Nicol Jr. Playground. The commenters assert that previous information provided to them about the project specified that a 4-story building would be developed at this location. The commenters state that this change represents a willful deception and a breach of prior assurances that nullified prior opposition to development of the project site. In response to these comments, since the notice of preparation (NOP) was published in April 2022 (see draft EIR Appendix A), a 90-foot-tall building has been proposed for Block NW1. The draft EIR accurately describes the physical components and requested approvals for the proposed project or variant. As stated in Chapter 2, Project Description, of the draft EIR, p. 2-1, the proposed project and variant would require amendments to the San Francisco General Plan, San Francisco Planning Code, and zoning map. The proposed rezoning would modify existing applicable height limits, including existing height limits within the portion of the project site referenced by the commenters. The draft EIR appropriately analyzes impacts associated with the height of the proposed buildings (e.g., draft EIR Section 3.E, Wind, and Section 3.F, Shadow). The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant. The commenters are also referred to Response GC-CEQA-2, Public Outreach, p. 4-120, regarding the environmental review process and public comment opportunities

4.U.5 Comment GC-NON-CEQA-5: Non-CEQA Transportation Impacts

This response addresses the following comments, which are quoted below:

I-Arbulu-3

I-Chang-1

I-Conroy2-3

I-DeBaun-2

I-EBirsinger-1

I-EBirsinger-3

I-Ho-2

I-Kiong-1

I-Kiong2-1

I-LBirsinger-3

I-Lee-2

I-Lo-2

I-Naraghi-1

I-Parthasarathy-1

I-Parthasarathy-2

I-Pilpel-9

I-Tsang-1

I-Wong-1

I-Chang-2

I-Moore-4

I-Will-2

I-Full-18

I-LG-4

“There are 3 schools in our neighborhood spanning 8 blocks—a high school and 2 primary schools. You need to be here in the mornings before school to see first hand the chaos and gridlock every morning. Parents double park, block driveways, and honk at each other as they drop their kids off, and the students who drive themselves scour the neighborhood for parking spots.

Adding hundreds of residents a block away —-many of whom will also seek parking—will only make it worse on our neighborhood.” *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-3, GC-NON-CEQA-5])*

"(1) Currently, there is a lot of traffic on 19th Avenue and Stonestown area. By having this project developed, it will create more congestion and significant noises." *(Mary Chang, Letter, 2/7/2023 [I-Chang-1, GC-NON-CEQA-5])*

"Also, only short shrift is given to the public comments concerning traffic impacts to surrounding neighborhoods - the Draft EIR identifies that Winston Avenue may experience traffic back-ups of one block, but ignores the remainder of the surrounding neighborhoods." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-3, GC-NON-CEQA-5])*

"1. EIR Section 3-2: 19th Avenue is already a highly congested thoroughfare. The impact of increased traffic in this area, potential diversion of Stonestown related traffic into Lakeside and other adjacent neighborhoods, impact of street parking (supply vs. demand), pedestrian crossings must be adequately addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-2, GC-NON-CEQA-5])*

"I am writing in regards to the subject project. I am totally against it. I am a Lakeside resident for nearly 30 years. The project would add tremendous congestion to the area. I suggest you take some of the vacant building in downtown SF and convert them to housing." *(Eugene Birsinger, Letter, 2/9/2023 [I-EBirsinger-1, GC-NON-CEQA-5])*

"2) Traffic - Section 3.2 of the EIR Draft. Traffic on Winston and Nineteenth Ave is already terrible. Congestion is getting worse. All of these new residents and businesses in this project will add to much traffic. Gridlock will be everywhere. How does the EIR Draft address this issue?? By the way, Muni is not the solution. Muni service is already terrible on Nineteenth Avenue." *(Eugene Birsinger, Letter, 2/9/2023 [I-EBirsinger-3, GC-NON-CEQA-5])*

"There is always heavy traffic from Holloway Ave. to Sloat Blvd on 19th Ave. Without any added underground public transportations, the traffic would get much worse and the Air quality would go down dramatically by increased traffics." *(Hyesoon Ho, Letter, no date [I-Ho-2, GC-NON-CEQA-5])*

"I am concerned about the negative impact to the traffic situation with this new development which will add even more cars to the road from 19th to South 280 which is already experiencing 'bottleneck' condition during peaking hours given there is no public transportation from that neighborhood to the south bay." *(Mee Mee Kiong, Letter, 1/30/2023 [I-Kiong-1, GC-NON-CEQA-5])*

"I like a lot about the Stonestown Development. My main concern is the traffic situation on the -- going to South Bay. Many residents in this neighborhood travel to the Silicon Valley to work. In fact, I think we are kind of well known to be, you know, the suburb of the Palo Alto area. So I am just really concerned about the number of residents that are going to be in this neighborhood and the traffic that's going to be generated. And there's a lack of public transportation from this particular area to Silicon Valley, and the only way to travel besides (unintelligible) the buses, or to take buses, is by cars.

Pre-COVID, this situation is already quite above that situation. And with the number of residents' parking spaces, it's just going to generate even more traffic. And as long as the developer adequately address that particular stretch from 19th down to Silicon Valley, I would really appreciate that. I just can't see how the number of people added to this particular location can eliminate or relieve that kind of traffic situation." *(Mee Mee Kiong, Public Hearing, 2/9/2023 [I-Kiong2-1, GC-NON-CEQA-5])*

"**Section 3.2. Traffic**

- Address how increased traffic patterns in/out of Stonestown will be managed." *(Laura Birsinger, Letter, 2/5/2023 [I-LBirsinger-3, GC-NON-CEQA-5])*

"Please conduct the necessary research on traffic. At times (holidays or after school hours), it's very difficult to get across Winston with traffic backed up to Junipero Sierra Blvd. I can't imagine what will happen once 2800 additional units are added at Stonestown. 19th avenue (highway 1) is already congested as it is. Please don't add to the madness." *(Marie Lee, Letter, 2/9/2023 [I-Lee-2, GC-NON-CEQA-5])*

"Moreover, Eucalyptus Dr houses an elementary school, a high school, a church with a K–8 school, a family YMCA and specifically, an entrance on 20th Ave directly to Stonestown. On any given school day, this street is traffic jammed three to four times for drop-offs/pick-ups. With the new plans, creating double to triple more residents, this mall entrance will ultimately create chaos." *(Cynthia Lo, Letter, 2/11/2023 [I-Lo-2, GC-NON-CEQA-5])*

"1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-2, GC-NON-CEQA-5])*

"8. The Project would eliminate parking and traffic lanes both in the Project area (Stonestown itself) and surrounding streets. The surrounding area is already significantly impacted by traffic related to 19th Avenue (State Route 1), San Francisco State University, and Parkmerced." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-9, GC-NON-CEQA-5])*

"I and my family strongly object to the redevelopment project particularly in light of the traffic flow. It is already a mess right now with traffic jams daily along 19th Ave. The added business and residential traffic will be unbearable. Our house is in Lakeside at the corner of Wyton and Denslowe east of 19th Ave. Wyton is a narrow walkway which does not and cannot support heavy traffic which the developer portrays to be a main conduit crossing 19th Ave. This will destroy my neighborhood and the value of our house. We spent three years applying for remodeling of our home including planting trees along Wyton and 19th Ave. which

application is pending approval after completing the recording process with the county recorder. This redevelopment project and intended diverging of traffic kills our entire effort to improve our house and value.

As of now, we constantly repaint over graffiti on our fence facing the sidewalk east of 19th Ave. We can't imagine how much worse it will become with increased traffic.

It directly kills our effort to improve our neighborhood. Come and drive along 19th Ave. and see firsthand the already congested traffic." *(D.W Tsang, Letter, 2/8/2023 [I-Tsang-1, GC-NON-CEQA-5])*

"I don't believe 19th Ave can handle additional 2,900 unit traffic in this area. Right now the traffic already packed in rush hour. Plus M car on 19th Ave will slow down more incoming traffic from freeway. Hotel business will bring more traffic on 19th Ave. 19th Ave is main street connected sunset and Richmond Residential District. SFSU has a lot students walk on 19th Ave. We need a safe street nota a heavy traffic street." *(Grace Wong, Letter, 2/9/2023 [I-Wong-1, GC-NON-CEQA-5])*

"(2) It is very hard to find parking even for the Lakeshore residents right now, this project will create even more parking problems." *(Mary Chang, Letter, 2/7/2023 [I-Chang-2, GC-NON-CEQA-5])*

"Another concern is parking. While the project calls for a total of 4,250 spaces overall, if we subtract the permanent parking for residents, it is not clear how many parking spaces are available for visitors to mall. From my causal observation, the majority of the current spaces available at the mall are used daily, let alone the congestion during the holidays. No mention or analysis is made of where people will park when they wish to visit the mall, or the impact upon the tenants at the mall when people decide not to visit due to inadequate parking." *(Andrew Moore, Letter, no date [I-Moore-4, GC-NON-CEQA-5])*

"Please provide sufficient underground and above ground parking for mall customers and proposed residents of the Stonestown housing development. There are many retailers at Stonestown that selling goods that require car transport, such as family groceries at Whole Foods and Trader Joe's, ski and snowboard (skis/boots/poles) rentals and returns at Sports Basement, and multi-bag purchases made during Target runs. As a mall, Stonestown has pivoted incredibly well bringing in highly desirable retailers and restaurants. Please continue to provide convenient automobile access for shoppers so that Stonestown continues to thrive." *(Tina Will, Letter, 2/3/2023 [I-Will-2, GC-NON-CEQA-5])*

"Page 3.B-5, Table 3.B-2. What is the point of this table? Why were only some intersections included in this table? Without additional information, such as the level of service (LOS) at these intersections, this information is useless.

Page 3.B-18, paragraph 2. While it is true that the CEQA Guidelines were amended to remove automobile delay as a measure to determine a project's significance, it does prohibit the EIR from disclosing that information. In fact, this information was requested as part of the scoping process and repeated during attendance at a public

meeting prior to the release of the Draft EIR. At that public meeting, this commenter was assured that such an analysis would be included in the EIR. Alas, that is not true. No such analysis has been provided. It is puzzling why information regarding traffic counts are provided (see Appendix D.1) but there is nothing in that appendix that provides any context for what these changes in traffic volumes mean. Why was such information provided in such an incomplete state? My biggest concern has been the effects of the project on 20th Avenue between Eucalyptus Drive and Sloat Boulevard. In personal meetings with a Brookfield Properties representative and at public meetings, I had been assured that these concerns would be addressed. Unfortunately, these concerns have not been addressed at all." *(Dave Full, Letter, 2/12/2023 [I-Full-18, GC-NON-CEQA-5])*

"Transportation Demand Management intended to reduce use of cars does not address the needs of seniors, the disabled and families with young children. Some of us are not able to walk long distances, ride bikes, etc. Does Demand Management mean charging for parking at the mall?" *(LG, Letter, 2/13/2023 [I-LG-4, GC-NON-CEQA-5])*

RESPONSE GC-NON-CEQA-5

The commenters discuss existing traffic and parking conditions and opine on the primary and secondary effects that vehicle trips associated with the proposed project or variant would have on traffic congestion. Many commenters express concerns regarding high level of automobile and pedestrian activity during school drop-off/pick-up periods and identify high traffic congestion levels associated with the proposed project or variant.

Comments regarding pedestrian and bicycle safety are addressed in Response TR-2, Pedestrian and Bicyclist Safety Impacts, on p. 4-23.

Some commenters express general concern that the proposed project would result in a decrease in air quality and additional noise impacts. Refer to Response AQ-1, Air Quality Analysis, and Response NO-1, Construction and Operational Noise, on pp. 4-53 and 4-45, respectively, of this RTC document.

The response to the traffic congestion comments is organized by the following subtopics:

- Automobile Delay and Existing Conditions
- Parking
- TDM

AUTOMOBILE DELAY AND EXISTING CONDITIONS

Several commenters request that an automobile delay analysis be provided for the study intersections, as the proposed project or variant would add vehicle trips to the study area. As discussed on draft EIR p. 3.B-18, CEQA section 21099(b)(2) expressly provides that automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment.

Several commenters state that the roadways in the project vicinity are already congested under existing conditions and that the proposed project would further worsen congestion in the area. Several commenters express concern regarding project-generated vehicle trips and the effect those added vehicles would have on surrounding neighborhoods. CEQA requires analysis of the significant effects of a project on the environment. A project cannot be required under CEQA to mitigate effects to which the project does not contribute to, nor can it be required to mitigate effects beyond a degree or amount that is roughly proportional to the impact of the project.

Due to CEQA provisions about automobile delay and studying a project's changes to the environment, the EIR shall not analyze or mitigate automobile delay impacts, including any existing vehicle queues resulting in backed-up traffic or school-related congestion along Eucalyptus Drive, Winston Drive, 20th Avenue, 24th Avenue, 25th Avenue, 26th Avenue, Inverness Drive, and Forest View Avenue.

A commenter questions the utility of "total entering vehicles," the current metric used in Table 3.B-2 on p. 3.B-5. Discussion of this table's purpose and utility is provided in Response TR-4., p. 4-37.

Queuing experienced at the noted intersections is due to existing conditions. In addition to automobile delay not being a CEQA impact, the existing congestion and secondary impacts at those locations referenced in the comments have no nexus with the proposed project or variant. Thus, the proposed project or variant is not required to mitigate existing conditions or existing system deficiencies.

A commenter incorrectly notes that the proposed project or variant would add heavy traffic to Wyton Lane. Per the San Francisco Better Streets Plan, Wyton Lane is identified as a paseo (a pedestrian-only path) that cannot be used by motor vehicle traffic.[53] The proposed project or variant would not modify Wyton Lane and therefore would not introduce vehicular traffic on the paseo.

Transit delay is a topic for environmental review and is discussed in the following locations:

- Impact TR-4 on draft EIR pp. 3.B-65 through 3.B-70
- Impact C-TR-4 on draft EIR pp. 3.B-78 through 3.B-83
- Draft EIR Appendix D.2, Transit Analysis Memorandum

PARKING

As discussed below, the draft EIR adequately analyzed the potential effects of vehicle parking at Stonestown Galleria shopping mall. Some commenters express concerns regarding vehicle parking supply and the perceived potential impact of inadequate vehicle parking at Stonestown Galleria shopping mall. The commenters do not state that environmental impacts would result from the alleged parking deficit. Parking supply is an issue decision-makers may consider separate from CEQA.

As discussed on draft EIR p. 3.B-45, the proposed project or variant meets the CEQA section 21099(d) criteria as a residential, mixed-use infill project in a transit priority area, and therefore parking shall not be considered an environmental impact under CEQA. Additionally, as discussed on the same page, the proposed project or variant would not result in substantial parking deficit and a secondary parking analysis

[53] San Francisco Better Streets Plan, Final Plan, December 7, 2010. Available online at: https://sfplanning.org/sites/default/files/archives/BetterStreets/docs/Better-Streets-Plan_Final-Adopted-10-7-2010.pdf. Accessed July 2023.

is not required. (Vehicle parking numbers are discussed in more detail in Response PD-1, Project Description Comments/Questions, p. 4-5.)

TDM

One comment expresses concern that the TDM measures, especially priced parking, would negatively affect seniors, the disabled, and family with young children. The commenters concerns are noted. TDM measures are incentives and tools to encourage walking, biking, and transit. The project applicant is not currently considering pricing parking for retail uses.

4.U.6 Comment GC-NON-CEQA-6: Effects from Other Projects

This response addresses the following comment, which is quoted below:

I-DeBaun-5

"4. Section 3.3: we have been directly impacted by the construction of the Science Building on the SFSU property. Noise, significant vibrations, loss of sunlight due to height of building." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-5, GC-NON-CEQA-6])*

RESPONSE GC-NON-CEQA-6

The commenter references experiencing noise and vibration impacts from construction of the Science Building on the adjacent San Francisco State University campus. This is not a cumulative project for purposes of the draft EIR analysis because the timing and duration of the construction would not coincide with the proposed project or variant. This comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required.

4.U.7 Comment GC-NON-CEQA-7: Opposition to the Proposed Project

This response addresses the following comments, which are quoted below:

I-Anthony-1

I-Berman-1

I-Cenpai-1

I-DeBaun-1

I-EBirsinger-4

I-Hardeman-8

I-Herlihy2-4

I-Herzfeld-2

I-Iwata-1

I-Lee-1

I-Lewis-1

I-Pilpel-2

I-Zhou-1

"We are vehemently opposed to the proposed redevelopment of Stonestown that would include the proposed 2900 housing units and an 18 story hotel. We have lived in this neighborhood all of our lives and have seen the increase in traffic and people explode over the years. The proposed project would absolutely destroy the quality of life in the area. The City of San Francisco has already deteriorated enough as it is." *(Bob and Maha Anthony, Letter2/7/2023 [I-Anthony-1, GC-NON-CEQA-7])*

"We have lived in Lakeside II since 1975 and we do not approve of any of the changes mentioned in this EIR!!! For one thing the traffic will be a nightmare. Also I could have stayed in Manhattan if I wanted concrete canyons." *(Laurie Berman, Letter, 2/8/2023 [I-Berman-1, GC-NON-CEQA-7])*

"I am sending this email to voice my objections against the development of the building behind Rolph Nicol Park. I believe that having a building there is not only environmentally detrimental, but also a safety concern for current residents." *(Inverness Cenpai, Letter, 2/8/2023 [I-Cenpai-1, GC-NON-CEQA-7])*

"We purchased our home on Denslowe Drive in December 2008. Having lived in a very dense and heavily populated neighborhood (NOPA) for over 20 years, we were attracted to the idyllic nature of the Lakeside neighborhood. Certainly, the neighborhood has changed in the past 14 years but its sweet neighborhood 'look and feel' remains. We are deeply concerned about the impact the proposed Stonestown Project will have on our community." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-1, GC-NON-CEQA-7])*

"Terrible project … to much congestion, more crime, and more traffic. SF already has plenty of vacant buildings to use for housing." *(Eugene Birsinger, Letter, 2/9/2023 [I-EBirsinger-4, GC-NON-CEQA-7])*

"To summarize, a 90-foot building built by a PRIVATE developer to MAXIMIZE PROFITS AT THE EXPENSE OF THE ENJOYMENT OF OUR PUBLIC PARK SHOULD NOT BE ALLOWED. It will forever alter the use and enjoyment of our park." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-8, GC-NON-CEQA-7])*

"I urge the San Francisco Planning Commission to reject the DEIR." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-4, GC-NON-CEQA-7])*

"This is the suburban side if SF. Do not turn it j to another downtown. Stop this ridiculous project if at least scale it way back. Do your residence building on the back side of Stonestown not along 19th Ave." *(Debbie Herzfeld, Letter, 2/9/2023 [I-Herzfeld-2, GC-NON-CEQA-7])*

"I am a Lakeside resident and am opposed to the planned redevelopment." *(Jerry Iwata, Letter, 1/7/2023 [I-Iwata-1, GC-NON-CEQA-7])*

"I'm a long-time resident of Lakeside and I'm against the enormous project coming to Stonestown. I live a block away and my cross street is Winston. I'm very concerned about the traffic and air quality this huge project will bring to my neighborhood." *(Marie Lee, Letter, 2/9/2023 [I-Lee-1, GC-NON-CEQA-7])*

"As a resident of Lakeshore Neighborhood, I strongly object the housing development plan, due to negatively impact

1- the enjoyment of the park

2- Current serene, quiet and beautiful skyline and landscape and

3- Blocking the easy access to the shopping mall." *(Michele Ho Lewis, Letter, 2/11/2023 [I-Lewis-1, GC-NON-CEQA-7])*

"2. I believe that this Project is not appropriate for an LEED proposal. The economy, locally and globally, is highly uncertain at this time. Downtown, educational institutions, housing, shopping, and transportation are incredibly speculative right now. Thoughtful and prudent consideration of long-term impacts is needed, with no rush to a decision on entitlements and growth." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-2, GC-NON-CEQA-7])*

"I opposed to the above project as this project will bring negative impact to our neighborhood such as, overloaded parking, traffic, increasing noisy, more people will share public facilities while limited accessibility and pollution over long time construction period." *(Peiling Zhou, Letter, 2/8/2023 [I-Zhou-1, GC-NON-CEQA-7])*

RESPONSE GC-NON-CEQA-7

The comments express opposition to the proposed project or variant.

Comments express general opposition to the proposed project or variant, including concerns that the proposed project or variant would result in negative effects related to increased population and traffic. The environmental effects of the proposed project or variant are identified and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study (included as Appendix B to the draft EIR). Specifically, physical effects of the proposed project or variant related to transportation are addressed in draft EIR Section 3.B, Transportation and Circulation. Effects of the proposed project or variant related to population growth are addressed in draft EIR Section 4.A, Growth Inducement, and initial study Section E.2, Population and Housing, and in other applicable topical sections of the draft EIR that address physical effects related to population growth. The proposed project or variant would not have a substantial direct growth-inducing impact. While the project would increase the residential population on the site, this growth is accounted for within the planned growth for San Francisco and, as addressed under their respective topics in the draft EIR and initial study, this project-related growth would be served by existing infrastructure and public services. Furthermore, the proposed project or variant would not indirectly result in growth inducement because it would be located on an infill site in an urbanized area. See Response OC-1, Other CEQA Considerations, p. 4-75, for a more detailed discussion regarding comments pertaining to the proposed project or variant's growth-inducing impacts.

A comment expresses opposition to development under the proposed project or variant in proximity to Rolph Nicol Jr. Playground, which is adjacent to the northwest corner of the project site. The comment expresses concern that the proposed development would result in adverse environmental effects and safety issues, neither of which are specified in the comment.

Comments express general opposition to the proposed project or variant and include various unspecified and unsupported claims regarding impacts related to traffic, parking, noise, air quality, public facilities, parks, crime, and public safety. These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant. The environmental effects of the proposed project or variant are described and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study (included as Appendix B to the draft EIR). Specifically, physical effects of the proposed project or variant related to transportation are addressed in draft EIR Section 3.B, Transportation and Circulation. Physical effects of the proposed project or variant related to noise are addressed in draft EIR Section 3.C, Noise and Vibration. Physical effects of the proposed project or variant related to public facilities are addressed in Section E.13, Public Services, in the initial study. Physical effects of the proposed project or variant related to air quality

are addressed in draft EIR Section 3.D, Air Quality. Physical effects of the proposed project or variant related to parks and recreation are addressed in Section E.11, Recreation, in the initial study. Regarding purported impacts of the proposed project or variant related to crime and public safety, see Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105.

A comment states that the proposed project is not appropriate for a LEED proposal. The comment cites global and local economic uncertainty, unclear claims of speculative conditions, and unspecified long-term impacts as factors that should inform and decelerate decisions on entitlements and growth. As discussed in Section E.8, Greenhouse Gas Emissions, p. 105, in the initial study (included as Appendix B to the draft EIR), the proposed project or variant would be required to comply with the standards of Title 24 and the requirements of the 2019 San Francisco Green Building Ordinance. As a mixed-use development, the proposed project or variant would be required to be built to LEED standards for Neighborhood Development certification at a minimum Gold Standard, thus minimizing the amount of fuel, water, or energy used. See Response GHG-1, Greenhouse Gas Emissions Analysis, p. 4-97, for more detailed discussion regarding comments related to GHG impacts.

Portions of these comments include concerns regarding other environmental topics. The following identifies responses where additional information is provided in this RTC document regarding environmental topics for specific comments:

- Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, 4-137, for a discussion of the existing conditions, study area, analysis related to vehicle trips, and parking at the project site.
- Response NO-1, Construction and Operational Noise, p. 4-45, regarding noise impacts.
- Response AQ-1, Air Quality Analysis, p. 4-53, for a discussion regarding air quality impacts.
- Response SH-1, Shadow Impacts, p. 4-59, for a discussion regarding the proposed project or variant's shadow impacts on Rolph Nichol Jr. Playground.
- Response RE-1, Recreation, p. 4-101, for a discussion regarding park and open space impacts (I-Lewis-1).
- Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105, for a discussion regarding impacts to public services.
- Response AL-4, Adequacy and Reasonable Range of Alternatives, p. 4-86, for a discussion regarding reduced density alternatives analyzed in the draft EIR.
- Response AE-1, Aesthetics, p. 4-95, regarding CEQA and aesthetic impacts.

4.U.8 Comment GC-NON-CEQA-8: Design of the Proposed Project

This response addresses the following comments, which are quoted below:

I-Tsakalakis-2

O-SFSU-2

"It may be that I missed this in the 628-page EIR, but I would like to see **more green walls on the residential, commercial, and retail buildings**. Singapore is a shining example of how greenery makes a high rise, dense city more beautiful and livable. This link shows many examples that could easily be

incorporated into the Stonestown design: http://www.greenroofs.com/2019/05/01/green-walls-becoming-more-popular-in-singapore-buildings/. As a member of the Board of Trustees, I worked with the Cathedral School for Boys (by Grace Cathedral) on a recent renovation, and a feature greatly appreciated by the neighbors as well as kids and teachers was green walls." *(Kath Tsakalakis, Letter, 12/23/2022 [I-Tsakalakis-2, GC-NON-CEQA-8])*

"2) Housing: Currently many SF State students, faculty and staff face long commutes to reach the university campus next door to the project site. Please consider whether unique initiatives exist which may reduce travel times for those affiliated with SF State by providing affordable housing. Such an approach would alleviate transit and transportation impacts as well as greenhouse gas emissions. Additionally, in considering the types of housing being offered, please consider the specific needs of the SF State community, particularly as they would complement the university's offerings." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-2, GC-NON-CEQA-8])*

RESPONSE GC-NON-CEQA-8

The comments relate to the design of the proposed project. A comment expresses the commenter's desire for green walls (i.e., vegetated wall surfaces) on proposed residential and commercial buildings. A comment requests consideration of housing geared specifically for SFSU students in order to reduce existing commute distances, transportation and transit impacts, and greenhouse gas emissions.

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant. These considerations would be carried out independent of the environmental review process.

4.U.9 Comment GC-NON-CEQA-9: San Francisco Designation as Urban Heat Island

This response addresses the following comments, which are quoted below:

I-Herlihy1-11

I-Naraghi-11

I-Parthasarathy-12

"11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-11, GC-NON-CEQA-9])*

"11) The new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-11, GC-NON-CEQA-9])*

"11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-12, GC-NON-CEQA-9])*

RESPONSE GC-NON-CEQA-9

The comments ask whether the proposed project or variant would exacerbate San Francisco's designation as an urban heat island and assert that this topic should be addressed in the draft EIR. The topic of urban heat islands is not pertinent to environmental analysis under CEQA, and the designation does not affect the analysis of environmental impacts in the EIR. However, GHG emissions are analyzed in initial study Section E.8 (see draft EIR Appendix B), These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.U.10 Comment GC-NON-CEQA-10: ParkMerced Ownership

This response addresses the following comment, which is quoted below:

O-SPEAK-5

"RELATED ISSUES

ParkMerced is nearby Stonestown. ParkMerced is owned by Maximus Real Estate Partners.

Maximus in currently in loan forebearance for the ParkMerced property and is expected to default in late 2023 or early 2024.

SPEAK would urge Brookfield Properties to negotiate with Maximus Real Estate Partners to acquire the ParkMerced property with the provision that the City have the option to purchase the property or parts of the property over the next thirty (30) years." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-5, GC-NON-CEQA-10])*

RESPONSE GC-NON-CEQA-10

The comment relates to land acquisition, finance, and other topics of a property not owned by the project sponsor. This comment is noted but does not relate to a physical environmental impact under CEQA. The comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is

required. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.U.11 Comment GC-NON-CEQA-11: Economic Feasibility and Workforce Considerations

This response addresses the following comments, which are quoted below:

I-Moore-5

O-SFSU-5

"Finally, no where is there a discussion of the economic feasibility of the project. That is, what analysis and projections have been made showing that people are willing to pay for the kinds of residential properties proposed at the price points necessary for the developer to go ahead with the project. While this may not technically be a consideration for the EIR, it really is an environmental issue. If the builder can not show that the project is highly viable as currently envisioned, it is too easy to claim that something different (and likely less desirable than what currently exists) should be put in its place down the road. Ultimately, the environment in which people currently live would be the loser." *(Andrew Moore, Letter, no date [I-Moore-5, GC-NON-CEQA-11])*

"5) Workforce Considerations: SF State plays a key role in developing the City's and the region's workforce, and the opportunities for our students to gain hands-on, practical experiences in the workforce may be significant. We would welcome the opportunity to consider partnerships that provide workforce training, and related collaborations." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-5, GC-NON-CEQA-11])*

RESPONSE GC-NON-CEQA-11

The comments discuss economic feasibility and workforce considerations. These topics are not applicable to environmental analysis under CEQA. In accordance with CEQA, the draft EIR evaluates the physical environmental effects of the proposed project or variant. Economic or workforce considerations are not considered environmental impacts under CEQA unless there would be a physical impact on the environment resulting from such effects (such as impacts addressed in air quality, transportation and circulation, and noise and vibration sections of the draft EIR), or if such effects would result in the need for the construction of new or physically altered facilities that would result in significant physical environmental impacts. The planning commission may consider non-environmental information regarding the economic feasibility of the proposed project or variant, separate from the EIR certification process. These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

CHAPTER 5
DRAFT EIR REVISIONS

The following changes to the text of the draft EIR are made in response to comments on the draft EIR or are included to clarify the draft EIR text. The revisions reflect changes identified in Chapter 4, Comments and Responses, or staff-initiated text changes; all of which clarify, expand, or update information and/or graphics presented in the draft EIR. Staff-initiated changes to clarify information presented in the draft EIR are highlighted with an asterisk (*) in the margin to distinguish them from text changes in response to comments.

The revised text does not provide new information that would result in any new significant impact not already identified in the draft EIR and initial study or a substantial increase in the severity of an impact identified in the draft EIR and initial study that cannot be mitigated to less than significant with implementation of mitigation measures agreed to by the project sponsor. Thus, none of the text revisions would require recirculation pursuant to CEQA Guidelines section 15088.5. The draft EIR and this response to comments document together constitute the final EIR for the Stonestown Development Project. In the revisions shown below, deleted text is shown in ~~strikethrough~~ and new text is double-underlined.

This chapter only shows changes to the proposed project and draft EIR variant, and no edits to the revised variant as modified in Chapter 2 of this RTC. Chapter 2 of this RTC includes the updated description of the revised variant.

5.A Revisions to Chapter S, Summary

* A new footnote was added on draft EIR p. S-1 to note the change in ownership of the Authentic Church to Brave Church San Francisco. However, for purposes of the EIR and this RTC document, the variant parcel will continue to be referred to as the Authentic Church:

> The variant would develop the 0.8-acre Authentic Church[1] parcel adjacent to the project site and would include approximately 150 additional residential units; 10,000 additional square feet of institutional use; and 200 additional parking spaces in a partially below-grade parking structure.
>
> [1] The Authentic Church has changed ownership and is now called the Brave Church San Francisco. However, the EIR will refer to the variant parcel as the Authentic Church.

* To be consistent with the correction made to initial study Section E.8, Greenhouse Gas Emissions, the following revision was made to draft EIR Table S-1, p. S-38:

INITIAL STUDY SECTION E.8, GREENHOUSE GAS EMISSIONS			
Impact C-GG-1: The proposed project or variant would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions.	S	Mitigation Measures M-AQ-1h and M-TR-4~~b~~a would apply.	LTSM

* The following revisions was made to draft EIR Table S-2, p. S-48, to remove a duplicate and incorrect row for Impact C-TCR-1:

INITIAL STUDY SECTION E.4, TRIBAL CULTURAL RESOURCES			
Impact C-TCR-1: The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources	S	Mitigation Measure M-CR-2 would apply.	LTSM
~~**Impact C-TCR-1:** The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources.~~	~~LTS~~	~~No mitigation required.~~	~~N/A~~

* Mitigation Measure M-TR-1 in draft EIR Table S-1, pp. S-7 to S-8 was revised as follows:

Mitigation Measure M-TR-1: Construction Coordination Plan. The project sponsor of the proposed project or variant shall prepare a construction coordination plan (plan or plans) for each construction phase ~~as shown in Figure 2-20 and Table 3.B-14 in the EIR~~ or subphase, including to address proposed project or variant construction activities that result in excavation or temporary occupancy on public or private streets located within the project site as shown in Figure 3.B-9 in the Stonestown Development Project EIR, including 20th Avenue, Buckingham Way, and Streets A through C. The plan(s) shall show potential conflicts with adjacent construction activities, previously approved phased Street Improvement Plans (SIPs), existing City utilities and connections (sewer, water, electrical, fiber, etc.), easements, and pedestrian, bicycle, vehicular, or transit access and circulation to and from the public street network and shall demonstrate how such conflicts will be minimized.

The project sponsor shall submit an initial overall draft plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency by no later than the first submittal of the first phased Street Improvement Plans (SIP). The project sponsor shall submit an updated draft plan with the first submittal of each subsequent phased SIP that reflects the as-built or current condition of the previous phase(s) and the planned coordination with future phase(s). The project sponsor shall implement the approved plans and update as necessary.

Each plan shall address the requirements of construction within the public right-of-way in the following sections of the SFMTA Regulations for Working in San Francisco Streets (Blue Book) and public works code and other applicable city regulations, including but not limited to:

- Blue Book section 3: Traffic Lane Closure Requirements
- Blue Book section 5: Sidewalk Closures
- Blue Book section 7: Transit Operations
- Blue Book section 9: Bicycle Routes
- Public Works Code section 2.4.20(b): Contractor Parking Plans
- Public Works Code section 724: Temporary Occupancy of Street
- Public Works Subdivision Code
- Public Works Subdivision Regulations

Each plan shall also address how the proposed construction activities within the project or variant site ~~would~~ will be coordinated with construction activities within Caltrans' right-of-way.

* The third paragraph of Mitigation Measure M-TR-4a in draft EIR Table S-1, p. S-10 was revised as follows to clarify the timing of when monitoring shall begin:

The project sponsor shall begin monitoring when Phase 1 operations overlaps with ~~any construction~~ Phase 3 construction, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1j that this performance standard is needed for air quality reductions.

* Mitigation Measure M-TR-4b in draft EIR Table S-1, p. S-11 was revised as follows to clarify the timing, protocol, and implementation:

Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure. The project sponsor ~~of the project or variant shall implement transit travel time reduction measure. Such a measure~~ shall ~~include the preparation and implementation of a coordination and transit signal priority~~ coordinate and fund traffic signal coordination with San Francisco Municipal Transportation Agency (SFMTA) to address potential northbound transit delay along 20th Avenue between Eucalyptus Drive and Buckingham Way (S)~~, subject to San Francisco Municipal Transportation Agency (SFMTA) review and approval~~. The project sponsor, in coordination with SFMTA, shall be responsible for implementation as outlined in the Transportation Exhibit of the Development Agreement.

* Mitigation Measure M-TR-6 in draft EIR Table S-1, pp. S-11 through S-13 was revised as follows:

Mitigation Measure M-TR-6: Develop a Loading and Operations Plan (DLOP). The project sponsor of the project or variant shall prepare and submit a DLOP to the planning department in accordance with this Mitigation Measure M-TR-6, and any guidelines issued by the department pursuant to planning code section 155(u)(DLOP code section for certain development projects) ("Guidelines"), in consultation with the San Francisco Municipal Transportation Agency (SFMTA). In the event of a conflict between the requirements of this Mitigation Measure M-TR-6 and the Guidelines, the requirements of this mitigation measure shall control. The purpose of the DLOP is to reduce potential conflicts between driveway and loading operations, including passenger and freight loading activities, and pedestrians, bicycles, and vehicles, to maximize reliance of on-site loading spaces to accommodate new loading demand, and to ensure that off-site loading activity is considered in the design of the project's new building. Potential conflicts refer to the potential intersection of project- or variant-generated vehicle movements with movements of other private street or public right-of-way users in locations like sidewalks, bicycle facilities, transit-only lanes, and mixed-flow travel lanes.

The DLOP shall require details requiring the location, quantity, dimensions, and access for off-street and on-street loading facilities and shall prevent vehicle queues. Vehicle queue refers to one or more vehicles waiting to access the project's or variant's off-street facility and blocking any portion of any private street or public right-of-way during project or variant operations for:

1. A combined 2 minutes during the peak consecutive 60 minutes or a combined 15 minutes between the hours of 6 a.m. and 10 p.m.; and
2. For at least three 24-hour periods in any consecutive seven-day period.

The DLOP shall be developed incrementally, with a stand-alone plan developed and approved for each building or phase or subphase of project construction. A project phase may not begin construction until its DLOP has received Planning approval.

The DLOP may also include, but not limited to, the following measures to reduce potential conflicts:

- **Locating Loading Facilities Away from Transit Lines:** Locate loading entrances away from internal circulation streets that include Muni bus routes, where feasible, including; 20th Avenue, Winston Drive, Buckingham Way (southern segment between Winston Drive and 20th Avenue). Locate entrances to parcels E1, E3, E4 along side streets rather than along 20th Avenue~~. Where no alternative location exists,~~ or design driveway or loading dock entrance with sufficient storage for vehicles to exit the roadway, to store outside of any bike facilities, and to avoid blocking sidewalks.
- **Designing and Managing Trash/Recycling/Compost Collection:** Meet with the appropriate representative from Recology (or other firm) to determine the location and type of trach/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection and indicate such room(s) for each building on the building plans. Identify procedures for collection such that the collection bins are not placed within any sidewalk, bicycle facility, parking lane, or travel lane adjacent to the project site at any time.
- **Managing the Loading Docks:** Maintain accurate truck logs to document the time and duration of truck activities. Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). For institutional, retail, and office uses on site, employ attendant(s) for the applicable parking garage and/or loading dock. The attendant would typically be stationed at the applicable driveway to direct vehicles entering and exiting the building and to avoid any safety-related conflicts on the sidewalk during a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the garage and loading dock.
- **Installing Audible and/or Visual Warning Devices:** Install audible and/or visible warning devices where the off-street facility interfaces with a private street or public right-of-way to alert other private street or public right-of-way users of vehicles entering or exiting the off-street facility.
- **Allowing for Unassisted Delivery Systems:** Design loading dock areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receive site is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business.

The DLOP shall be implemented by the project sponsor of the project or variant in accordance with any guidelines issued by the department pursuant to planning code section 155(u).

* Mitigation Measure M-C-TR-3 in draft EIR Table S-1, p. S-14 was revised as follows:

Mitigation Measure M-C-TR-3: Signal Coordination ~~and Transit Signal Priority~~ along 19th Avenue. The project sponsor or vertical developer of the proposed project or variant shall pay a fair-

share contribution for SFMTA to design and install up to two additional closed-circuit televisions (CCTVs) along Muni routes 28 and 28R southbound at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections, subject to approval by SFMTA staff. If approved for installation, the project fair-share contribution shall be 17 percent, which is $6,800 in 2022 dollars, of the total cost [with the San Francisco Area consumer price index (CPI) escalation].

The cost of the CCTVs is $40,000 (in 2022 dollars; cost shall be escalated using CPI to year of payment).

* Mitigation Measure M-WI-1b in Table S-1, p. S-14 was revised as follows:

Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet. Before design review approval, ~~if any, but no later than prior to obtaining a building permit~~ for any project or variant building(s) within the project site proposed to be taller than 85 feet, the project sponsor shall undertake an assessment by a qualified wind consultant or the project architect, as approved by the planning department.

The proposed buildings tested may incorporate wind baffling features or landscaping. Such features must be tested and presented in a wind report in the order of preference discussed below and shall reduce, to the extent feasible, wind hazards, defined as wind speeds of or exceeding the 26-mph wind hazard criterion for a single hour of the year, as compared to the then-existing conditions; but in no event shall the proposed building(s) result in increases in the number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR.[54] The proposed building(s) shall be wind tunnel tested, or modeling equivalent, using a model that represents the full buildout conditions as modeled for the EIR, updated to reflect the design of any constructed buildings at the site:

1. *Building Massing.* New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these shapes include setbacks, stepped façades, and vertical steps in the massing to help disrupt wind flows.
2. *Wind Baffling or Landscaping Measures on the Building, on the Project Site, or in the Private Right-of-Way.* Wind baffling or landscaping measures shall be included on future buildings and/or on the project site to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, free-standing canopies, or wind screens. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern.

If feasible mitigation measures cannot be identified to eliminate wind hazard exceedances in the context of then-existing partial build-out conditions, off site landscaping and wind baffling measures shall be considered:

3. *Landscaping off the Project Site and/or Wind Baffling Measures in the Public or Private Right-of-Way.* Landscaping and/or wind baffling measures shall be installed in the public or private right-of-way to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the

[54] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.

direction from which the wind is blowing) of the areas of concern. Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger.

If landscaping on or off the project site or wind baffling measures in the public or private right-of-way are required as one of the features to mitigate wind impacts, Mitigation Measures M-WI-1c and M-WI-1d shall also apply.

* The second sentence of Mitigation Measure M-AQ-1j in draft EIR Table S-1, p. S-29 was revised as follows to correct the proposed project offset and to reflect the revised variant offset numbers:

Based on Table 3.D-9 and Table 3.D-13 in the EIR Section 3.D, Air Quality, the required amount of ROG emission reductions in tons per year is as follows: ~~0.2~~0.5 tons for the project and 0.0 tons for the variant in 2030; ~~2.6~~ 2.8 tons for the project and ~~3.0~~ 3.3 tons for the variant in 2031; ~~and 4.6~~ 4.9 tons for the project and ~~5.0~~ 5.3 tons for the variant in 2032; and 4.9 tons for the project and 5.6 tons for the variant and each year ~~thereafter~~ after full buildout.

5.B Revisions to Chapter 1, Introduction

The project sponsor has elected not to pursue certification of the proposed project or variant as an environmental leadership development project under the Jobs and Economic Improvement through Environmental Leadership Act of 2021 (Senate Bill 7). The record of proceedings website was discontinued and Section 1.D.4, Senate Bill 7, and associated footnotes on draft EIR pp. 1-9 through 1-11 were deleted as follows:

~~1.D.4 Senate Bill 7~~

~~The project sponsor intends to submit an application with the Governor's Office of Planning and Research for certification of the proposed project or variant as an environmental leadership development project under the Jobs and Economic Improvement through Environmental Leadership Act of 2021 (Senate Bill [SB] 7).~~

~~SB 73[3] provides streamlining benefits under CEQA, as described further below, for environmental leadership development projects and defines an environmental leadership development project as the following:~~

- ~~The project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature;~~
- ~~The project, upon completion, will qualify for Leadership in Energy and Environmental Design gold certification or better;~~
- ~~The project will achieve at least 15 percent greater standard for transportation efficiency than comparable projects;~~
- ~~The project is located on an infill site;~~
- ~~For housing development within a metropolitan planning organization's jurisdiction for which a sustainable communities strategy or alternative planning strategy is in effect, the infill project is~~

> consistent with the general use designation, density, building intensity and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the California Air Resources Board has accepted that the strategy would achieve the greenhouse gas (GHG) emission reduction targets.[4]

In order for the Governor to certify a leadership project, the project must: (1) result in a minimum investment of $100 million dollars in California upon completion of construction; (2) create high-wage, highly skilled jobs that pay prevailing wages and living wages and provide construction jobs and permanent jobs for Californians, and help reduce unemployment; (3) not result in any net additional GHG emissions; (4) comply with requirements for commercial and organic waste recycling; (5) have a binding agreement with the lead agency establishing the mitigation measure and record of proceeding requirements set forth in Public Resources Code sections 21183(e) and (g); (6) agree to pay the costs of the trial court and the Court of Appeal in hearing and deciding any case; and agree to pay the costs of preparing the record of proceedings for the project concurrent with review and consideration of the project, in a form and manner specified by the lead agency for the project.[5] Multifamily residential projects certified as environmental development leadership projects are also required to provide unbundled parking, such that private vehicle parking spaces are priced and rented or purchased separately from dwelling units.[6]

In accordance with the requirements of SB 7, the planning department provided a record of proceedings for the proposed project and variant that can be accessed and downloaded from the following website: www.stonestownadminrecord.com. The record of proceedings includes the EIR and all other documents and materials submitted to, or relied upon by, the lead agency in the preparation of the EIR or the approval of the project. In addition, a document prepared by the lead agency or submitted by the applicant after the date of the release of the draft EIR that is a part of the record of proceedings, and comments received on the draft EIR, will be made available to the public on this same website in a readily accessible electronic format within the timeframes specified by the act.

Within 10 days of the governor certifying the proposed project as an environmental leadership development project, the planning department is required to issue a public notice in no less than 12-point type stating the following:

> "THE APPLICANT HAS ELECTED TO PROCEED UNDER CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF DIVISION 13 OF THE PUBLIC RESOURCES CODE, WHICH PROVIDES, AMONG OTHER THINGS, THAT ANY JUDICIAL ACTION CHALLENGING THE CERTIFICATION OF THE ENVIRONMENTAL IMPACT REPORT (EIR) OR THE APPROVAL OF THE PROJECT DESCRIBED IN THE EIR IS SUBJECT TO THE PROCEDURES SET FORTH IN SECTIONS 21185 TO 21186, INCLUSIVE, OF THE PUBLIC RESOURCES CODE. A COPY OF CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF DIVISION 13 OF THE PUBLIC RESOURCES CODE IS INCLUDED BELOW."

As required by Public Resources Code section 21185, the Judicial Council adopted rules of court that establish procedures applicable to actions or proceedings brought to attack, review, set aside, void, or annul the certification of the environmental impact report for an environmental leadership development project (certified by the governor pursuant to this act) or the granting of any project approvals that require the actions or proceedings, including any potential appeals therefrom to the

~~Court of Appeals or the Supreme Court, be resolved, to the extent feasible within 270 days of the filing of the certified record of proceedings with the court. This creates an accelerated timeframe for CEQA litigation. The procedures can be found in California Rules of Court.~~

~~The provisions of SB 7 apply to projects that have been certified by the governor as environmental leadership development projects by January 1, 2024, and the project is approved by the lead agency by January 1, 2025. This act remains in effect until January 1, 2026.~~

~~[3] California Public Resources Code section 21178 et seq. and Governor's Office of Planning and Research, California Jobs (AB 900), Governor's Guidelines for Streamlining Judicial Review Under the California Environmental Quality Act Pursuant to AB 900, Updated to Comply with Senate Bill 734 and Assembly Bill 246, accessed July 22, 2019, http://opr.ca.gov/ceqa/california-jobs.html.~~
~~[4] California Public Resources Code section 21180(b).~~
~~[5] California Public Resources Code section 21183.~~
~~[6] California Public Resources Code section 21184.5(a).~~

Due to the deletion of Section 1.D.4 above, the following revision was made to the subheading on draft EIR p. 1-11:

~~1.D.5~~1.D.4 Final EIR and EIR Certification

Due to the deletion of Section 1.D.4 above, the following revision was made to the subheading on draft EIR p. 1-12:

~~1.D.6~~1.D.5 Mitigation Monitoring and Reporting Program

5.C Revisions to Chapter 2, Project Description

The first paragraph on draft EIR p. 2-1 was revised to incorporate the public right-of-way area into the overall description of the project site:

> The project sponsor (Brookfield Properties ~~Development~~) would redevelop the approximately 27 acres of surface parking and surrounding structures in the ~~41~~ 43-acre Stonestown Galleria shopping mall site into a master-planned, multi-phased, mixed-use community as detailed below. …

The last sentence on draft EIR p. 2-1 and the first line on p. 2-2 were revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

> … The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned, and a new ~~straightened and converted to a~~ two-way connection to 19th Avenue (Street A) would be created between Blocks E1 and E3. …

The first paragraph of draft EIR Section 2.C, Project Location and Existing Site Characteristics, p. 2-3, was revised to clarify and include the public right-of-way area into the overall description of the project site:

> The proposed Stonestown Development Project is located on an approximately ~~41~~ 43-acre site in the Lakeshore area in southwest San Francisco (see Figure 2-1). The project site is generally bounded by San Francisco State University (SFSU) Campus to the south; Lowell High School, SFSU housing, and

Buckingham Way to the west; Stonestown Family YMCA, commercial uses, and Eucalyptus Drive to the north; and 19th Avenue to the east (see Figure 2-2, p. 2-5). The project site is fully developed and comprises the 11-acre Stonestown Galleria, approximately 27 acres of surface parking lots and operational uses, a vacant building, ~~and~~ 3 acres of privately owned streets, and 2 acres of public right-of-way.

In response to comments, the text under draft EIR Section 2.D, Project Characteristics and Components, p. 2-7, was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

… Transportation and circulation changes would include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3 (shown as Street A in Figure 2-4). …

The "vehicle parking spaces" row in Table 2-1 on draft EIR p. 2-12 was revised as follows:

Project Characteristics	Existing	Proposed Project	Proposed Project Including Variant
PROPOSED PARKING	**NUMBER (APPROXIMATE)**		
Vehicle parking spaces:	**3,400** 2,450 surface parking spaces 700-space parking garage 250 spaces below shopping mall	**4,250** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,040~~ 2,690 spaces distributed throughout site *850 net new spaces*[e]	**4,450** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,240~~ 2,890 spaces distributed throughout site *1,050 net new spaces*[e]
Car-share parking spaces	0	66	68

The private residential open space description was revised in Table 2-1, draft EIR p. 2-13 to be consistent with the proposed Special Use District as follows:

> Approximately ~~36~~ 27 sf per unit ~~if located on balcony, or approximately 48 sf per unit if commonly accessible to residents~~, or as otherwise refined in the planning code.

The proposed rezoning would also include portions of the site that are residential use districts. The proposed project would also create a Stonestown Special Sign District as part of the rezoning. Draft EIR Section 2.D.4, Design for Development on p. 2-14 was revised as follows:

> The proposed project would be rezoned from C-2 (Community Business Districts), RH-1(D) (Residential-House, One Family-Detached), and RM-1 (Residential-Mixed, Low Density) to a Special Use District (SUD) to establish land use controls and incorporate Design Standards and Guidelines (DSGs) to govern future development. In addition, the planning code would be amended to create a new Stonestown Special Sign District that would include the proposed project along with the existing Stonestown Galleria, and that would establish signage controls for the entire 43-acre site.

The text under Section 2.D.6, Vehicle Parking, on draft EIR p. 2-18 was revised as follows:

> In addition to the 250 spaces retained under the shopping mall, expanded 540-space parking garage below the shopping mall and the new 770-space parking garage, the proposed project would provide ~~2,940~~ 2,690 vehicle parking spaces embedded within the proposed building podiums and/or below grade throughout the site (see Figure 2-11). With the variant, ~~3,140~~ 2,890 vehicle parking spaces would be embedded within the proposed building podiums and/or below grade throughout the site, including an additional 200 parking spaces on Block E3E.

Table 2-2 on draft EIR p. 2-20 was revised as follows:

Block	Proposed Project Parking Spaces	Proposed Project Including Variant Parking Spaces
W2 Public Parking Garage	770	770
W3 and W4 Expanded Parking Garage Below Shopping Mall	540	540
Existing Shopping Mall Retained Parking	250	250
Parking spaces in remaining block podiums and/or below grade parking	~~2,940~~ 2,690	~~3,140~~ 2,890
Total	***4,250***	***4,450***

The first paragraph under Section 2.D.8, Transportation and Circulation Plan, draft EIR p. 2-20, was revised as follows for consistency:

> … The primary ~~and secondary~~ access point~~s~~ to the project site would continue to be at 19th Avenue at Winston Drive~~, and Eucalyptus Drive at 20th Avenue, respectively~~. Secondary access points would continue to be at Eucalyptus Drive and 20th Avenue, Winston Drive and Buckingham Way, and 19th Avenue and Buckingham Way. …

In response to comments, the last bullet point at the end of draft EIR p. 2-20 was revised to clarify the range of travel lanes on 20th Avenue:

- **20th Avenue.** The privately owned portion of 20th Avenue between Eucalyptus and Winston drives would be straightened would have two to four travel lanes (predominantly one lane in each direction), and would range between 25 and ~~35~~ 44 feet in width. Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (one through lane in each direction and one lane in each direction for right turns). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one lane in each direction and one lane dedicated for left turns). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only. Conceptual illustrative street sections for 20th Avenue are shown in **Figure 2-14** to **Figure 2-17**, pp. 2-14 to 2-27.

The first bullet on draft EIR p. 2-28 was revised as follows:

- **Buckingham Way.** Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to ~~two~~ three lanes ~~(one lane in each direction)~~ along the frontage of Block E5 near the intersection with 20th Avenue. West of Block E5, Buckingham Way would remain three travel lanes. Along Block E5, Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left-turn lane and one dedicated right-turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right-turn lane and one dedicated left-turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left-turn lane and one dedicated right-turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet. The conceptual illustrative street section for Buckingham Way North is shown in **Figure 2-18**.

The second bullet point on draft EIR p. 2-28 was revised as follows:

- **Street A.** The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be ~~straightened~~ abandoned and ~~converted to~~ a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3 (shown as Street A on Figure 2-12). The westbound approach at 20th Street along Street A would be a right-turn-only lane. Street A would be approximately ~~20~~22 feet wide.

The third bullet point on draft EIR p. 2-28 was revised as follows to reflect the project sponsor's decisions to retain the separated westbound right-turn lane:

- **Winston Drive.** Winston Drive between Block S3 and 20th Avenue would be reduced from four travel lanes (two lanes in each direction) to three lanes (two lanes westbound, one lane eastbound). The separated westbound right-turn lane on Winston Drive at 20th Avenue would be retained. The curved portion of Winston Drive at Block S3 would be converted to a 90-degree corner. The six travel lanes (three lanes in each direction) between 19th and 20th avenues would

be maintained. Winston Drive would be 46 to 66 feet wide. Conceptual illustrative street sections for Winston Drive are shown in **Figure 2-19** and **Figure 2-20**, pp. 2-30 and 2-31.

The fourth bullet point on draft EIR p. 2-28 was revised as follows:

- **Street B.** A new street with two lanes (one lane in each direction) would extend east from 20th Avenue between Blocks E3 and E4~~, however it~~ but would not connect to 19th Avenue. Street B would provide vehicular and pedestrian access to Blocks E3 and E4 and would be approximately ~~26~~ 22 feet wide.

Draft EIR Figure 2-12 (p. 2-12), Figures 2-14 through 2-17 (pp. 2-24 to 2-27), and Figures 2-18 through 2-20 (pp. 2-29 to 2-31), were updated to reflect the updated transportation and circulation updates above and to clarify whether the roadways are public or private right-of-way.

The first sentence under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to include the Americans with Disabilities Act (ADA) pathway improvements through Rolph Nichol Jr. Playground.

> Pedestrian and bicycle access would be provided through the northwest portion of the project site, connecting to Rolph Nicol Jr. Playground as shown in Figure 2-21 and Figure 2-22, p. 2-34, respectively. Landscaping and two new Americans with Disabilities Act (ADA) pathway improvements would be included through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive.

The first sentence of the second paragraph under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to clarify the type of class IV bicycle facilities:

> Two-way (combined or separated) class IV bicycle facilities (protected bike lanes) are proposed on Buckingham Way, 20th Avenue, and Winston Drive.[17] …

The first bullet point on draft EIR p. 2-36 was revised to provide clarification regarding the recycled water system:

- **Recycled Water.** The project site is located within a designated recycled water use area, and the proposed project would ~~provide the piping needed to distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance~~ comply with San Francisco's Recycled Water Use Ordinance by producing and distributing non-potable water on-site and distributing it to uses within specific buildings or within the project site. The proposed recycled water system would be private and not connected to future City recycled water systems.

In response to a comment, the text on draft EIR p. 2-36 was revised to clarify the non-potable supply uses to be consistent with the water supply assessment as follows:

- **Non-potable Water.** Similarly, the proposed project would comply with San Francisco's Non-potable Water Ordinance and would include the diversion and reuse of water from HVAC/cooling systems, graywater,[20] blackwater,[21] and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas. The proposed project would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water to the project. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or

decentralized treatment facilities located within certain buildings or phases as shown in **Figure 2-24** and **Figure 2-25**, p. 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the project site buildings.

* The following bullet was added to the list of approvals by the San Francisco Board of Supervisors on draft EIR p. 2-47:

- Approval of a resolution of intention to establish an Enhanced Infrastructure Financing District

* The following corrections were made to the joint action by the planning commission and the recreation and park commission approvals on draft EIR p. 2-48:

~~JOINT ACTION BY THE PLANNING COMMISSION AND THE~~ RECREATION AND PARK COMMISSION

- ~~Determination~~ Recommendation to the planning commission that the proposed project would have no adverse impact on publicly accessible open space under the jurisdiction of the Recreation and Park Commission ~~after consultation with the Recreation and Parks Commission~~ (planning code section 295)[22]

[22] ~~This determination would only be necessary if the proposed project would shadow a park with a shadow budget.~~

5.D Revisions to Chapter 3, Introduction to the Analysis

In response to a comment, the description of the Parkmerced project in Table 3-1 on draft EIR p. 3-7 was revised as follows:

Parkmerced (2008.0021ENV)

Subsequent phases of the Parkmerced project would add up to 5,679 new residential units to the 152-acre site's existing 3,221 housing units. It would also provide new commercial and retail services and open space. The transportation plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood and would include rerouting of the M-line light rail through the development and five major intersection improvements (including State Route 1/19th Ave), and structured underground parking beneath each block.

The full project has a 15- to 30-year construction horizon, and would include demolition of existing buildings, utility relocation, site clearance, and grading. At buildout, the project would consist of approximately 8,900 dwelling units (including approximately 5,679 new units), approximately 6,252 net new spaces, 310,000 gross square feet of commercial use, 25,000 square feet of educational use, and 164,000 gross square feet of other uses (100,000 square feet of building and maintenance use, and 64,000 square feet of recreation/fitness center/community center).

5.E Revisions to Section 3.A, Historic Architectural Resources

In response to a comment, the text on draft EIR p. 3.A-15 was revised to expand upon the local use of New Formalism:

> Compared to many other midcentury modern styles of architecture defined in the *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, New Formalism buildings in San Francisco are relatively rare. This style was most often applied to banks designed from 1963 into the 1970s, including the buildings at 275 Ellis Street (built in 1963, extant), 4947 Third Street (built in 1964, extant), and 2500 Mission Street (built in 1968, extant).[52] Larger-scale examples of institutional buildings in San Francisco designed in the New Formalism style include Kendrick Hall at the University of San Francisco (2100 Fulton Street, built in 1962, extant) and St. Mark's Urban Life Center (1031 Franklin Street, built in 1965, extant).[53] Architects associated with the New Formalism style in San Francisco include George K. Raad (who designed the UA Stonestown Twin Theater at 501 Buckingham Way); Wurster, Bernardi & Emmons; and Milton Pflueger.[54]
>
> The UA Stonestown Twin Theater illustrates the New Formalist style through its strict symmetry, the round-arch, groin-vaulted colonnade that encloses three sides of theater lobby, its flat projecting roofline, the use of extensive glazing to enclose the theater lobby, and the presence of a small sunken courtyard with large aggregate concrete hardscaping and landscaping within concrete planters. The theater demonstrates nearly all of the features that are considered characteristic of the style, apart from a use of high-quality materials like stone. While the building's stylistic elements are limited to its front portion which encloses the lobby, as a freestanding building with a front plaza, the building is more expressive of the formal nature of New Formalism, providing an open-air arcade along three faces of the lobby, articulating the cross-vaulted groined arches, and carrying these design elements into the interior with the inclusion of blind arches along the rear wall of the lobby. The building is an excellent example of the New Formalist style along its primary façade, while the rear of the building is entirely undecorated, in keeping with movie theater typologies that prioritize the decoration of the public-facing façades and entrances of the building.

In response to a comment, the third paragraph of draft EIR p. 3.A-15 was revised as follows for clarity:

> The building functioned continuously as ~~the UA Stonestown Twin Theater~~ a movie theater from 1970 to 2020, and it has been minimally altered. ~~In 1973~~ Originally known as the UA Cinema Stonestown Theater, the ~~original~~ single auditorium was bisected in 1973 to create two smaller auditoriums, and it was renamed the UA Stonestown Twin Theater at that time. In 1998, amenities including a drinking fountain and public telephone were added, and renovations including new auditorium doors and improved restrooms were completed. That same year, the primary (east) façade was altered to include a new accessible entrance. Most recently, the roof was covered with built-up roofing in 2016.

5.F Revisions to Section 3.B, Transportation and Circulation

In response to a comment, draft EIR Table 3.B-1 on p. 3.B-4 was revised as follows:

Table 3.B-1 Roadway Facilities in the Study Area

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
19th Avenue	N-S	3[d]	Vision Zero Network	Residential Throughway	28, 29, M	N/A
~~20th Avenue~~	~~N-S~~	~~1~~	~~N/A~~	~~N/A~~	~~57~~	~~Class III~~
20th Avenue (North of Eucalyptus Drive)	N-S	1	N/A	Neighborhood Residential	N/A	Class III
20th Avenue (South of Eucalyptus Drive)	N-S	1	N/A	N/A	57	Class III
Buckingham Way (North and South)	E-W	1	N/A	Neighborhood Residential	N/A	Class III
Eucalyptus Drive	E-W	1	N/A	Neighborhood Residential	57	—
Font Boulevard	E-W	1	N/A	Boulevard	57	Class III
Holloway Avenue	E-W	1	N/A	Neighborhood Residential	29	Class II
Junipero Serra Boulevard	N-S	3	N/A	Residential Throughway	KT	N/A
Lake Merced Boulevard	N-S	3	Vision Zero Network	Park Edge	57, 58, 18, 29, 122	Class I
Mercedes Way	E-W	1	N/A	Neighborhood Residential	N/A	N/A
Middlefield Drive	N-S	1	N/A	N/A	N/A	N/A
Ocean Avenue	E-W	2	N/A	Residential Throughway/ Commercial Throughway	KT	Class III
Portola Drive	N-S	1	N/A	Residential Throughway	KT, M, 57	Class IV
Sloat Boulevard	E-W	3	N/A	Park Edge/Residential Throughway	18, 58	Class III/ class IV
Sunset Boulevard	N-S	2	Vision Zero Network	Parkway	29	Class I
Wawona Street	E-W	1	N/A	Park Edge/Paseo/ Neighborhood Residential	N/A	N/A

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
West Portal Avenue	N-S	3	N/A	Residential Throughway	KT, M, 57	N/A
Winston Drive	E-W	2	N/A	Neighborhood Residential/ Neighborhood Commercial	58, 122	Class III

SOURCES: *San Francisco General Plan*, 2017; San Francisco Vision Zero High Injury Network, 2017; *San Francisco Better Streets Plan*, 2010

ABBREVIATIONS:

E-W = east–west; N-S = north–south; N/A = value not applicable

NOTES:

The descriptions associated with each street (Vision Zero network, Better Streets Plan Classification, Transit Routes, etc.) are those that apply to some portion of the street near the project site and may not apply to the entire length of the street.

[a] Based on the 2017 Vision Zero Network. Obtained from the San Francisco Transportation Information Map, http://www.sfplanninggis.org/TIM/, accessed September 1, 2022.
[b] The transit routes are operated by Muni, except for the SamTrans Route 122 route.
[c] Bikeway class definitions are provided in the Bicycling Conditions discussion, beginning on p. 3.B-9.
[d] Three travel lanes in each travel direction, with a center-running Muni light-rail line for a portion.

The sixth sentence in the fourth paragraph on draft EIR p. 3.B-52 was revised as follows:

… Vehicles that weigh three tons or more are prohibited on Everglade Drive between Eucalyptus Drive and Sloat Avenue with limited exemptions. None of the other streets within the project study area ~~are~~ is restricted to commercial or oversize vehicles. …

* Mitigation Measure M-TR-1 on draft EIR pp. 3.B-55 to 3.B-56 was revised as follows:

Mitigation Measure M-TR-1: Construction Coordination Plan. The project sponsor of the proposed project or variant shall prepare a construction coordination plan (plan or plans) for each construction phase ~~as shown in Figure 2-20 and Table 3.B-14 in the EIR~~ or subphase, including to address proposed project or variant construction activities that result in excavation or temporary occupancy on public or private streets located within the project site as shown in Figure 3.B-9 in the Stonestown Development Project EIR, including 20th Avenue, Buckingham Way, and Streets A through C. The plan(s) shall show potential conflicts with adjacent construction activities, previously approved phased Street Improvement Plans (SIPs), existing City utilities and connections (sewer, water, electrical, fiber, etc.), easements, and pedestrian, bicycle, vehicular, or transit access and circulation to and from the public street network and shall demonstrate how such conflicts will be minimized.

The project sponsor shall submit an initial overall draft plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency by no later than the first submittal of the first phased Street Improvement Plans (SIP). The project sponsor shall submit an updated draft plan with the first submittal of each subsequent phased SIP that reflects the as-built or current condition of the previous phase(s) and the planned coordination with future phase(s). The project sponsor shall implement the approved plans and update as necessary.

Each plan shall address the requirements of construction within the public right-of-way in the following sections of the SFMTA Regulations for Working in San Francisco Streets (Blue Book) and public works code and other applicable city regulations, including but not limited to:

- Blue Book section 3: Traffic Lane Closure Requirements
- Blue Book section 5: Sidewalk Closures
- Blue Book section 7: Transit Operations
- Blue Book section 9: Bicycle Routes
- Public Works Code section 2.4.20(b): Contractor Parking Plans
- Public Works Code section 724: Temporary Occupancy of Street
- Public Works Subdivision Code
- Public Works Subdivision Regulations

Each plan shall also address how the proposed construction activities within the project or variant site ~~would~~ will be coordinated with construction activities within Caltrans' right-of-way.

* The third paragraph of Mitigation Measure M-TR-4a on draft EIR, p. 3.B-68 was revised as follows to clarify the timing of when monitoring shall begin:

The project sponsor shall begin monitoring when Phase 1 operations overlaps with ~~any construction~~ Phase 3 construction, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1j that this performance standard is needed for air quality reductions.

* Mitigation Measure M-TR-4b on draft EIR p. 3.B-69 was revised as follows to clarify the timing, protocol, and implementation:

Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure. The project sponsor ~~of the project or variant shall implement transit travel time reduction measure. Such a measure~~ shall ~~include the preparation and implementation of a coordination and transit signal priority~~ coordinate and fund traffic signal coordination with San Francisco Municipal Transportation Agency (SFMTA) to address potential northbound transit delay along 20th Avenue between Eucalyptus Drive and Buckingham Way (S)~~, subject to San Francisco Municipal Transportation Agency (SFMTA) review and approval~~. The project sponsor, in coordination with SFMTA, shall be responsible for implementation as outlined in the Transportation Exhibit of the Development Agreement.

* Mitigation Measure M-TR-6 on draft EIR pp. 3.B-75 to 3.B-76 was revised as follows:

Mitigation Measure M-TR-6: Develop a Loading and Operations Plan (DLOP). The project sponsor of the project or variant shall prepare and submit a DLOP to the planning department in accordance with this Mitigation Measure M-TR-6, and any guidelines issued by the department pursuant to planning code section 155(u)(DLOP code section for certain development projects) ("Guidelines"), in consultation with the San Francisco Municipal Transportation Agency (SFMTA). In the event of a conflict between the requirements of this Mitigation Measure M-TR-6 and the Guidelines, the requirements of this mitigation measure shall control. The purpose of the DLOP is to reduce potential conflicts between driveway and loading operations, including passenger and freight

loading activities, and pedestrians, bicycles, and vehicles, to maximize reliance of on-site loading spaces to accommodate new loading demand, and to ensure that off-site loading activity is considered in the design of the project's new building. Potential conflicts refer to the potential intersection of project- or variant-generated vehicle movements with movements of other private street or public right-of-way users in locations like sidewalks, bicycle facilities, transit-only lanes, and mixed-flow travel lanes.

The DLOP shall require details requiring the location, quantity, dimensions, and access for off-street and on-street loading facilities and shall prevent vehicle queues. Vehicle queue refers to one or more vehicles waiting to access the project's or variant's off-street facility and blocking any portion of any private street or public right-of-way during project or variant operations for:

1. A combined 2 minutes during the peak consecutive 60 minutes or a combined 15 minutes between the hours of 6 a.m. and 10 p.m.; and
2. For at least three 24-hour periods in any consecutive seven-day period.

The DLOP shall be developed incrementally, with a stand-alone plan developed and approved for each building or phase or subphase of project construction. A project phase may not begin construction until its DLOP has received Planning approval.

The DLOP may also include, but not limited to, the following measures to reduce potential conflicts:

- **Locating Loading Facilities Away from Transit Lines:** Locate loading entrances away from internal circulation streets that include Muni bus routes, where feasible, including; 20th Avenue, Winston Drive, Buckingham Way (southern segment between Winston Drive and 20th Avenue). Locate entrances to parcels E1, E3, E4 along side streets rather than along 20th Avenue~~. Where no alternative location exists,~~ or design driveway or loading dock entrance with sufficient storage for vehicles to exit the roadway, to store outside of any bike facilities, and to avoid blocking sidewalks.
- **Designing and Managing Trash/Recycling/Compost Collection:** Meet with the appropriate representative from Recology (or other firm) to determine the location and type of trach/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection and indicate such room(s) for each building on the building plans. Identify procedures for collection such that the collection bins are not placed within any sidewalk, bicycle facility, parking lane, or travel lane adjacent to the project site at any time.
- **Managing the Loading Docks:** Maintain accurate truck logs to document the time and duration of truck activities. Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). For institutional, retail, and office uses on site, employ attendant(s) for the applicable parking garage and/or loading dock. The attendant would typically be stationed at the applicable driveway to direct vehicles entering and exiting the building and to avoid any safety-related conflicts on the sidewalk during a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the garage and loading dock.

- **Installing Audible and/or Visual Warning Devices:** Install audible and/or visible warning devices where the off-street facility interfaces with a private street or public right-of-way to alert other private street or public right-of-way users of vehicles entering or exiting the off-street facility.
- **Allowing for Unassisted Delivery Systems:** Design loading dock areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receive site is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business.

The DLOP shall be implemented by the project sponsor of the project or variant in accordance with any guidelines issued by the department pursuant to planning code section 155(u).

* Mitigation Measure M-C-TR-3 on draft EIR p. 3.B-82 was revised as follows:

Mitigation Measure M-C-TR-3: Signal Coordination ~~and Transit Signal Priority~~ along 19th Avenue. The project sponsor or vertical developer of the proposed project or variant shall pay a fair-share contribution for SFMTA to design and install up to two additional closed-circuit televisions (CCTVs) along Muni routes 28 and 28R southbound at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections, subject to approval by SFMTA staff. If approved for installation, the project fair-share contribution shall be 17 percent, which is $6,800 in 2022 dollars, of the total cost [with the San Francisco Area consumer price index (CPI) escalation].

The cost of the CCTVs is $40,000 (in 2022 dollars; cost shall be escalated using CPI to year of payment).

5.G Revisions to Section 3.D, Air Quality

* The second sentence of Mitigation Measure M-AQ-1j on draft EIR p. 3.D-46 was revised as follows to correct the proposed project offset and to reflect the revised variant offset numbers:

Based on Table 3.D-9 and Table 3.D-13 in the EIR Section 3.D, Air Quality, the required amount of ROG emission reductions in tons per year is as follows: ~~0.2~~ 0.5 tons for the project and 0.0 tons for the variant in 2030; ~~2.6~~ 2.8 tons for the project and ~~3.0~~ 3.3 tons for the variant in 2031; ~~and 4.6~~ 4.9 tons for the project and ~~5.0~~ 5.3 tons for the variant in 2032; and 4.9 tons for the project and 5.6 tons for the variant and each year ~~thereafter~~ after full buildout.

5.H Revisions to Section 3.E, Wind

* Mitigation Measure M-WI-1b on draft EIR pp. 3.E-9 to 3.E-10 was revised as follows:

Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet. Before design review approval, ~~if any, but no later than prior to obtaining a building permit~~ for any project or variant building(s) within the project site proposed to be taller than 85 feet, the project sponsor shall undertake an assessment by a qualified wind consultant or the project architect, as approved by the planning department.

The proposed buildings tested may incorporate wind baffling features or landscaping. Such features must be tested and presented in a wind report in the order of preference discussed below and shall reduce, to the extent feasible, wind hazards, defined as wind speeds of or exceeding the 26-mph wind hazard criterion for a single hour of the year, as compared to the then-existing conditions; but in no event shall the proposed building(s) result in increases in the number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR.[55] The proposed building(s) shall be wind tunnel tested, or modeling equivalent, using a model that represents the full buildout conditions as modeled for the EIR, updated to reflect the design of any constructed buildings at the site:

1. *Building Massing.* New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these shapes include setbacks, stepped façades, and vertical steps in the massing to help disrupt wind flows.
2. *Wind Baffling or Landscaping Measures on the Building, on the Project Site, or in the Private Right-of-Way.* Wind baffling or landscaping measures shall be included on future buildings and/or on the project site to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, free-standing canopies, or wind screens. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern.

If feasible mitigation measures cannot be identified to eliminate wind hazard exceedances in the context of then-existing partial build-out conditions, off site landscaping and wind baffling measures shall be considered:

3. *Landscaping off the Project Site and/or Wind Baffling Measures in the Public or Private Right-of-Way.* Landscaping and/or wind baffling measures shall be installed in the public or private right-of-way to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern. Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger.

If landscaping on or off the project site or wind baffling measures in the public or private right-of-way are required as one of the features to mitigate wind impacts, Mitigation Measures M-WI-1c and M-WI-1d shall also apply.

* The first sentence under "Significance after Mitigation" on draft EIR p. 3.E-20 was corrected to refer to the applicable mitigation measures:

Although Mitigation Measure M-WI-1a through M-WI-1d would reduce wind hazard exceedances to the maximum extent feasible, it cannot be stated with certainty that no wind hazard exceedances would result from implementation of the proposed project or variant, in combination with cumulative projects; therefore, this impact would be ***significant and unavoidable with mitigation***.

[55] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.

5.I Revisions to Section 3.F, Shadow

* The second sentence in the first paragraph on draft EIR p. 3.F-24 was revised as follows to reflect refinements in the shadow calculations:

> Net new shadow coverage on the park in winter would decline from approximately 74 percent early in the morning to ~~20~~ 17.8 percent by noon and would be ~~less than 10~~ 5.3 percent by 3 p.m.

5.J Revisions to Section 3.G, Utilities and Service Systems

In response to a comment, the second paragraph on draft EIR p. 3.G-1 was revised as follows:

> San Francisco's ~~Hetch Hetchy~~ regional water system, operated by the San Francisco Public Utilities Commission (SFPUC), supplies water to approximately 2.7 million people. The system supplies both retail customers—primarily in San Francisco—and ~~27~~ 26 wholesale customers in Alameda, Santa Clara, and San Mateo counties. The system supplies an average of 85 percent of its water from the Tuolumne River watershed, stored in the Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent from local surface waters in the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on hydrological conditions and operational circumstances. Separate from the regional water system, the SFPUC owns and operates an in-city distribution system that serves retail customers in San Francisco. Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, ~~and~~ recycled water, and non-potable water.

In response to a comment, the second paragraph on draft EIR p. 3.G-2 was revised as follows:

> In December 2018, the State Water Resources Control Board (state water board) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment), to establish water quality objectives with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. Specifically, the Bay-Delta Plan Amendment requires the release of 30 to 50 percent of the unimpaired flow[56] from the three tributaries from February through June every year, whether it is wet or dry. In SFPUC modeling of the new flow standard, it is assumed that the required release from the Tuolumne River is 40 percent of unimpaired flow. During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed.

In response to a, the third paragraph on p. 3.G-2 was revised as follows:

> If the Bay-Delta Plan Amendment is implemented, the SFPUC would be able to meet the projected demand in normal years but would experience supply shortages in single dry years and multiple dry years. Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~ and corresponding water use reductions throughout the SFPUC's regional water system service area, including San Francisco. Without the

[56] "Unimpaired flow" represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.

implementation of the Bay-Delta Plan Amendment, the SFPUC would not experience shortages until the fourth and fifth year of a multi-year drought at 2045 levels of projected demand.

In response to a comment, the last paragraph on draft EIR p. 3.G-2 was revised as follows:

In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the state water board directed its staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the [state water board] as early as possible after December 1, 2019." In accordance with the state water board's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a substitute agreement with the state water board that would serve as an alternative path to implementing the Bay-Delta Plan's objectives. On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the state environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement. To date, those negotiations are ongoing.

In response to a comment, the third paragraph and footnote 284 on draft EIR p. 3.G-3 was revised as follows:

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would improve overall water supply resilience through the Alternative Water Supply Planning Program. Developing these supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant[284] and the 2020 plan~~.

~~[284] A water supply assessment was prepared for the project using the variant projected demand because it represents the most conservative buildout for the project site from a water demand perspective.~~

In response to a comment, the last paragraph on draft EIR p. 3.G-8 was revised as follows:

The proposed project or variant would include the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to a comment, the first full paragraph on draft EIR p. 3.G-12 was revised as follows:

The SFPUC adopted a water supply assessment for the proposed project on October 24, 2022.[25] The water supply assessment for the variant identifies the project's total water demand, including a breakdown of potable and non-potable water demands.[26] The proposed project or variant is subject to San Francisco's Non-potable Water Ordinance (San Francisco Health Code article 12C). The Non-potable Water Ordinance requires new ~~commercial, mixed-use, and multi-family residential~~ development projects ~~with 250,000~~ of 100,000 gross square feet or more ~~of gross floor area~~ to install and operate an onsite non-potable water system and meet certain water demands with the onsite non-potable water. ~~Such projects must meet their toilet and urinal flushing and irrigation demands through the collection, treatment, and use of available graywater, rainwater, and foundation~~

~~drainage. While not required, projects may use treated blackwater or stormwater if desired.~~ Commercial buildings that install building-by-building alternate water source systems must meet toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate (water vapor collected from air conditioning systems). Residential and mixed-use buildings must meet toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. Furthermore, projects may choose to apply non-potable water to other non-potable water uses, such as cooling tower blowdown and industrial processes, but are not required to do so under the ordinance. The proposed project or variant would meet the requirements of the Non-potable Water Ordinance ~~by using treated commercial blackwater, graywater, and rainwater for toilet and urinal flushing and irrigation~~ with the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to a comment, the last paragraph on draft EIR p. 3.G-13 was revised as follows:

Potable water to meet the site's potable water and fire flow demands would be supplied to the project site from the SFPUC's regional water system, via the in-city low-pressure water distribution system, described above. The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections,[27] ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities. Therefore, the proposed project or variant would not require construction of new or expanded potable water distribution facilities.

* The second to last sentence and associated footnote under "Low-Pressure Water System" on draft EIR p. 3.G-14 was revised as follows to reflect the updated fire flow demand:

Fire flow demands of ~~1,500~~ 2,500 gallons per minute would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch.[307]

[307] Carlson, Barbee & Gibson, Inc., ~~*Stonestown Mall Water System Modelling Low Pressure Water System Design Recommendations*, October 28, 2022. In this document 19th Avenue is referred to as "Monte Vista Drive."~~ Draft Infrastructure Plan, June 2023.

In response to a comment, the last paragraph on draft EIR p. 3.G-14 was revised as follows:

The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~ demand projections, supplies for which would be accommodated by the existing regional water treatment and transmission facilities. The proposed project or variant's population and employment growth is within the projected growth that is the basis for ongoing improvements to the emergency firefighting water system. The proposed project or variant would reduce stormwater flows to existing combined sewer system facilities consistent with the City's Stormwater Management Requirements and Design Guidelines. For these reasons, the proposed project or variant would not require construction of new or expanded water or stormwater drainage facilities during construction or operation, and this impact would be ***less than significant***.

In response to a comment, the first paragraph under "Operation" on draft EIR p. 3.G-15 was revised as follows:

> Water use at full buildout is estimated at 90.74 million gallons per year,[57] and would include irrigation, HVAC/cooling, and residential and commercial uses, such as toilets, lavatory faucets, and kitchen faucets. The proposed project or variant would ~~include the diversion, treatment, and reuse of graywater and blackwater for urinals, irrigation, and cooling towers. Graywater and blackwater collected from showers and washing machines would be treated prior to reuse onsite at a treatment plant or facility located within the project site~~ meet the requirements on the Non-potable Water Ordinance by the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas.

* The last paragraph on draft EIR p. 3.G-21 was revised to provide clarification regarding the recycled water system:

> In addition, ~~while recycled water is not yet available for the site,~~ the proposed project or variant would ~~install distribution facilities for recycled water to ensure that such water, when available, could be used for non-potable applications such as irrigation and toilet or urinal flushing~~ produce its own non-potable water on-site and would distribute it to non-potable uses within specific buildings or within the project site, as applicable per the Infrastructure Plan. The proposed system(s) would be private and would not connect to future City recycled water systems, should they ever be extended to the vicinity of the project. Compliance with local regulatory requirements would reduce the project demand for potable water and would not result in direct or indirect environmental impacts discussed above. Therefore, this impact would be ***less than significant***.

[57] This discussion evaluates water use at full buildout of the proposed variant because the variant includes more residential units and institutional space, and consequently greater water use, than the proposed project.

5.K Revisions to Chapter 5, Alternatives

In response to a comment, draft EIR Table 5-3, p. 5-30, was revised as follows:

Table 5-3 Land Use Characteristics and Estimated Vehicle Trips, Alternative C: Partial Preservation and Relocated Parking Alternative

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative C Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	401	(6)
Retail Sales and Services Use	492	480	(12)
Non-Retail Sales and Service Use	172	172	0
Hotel	29	29	0
Institutional Use	117	108	(9)
Childcare	32	32	0
Total	***1,249***	***1,222***	***~~(275)~~ (27)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(2.2%)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

In response to a comment, the footnotes of Table 5-12, pp. 5-65 through 5-77, was revised as follows:

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LTSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:
[a] See EIR Chapter 3 and Appendix B for complete impact statements.

5.L Revisions to Initial Study Section E.1, Land Use and Planning

The second paragraph under Impact LU-1 on initial study p. 8 (see draft EIR Appendix B) was revised as follows to be consistent with draft EIR Chapter 2, Project Description, text changes:

> Proposed modifications to existing streets include straightening 20th Avenue between Eucalyptus and Winston drives~~ and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3.

5.M Revisions to Initial Study Section E.8, Greenhouse Gas Emissions

The following revisions to initial study Section E.8, Greenhouse Gas Emissions, were made to reflect updates to the regulatory setting for greenhouse gas emissions.

* The last paragraph and associated footnotes on initial study p. 46 and first two lines on p.47 were revised as follows:

> For the post-2030 period, ~~Executive Order B-55-18 establishes a~~ Assembly Bill 1279, the California Climate Crisis Act, codifies the statewide goal of achieving ~~carbon neutrality~~ net-zero GHG emissions as soon as possible, but no later than 2045, and achieving and maintaining net negative emissions thereafter. AB 1279 also requires that the state reduce anthropogenic emissions to 85 percent below 1990 levels by 2045. The ~~next update to the scoping plan, the 2022 climate change scoping plan, will~~ 2022 Scoping Plan was adopted by CARB on December 16, 2022, and assesses progress toward achieving the 2030 target under the California Global Warming Solutions Act of 2016 ~~2030 target~~ and laying out a path to achieve carbon neutrality by ~~mid-century~~ 2045 pursuant to ~~Executive Order B-55-18~~ AB 1279.[132,~~133~~]
>
> [132] California Air Resources Board, ~~*AB 32 Climate Change Scoping Plan*~~ *2022 Scoping Plan for Achieving Carbon Neutrality*, ~~https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan~~ https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents, accessed ~~June 6, 2022~~ April 8, 2023.
> [133] ~~On November 16, 2022, CARB published the *2022 Scoping Plan for Achieving Carbon Neutrality*, https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf. The 2022 Scoping Plan is going to the CARB board for adoption on December 16, 2022.~~

* The second full paragraph on initial study p. 48 was revised as follows:

> These sector-based GHG reduction targets are more ambitious than those set forth in ~~Executive Order B-30-15~~ SB 32 (e.g., a 61 percent reduction in sector-based GHG emissions compared to 1990 levels by 2030 rather than a 40 percent reduction by 2030) and ~~Executive Order B-55-18~~ AB 1279 (e.g., achieving ~~carbon neutrality~~ net zero GHG emissions by 2040 rather than by 2045). The consumption-based targets are consistent with the 2030 goal of Executive Order B-30-15 and the 2050 goal of Executive Order S-3-05 (80 percent below 1990 levels, by 2050).

* New text and revisions to initial study pp. 49 to 50 were made as follows:

> The July 2021 GHG ordinance required the San Francisco Department of the Environment to prepare and submit to the mayor a climate action plan, which was released in December 2021. The climate action plan, which is to be updated every five years, carries forward the efforts of the city's previous climate action plans and charts a path toward meeting the GHG commitments stated in the Paris Agreement (e.g., limit global warming to 1.5 degrees Celsius) as well as the reduction targets adopted within the GHG ordinance. The climate action plan incorporates an equity framework to address historic inequities; prioritizes the social, economic, and environmental benefits from implementing the climate action plan; and ensures that those benefits are distributed equitably. To support the updated 2021 GHG ordinance, the city prepared the 2021 Climate Action Plan in 2022.[138a] The 2021 Climate Action Plan is a roadmap for meeting the City's GHG emissions reduction goals, which are:
>
> - An interim target of cutting sector-based emissions 61 percent below 1990 levels by 2030; and
> - Net-zero sector-based emissions by 2040, a 90 percent reduction from 1990 levels.

These goals align with the updated GHG ordinance goals and are more aggressive than the State's 2030 and 2045 GHG emission reduction targets, as discussed above.

San Francisco has developed many plans and programs for reducing the city's contribution to global climate change and meeting the goals of ordinance 81-08. The ~~2017~~ 2023 GHG Reduction Strategy Update[139] documents city actions related to pursuing cleaner energy, reducing energy consumption, supporting alternative transportation, and implementing solid waste policies. For instance, the city has implemented mandatory requirements and incentives that have measurably reduced GHG emissions, including, but not limited to, requirements for increased energy efficiency in new and existing buildings, requirements for the installation of solar panels or vegetation on roofs (i.e., living roofs), implementation of a green building strategy, implementation of a transportation sustainability program, adoption of a zero-waste strategy, adoption of a construction and demolition debris recovery ordinance, creation of a solar energy generation subsidy, incorporation of alternative-fuel vehicles in the city's transportation fleet (including buses), and adoption of a mandatory recycling and composting ordinance. The strategy also includes specific regulations for new development, which would reduce GHG emissions generated by anticipated future development. These GHG emissions reduction actions resulted in a 41 percent reduction in GHG emissions in 2019 compared with 1990 levels.[140,141,141a] This level of GHG emissions substantially surpasses the 2020 and 2030 goals in the air district's 2017 Clean Air Plan, Executive Orders S-3-05 and B-30-15, California Global Warming Solutions Act, California Global Warming Solutions Act of 2016, and the city's 2017 GHG emissions reduction goal. The 2023 GHG Reduction Strategy Update incorporates the 2021 CAP's GHG emissions targets and strategies.

The July 2021 GHG ordinance required the San Francisco Department of the Environment to prepare and submit to the mayor a climate action plan, which was released in December 2021. The climate action plan, which is to be updated every five years, carries forward the efforts of the city's previous climate action plans and charts a path toward meeting the GHG commitments stated in the Paris Agreement (e.g., limit global warming to 1.5 degrees Celsius) as well as the reduction targets adopted within the GHG ordinance. The climate action plan incorporates an equity framework to address historic inequities; prioritizes the social, economic, and environmental benefits from implementing the climate action plan; and ensures that those benefits are distributed equitably.[142]

[138a] City of San Francisco, San Francisco's Climate Action Plan 2021, https://sfenvironment.org/climateplan, accessed April 12, 2023.
[139] San Francisco Planning Department, *2023~~2017~~ Greenhouse Gas Reduction Strategy Update*, ~~July 2017~~ Updated October 2023, https://sfplanning.org/project/greenhouse-gas-reduction-strategies, accessed ~~June 6, 2022~~ December 5, 2023.
[141a] San Francisco Department of the Environment, *San Francisco's 2020 Carbon Footprint*, https://sfenvironment.org/carbonfootprint, accessed September 12, 2023. San Francisco's 2020 carbon footprint inventory found that GHG emissions reduction actions resulted in a 48 percent reduction in GHG emissions in 2020 compared to 1990. It is uncertain the degree to which the decrease may have been attributable to the effects of the pandemic.

* The following text was added to the end of the first paragraph on initial study p. 51.

In December 2021, the U.S. EPA finalized the national greenhouse gas emissions standards rule, which is expected to result in a projected industry-wide fuel economy of 40 miles per gallon by 2026, an approximately 25 percent increase over the previous standard.[151] In 2022, CARB approved the Advanced Clean Cars II Program for model years 2026–2035, which requires that all new passenger cars, trucks, and SUVs sold in California be zero emissions by 2035.[151a]

[151a] California Air Resources Board, Advanced Clean Cars II Regulations: All New Passenger Vehicles Sold in California to be Zero Emissions by 2035, https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii, accessed April 8, 2023.

* The following text was added to the end of the second full paragraph on initial study p. 52:

> Public Resources Code chapter 547, statutes of 2015[58] increased the stringency of the renewable portfolio standard. Public Resources Code chapter 547, statutes of 2015, establishes a renewable portfolio standard that calls for 50 percent of electricity to come from renewable sources by 2030, along with interim targets of 40 percent by 2024 and 45 percent by 2027. California Public Utilities Code, sections 399.11, 399.15, 399.30, and 454.53 accelerates the renewable energy targets that were set by Public Resources Code chapter 547, statutes of 2015 from 50 percent to 60 percent. SB 1020, signed on September 16, 2022, requires that renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to end-use customers by December 31, 2035; 95 percent of all retail sales to end users by December 31, 2040; 100 percent of all retail sales to end users by December 31, 2045; and 100 percent of electricity procured to serve all state agencies by December 31, 2035.

* The following text was added to the first and second bullet points on initial study p. 54:

- Project does not include natural gas ~~and~~.
- Project would not result in wasteful, inefficient, or unnecessary energy use.
- Project would result in VMT per capita that is 15 percent below the regional average ~~and~~ for residential and office projects and result in no net increase in existing VMT for retail projects.
- Project would meet the CALGreen Tier 2 off-street electric vehicle requirement.

* The second and third paragraphs on initial study p. 54 was revised as follows:

> Given that the city's GHG emissions reduction targets are more aggressive than the state's 2030 and 2045 GHG emissions reduction targets, the city GHG ordinance is consistent with the goals of statewide executive orders and bills (i.e., California Global Warming Solutions Act, California Global Warming Solutions Act of 2016, AB 1279, and Executive Orders S-3-05, B-30-15, B-55-18). ~~Therefore,~~ Because the 2023 GHG Reduction Strategy Update incorporates the 2021 Climate Action Plan, which is consistent with the statewide GHG goals for 2030 and 2045, actions that are consistent with the ~~2017~~ 2023 GHG Reduction Strategy Update would be consistent with the state's GHG goals and would not conflict with an applicable plan or generate GHG emissions that would make a considerable contribution to global climate change.
>
> The air district has reviewed the 2010 GHG reduction strategy and concluded that aggressive GHG reduction targets and comprehensive strategies like San Francisco's help the bay area move toward reaching the state's California Global Warming Solutions Act goals and also serve as a model from which other communities can learn.[162] Subsequent updates including the 2017 and 2023 GHG Reduction Strategies have only strengthened the City's GHG reduction requirements. Although the California Global Warming Solutions Act milestone year of 2020 passed just two years ago, San Francisco has already met the 2030 GHG reduction goal of the California Global Warming Solutions

[58] California Health and Safety Code section 44258.5; California Labor Code section 1720; California Public Resources Code sections 25310, 25943, 25302.2, and 25327; California Public Utilities Code chapter 2.3, part 1, division 1, sections 359, 399.4, 399.11, 399.12, 399.13, 399.15, 399.16, 399.18, 399.21, 399.30, 454.55, 454.56, 701.1, 740.8, 9505, 9620, 337, 352, 237.5, 365.2, 366.3, 454.51, 454.52, 740.12, 9621, 9622.

Act of 2016 (40 percent below 1990 levels). San Francisco's updated GHG ordinance includes a pathway to carbon neutrality by 2040 and the 2050 goals of the California Global Warming Solutions Act of 2016, ensuring that the city will continue to serve as a model for other communities. Meeting the emissions targets of the California Global Warming Solutions Act of 2016 as well as longer-term goals would result in an overall annual net decrease in GHG emissions compared with current levels and account for the projected increases in emissions resulting from anticipated growth.

The last paragraph on initial study p. 56 was revised as follows:

The project sponsor is required to comply with these regulations, which have proven effective as the city's GHG emissions have decreased 41 percent in 2019 when compared to 1990 emissions levels, which far exceeds the statewide ~~and regional~~ 2020 GHG reduction target~~s~~ (1990 levels) and achieves the city's local 2025 target (40 percent below 1990 levels) six years in advance of the target year. Furthermore, the city's GHG emission reductions in 2019 also met the statewide ~~and regional~~ 2030 target~~s~~ (40 percent below 1990 levels) more than 10 years in advance of the target year. This progress puts the City on the emission reduction trajectory to meet the 2030 target (61 percent below 1990 levels) and the 2045 target (90 percent below 1990 levels), as envisioned in the 2021 CAP. The City will continue to update its regulations and ordinances for new development to implement the GHG emission reduction strategies and measures in the 2021 CAP to achieve the City's 2030 and 2045 targets. These new regulations and ordinances will apply to the proposed project or variant, or portions of the proposed project or variant, as individual development applications are submitted to the City for approval. The City will update its GHG Reduction Strategy to incorporate these new regulations. Therefore, because the proposed project or variant would be subject to regulations adopted to reduce GHG emissions, the proposed project or variant would be consistent with San Francisco's 2023 GHG reduction strategy and the 2021 CAP and would not generate significant GHG emissions nor conflict with state, regional, and local GHG reduction plans and regulations.

* The first paragraph on initial study p. 57 was revised as follows:

~~Therefore~~ Furthermore, because the proposed project or variant would be consistent with the City's 2023 GHG reduction strategy and 2021 CAP, the proposed project or variant it would also be consistent with the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan, and would not conflict with these plans.

* The third sentence in the last paragraph on initial study p. 57 was revised as follows:

The proposed project or variant would also be consistent with the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan, and would not conflict with these plans.

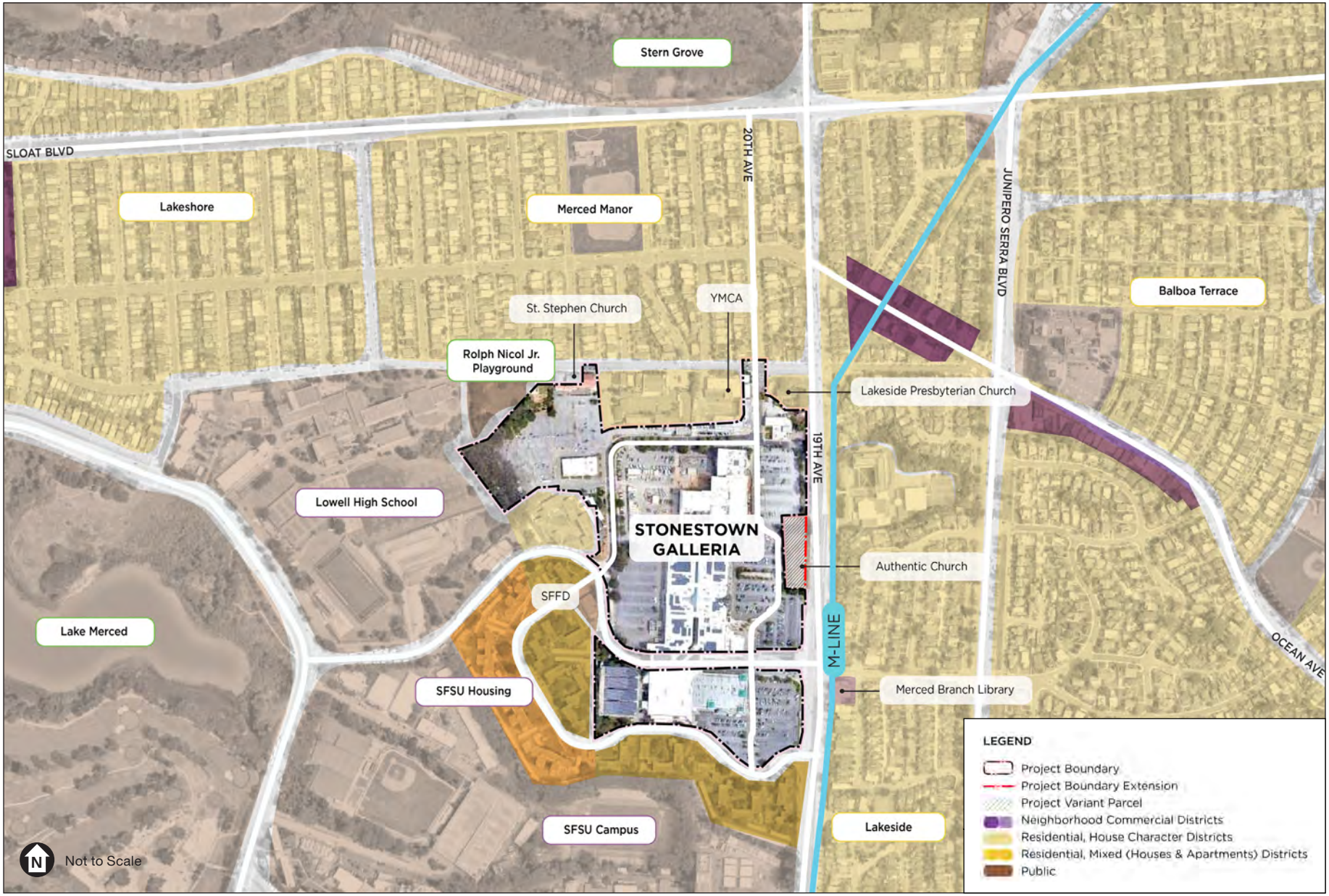
5.N Revisions to Figures

The following draft EIR figures were revised to reflect the changes to the project description as outlined in Chapter 2 and minor corrections in response to comments in Chapter 4 of this RTC:

- Figure 2-2, Project Site and Adjacent Land Uses
- Figure 2-7, Proposed Site Sections through West and East Parcels
- Figure 2-8, Proposed Site Sections along 19th Avenue
- Figure 2-9, Proposed Site Sections through North and South Parcels
- Figure 2-12, Proposed Street Plan
- Figure 2-13, Proposed Intersection Controls
- Figure 2-14, 20th Avenue Illustrative Section A
- Figure 2-15, 20th Avenue Illustrative Section B
- Figure 2-16, 20th Avenue Illustrative Section C
- Figure 2-17, 20th Avenue Illustrative Section D
- Figure 2-18, Buckingham Way North Illustrative Section
- Figure 2-19, Winston Drive Illustrative Section A
- Figure 2-20, Winston Drive Illustrative Section B
- Figure 2-21, Proposed Pedestrian Network
- Figure 2-23, Proposed Potable Water Plan
- Figure 2-24, Proposed Non-Potable Water Plan (Centralized Treatment Option)
- Figure 2-25, Proposed Non-Potable Water Plan (Decentralized Treatment Option)
- Figure 2-26, Proposed Combined Sewer System Plan
- Figure 3.D-1, Sensitive Receptors
- Figure 5-1, Alternative B: Full Preservation and Relocated Parking Alternative
- Figure 5-2, Alternative C: Partial Preservation Alternative

The following note was added to the legends on Figures 2-7 to 2-9:

~~CEQA Heights~~ Maximum Building Envelope for Shadow and Wind Analyses

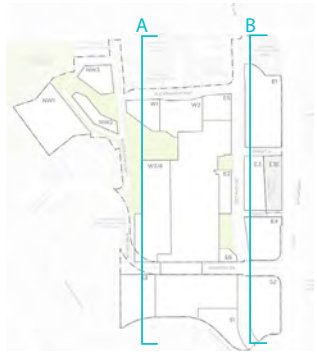


SOURCE: ESA, 2022; Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

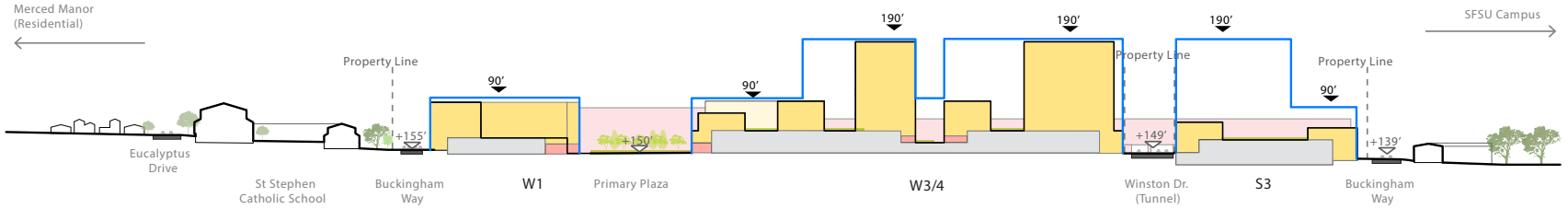
FIGURE 2-2

PROJECT SITE AND ADJACENT LAND USES (REVISED)



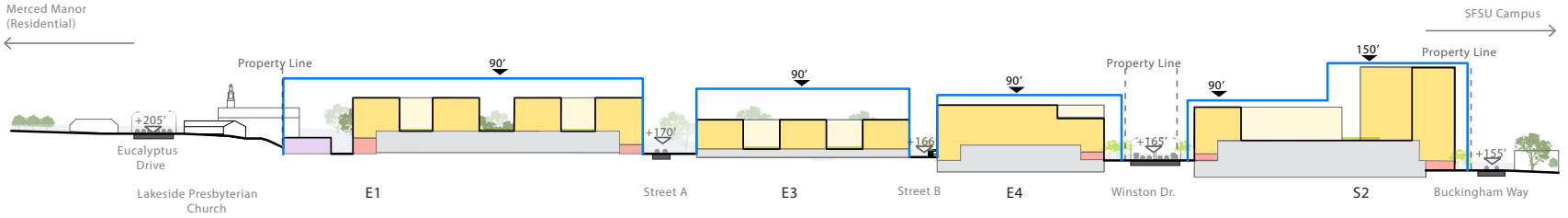
Section A

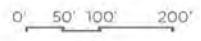
Section Through West Parcels - Looking East



Section B

Section Through East Parcels - Looking East





Note: Proposed topographic/grading elevations to be further refined in a future phase. Buildings are an illustrative representation and subject to change.

Legend

- Maximum Building Envelope for Shadow and Wind Analyses
- +00' Elevation Above Sea Level
- 00' Maximum Parcel Height
- Section Cut Line

Illustrative Buildings

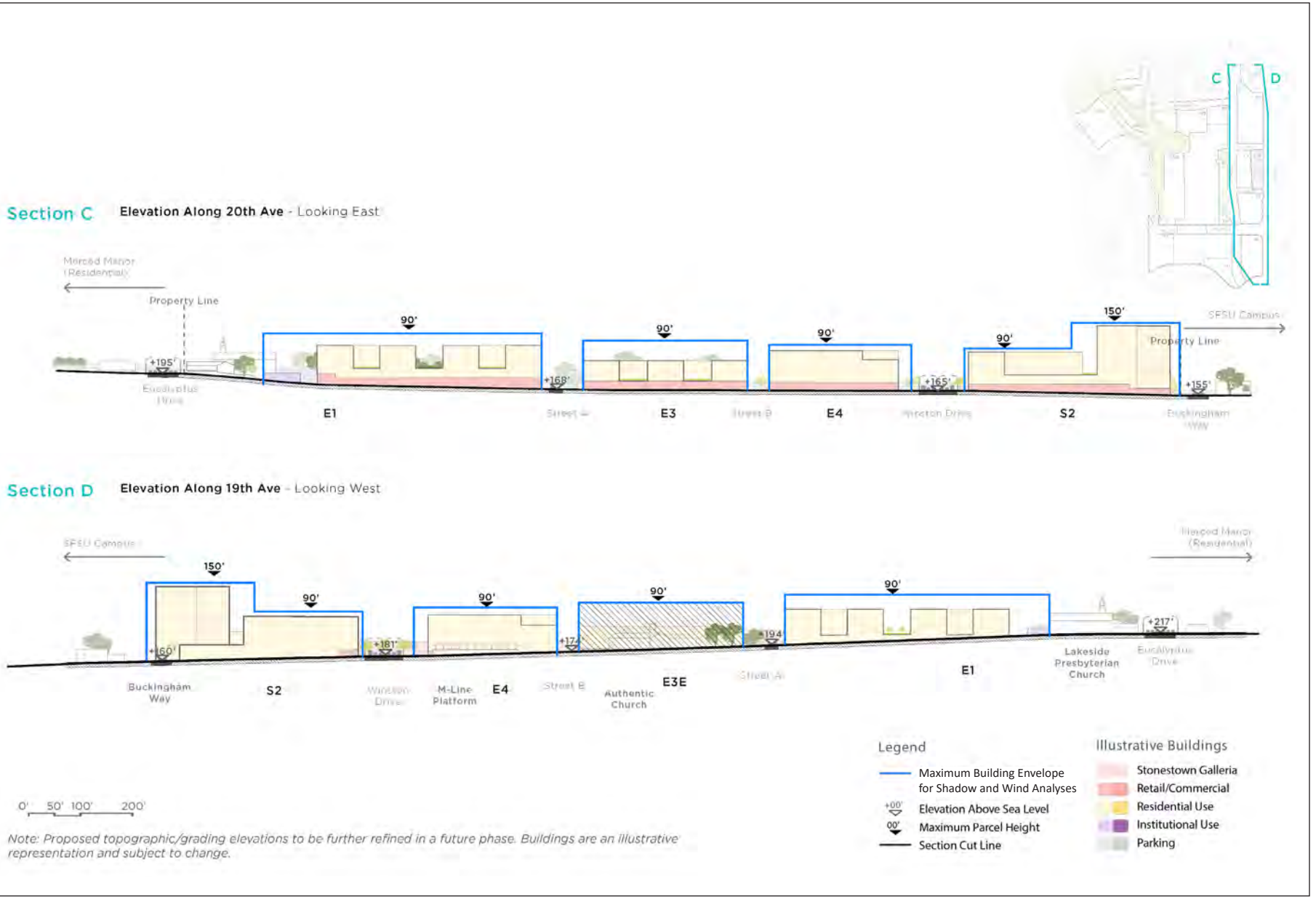
- Stonestown Galleria
- Retail/Commercial
- Residential Use
- Institutional Use
- Parking

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-7

PROPOSED SITE SECTIONS THROUGH WEST AND EAST PARCELS (REVISED)

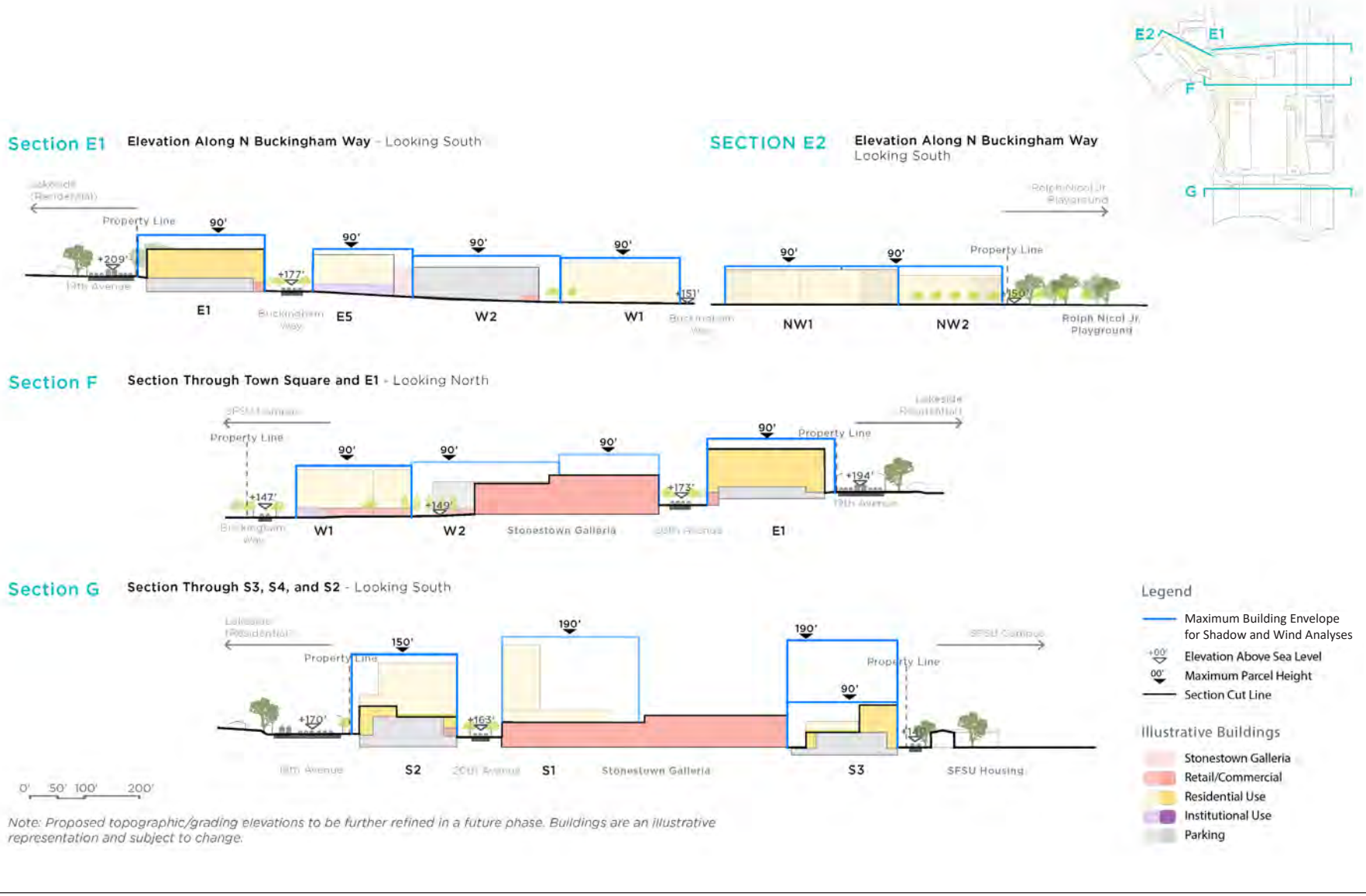


SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-8

PROPOSED SITE SECTIONS ALONG 19TH AVENUE (REVISED)



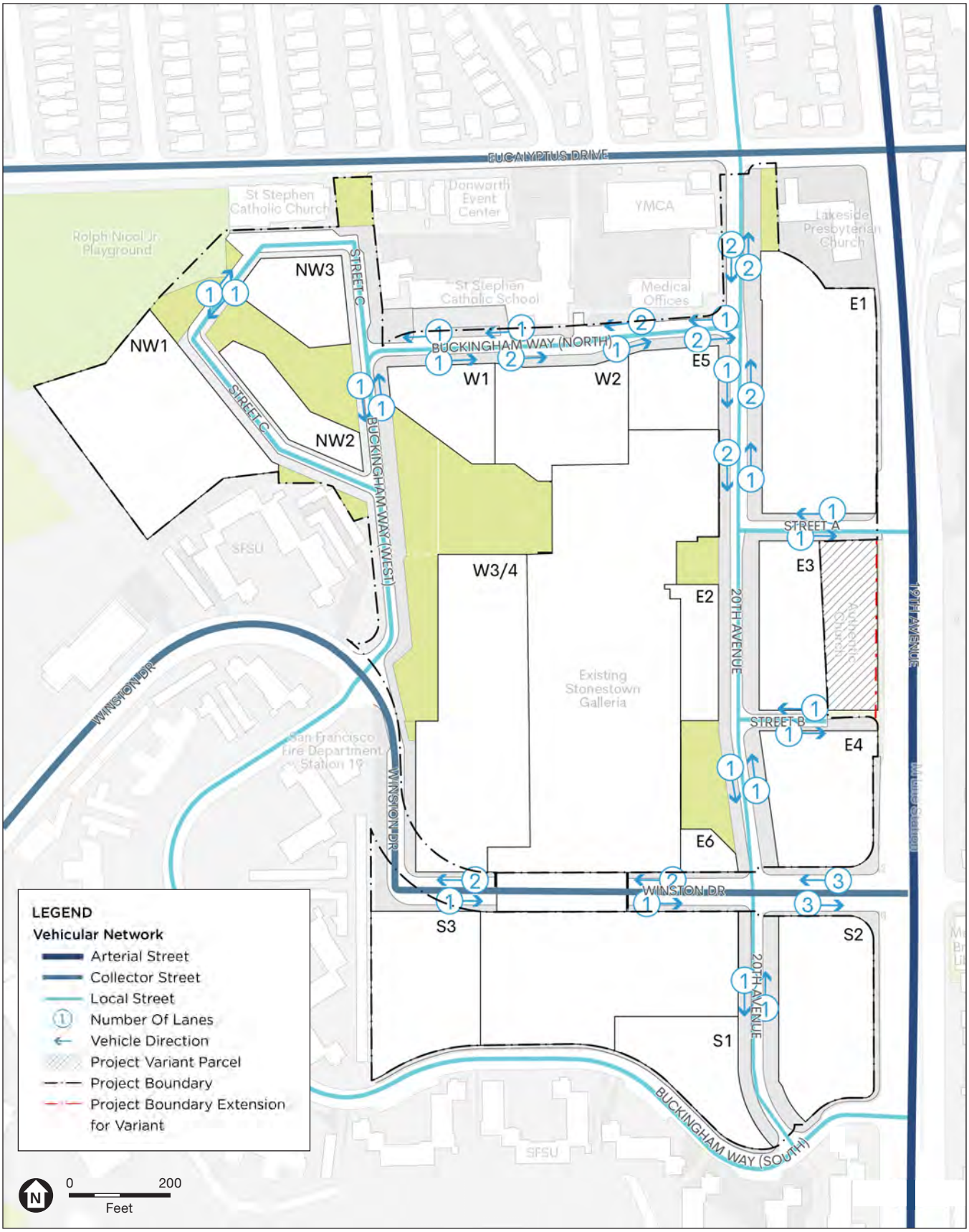
Note: Proposed topographic/grading elevations to be further refined in a future phase. Buildings are an illustrative representation and subject to change.

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-9

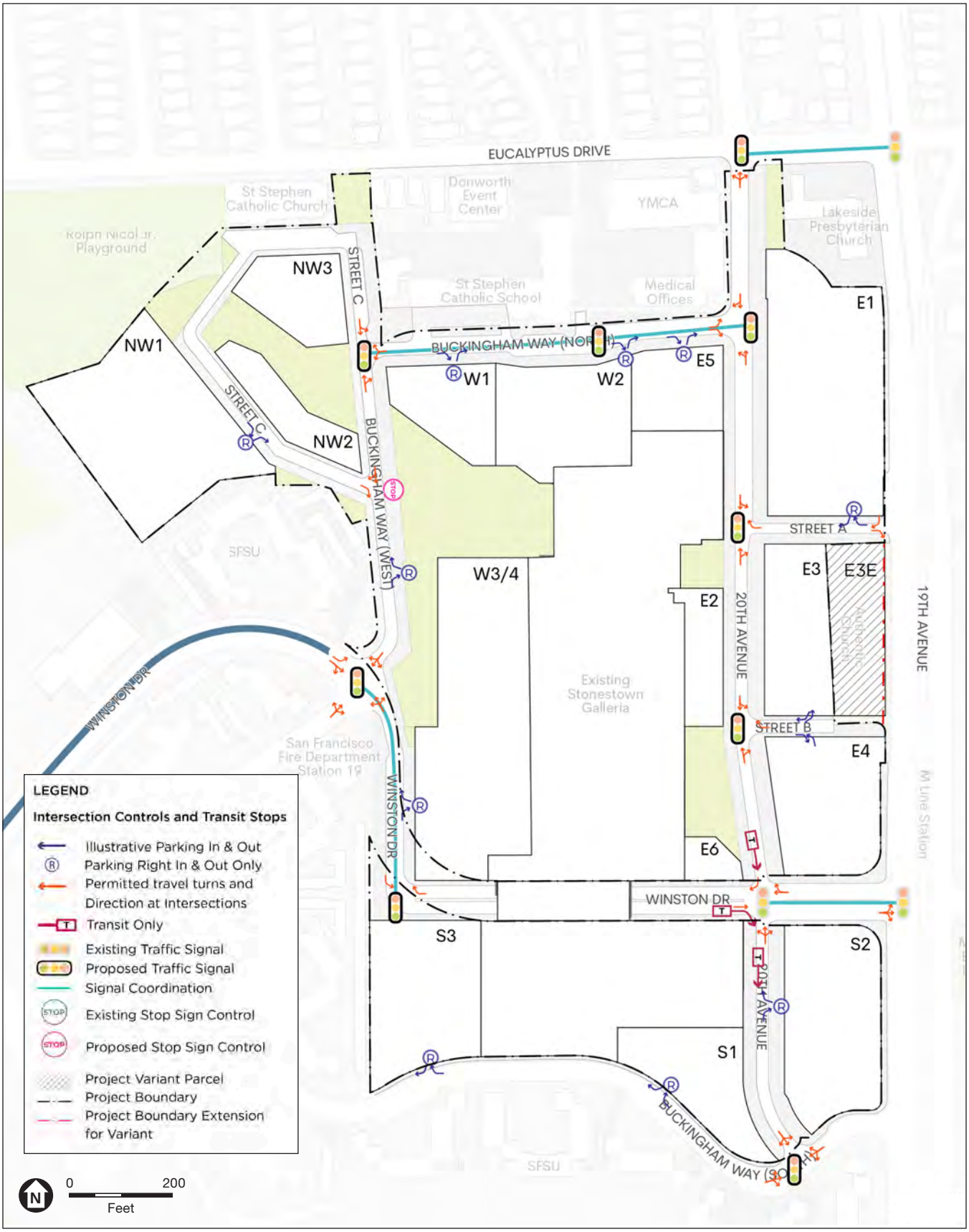
PROPOSED SITE SECTIONS THROUGH NORTH AND SOUTH PARCELS (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

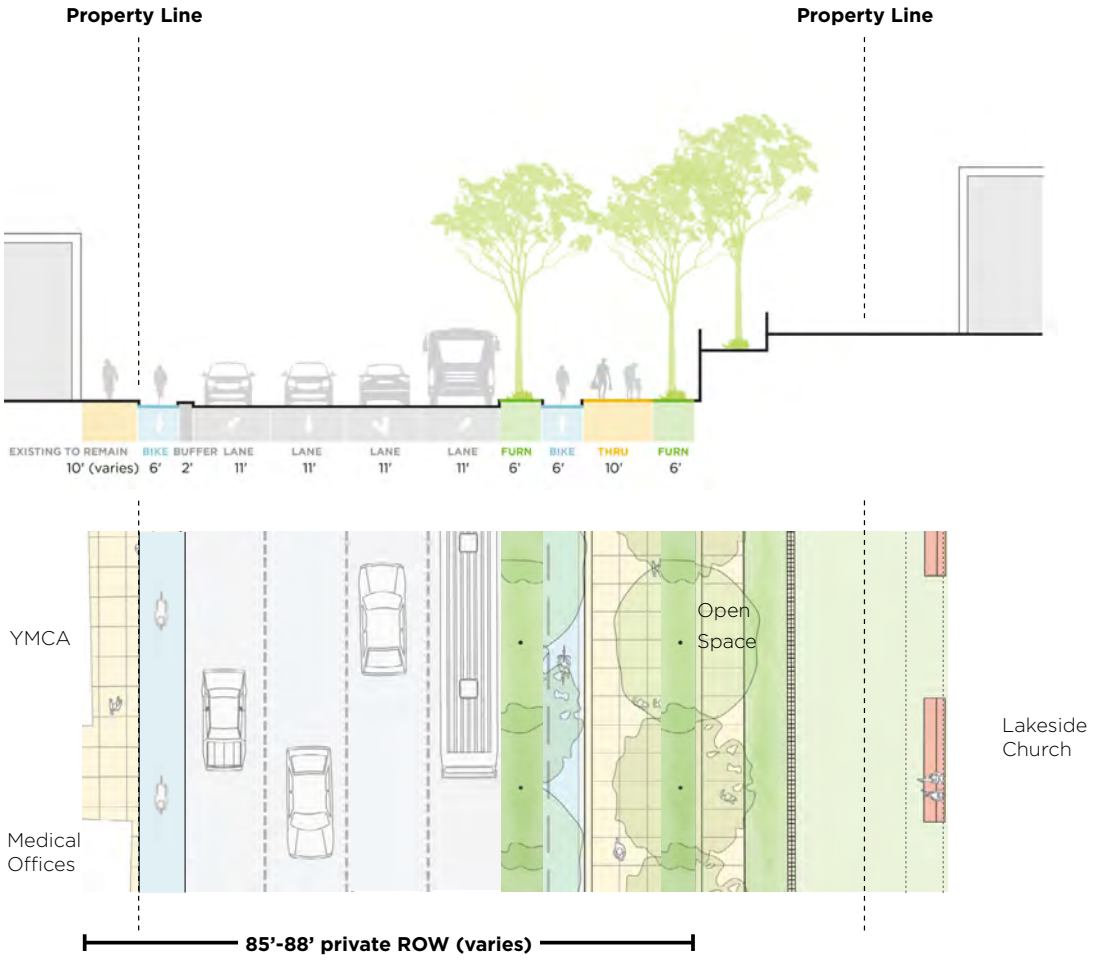
FIGURE 2-12
PROPOSED STREET PLAN (REVISED)

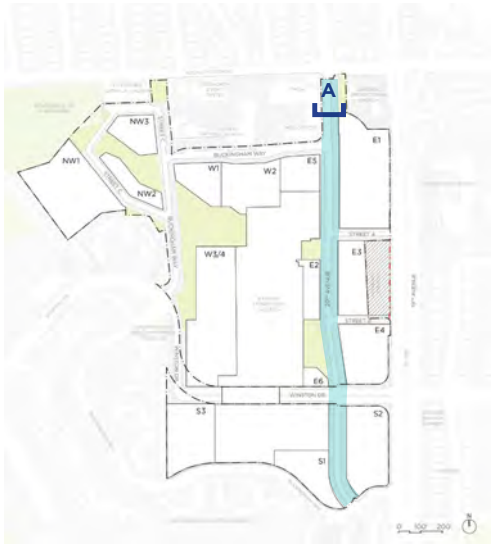


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-13
PROPOSED INTERSECTION CONTROLS (REVISED)





Legend

Sidewalk zone
- Frontage zone (FRNT)
- Throughway zone (THRU)
- Furnishing zone (FURN)
- Extension zone* (EXT)
- Furnishing zone with parking edge zone

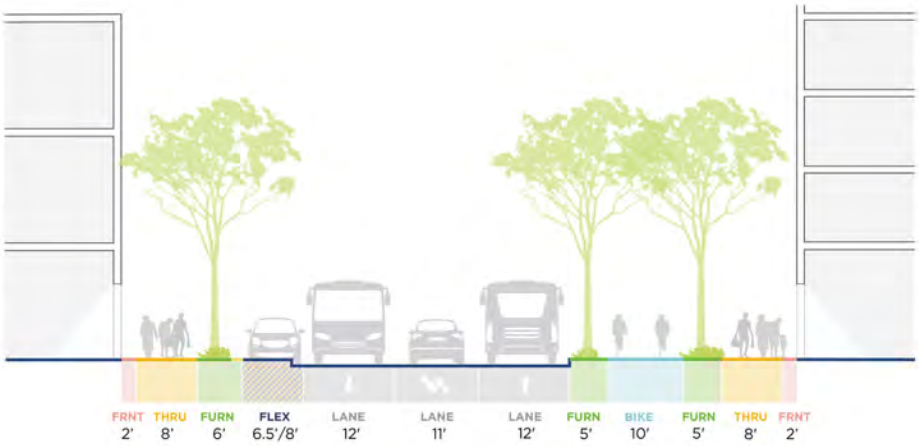
Travel Lane zone
- Travel lane (LANE)

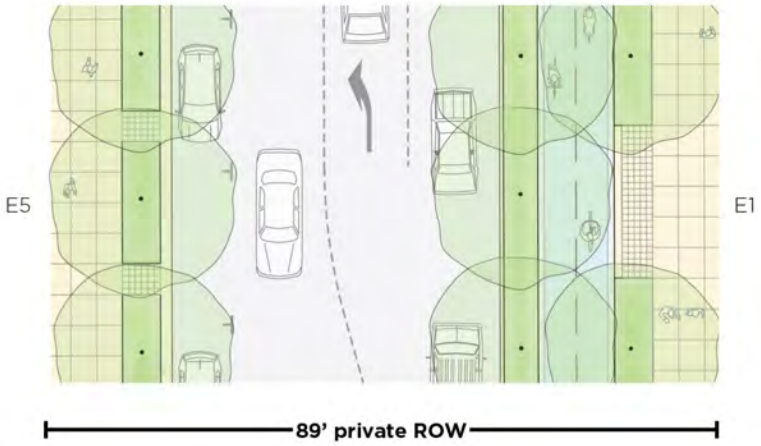
Other
- Bicycle facility (BIKE)

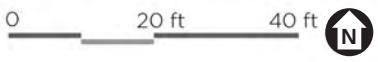
SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-14
20TH AVENUE ILLUSTRATIVE SECTION A (REVISED)



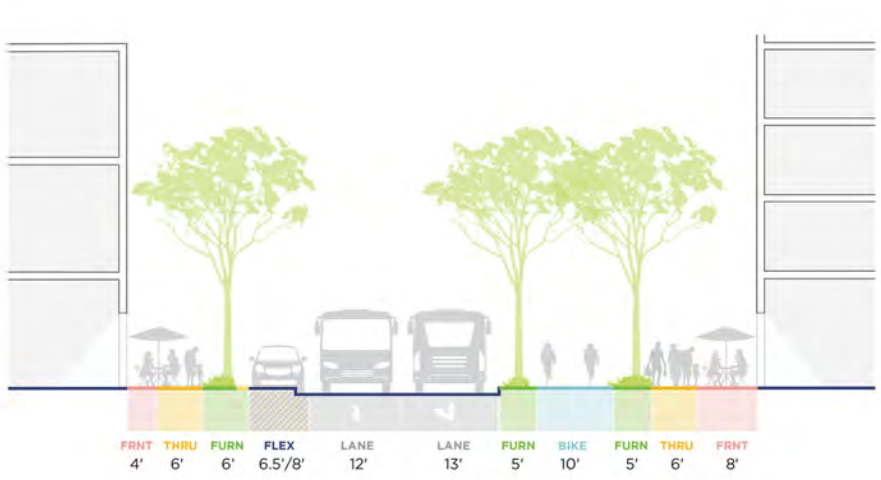


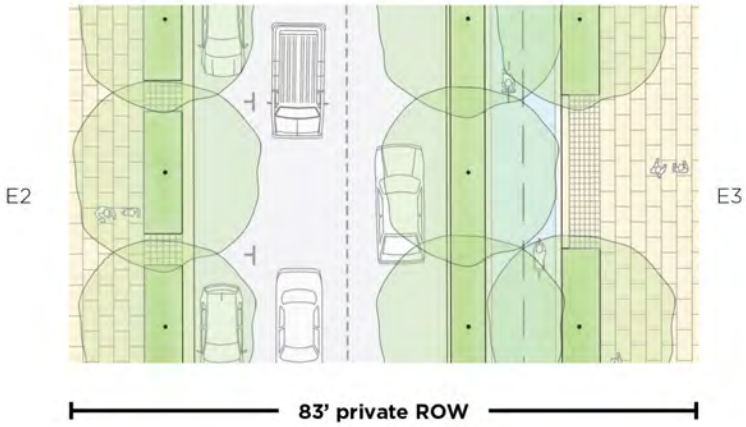


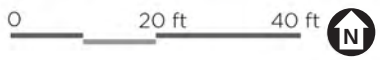
SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-15
20TH AVENUE ILLUSTRATIVE SECTION B (REVISED)



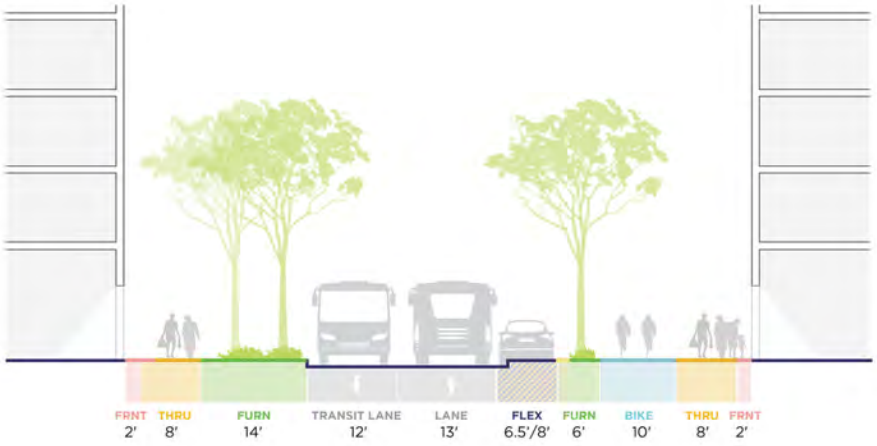


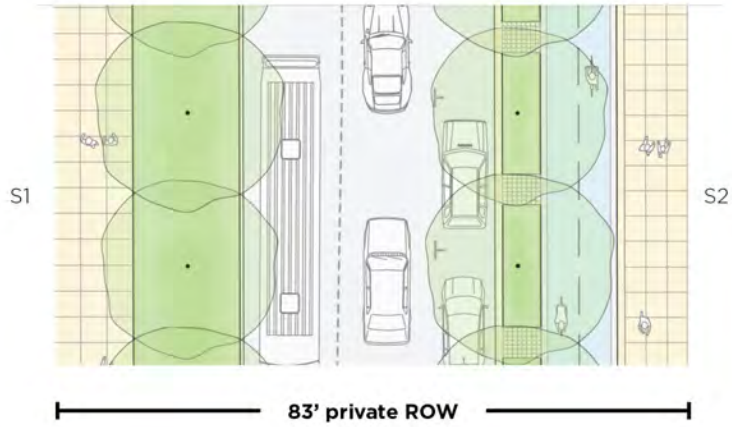


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-16
20TH AVENUE ILLUSTRATIVE SECTION C (REVISED)





SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

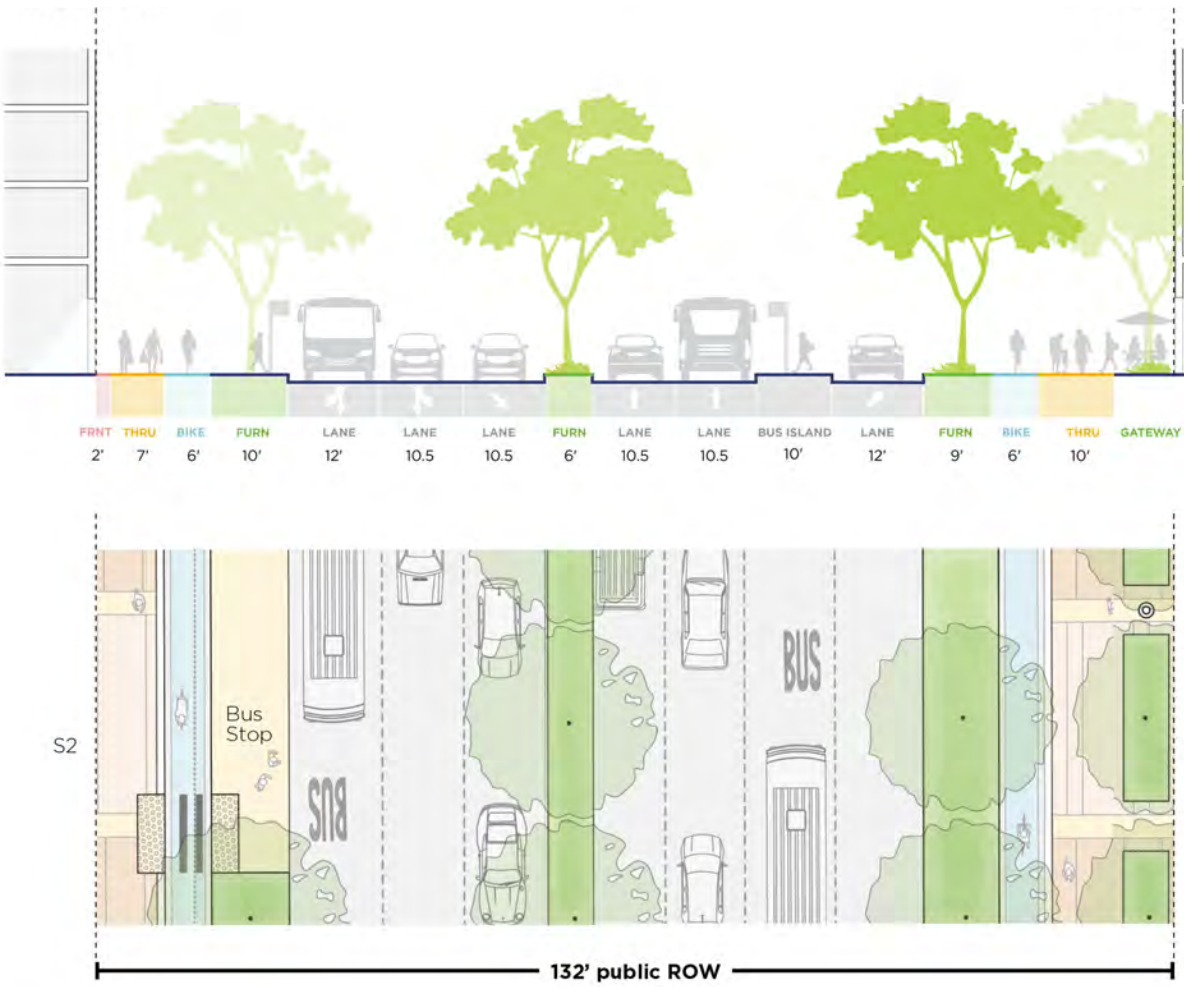
FIGURE 2-17
20TH AVENUE ILLUSTRATIVE SECTION D (REVISED)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-18

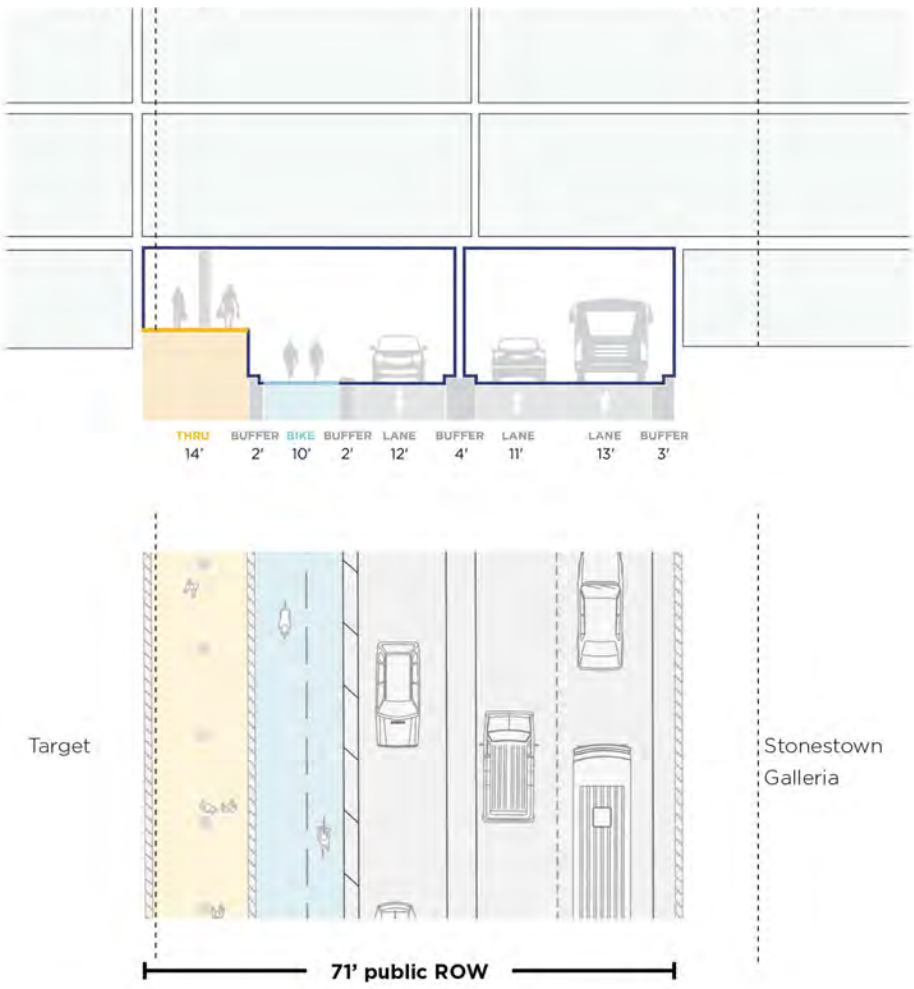
BUCKINGHAM WAY NORTH ILLUSTRATIVE SECTION (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

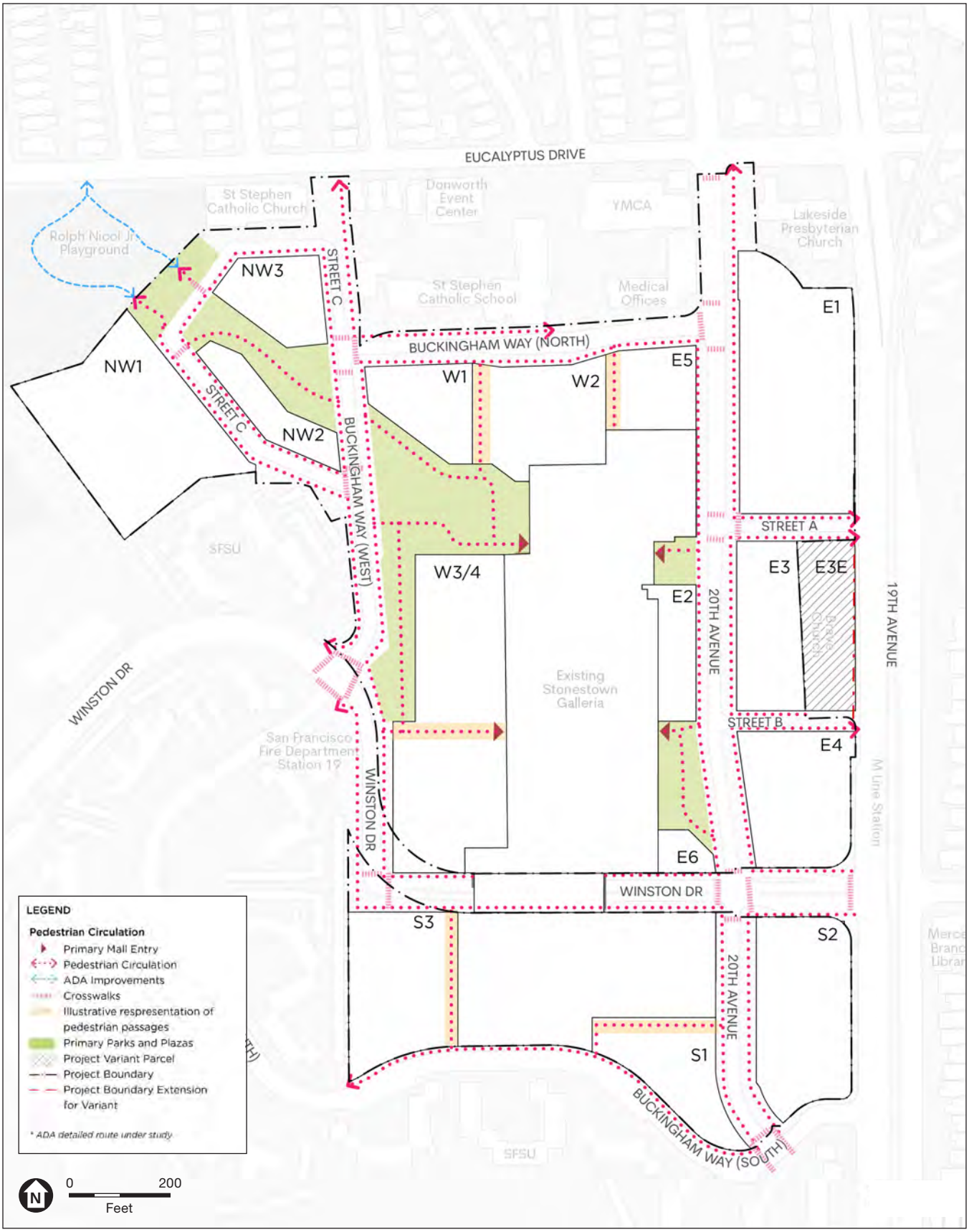
FIGURE 2-19
WINSTON DRIVE ILLUSTRATIVE SECTION A (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

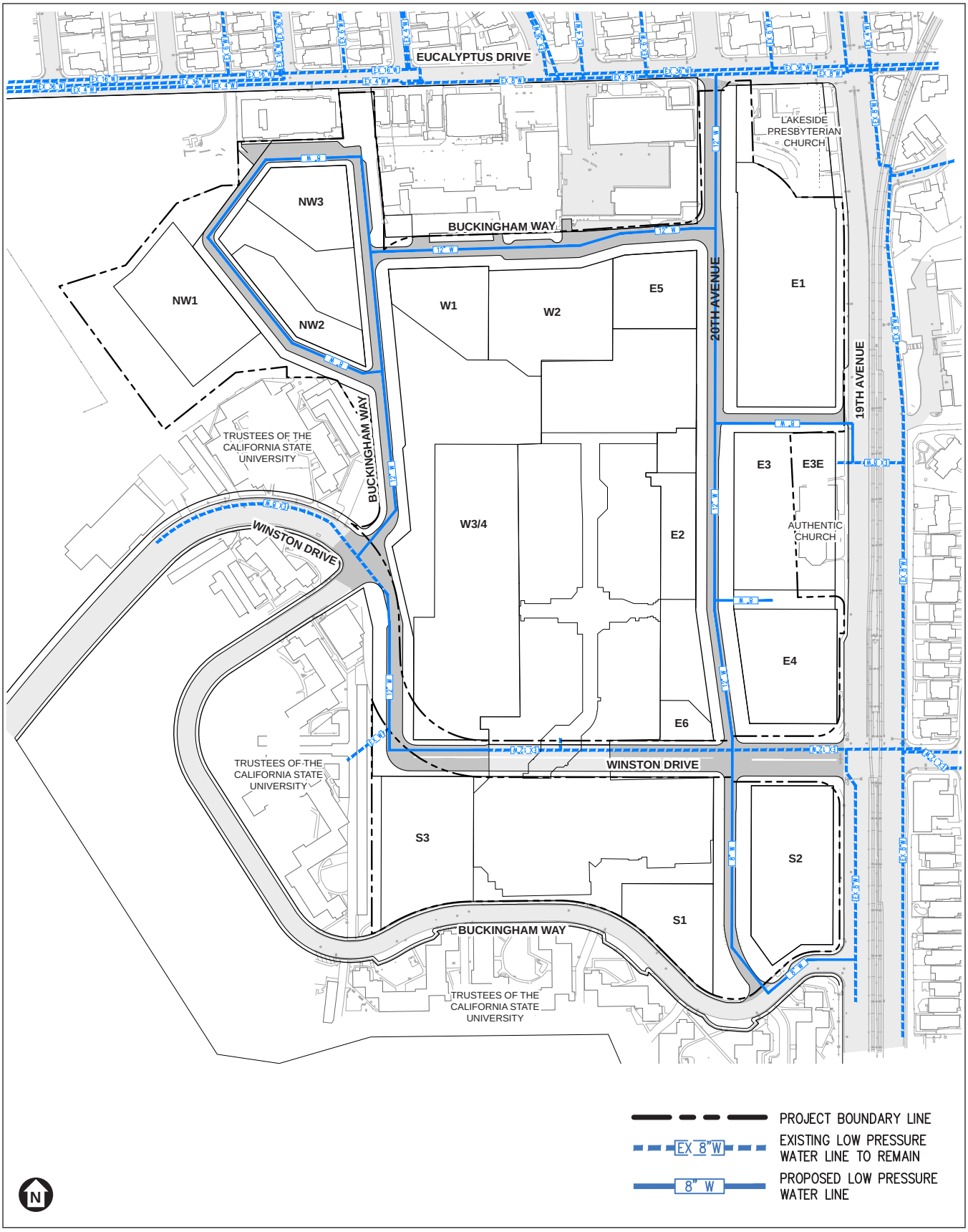
FIGURE 2-20
WINSTON DRIVE ILLUSTRATIVE SECTION B (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2024

Stonestown Development Project

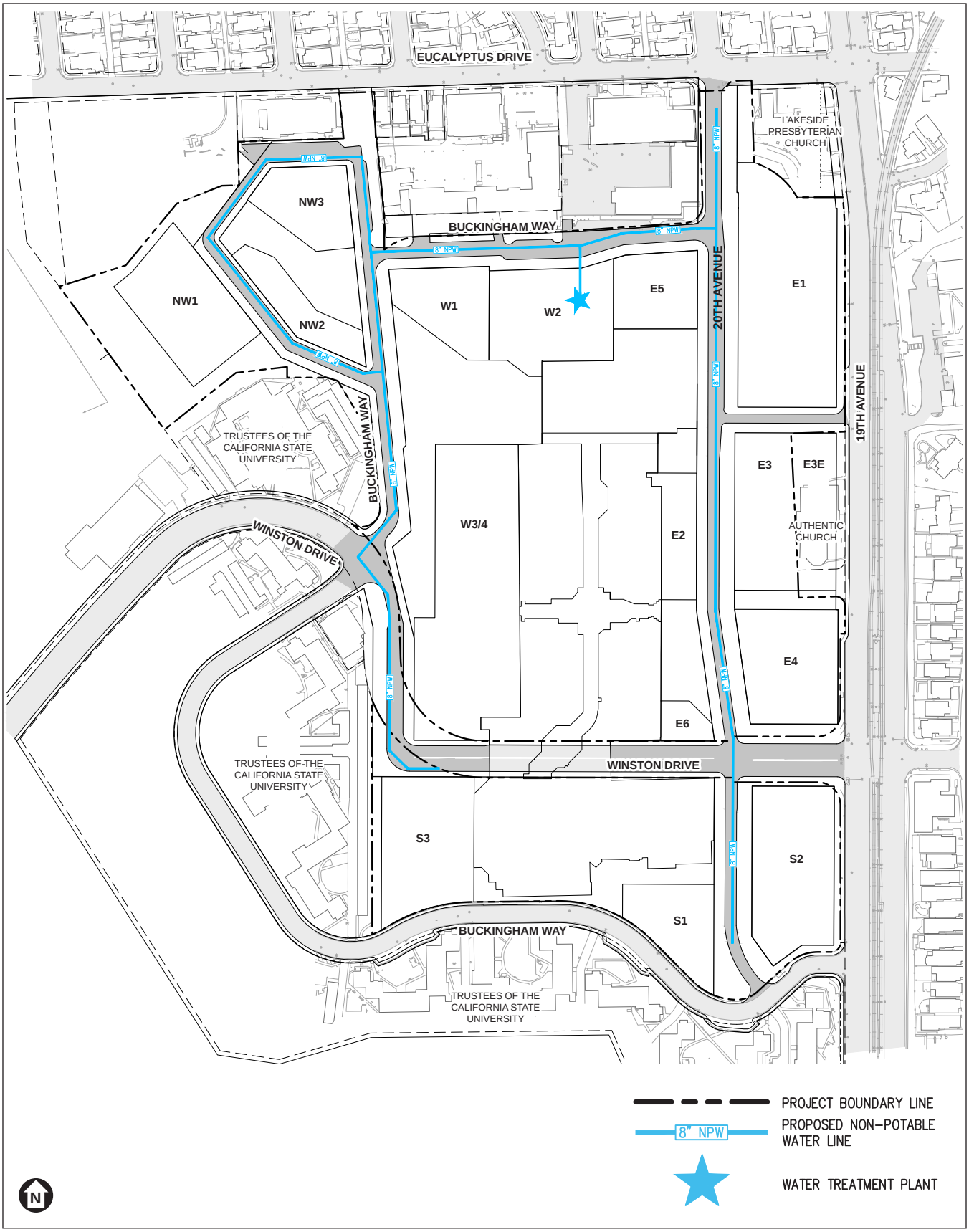
FIGURE 2-21
PROPOSED PEDESTRIAN NETWORK (REVISED)



SOURCE: CBG, 2022

Stonestown Development Project

FIGURE 2-23
PROPOSED POTABLE WATER PLAN (REVISED)

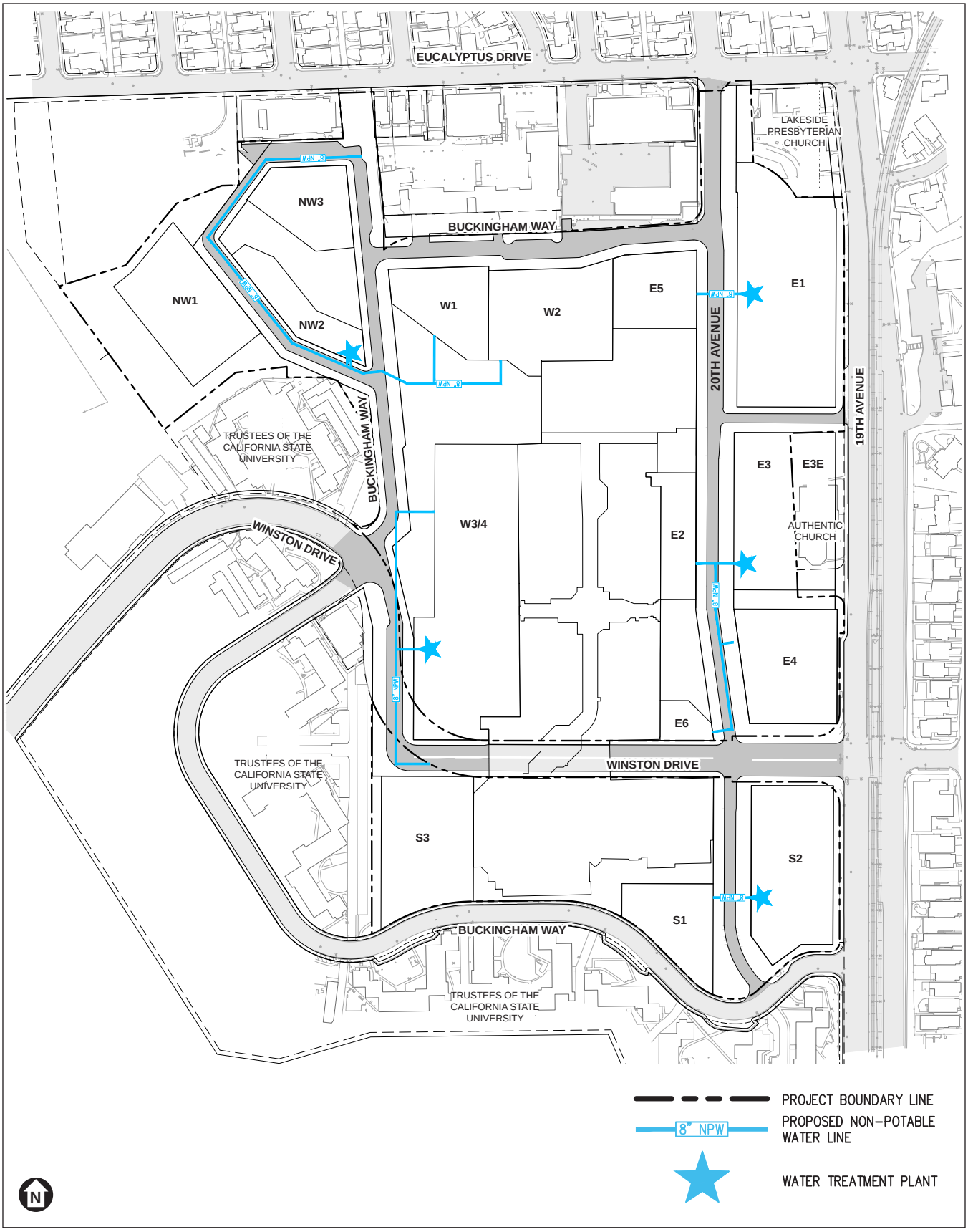


SOURCE: CBG, 2022

Stonestown Development Project

FIGURE 2-24

PROPOSED NON-POTABLE WATER PLAN (CENTRALIZED TREATMENT OPTION) (REVISED)

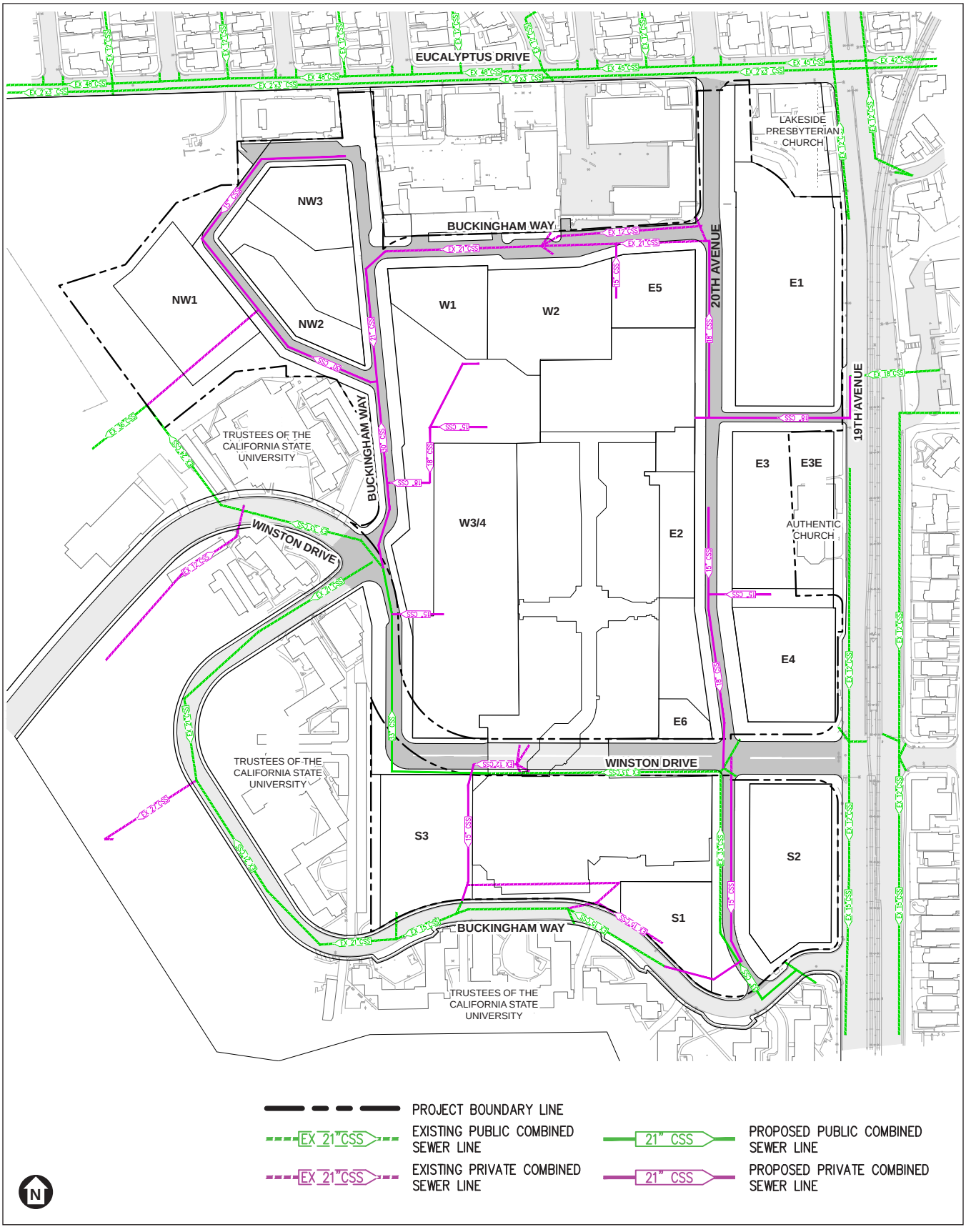


SOURCE: CBG, 2022

Stonestown Development Project

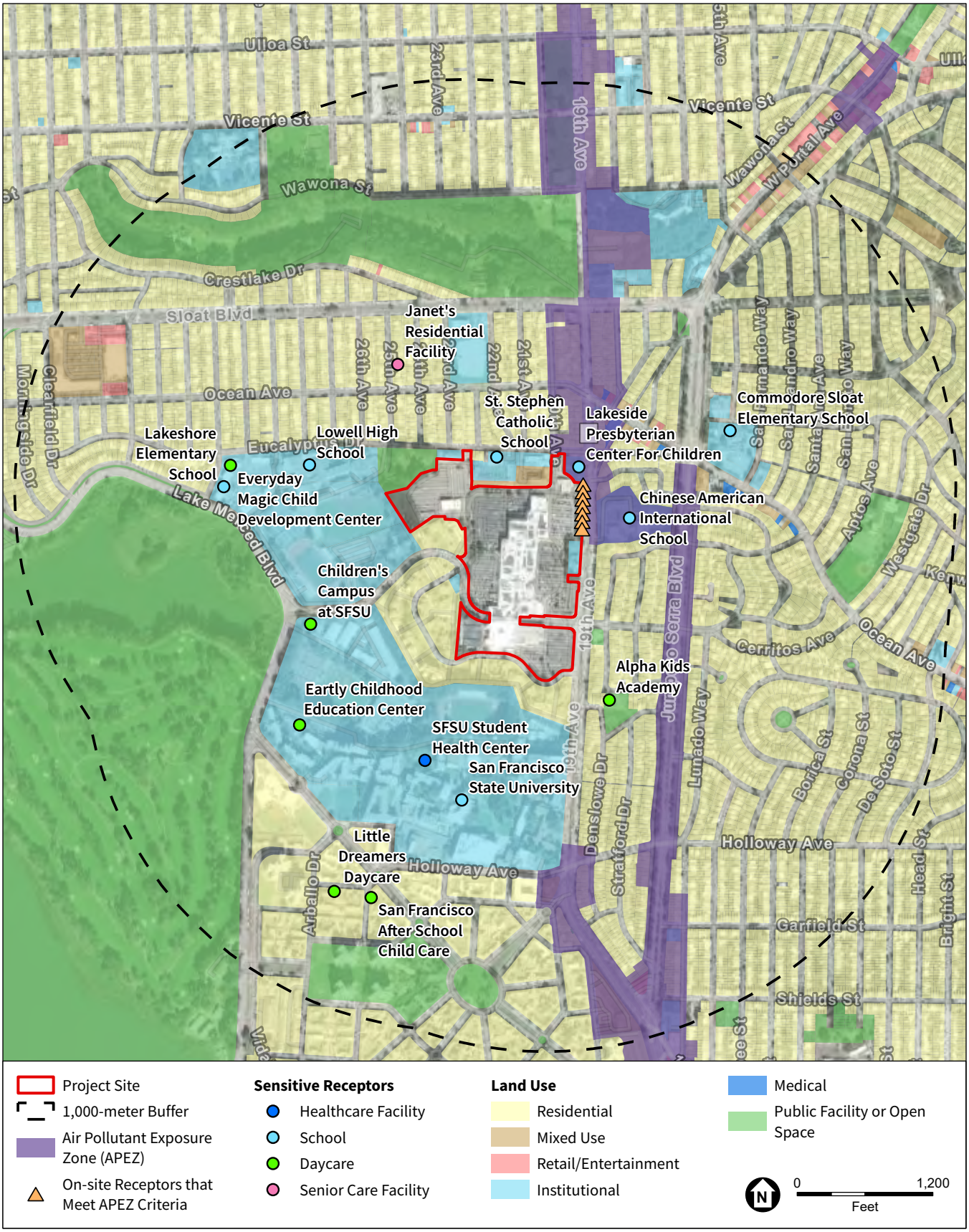
FIGURE 2-25

PROPOSED NON-POTABLE WATER PLAN (DECENTRALIZED TREATMENT OPTION) (REVISED)



SOURCE: CBG, 2022

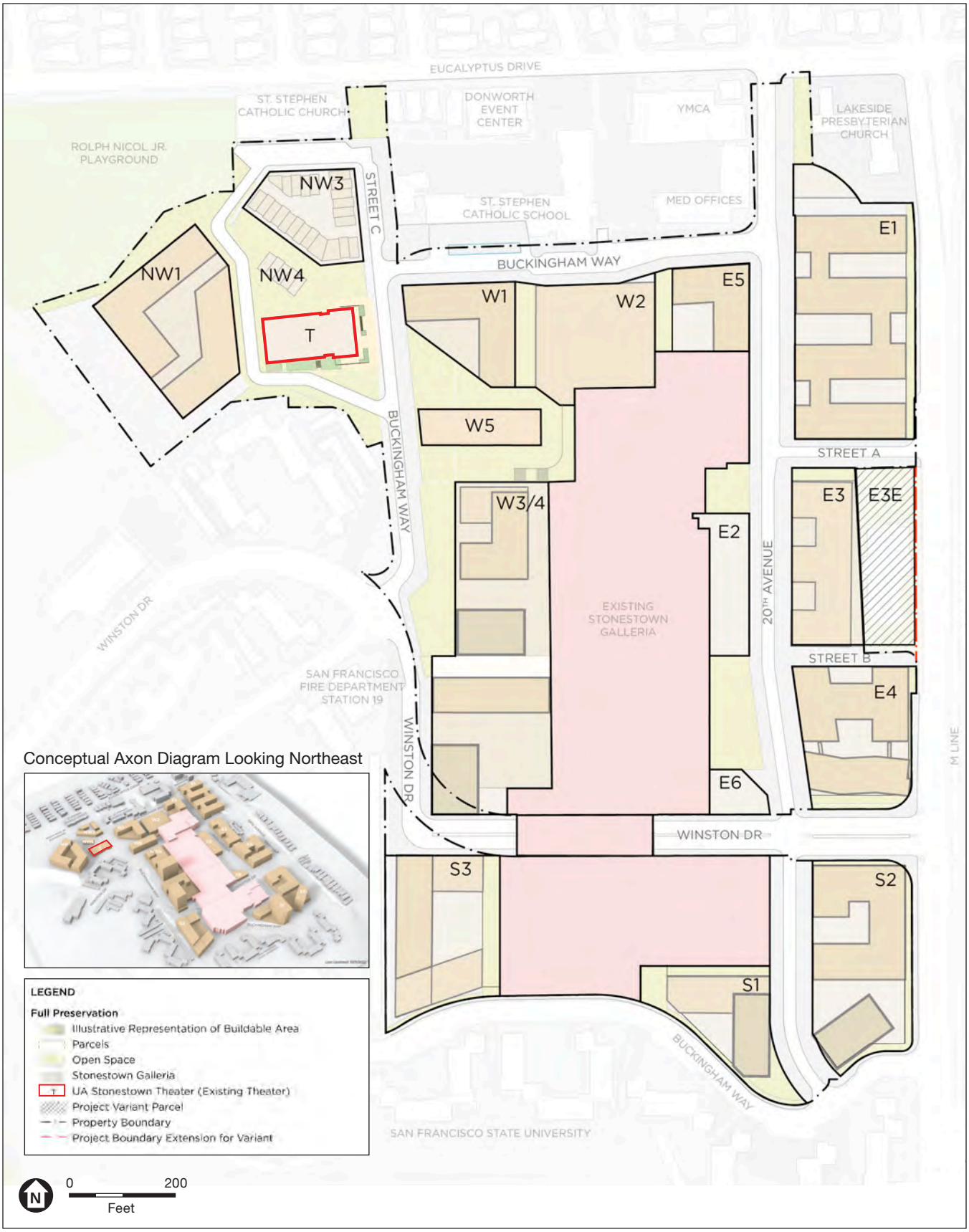
FIGURE 2-26
PROPOSED COMBINED SEWER SYSTEM PLAN (REVISED)



SOURCE: Maxar, 2021; San Francisco Planning Department, 2022; Google, 2022; ESA, 2023

Stonestown Development Project

FIGURE 3.D-1
SENSITIVE RECEPTORS (REVISED)

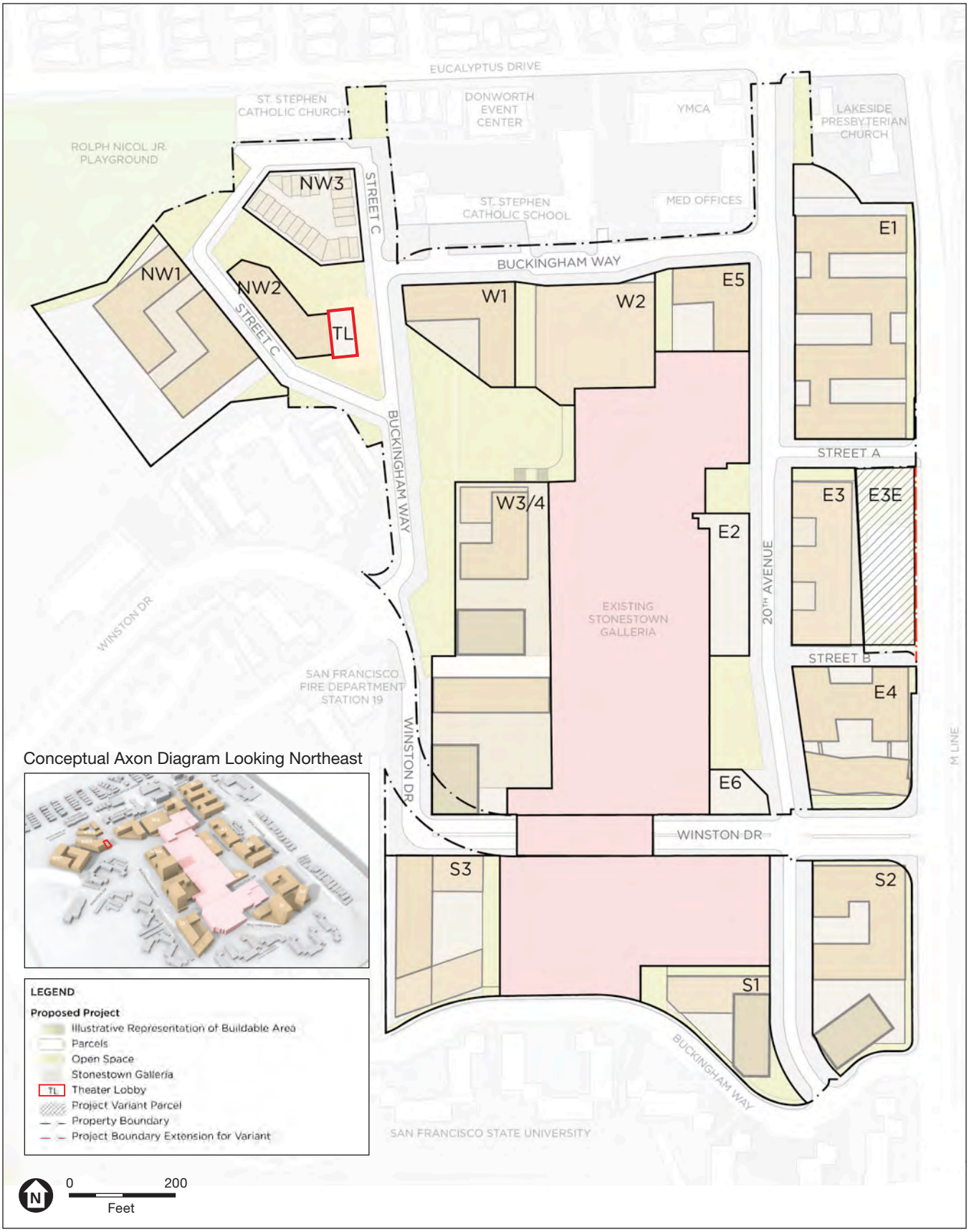


SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-1

ALTERNATIVE B: FULL PRESERVATION ALTERNATIVE (REVISED)



SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-2

ALTERNATIVE C: PARTIAL PRESERVATION ALTERNATIVE (REVISED)

5.O Revisions to Appendices

Appendix H, Shadow Analysis Report, is replaced in its entirety to reflect the inclusion of correct exhibits, and minor refinements to shadow coverage calculations. Exhibits B.1 and B.2 (Rolph Nichols Jr. Park) of Appendix H were replaced with the correct exhibits, such that the report text and exhibits are aligned. In addition, an error in the spreadsheet calculating shadow coverage for each park was corrected and resulted in slight decreases in the proposed project or variant shadow coverage of both Rolph Nichol Jr. Park and Junipero Serra Playground. These changes do not materially affect the analysis, nor do they alter the conclusions of the draft EIR with respect to shadow impacts: there would be no new or substantially more-severe impacts, nor would new or revised mitigation measures or alternatives lessen the shadow impacts of the proposed project or variant. Rather, refinements to the calculations merely clarify and make insignificant modifications to the draft EIR. Accordingly, no recirculation of the EIR is required.

The revised *Shadow Analysis Report* may be found on the planning department's website under Case No. 2021-012028ENV at https://sfplanning.org/environmental-review-documents.

ATTACHMENT A

Draft EIR Public Hearing Transcript

CITY AND COUNTY OF SAN FRANCISCO

PLANNING COMMISSION

---oOo---

PROJECT NAME:	) CASE NO.:
3251 20TH AVENUE	) 2021-012028ENV
Stonestown Development Project	)
	) Pages 1 - 30

PUBLIC HEARING ON DRAFT EIR

Thursday, February 9th, 2023

Reported by:

Brianna Rudd, CSR 13668

JAN BROWN & ASSOCIATES

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STAFF:

RICH HILLIS, Planning Director

JONAS IONIN, Commission Secretary

FLORENTINA CRACIUN, Environmental Coordinator

PATRICK RACE, Senior Planner

LISA GIBSON, Environmental Review Officer

PROJECT:

COURTNEY PASH, Project Sponsor Representative

Page

Reporter's Certificate 30

February 9, 2023 - 2:36 p.m.

P R O C E E D I N G S

---oOo---

...

(Proceedings prior to agenda item #10 not reported.)

COMMISSION SECRETARY IONIN: Commissioners, that will place us on item 10 for Case No. 2021-012028ENV for the property at 3251 20th Avenue. This is the Environmental Impact Report.

Please -- the Draft Environmental Impact Report.

Please note that public comment for this Draft EIR is from December 14th, 2022 until 5:00 p.m. on February 13th, 2023. And this is for your review and comment.

MS. CRACIUN: Okay. Hi, everybody.

Good afternoon, President Tanner and members of the Commission. My name is Florentina Craciun, and I am Planning Department staff and environmental coordinator for the Stonestown Development Project. Joining me here today is my colleague, Patrick Race, and Courtney Pash on behalf of the project sponsor.

The item before you is the public hearing on the Draft Environmental Impact Report, or Draft EIR, for the Stonestown Development Project, which was published on December 14, 2022. We are here seeking comments on the

adequacy of the Environmental -- of the Environmental Impact Report.

Please note that the comments received here today will be responded to in writing in the Response to Comments document that will be part of the final EIR.

Next slide.

I will go ahead and provide you with a short -- with a short description of the proposed project and the project site.

Next slide.

As you can see on this map, the project site is located at the Stonestown Galleria in the Lakeshore area in southwest San Francisco. The site is surrounded by San Francisco State University, a variety of schools, and residential neighborhoods.

Next slide.

The proposed project would develop the existing 27 acres of surface parking surrounding the Stonestown Galleria into a master-planned, multi-phased, mixed-use community. Under the project, the existing mall would be retained, with changes to the facade, entrances and exits. The site would be rezoned as part of a proposed special use district.

As you can see, the site would include a variety of building types and heights. The intent of the

master-planned community is to transform 20th Avenue into the commercial core of the site, while the western portion would be mostly dedicated to residential uses and open space. The proposed project would include 2,930 units of housing, along with new retail, hotel and institutional use, as well as six acres of open space.

The EIR also analyzed a project variant. The variant would include the .8-acre parcel in the eastern portion of the site, shown on this slide as E3E. The variant would add an additional 150 residential units, 10,000 square feet of institutional uses, and approximately 200 parking spaces, additional parking spaces.

Now I will move forward and provide you with an overview of the potential environmental impacts outlined in the Draft EIR.

If we could move the slides forward, please. And one more.

The draft EIR determined that the project or variant would result in significant and unavoidable impacts for the following resources areas: built historic culture resources due to the demolition of the UA theater, which is a historic architectural resource under CEQA; noise due to overlap of construction for the multi-phase development; wind hazards, as the project

would result in construction of buildings above 85 feet in height; transit delay for the project variant scenario, under cumulative conditions for the routes -- the transit routes running along 20th Avenue; and air quality impacts, due to the exceedances of criteria air pollutants for the construction phases that would overlap with project operations, as well as for project operations due to ROG exceedances.

Next slide.

The EIR identified feasible mitigation measures for these significant and unavoidable impacts; however, I want to point out that these impacts would remain significant and unavoidable even with implementation of said mitigation measures. As shown in this slide, mitigation measures include: documentation of historic resources; reduction of vehicle miles traveled; signal coordination to reduce transit delay; as well as construction noise control plan.

Next slide.

Mitigation measures to reduce air quality impacts include usage of Tier 4 engines during construction, electric vehicle infrastructure, and offsets for ROG emissions, while wind mitigation measures include additional analysis for any buildings taller than 85 feet as specific design becomes available, as well as

a wind safety plan during construction.

Next slide.

In addition to the topics analyzed in the Draft EIR, the EIR also includes the initial study checklist that covers the remaining topics required under CEQA. Additional mitigation measures were identified to reduce impacts to archaeological and paleontological impacts.

Next slide.

I really do hope that these brief slides were a useful overview of the potential environmental impacts of the proposed project. In addition to environmental impacts, we are also required to study CEQA alternatives to the project. The purpose of the alternatives is to minimize or eliminate the project's environmental impacts. As such, in consultation with the sponsor, and with input from the public and other city agencies, we developed five alternatives to the project. I will quickly walk you through those alternatives.

Next slide.

The first alternative considered is the required No Project Alternative. Under this scenario, the site would remain as is and no development would take place.

Next slide.

Because the project would have a significant and unavoidable impact on an identified historic resource

under CEQA, the Draft EIR includes two alternatives that would reduce impacts on historic resources. The Full Preservation Alternative, as shown on this slide, would retain the theater building with some minor alterations and would include a new 100-unit building, shown as W5, and a new five-unit building shown as NW4. This alternative would construct 2,870 units, or 60 less than the proposed project, and would include 3.2 acres of open space, or 2.8 less than the proposed project.

Next slide.

Under the Partial Preservation and Relocated Parking Alternative, the theater would be partially retained and parking would be relocated to minimize transit impacts. The theater building would incorporate the new NW2 building, which is an eight-story, 130-residential-unit building. This is alternative would include 2,890 residential units, or 40 less than the proposed project, and similar other uses, including six acres of open space. This alternative also includes the relocation of parking from E3 to the southwest corner to avoid significant transit impacts along 20th Avenue.

Next slide.

As another alternative, we put forward the Code Compliant Alternative, which was provided to show the development potential at the site under existing land

use and zoning regulations. Under this alternative, development would be about 46 percent less than under the proposed project, and there would be no buildings above 65 feet. This alternative would include about 2,000 housing units, 1.5 acre of open space, and would not include any hotel services or institutional uses. In addition, this alternative would not include any street network changes to 20th Avenue. And this alternative was also tailored to avoid or substantially reduce significant impacts related to transportation, noise, air quality and wind.

Next slide.

The Reduced Density Alternative was developed to substantially reduce significant and unavoidable impacts of the proposed project. Overall, this alternative would result in 36 percent less building than the proposed project, and buildings would be up to 80 feet in height. This alternative would produce approximately seventeen hundred housing units, about 75,000 square feet of retail space and would maintain the six acres of open space, as proposed in the project. It would also include a hotel and non-retail uses similar to the proposed project. This alternative would avoid or substantially reduce significant and unavoidable impacts related to transportation, noise, air quality and wind.

Next slide.

I know that I just covered a lot of information, and I put together this table for you to show you a handy comparison of all the numbers I just threw at you. As shown, the main difference between the five alternatives are the number of proposed housing units and open space. So I'm gonna move forward to this slide, but you do have it in your printout.

Next slide.

Now that we covered the proposed project, potential environmental impacts and alternatives, I would like to give a quick overview of where we are in the environmental process and the next steps for this project.

Next slide.

As shown in this slide, we are currently in the public comment period. Once the Draft EIR comment period concludes, we will prepare a Response to Comments document and a Final Environmental Impact Report that we anticipate will be back before this Commission later this year for certification.

Next slide.

As a reminder, we are here to receive comments on the adequacy of the EIR by the public and the Commission. As I previously mentioned, comments received

today will be responded to in writing.

Written comments will be accepted until 5:00 p.m. on February 13, 2023. While staff is available to answer clarifying questions about the EIR process, comments will be fully responded in the Response to Comments.

Please also note that a court reporter is here today virtually to record these proceedings. Therefore, when you speak, please be sure to state your name, its spelling, and to speak slowly and clearly so that the reporter can make an accurate transcript.

Thank you so much for your time.

COMMISSION SECRETARY IONIN: Okay. We should open up public comment.

Members of the public, this is your opportunity to address the Commission on this Draft EIR. Again, we're taking comment on the adequacy and accuracy, not the project itself.

MEMBER OF PUBLIC: Excuse me.

Good afternoon, ladies and gentlemen. My name is Jim Herlihy. I live in the Lakeside subdivision. I'm also a member of the Lakeside Property Owners Association.

A little bit of history, the Lakeside subdivision consists of 500 homes bordered by Junipero

Serra, Sloat Boulevard, 19th Boulevard -- 19th Avenue, rather -- sometimes it seems like a boulevard -- going out as far as the Chevron gas station.

As I said, I'm a member of the Lakeside Property Owners Association. We've lived there since 1987.

I-Herlihy3-1

CEQA guideline section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly obtain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This Draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5.1 outlines Alternatives (B), (C), (D), and (E), which range from 2,890 dwelling units to 1,758 dwelling units. Assuming two-person occupancy per unit, that would result in approximately 5,600 new residents, on the high end, or 3,500 new residents on the low end, on the Stonestown property. Today, there is no resident on that property.

Unavoidable negative impacts have been detailed in the DEIR and were also detailed by Miss Florentina. And those negative -- unavoidable negative impacts are noted in the Draft, and they impact transit, traffic, emergency services and infrastructure, including sewer

I-Herlihy3-1 (cont.)

and water. No consideration is given to an alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure. Such an alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor and Lakeshore.

I-Herlihy3-2

I realize my time is up. Simply would like to close by saying that the proposed 18-story, 200-room hotel is inconsistent with their goal of mixed residential and commercial.

I-Herlihy3-3

And finally, the proposed -- it's essentially a towering wall of apartments which would go from Eucalyptus to Buckingham Way, approximately 0.25 miles, and no analysis has been done on the environmental impact of having a towering wall on the west side of 19th Avenue --

COMMISSION SECRETARY IONIN: Thank you, sir. That is your time. But you can always submit your written comments as well.

MEMBER OF PUBLIC: I have copies for you all.

COMMISSION SECRETARY IONIN: Great.

Okay. Any other member of the public in the chambers wishing to submit their testimony, you need to come forward.

Seeing none, we'll go to our remote callers.

COMMISSIONER TANNER: We might need to remind callers they have to press star, six to be heard.

COMMISSION SECRETARY IONIN: Indeed. Thank you, Commission President.

MEMBER OF PUBLIC: Hello, can you hear me?

COMMISSION SECRETARY IONIN: We can.

MEMBER OF PUBLIC: Hi. Good afternoon, commissioners. Jake Price on behalf of the Housing Action Coalition.

O-HAC-1

I'd like to first commend the interpretation team, the Planning Commission and the Planning staff for your flexibility earlier in this hearing.

I am here to offer support for the Stonestown Development Project and believe that the Draft EIR is sufficient and hope that the project moves forward with the maximum number of housing units that would not require an EIR re-submittal.

Our project review committee endorsed this project back in December of 2022 and gave especially high marks to the land use and density of the project. We are tremendously excited to see this innovative project revitalize the area and ask that the Commission move forward in approving this EIR at its earliest convenience.

Thank you.

COMMISSION SECRETARY IONIN: Again, you need to press star, six to unmute yourself.

MEMBER OF PUBLIC: Can you hear me?

COMMISSION SECRETARY IONIN: Yes, we can.

MEMBER OF PUBLIC: Perfect.

Hey, my name is Roland Maldonado. I was a past five-year resident in SF's Ingleside District 11. I live in Oakland now for the past year.

I-Maldonado-1

I'm calling in support of Stonestown Development EIR. This is -- the EIR is missing things like prospected environmental benefits instead of the short-term project environmental impact. This project provides sustainable alternatives for biking from Ingleside's Holloway Street through SF campus -- which I've done before, even walking through it -- to Stonestown beneath an Irish sunset. And it's pretty safe; right?

Moreover, this opportunity provides in-filling of housing space at affordable market rates to keep and grow the diversity of Ingleside, where Blacks were displaced before. And some callers against EIR approval are familiar with such history in the past.

This multi-development narrowly promotes SFMT ridership with the M-Line as well, buses, and even

I-Maldonado-1 (cont.)

walking within the new 15-minute walkable neighborhood as well. Plus it's a multi-use neighborhood.

Please consider the future positive environmental impacts this project has going forward with this already satisfactory EIR document.

Thank you so much. Have a great day, everyone.

MEMBER OF PUBLIC: Good afternoon, commissioners. My name is Jonathan Bunemann. I live in District 2, and I'm with the pro-housing neighborhood organization, Northern Neighbors.

O-NorthernNeighbors-1

And I'm calling in in support of this Stonestown Development draft EIR. The, you know, EIR is adequate and comprehensive. Let's not be -- let perfect be the enemy, you know, of the good here.

I think one of biggest issues in housing in San Francisco is that things get delayed over and over again and that the process takes forever. So let's make good progress here in the process, not delay it further, and approve the Draft EIR.

Thank you.

MEMBER OF PUBLIC: My name is Tara Hardesty, and I live within a mile of the project.

I-Hardesty-1

I believe I'm calling in support for the Draft EIR. I've participated, over the last the several years, in community outreach efforts by the sponsor, and I've

I-Hardesty-1 (cont.)

looked at these plans. I believe this is a really smart use of this land and a good place to build significant housing which we desperately need.

I'd like to encourage the Commission to take the next steps to approve -- or take -- approve the draft EIR and move forward in the next steps to having this development realized.

Thank you.

COMMISSION SECRETARY IONIN: Again, if you're being asked to unmute yourself, you need to press star, six.

When you're asked to unmute yourself, you need to press star, six.

MEMBER OF PUBLIC: Good afternoon.

Can you guys hear me?

COMMISSION SECRETARY IONIN: We can hear you just fine.

MEMBER OF PUBLIC: Hi. My name is Dena Aslanian-Williams, and I'm the immediate past president of the West of Twin Peaks Central Council.

I-Aslanian-Willams-1

And the only thing I came to say today is that this Draft EIR and the company has definitely presented itself to the community. They've been to West of Twin Peaks meetings a few times and presented the project. And I think that this Draft EIR is complete and should be

I-Aslanian-Williams-1 (cont.)

approved.

There are questions and requests that we have, and we have sent a letter to that effect by the chair of our land use committee. So there are things to be answered, such as the infrastructure, mix of housing, et cetera. But as far as this Draft EIR, it should be approved.

Thank you very much.

COMMISSION SECRETARY IONIN: Mr. Kleinfelter? Mr. Kleinfelter, are you with us?

Okay. Let's take the next caller.

Again, when you're being asked to unmute yourself, you need to press star, six.

MEMBER OF PUBLIC: Hello?

My name is my Mee Mee Kiong. I live in the Balboa Terrace neighborhood, which is not very far away from Stonestown Development.

I-Kiong2-1

I like a lot about the Stonestown Development. My main concern is the traffic situation on the -- going to South Bay. Many residents in this neighborhood travel to the Silicon Valley to work. In fact, I think we are kind of well known to be, you know, the suburb of the Palo Alto area. So I am just really concerned about the number of residents that are going to be in this neighborhood and the traffic that's going to be

I-Kiong2-1 (cont.)

generated. And there's a lack of public transportation from this particular area to Silicon Valley, and the only way to travel besides (unintelligible) the buses, or to take buses, is by cars.

Pre-COVID, this situation is already quite above that situation. And with the number of residents' parking spaces, it's just going to generate even more traffic. And as long as the developer adequately address that particular stretch from 19th down to Silicon Valley, I would really appreciate that. I just can't see how the number of people added to this particular location can eliminate or relieve that kind of traffic situation.

MEMBER OF PUBLIC: Can everybody hear me?

COMMISSION SECRETARY IONIN: We can.

MEMBER OF PUBLIC: Great.

I-Seratti-1

My name is Karen Seratti, and I live about a mile away from Stonestown. And I can't tell you how excited I am to see something like this in our area that's so close. We lack housing, as everybody knows, in this city, and the -- so I'm absolutely thrilled with this proposal, and I -- for many reasons: the housing, the walkable space, the proximity to San Francisco State. How fortunate for these college students to be so close to a proposed living and mixed-usage space as this one.

So I absolutely ask you to move forward to

I-Seratti-1 (cont.)

approve this EIR as it is. And I think it's a wonderful, wonderful contribution to our area. Thank you so much. And this'll make the west side so much more exciting and livable than it is right now.

Thank you.

MEMBER OF PUBLIC: Hello?

COMMISSION SECRETARY IONIN: Yes.

MEMBER OF PUBLIC: Thank you.

I-CLee-1

My name is Chen Young Lee. I am in support of the Stonestown Project and hope that it moves forward with the maximum amount of units and hope that the Planning Commission takes the necessary steps to move forward with the -- what's that? -- the EIR.

I spent my time going to the high school there on Eucalyptus, so I spent a lot of time walking back and forth between Stonestown and the high school. The space towards the -- toward (unintelligible) high school and the Ralph Nicol Park, they're unactivated space. When I was a student there, me and my friend, we've been mugged through that -- in that area because it's a very quiet area. So the intimacy (unintelligible) all residents and has a more accurate space. I think it's a great use of the (unintelligible) as of right now.

Thank you.

MEMBER OF PUBLIC: Hi. My name is Martin Munoz.

I-Muñoz-1

I'm calling in support of the Draft EIR for the Stonestown redevelopment, particularly because a mall like Stonestown was built during a time in which a lot of development was car-centric. And unfortunately, this created huge scars throughout the city where, you know, it's not walkable. You can't really feel comfortable there unless you're in a car. And I think this will correct the wrongs of the past by adding housing, by adding walkable spaces, by adding green spaces. And importantly, it's on a Muni Metro line, which will be great for people.

Oftentimes, the West side has quoted a lot of opportunity, like great parking, great schools and not enough housing for the people to be able to take advantage of that. So this development will right those wrongs as well. And I hope you will agree and pass -- and approve this EIR.

Thank you.

MEMBER OF PUBLIC: Eileen Boken, CSFN speaking on my own behalf.

I-Boken-1

When this item was on the agenda for the February 2nd meeting, I was caught off guard for a number of different reasons. I've been following this project since pre-pandemic years, both attending in-person events and virtual meetings. Each of these involved only

I-Boken-1 (cont.)

project sponsors and their consultants. Planning staff was never included. There is a community steering committee, but it's only by invitation.

The PIM website still lists Xinyu Liang as the assigned planner even though the department staff directory lists her as a current planner for District 6. The PIM website also states that the shadow study was placed on hold on September 7th of last year.

I-Boken-2

During the walking tour last year, the consultant stated that the UA cinema would be demolished. Navy report subsequently stated that the cinema had been -- had come before the Historic Preservation Commission, and even the HPC was not listed on the project website as a milestone.

That the public comment period for the Draft EIR started over the holidays on December 14th is a practice that the Department has been heavily criticized for in the past.

I would concur with the commissioner's comments from the February 2nd meeting on how this is late to come before the Commission, as half of the plans and half of the community benefits have already been completed. I

I-Boken-3

would add the following: The cumulative impacts should include not only SF State housing and Park Merced but

I-Boken-4

also Balboa Reservoir; the issue of limited evacuation

I-Boken-4 (cont.)

routes from the site should be investigated; the issues

I-Boken-5

of resiliency and climate change, as the project will have dedicated emergency firefighting water pipes, but the City has stated that there aren't funds to connect them to the city's pipeline network.

I-Boken-6

Besides catastrophic fires, the issue of the project's impact on drinking water has not been adequately addressed. This city has experienced water rationing, and a large project would have impacts on the water system even further.

It should be noted that the City has commissioned a report by URS to identify sites for a desalination facility. The preferred site in the URS report is the Oceanside treatment facility not far from the project site.

Thank you.

MEMBER OF PUBLIC: Good afternoon, everyone.

I-Marzo-1

I'm calling in strong support. This is Steve Marzo. I'm a resident in the Ingleside neighborhood right down the street of the Stonestown Development. I go to this mall all the time. I'm a, you know, a big fan of the mall, and I strongly believe that it should be used for more housing.

And looking at the EIR, it looks to be adequate for the purposes of environmental review. And, you know,

I-Marxo-1 (cont.)

let's get it done. Let's get this passed so we can get more housing in San Francisco because we need it.

Thank you so much for your time. Please pass the EIR.

COMMISSION SECRETARY IONIN: Okay. Last call for public comment. You need to come forward if you're in the chambers; or if you're calling in remotely, you need to press star, three; if you're on Webex, you need to raise your hand.

Seeing no additional request to speak, commissioners, public comment is closed, and this is now for your review and comment.

COMMISSIONER TANNER: All right. Thank you. Good to see so many callers reading the EIR, getting in on it.

Wondering if there are commissioners who have comments that they would like to make in response to the Draft EIR.

Commissioner Diamond.

A-CPC-Diamond-1

COMMISSIONER DIAMOND: We're at this pivotal point in time where not only is CEQA a very important consideration in the approval of the project, which is not yet in front of us, but we are also now dealing with a new Housing Element that's been adopted and certified that mandates that we find room for 82,000 additional

A-CPC-Diamond-1 (cont.)

units with the focus being on the west side. And this is one of the prime opportunity sites where we can really add a significant amount of housing so long as it is done in an appropriate manner with Urban Design and with the appropriate infrastructure, in part, to ensure that whatever we add here is still beautiful and livable and adds to the quality of life in the city.

But approving units on paper doesn't do us any good. We need the developer to actually build them. And so I am hoping that when we get to the next stage, that the elements for this project will build in necessary flexibility that will allow the developer to pursue various parts of this project at appropriate times to meet market demand and to make changes as necessary.

And so what I am curious about is whether or not -- is really the limits of the existing analysis that's been done to allow for that flexibility in the future. And let me just give a couple of examples.

If they decide not to build the hotel and to add housing units instead, is the EIR, as currently drafted, adequate to handle that without the need for, you know, a supplemental EIR? Same thing if they decide to take out some of the retailers institutional uses and add in more housing units instead to go above the 3,000, even with the variant, or if they decide to add an extra floor or

A-CPC-Diamond-1 (cont.)

two, or three or four, or whatever it is on various parts of the project, because that's what makes sense from an economic perspective in order to move it forward without having to do a supplemental EIR.

So really the CEQA question that I have, that I'm hoping you can respond to is that, at the limits of this document, how far it can go in terms of providing coverage for the entitlements. And I'm -- as I say, entitlements that include flexibility to allow for shifts among the various uses.

COMMISSIONER TANNER: Thank you.

Commissioner Moore.

A-CPC-Moore-1

COMMISSIONER MOORE: I believe that the Draft EIR in front of us is accurate and complete. It has an unusually large number of alternatives; mostly, we see two or three. This really stretches it and gives everybody really the subtleties of what can happen. This is only -- these are comments for the Draft EIR, not an exchange between us and staff.

A-CPC-Moore-2

The one thing I would like to suggest is that the graphics, which show the theater, punch out the theater more strongly because your eye gets lost, given the line weight of how that particular object -- which is much of the alternatives -- pops into your eye when you look at the alternatives. It may be the smallness of

A-CPC-Moore-2 (cont.)

what the EIR shows, but I would strongly suggest that it is more strongly delineated and popped out in the graphics.

A-CPC-Moore-3

The other thing -- and that is my own personal comment, probably not really a DEIR comment -- the New Formalist-styled theater and its value kind of somewhat eludes me. I will be very honest. I have looked at it. I've been there.

The site is complicated due to the fact that the theater is actually in a bowl, so to speak, which makes the usability of that particular site, even in -- under any theater configuration difficult because the theater, as it is built, does not meet ADA requirements of how you get there.

That said, I would like to see a slightly larger elaboration historically, with pictures or whatever, to explain the New Formalist style. Having practiced in my field and my entire education, which is quite extensive, in architecture and architectural history, et cetera, the style of New Formalist has never crossed my desk. And it may be a regional expression. There is obviously similar styles practiced by Eero Saarinen with concrete that takes form similar to what's attempted here.

Without trying to sound facetious, I would like to see a slightly more in-depth explanation of the value

A-CPC-Moore-3 (cont.)

of this building and its stylistic importance.

A-CPC-Moore-4

Those are my comments. Otherwise, I believe that the -- what's in front of us is very thorough and goes into all of the aspects that we need to consider.

Thank you.

COMMISSIONER TANNER: Great. Thank you.

Commissioner Koppel.

A-CPC-Koppel-1

COMMISSIONER KOPPEL: Yeah. Thanks again to the environmental review staff. You guys always do a very thorough job. So thanks again.

But I would like to echo the comments of Commissioner Diamond. You said it best when you said opportunity site. I mean, 20 acres in this seven-by-seven-mile-wide city is a huge opportunity. I just want to make sure we're not limited, with our limited horizontal footprint, in what we can do going upwards.

COMMISSIONER TANNER: Thank you.

A-CPC-Tanner-1

I'll align myself with those comments as well. In particular, thinking about some of the, you know, mega multi-phase projects we have in this city that, you know, get going, and then they run into a problem and then need to rethink what they're doing and how the EIR does or does not allow that type of flexibility for, you know, a future that's unknown, and that we're trying to plan for

A-CPC-Tanner-1 (cont.)

as best we can. So having, you know, a ceiling that's higher, maybe, than we need it to be in terms of, you know, dwelling units, in order to shift as needed or shift space around. Maybe it is a hotel or proposed as another use now but dwelling units make a better -- better proposition in the future.

A-CPC-Tanner-2

But I just again want to thank the staff for their great work and again for the project sponsor for bringing it forward. We're very, very excited about this and really just want to commend a very transformative proposal that both keeps the mall and brings it into -- really a whole new part of this neighborhood into being.

So we're very excited and thank, again, staff and for members of the public, again, calling in.

And I don't see any other hands or comments from other commissioners.

COMMISSION SECRETARY IONIN: Indeed, commissioners. That will conclude your agenda today.

COMMISSIONER TANNER: Thank you all for a short but very interesting hearing.

We're adjourned.

(Whereupon the proceedings adjourned at 3:18 p.m.)

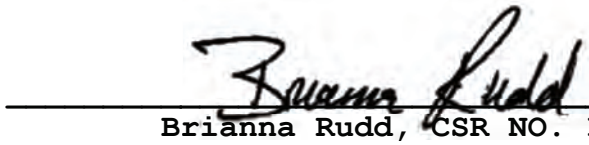
---oOo---

REPORTER'S CERTIFICATE

I, BRIANNA RUDD, a Shorthand Reporter, State of California, do hereby certify:

That said proceedings were taken before me at said time and place, and were taken down in shorthand by me, a Certified Shorthand Reporter of the State of California, and were thereafter transcribed into typewriting, and that the foregoing transcript constitutes a full, true and correct report of said proceedings that took place.

IN WITNESS WHEREOF, I have hereunto subscribed my hand this 24th day of February 2023.



Brianna Rudd, CSR NO. 13668

ATTACHMENT B

Draft EIR Comment Letters and Emails

From: Luo, Yunsheng@DOT <Yunsheng.Luo@dot.ca.gov>
Sent: Wednesday, February 8, 2023 2:31 PM
To: Craciun, Florentina (CPC)
Cc: Leong, Mark@DOT; Zushi, Kei (CPC); Wietgrefe, Wade (CPC)
Subject: Comments for Stonestown Development Project, DEIR

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon Florentina,

Thank you for the opportunity to review the DEIR for the Stonestown Development Project. We had a call with Kei and Wade this Monday regarding our comments. One question came up during the meeting was the location for the Caltrans project 04-4W490. But our project management team told me that there are multiples locations still pending to be finalized. Please see our comments below.

Comments

A-Caltrans-1

Project Coordination
Please specify the design and construction schedule of the proposed project. Please coordinate this project with the following adjacent Caltrans projects:

- Project 04-0AA62: 19th Ave Pave Rehab, design to be completed in June 2024
- Project 04-4W490: Traffic Signal Replacement (locations are pending to be finalized), design to be completed in FY 2026/27

Encroachment Permit
The following project elements identified in the DEIR will need the Caltrans-issued encroachment permit:

- Figure 2-22: the road approach and road connection off the State Highway System for the new streets
- Figure 2-23: the new proposed water line within the limits of Caltrans' Right of Way (ROW)
- Figure 2-26: the new private sewer line within the limits of Caltrans' ROW
- Figure 3.B-4: the proposed sidewalks within the limits of Caltrans' ROW

Feel free to reach out to me if you have any questions.

Best,

Yunsheng Luo
Associate Transportation Planner
Local Development Review (LDR), Caltrans D4
Work Cell: 510-496-9285
For early coordination and project circulation, please reach out to ***LDR-D4@dot.ca.gov***

San Francisco Planning

A-HPC
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

February 7, 2023

Ms. Lisa Gibson
Environmental Review Officer
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

Dear Ms. Gibson,

On January 18, 2023, the Historic Preservation Commission (HPC) held a public hearing for the Commissioners to provide comments to the San Francisco Planning Department on the Draft Environmental Impact Report (DEIR) for the proposed Stonestown development project at 3251 20th Avenue (2019-014485ENV). After discussion, the HPC arrived at the comments below on the DEIR:

A-HPC-1
- The HPC had no comments on the analysis of historic resources on the site and found the analysis to be accurate. Some commissioners expressed their preference regarding the architectural style of the theater.

A-HPC-2
- The HPC agreed that the DEIR analyzed a reasonable and appropriate range of preservation alternatives to address historic resource impacts. Some commissioners weighed the merits of the different alternatives and expressed a preference for one alternative over another.

A-HPC-3
- Commissioner Black inquired why the additional building W5 added to the Full Preservation Alternative was also not incorporated within the Partial Preservation Alternative. She thought the partial preservation alternative that saved the theater lobby was successful and supported it over the full preservation alternative.
- Commissioner Johns found the changes made to the partial preservation alternative to be acceptable.
- Commissioner So requested clarification as to whether or not the project team explored the possibility of constructing above the theater or explored reduction of other non-residential square footages on the site to increase the residential units under the preservation alternatives.

HPC Comments on the Proposed Project

A-HPC-4
- Commissioner Foley expressed support for the proposed project and expressed the need for the City to construct housing.

The HPC appreciates the opportunity to participate in review of this environmental document.

Review of CEQA Documents for Non-SFPUC Projects
San Francisco Public Utilities Commission

Document Name: **DEIR**
Project: **Stonestown Development Project**

SFPUC BEM Coordinator: **Monica Wu**
Date: 1/18/2023

	Comment Number	Commenter Name & SFPUC Division	Document Section Title or Section Number	Page Number and Line or Paragraph Number	Figure Number	Review Comment
A-SFPUC-1	1	Taylor Nokhoudian and Fan Lau, Water Resources Division	2.D.9 Infrastructure and Utilities	page 154 (2-36), paragraph 2	N/A	Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a non-potable use as it is required. Also, the Water Supply Assessment indicates that residential laundry would be another end use for non-potable supply in addition to toilet and urinal flushing, irrigation, and cooling tower. Please list all anticipated end uses of non-potable supply.
	2	Taylor Nokhoudian, Water Resources Division	2.D.9 Infrastructure and Utilities	page 155-156 (2-27 through 2-38)	Figure 2-24 and Figure 2-25	Why are the figures not showing non-potable water piping extending to building NW1?
A-SFPUC-2	3	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 501 (3.G-1), paragraph 2	N/A	Edit paragraph to align with 2020 UWMP: - Remove "Hetch Hetchy" in first sentence - Change to 26 wholesale customers instead of 27 - Revised last sentence as follows: "Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, ~~and~~ recycled water, and non-potable water."
	4	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 502 (3.G-2), paragraph 2	N/A	Last sentence of paragraph may be redundant since similar to next paragraph. Suggest removing. If not, revise as follows to align wiht 2020 UWMP: "During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed."
	5	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 502 (3.G-2), paragraph 3	N/A	Revise sentence as follows to align with WSA language: "Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~corresponding to water use reductions throughout the SFPUC's regional water system service area, including San Francisco."
	6	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 503 (3.G-3), paragraph 1	N/A	At top of page, add following language before sentence that reads "To date, those negotiations are ongoing": "On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the State environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement."
	7	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 503 (3.G-3), paragraph 3	N/A	Edit last sentence as follows: "The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant and the 2020 plan~~."
	8	Taylor Nokhoudian, Water Resources Division	3.G.3 Regulatory Framework	page 508 (3.G-8), paragraphs 4-5	N/A	Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a non-potable use as it is required.
	9	Taylor Nokhoudian, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 512 (3.G-12), paragraph 2	N/A	Discussion of the Non-potable Ordinance requirements differs from what is described on page 508 (3.G-8). These should be consistent with each other and should follow the language on page 508.

Review of CEQA Documents for Non-SFPUC Projects
San Francisco Public Utilities Commission

Document Name: **DEIR**
Project: **Stonestown Development Project**

SFPUC BEM Coordinator: **Monica Wu**
Date: 1/18/2023

A-SFPUC-2 (cont.)

Comment Number	Commenter Name & SFPUC Division	Document Section Title or Section Number	Page Number and Line or Paragraph Number	Figure Number	Review Comment
10	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 512 (3.G-12), paragraphs 2-3	N/A	The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.
11	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 513 (3.6-13), paragraph 5	N/A	The existing wording suggests that the regional treatment and distribution system is sized to meet the growing water demands, but that might be misleading. Revise sentence as follows: "The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections, ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities."
12	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 514 (3.6-14), paragraph 3	N/A	Similar comment as above. The existing wording suggests that system capacity is sized based on the projected demands, but that is incorrect. Revise sentence as follows: "The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water demand projections ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~, supplies for which would be accommodated by the existing regional water treatment and transmission facilities."
13	Taylor Nokhoudian, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 515 (3.G-15), paragraph 3	N/A	Under "Operation", the description of how the project plans to comply with the Non-potable Ordinance should be consistent with how it's described above on page 508 (3.G-8). Currently the description is inconsistent.
14	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 515 (3.G-15), paragraph 3	N/A	Same comment as above regarding difference in resident and employee estimates. The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.
15	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 515 (3.G-15), paragraph 5	N/A	The Water Supply Assessment does not make any determination based on the potable portion of the project's demand estimate. The assessment is based on the total project demand. Revise sentences as follows: "The water supply assessment determined that the ~~variant's potable water demand of 0.152 mgd would contribute 0.19 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045. The~~ variant's total water demand of 0.249 mgd, which does not account for the 0.097 mgd savings anticipated through compliance with the non-potable water ordinance, would represent 0.31 percent of 2045 total demand for the city."

Ingleside Terraces Homes Association

O-ITHA

P.O. Box 27304 ● San Francisco, California 94127

Feb. 10, 2023

Florentina Craciun, EIR Coordinator
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
CPC.Stonestown@sfgov.org

Re: Project Title: Stonestown Development Project

This letter, on behalf of the Ingleside Terraces Homes Association, a neighborhood organization representing 750 households to the east of the proposed project, is our response to the draft EIR. We have the following issues and concerns regarding the identified impacts as well as the lack of identifying additional impacts and their satisfactory analysis and mitigation enumerated below.

IDENTIFIED IMPACTS

I-ITHA-1 **Section 3.B, Transportation and Circulation**

- We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA.

I-ITHA-2 **Section 3.C, Noise and Vibration**

1. We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a non-profit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences.

I-ITHA-3 **Section 3.G, Utilities and Service Systems**

- We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify.

I-ITHA-4

- We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used.

MISSING IMPACTS

I-ITHA-5

- **Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact be identified, analyzed, and mitigated with additional staffing or a manned police sub-station.

- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled.

I-ITHA-6

- **Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks, streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston.

I-ITHA-7

- **History:** We understand that in recognition of the potential impact of the original Stonestown Mall project on the surrounding neighborhoods, the original proposal was modified to protect the quality of life of these communities. We request that the EIR detail and examine the initial City approval process for Stonestown and the mitigating measures taken at that time and ensure that is maintained if still relevant to place this project in the proper historical context.

We look forward to your careful consideration of these community issues and the preparation of a Final EIR that addresses the issues we have raised above.

Sincerely,

Mark V. Scardina, President
Ingleside Terraces Homes Association

SAN FRANCISCO STATE UNIVERSITY

UNIVERSITY ENTERPRISES

1600 Holloway Avenue
San Francisco, CA 94132

Tel: 415/338-6880
sfsu.edu

February 13, 2023

Florentina Craciun, EIR Coordinator
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

Via email to: cpc.stonestown@sfgov.org

Re: Comments on Draft Environmental Impact Report
Stonestown Development Project

Dear Ms. Craciun,

On behalf of San Francisco State University, I am pleased to submit the following comments on the draft environmental impact report for the Stonestown Development Project. As the project's largest neighbor, with our Holloway campus just south of the project site, the university has taken great interest in the planning that has been underway at Stonestown. We have appreciated the opportunity to attend regular community meetings and planning charrettes with others from the neighborhood and throughout the City, and we very much appreciate the thoughtful and engaging community outreach program pursued by the developer so as to garner community feedback. With over 20,000 students and 3,000 employees, our campus community is inherently tied to Stonestown; the City's transportation and utilities infrastructure, housing stock, public open space, and many other vital services are shared among the communities near the project site. Thus, coordination, ongoing planning and dialogue are essential components to ensuring a vibrant, safe, well-functioning community.

Below, please find several comments on the Draft EIR for consideration as the Final EIR is prepared:

O-SFSU-1

1) Transit Services: With a significant increase in the anticipated number of transit riders on the SFMTA's M-Line, please analyze whether there may be value in any of the following approaches:
   - A) extending platforms at stations along the corridor to permit three-car trains;
   - B) extending the J-Church line to the Holloway/SFSU or Winston/Stonestown Stations, so that both the M and J lines can serve the project site and others in the vicinity.

O-SFSU-2

2) Housing: Currently many SF State students, faculty and staff face long commutes to reach the university campus next door to the project site. Please consider whether unique initiatives exist which may reduce travel times for those affiliated with SF State by providing affordable housing. Such an approach would alleviate transit and transportation impacts as well as greenhouse gas emissions. Additionally, in considering the types of housing being offered, please consider the specific needs of the SF State community, particularly as they would complement the university's offerings.

O-SFSU-3

3) Pedestrian and Bicycle Connections: Currently, there is a great deal of pedestrian and bicycle activity between SF State and the project site. We expect this level of activity to increase significantly under the proposed project—both from residents and patrons of the Sonestown site, as well as residents and students at SF State. It will be critical that bike and pedestrian routes are mutually planned and implanted to ensure safe and clear paths of travel. Ample bicycle parking will also be needed to support this effort.

O-SFSU-4

4) Street Configuration: Please assess the proposed layout of both Buckingham Way and Winston Drive, as they relate to the anticipated increase in travel between SF State and the project site. We expect that many students, faculty and staff who live on campus or who will live at the project site and walk to SF State will cross one or both of these streets. Safe passage, clear paths of travel, and appropriate vehicle signals will be critical to support this activity.

O-SFSU-5

5) Workforce Considerations: SF State plays a key role in developing the City's and the region's workforce, and the opportunities for our students to gain hands-on, practical experiences in the workforce may be significant. we would welcome the opportunity to consider partnerships that provide workforce training, and related collaborations.

O-SFSU-6

6) Open Space: As a public university, SF State is a beloved place to visit—to enjoy the quad, pathways and other spaces for outdoor recreation and enjoyment. With the addition of a large residential community please consider how the project's population will be provided with open space for outdoor recreation and enjoyment to complement those provided at the university and surrounding environs. Perhaps there are options that might include accessible rooftop gardens, which would provide views of the ocean and the lake nearby.

O-SFSU-7

7) Utilities:

- A) SF State occasionally experiences power outages and we are considering methods whereby we may have access to redundant power supplies from differing sources. Please consider whether the project site has ample access to utilities and whether additional sources are needed to support this growth.

O-SFSU-8

- B) Please consider electric/battery generators, rather than gas-powered so as to reduce air pollution.

O-SFSU-9

- C) The project considers water demand for landscape irrigation and cooling. Please assess whether there might be an opportunity to access recycled water via

O-SFSU-9 (cont.)

purple pipes from nearby sources. Extension of such infrastructure to the project site may benefit other projects as well.

Thank you for your consideration, and please let me know if I can provide any additional information.

Sincerely yours,

Jason Porth
Vice President
University Enterprises

SIERRA CLUB
FOUNDED 1892

SAN FRANCISCO GROUP

January 27, 2023

Florentina Cracium, Coordinator
CPC.Stonestown@#sfgov.org
Planning Department, 1660 Mission Street
San Francisco CA 94103-2414

Re: Stonestown DEIR Comments, Case No. 2021-012028ENV

Dear Ms. Cracium,

I-SierraClub-1 Thank you for the opportunity to comment on the subject SEIR. The Sierra Club appreciates your electronic publishing of the DEIR to save paper, printing and mailing cost.

The subject document has over 600 pages that attempt to deal with prospective environmental failures. Thankfully, the Stonestown project, of dense housing near good transit is inherently a benefit to the environment by providing residents with thermally efficient housing and a more economic life of less driving. The Sierra Club has reviewed the subject Draft EIR and we have a few suggestions to improve the final EIR and make the ultimate project more even beneficial to the environment:

I-SierraClub-2 1) Because of San Francisco's great need of additional affordable housing the Study should have included a statement about how many additional affordable units, of what kind, would be provided if an outside source of funding, of how much, was available.

I-SierraClub-3 2) Because of SF's increasing numbers of elderly residents and our great need for market rate housing the study should have included as a partial alternative the impacts of using the eighteen story building as a senior "independent living" residence. This alternative should note that many of the residents of this senior facility would be people who are ready to downsize from a two or three bedroom home or apartment but now see little advantage to moving. If they can move into a nearby senior residence they will release their larger, nearly empty, houses for families who need more space. In addition some of these homes have a lower floor that can be improved to provide a second housing unit, but, that is too big a project for an elderly person. An attachment is provided to show how this building might work as an Ideal senior residence.

3) Because of SF's great need of housing of all sorts the Study should have included an alternative of greater density and height (without shading an existing park) with up to the maximum number of units, with existing zoning, or more. This alternative would provide the developer with greater profits from the currently wasted parking lot land and more shoppers for

I-SierraClub-3 (cont.)

the remaining shopping center. The studies discussion of the problems and benefits of increased density on this site might give the public and their elected representatives a chance to select a larger project or a better understanding of why the proposed size is just right.

Another Sierra Club member may be commenting on other aspects of this project

Thank you for your consideration,

Howard Strassner, Member SF Group Executive Committee of the Sierra Club
419 Vicente, San Francisco CA 94116, 661-8786, (h,w)
email: ruthow1@gmail.com

From: aeboken <aeboken@gmail.com>
Sent: Monday, February 13, 2023 4:30 AM
To: Craciun, Florentina (CPC)
Subject: Stonestown Draft EIR Comments

DATE: February 13, 2023 (Submitted prior to 5pm.)

TO: Florentina Craciun
San Francisco Planning Department

FROM: Eileen Boken, President
Sunset-Parkside Education and Action Committee (SPEAK)

RE: Stonestown Draft EIR Comments

BACKGROUND

Due to redistricting, Stonestown is now in both Board of Supervisors Districts 4 and 7.

O-SPEAK-1

PROJECT SCOPE

The project proposal includes a 200 room hotel. The Westside is not a tourist or business destination. The hotel should be reassigned to housing.

The project proposal includes office space. The Westside is not a business destination. Also, there is a high commercial vacancy rate in the downtown core. The office space should be reassigned to housing.

The project proposal includes an increase in retail space. With increases in online retail, this increase should be eliminated.

HEIGHT

The tallest structure in the proposed project is eighteen (18) storeys. The tallest structure in the SFSU student housing site is ten (10) storeys. The tallest structure in ParkMerced is fourteen (14) storeys but at a lower geographic elevation.

SPEAK is advocating for the tallest structure in the Stonestown project to be ten (10) storeys mirroring the adjacent structures in SFFU student housing.

O-SPEAK-2

SB7 (Atkins)

SPEAK is strongly opposing the proposed application for SB7 (Atkins) streamlining. SB7 (Atkins) is a deeply flawed reauthorization of a previous bill.

O-SPEAK-3

UTILITIES AND SERVICE SYSTEMS

The project proposes to construct independent Emergency Firefighting Water System (EFWS) pipes onsite.

However, the Draft EIR states that the nearest hookup to the City's EFWS pipeline network is Ocean Avenue and San Fernando Way.

Although geographically closest, this hookup location doesn't appear to deliver the maximum benefits of EFWS.

Besides high volume, EFWS pipes and hydrants are designed to utilize high pressure.

The typical residential water pressure is 60 psi. The EFWS system can reach a maximum pressure of 328 psi.

However, this is dependent on EFWS hydrants and pumping stations.

There are currently two (2) EFWS pumping stations on the Eastside of the City.

For the Stonestown EFWS to operate effectively, there needs to be an ocean water pump station.

To achieve this, a possible configuration is hooking up to the EFWS pipe and hydrant on 19th Avenue at Ulloa and extending it to 19th Avenue and Buckingham Way.

This could connect to another section of EFWS pipes and hydrants from 19th Avenue and Sloat to Sloat and the Great Highway.

The ocean water pump station could be located in the vicinity of the Oceanside Treatment Facility.

An affiliate of Brookfield Properties is Brookfield Infrastructure. Brookfield Infrastructure should be well positioned to implement this EFWS expansion as part of the Stonestown Development Agreement.

A subsidiary of Brookfield Infrastructure is Poseidon Water.

Poseidon Water is the owner/operator of a desalination (desal) facility in San Diego County. The engineering firm for this facility is IDE Technologies.

It has been confirmed by IDE Technologies that it is technically feasible to engineer a combined EFWS ocean water pump station and a desal facility.

The structure would function as a desal facility during normal operations and bypass the desal process in an emergency to provide ocean water directly to the EFWS system.

This could also be included in the Development Agreement.

O-SPEAK-4

RELATED ISSUES

ParkMerced is nearby Stonestown. ParkMerced is owned by Maximus Real Estate Partners.

Maximus in currently in loan forebearance for the ParkMerced property and is expected to default in late 2023 or early 2024.

SPEAK would urge Brookfield Properties to negotiate with Maximus Real Estate Partners to acquire the ParkMerced property with the provision that the City have the option to purchase the property or parts of the property over the next thirty (30) years.

###

Sent from my Verizon, Samsung Galaxy smartphone

West of Twin Peaks Central Council
A Resource for Neighborhood Organizations West of Twin Peaks in San Francisco since 1936

PO Box 27112
San Francisco, CA 94127
http://www.westoftwinpeaks.org/

<DATE>

West of Twin Peaks Central Council
PO Box 27112
San Francisco, CA 94127

Florentina Craciun, EIR Coordinator
49 South Van Ness Ave,
Suite 1400,
San Francisco, Ca. 94103

Dear Ms. Craciun,

The West of Twin Peaks Central Council represents over twenty San Francisco neighborhoods and thousands of homeowners. It was formed over 80 years ago to provide input into the development and zoning of the community in which many have invested and raised families.

We have the following issues and concerns regarding the identified impacts as well as the lack of identifying additional impacts and their satisfactory analysis and mitigation enumerated below.

IDENTIFIED IMPACTS

O-WTPCC-1 **Section 3.B, Transportation and Circulation**

- We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA.

O-WTPCC-2 **Section 3.C, Noise and Vibration**

- We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a non-profit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences.

O-WTPCC-3 **Section 3.G, Utilities and Service Systems**

- We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify.

O-WTPCC-4

- We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used.

MISSING IMPACTS

O-WTPCC-5

- **Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing or a manned police sub-station.
- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled.

O-WTPCC-6

- **Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks, streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston.

O-WTPCC-7

- **History:** We recognize that the original Stonestown retail development would impact the surrounding neighborhoods and that impacts were identified and mitigated to protect the quality of life of these communities. We request that the EIR should examine the initial City approval process for Stonestown and the provisions made at that time and ensure that is maintained if still relevant to place this project in the proper historical context.

We look forward to your careful consideration of these community issues and your response.

Sincerely,

Stephen Martin-Pinto
President,
West of Twin Peaks Central Council

Representing Balboa Terrace Homes Association, Forest Hill Association, Forest Knolls Association, Golden Gate Heights Neighborhood Association, Greater West Portal Neighborhood Association, Ingleside Terraces Homes Association, Lakeshore Acres Improvement Club, Lakeside Property Owner's Association, Merced Manor Property Owner's Association, Midtown Terrace Homeowner's Association, Miraloma Park Improvement Club, Monterey Heights Homes Association, Mount Davidson Manor Homeowners Association, Mount Sutro Woods Owners Association, Pinelake Park Neighborhood Association, Saint Francis Homes Association, Sherwood Forest Homeowner's Association, Sunnyside Neighborhood Association, Twin Peaks Improvement Association, Westwood Highlands Homeowner's Association, Westwood Park Association and The Woods of San Francisco Homeowners Association

From: Bob Anthony <bobanthony46@gmail.com>
Sent: Tuesday, February 7, 2023 3:59 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

I-Anthony-1 We are vehemently opposed to the proposed redevelopment of Stonestown that would include the proposed 2900 housing units and an 18 story hotel. We have lived in this neighborhood all of our lives and have seen the increase in traffic and people explode over the years. The proposed project would absolutely destroy the quality of life in the area. The City of San Francisco has already deteriorated enough as it is.

Thank You,

Bob and Maha Anthony

From: Antonio Arbulu <arbuluanthony4@gmail.com>
Sent: Saturday, February 11, 2023 2:45 PM
To: CPC.Stonestown
Subject: Comment on Stonestown EIR

I-Arbulu-1 We reside in Merced Manor which is right
> across the street from Phase 1 of the project. We have just seen the plans for the parking lot near our home and are very concerned about the scope of the project and the construction noise that they estimate will take at least 4 years for Phase 1 alone, AND the noise and traffic that will be in our neighborhood forever
>

I-Arbulu-2 > It does not appear that the impact on our neighborhood has been adequately addressed. No one from the developer ever approached us for our input. They held open houses to say WHAT they were going to do— not for suggestions. Then in the final plan they changed the scope of Phase 1 with even bigger and taller buildings. The people they list as supporters do not live in the neighborhood. Of course they will support it because they will reap the benefits of visiting a massive new mall and then going home to their neighborhoods and leaving the noise and traffic to those who actually live here!
>

I-Arbulu-3 > There are 3 schools in our neighborhood spanning 8 blocks—a high school and 2 primary schools. You need to be here in the mornings before school to see first hand the chaos and gridlock every morning. Parents double park, block driveways, and honk at each other as they drop their kids off, and the students who drive themselves scour the neighborhood for parking spots.
>
> Adding hundreds of residents a block away —-many of whom will also seek parking—will only make it worse on our neighborhood
>

I-Arbulu-4 > Finally, the construction noise over a minimum of 4 years will be a terrible nuisance. Pile driving etc. Would YOU like to hear that from your home for 1/2 a decade? Of course not! So don't allow the developer to do that to us!
>

I-Arbulu-5 > The scope of Phase 1 must be scaled down to reduce the impact on the existing residents. This is not some remote parking lot that they want to develop with nothing around it, or in an empty downtown This is in the middle of our neighborhood. Please help us!
>
> [Name withheld for fear of retribution from the developer]

From: Laurie Berman <lmberman@earthlink.net>
Sent: Wednesday, February 8, 2023 12:19 AM
To: CPC.Stonestown
Subject: EIR.

Follow Up Flag: Follow up
Flag Status: Flagged

I-Berman-1 We have lived in Lakeside ll since 1975 and we do not approve of any of the changes mentioned in this EIR!!! For one thing the traffic will be a nightmare. Also I could have stayed in Manhattan if I wanted concrete canyons.
Sent from my iPhone

From: Cenpai <s.x.echarles@gmail.com>
Sent: Wednesday, February 8, 2023 1:11 AM
To: CPC.Stonestown
Cc: dlhsf1@aol.com
Subject: Objections to 4 Story Building behind Rolph Nicol Park

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

I-Cenpai-1 I am sending this email to voice my objections against the development of the building behind Rolph Nicol Park. I believe that having a building there is not only environmentally detrimental, but also a safety concern

I-Cenpai-2 for current residents. Environmentally, more traffic in that area will increase trash and garbage within the area. In addition, having a tall building there where dogs and kids alike gather will make it less safe. Crime has been on a rise in the neighborhood, and with a tall building blocking everything, crime will definitely increase. Do we really need a second tenderloin in San Francisco? I don't think so. Please keep this residential area safe and spacious before building more things and causing higher human traffic.

Best,
Inverness

From: Mary Chang <marymchang@yahoo.com>
Sent: Tuesday, February 7, 2023 8:41 PM
To: CPC.Stonestown
Cc: Mary M Chang
Subject: Subject: Draft Environmental Impact Report Stonestown Development Project Comments from Lakeshore residents

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Florentina Craciun, EIR Coordinator,

My name is Mary Chang, I reside on 57 Stratford Drive, San Francisco, CA 94132 (Member of Lakeside Property Owners Association.

I am writing to Oppose the the EIR on Stonestown development Project for the following reasons:

I-Chang-1 (1) Currently, there is a lot of traffic on 19th Avenue and Stonestown area. By having this project developed, it will create more congestion and significant noises

I-Chang-2 (2) It is very hard to find parking even for the Lakeshore residents right now, this project will create even more parking problems.

I-Chang-3 (3) We have a lot of foot traffic near the Stonestown mall, with the increase of traffic and populations, it will likely to have more car/pedestrians accidents.

I-Chang-4 (4) The air quality will get worsened with the proposed apartment and hotel construction

I-Chang-5 (5) It will increase the demand and the response time for public services from fire protection, police and emergency services

I-Chang-6 (6) Increase the risks posed by demolition of existing buildings for hazardous materials, directly affect our health for the existing local residents

I-Chang-7 (7) This project has a significant impact on increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore

I-Chang-8 (8) SFMTA streetcar platform is already at capacity during rush hours. can you address the impact of increased ridership.

Please listen to my voice and I look forward to hearing from you soon!

Regards,

Mary Chang

Email: marymchang@yahoo.com

From: Su-Syin Chou <susyinchou@gmail.com>
Sent: Sunday, February 12, 2023 1:04 PM
To: CPC.Stonestown
Cc: dlhsf1@aol.com; Anthony Chen; Chen, Yu-Lang (Angus)
Subject: Stonestown - 90-foot tall Residential Tower (OBOJECTIONS)

Dear Florentina Craciun, EIR Coordinator,

I, on behalf of my family, am sending in an objection to the Stonestown proposed development, specifically a 90-foot tall residential tower next to Rolph Nicol Park.

I-Chou-1 For years, we were informed that a 4-story building in that spot was proposed. Its Environmental Impact Report (EIR) will provide an overview of the project, in-depth studies of potential impacts, measures to reduce or avoid those impacts, maps and technical details of the project area and an analysis of alternatives to the project. Yet, a 90-foot residential tower has been inserted into the Draft EIR filed with the City on 12/14/2022. This is an dishonest move that breaks the Merced Manor and Lakeshore neighborhood's trust.

I-Chou-2 The proposed building is also next to Saint Stephen Church and School. This quiet community will be impacted in many ways (to be addressed in the EIR in-depth). Saint Stephen School children will not receive the same quality of school environment/life/education as my children received from there as a dense neighborhood brings many adverse impacts to a safe environment.

I-Chou-3 As a professional Civil Engineer and over 30 years resident, I would like to request a copy of draft EIP for my review prior to its certification.

Thank you for your time and your consideration.

Best regards,
Su-Syin Chou, P.E.
Merced Manor and Lakeshore Resident

From: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Sent: Monday, January 9, 2023 12:55 PM
To: Susan Yogi
Subject: FW: Stonestown Draft EIR

Susan,

Can you double check that we included the WTPCC letter?

Thank you,

Florentina Craciun, AICP
Senior Environmental Planner
Environmental Planning Division
San Francisco Planning Department
1650 Mission Street, Suite 400 San Francisco, CA 94103
Direct: 628.652.7510 | www.sfplanning.org
San Francisco Property Information Map

From: Paul Conroy <conroy@wans.net>
Sent: Thursday, January 5, 2023 3:42 PM
To: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Subject: Stonestown Draft EIR

Dear Ms. Craciun,
I have two preliminary process questions, having looked at the Draft EIR:

I-Conroy1-1

1. I understood that the West of Twin Peaks Central Council (WTPCC) made written comments about the scope of the EIR before the deadline for public comment. However, I don't see any reference to comments by the WTPCC in the draft EIR. Were written comments received from the WTPCC?

2. The announcement of the availability of the Draft EIR for comment and the deadline for public comment, both in writing and at the hearing, is timed such that affected neighborhood organizations (that do not meet in December because of the holidays) are limited in their ability to discuss and develop responses to the Draft EIR before the February 13th deadline. How can this deadline be extended 30 days to permit considered responses?

Thank you.
-Paul Conroy

Paul A. Conroy
conroy@wans.net

February 13, 2023

Florentina Craciun, EIR Coordinator
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
CPC.Stonestown@sfgov.org

Re: Stonestown Development Project – COMMENTS ON DRAFT EIR
Case No. 2021-012028ENV

Dear Ms. Craciun:

I-Conroy2-1 The Draft EIR does not adequately address several of the significant negative impacts that would be created by the proposed Stonestown Development Project.

The Draft EIR fails to meet the requirement that an EIR "contain sufficient information to understand the project's environmental impacts. (Dry Creek Citizens Coalition v. County of Tulare (1999) 70Cal.App.4th 20, 28.) "Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal ... and weigh other alternatives in the balance." (County of Inyo, supra, 71Cal.App.3d at pp.192-193.)" Save Our Capitol! Vs Department of General Services (Opinion Filed January 18, 2023; No. C096617, California Court of Appeal, 3rd Dist., p.12)

I-Conroy2-2 The Draft EIR does not adequately inform the public and public agency decision-makers with respect to several environmental impacts, as addressed by comments from affected neighborhood associations. The Draft EIR does not address many of the earlier public comments regarding the scope of the EIR, other than to note that the comments were made. This is particularly true with respect to the comments regarding the project's blocking of public vistas and view corridors.

I-Conroy2-3 Also, only short shrift is given to the public comments concerning traffic impacts to surrounding neighborhoods - the Draft EIR identifies that Winston Avenue may experience traffic back-ups of one block, but ignores the remainder of the surrounding neighborhoods.

PUBLIC VISTAS AND VIEW CORRIDORS

I-Conroy2-4 The Draft EIR does not even acknowledge blocked public vistas as significant adverse impacts on the surrounding neighborhoods and the City's southwestern quadrant. The Draft EIR does nothing to clarify the misleading depictions of the project contained in the developer's presentations - the developer's birds-eye views and aerial renderings hide the true visual impact of the project's towers and mid-rise structures. In this respect the Draft EIR does not meet the requirement that it present sufficient information on this subject so that the public and the public agency decision-makers have sufficient information to assess the project's negative environmental impacts.

I-Conroy2-4 (cont.)

The Draft EIR should, but does not, contain photographs, renderings and depictions of the project's visual impact on public vistas and views from streets, sidewalks and other public areas within the surrounding neighborhoods. The disruption of views from public parks, including Lake Merced and Fort Funston, requires depiction, discussion and analysis of mitigating measures. The draft EIR does not discuss the fact that the existing ten story buildings to the west of the project are situated at a ground elevation much lower than the project. Those buildings therefore do not serve as a guide to how a ten story, much less a nineteen story building, will appear on the project site. The EIR should address the project sponsor's promotion of the project as a "city within a city" and how that notion of a high-rise downtown in the midst of residential neighborhoods so close to the coastline will effect a major deviation from the area's overall city pattern.

INCONSISTENCY WITH THE URBAN DESIGN ELEMENT OF SAN FRANCISCO'S GENERAL PLAN

I-Conroy2-5

Despite public scoping comments, the Draft EIR has not addressed how the project deviates from the Urban Design Element of the General Plan. The Urban Design Element requires that projects be compatible with the views and vistas afforded by the existing city pattern.

The Draft EIR does not identify the project's inconsistencies with the Element's policies, as requested by the undersigned's EIR scoping letter as follows:

Policy No. 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.

The project will disrupt and block views of the Ocean, the shoreline and sunsets on the Ocean's horizon from the neighborhoods to the east of the project. The increased height will also disrupt views of Mount Davidson, Twin Peaks and other topographical features from areas west of the project, including, for example, views from Fort Funston.

Policy No. 1.3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

This policy provides that "…the relationships of building forms to one another and to other elements of the city pattern should be moderated so that the effects will be complementary and harmonious." In other words, the buildings should fit with one another to produce a harmonious effect. The Draft EIR should, but does not, analyze to what extent the proposed increased height and bulk conflict with the existing topography and buildings.

Policy No. 2.6: Respect the character of older development nearby in the design of new buildings.

The Draft EIR does not consider whether the project's new buildings conflict with the pattern established by the existing buildings in the area, including the existing apartment buildings and adjoining residential neighborhoods: Policy 2.6 further states that, "In some cases, formal height

I-Conroy2-5 (cont.)

limits and other building controls may be required to assure that prevailing heights or building lines or the dominance of certain buildings and features will not be broken by new construction."

Policy No. 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.

This policy, similar to Policy 2.6, must also be considered by the EIR in determining whether the heights proposed by the project are out of scale with the surrounding area, imposing a significant adverse environmental impact on the area.

Policy No. 4.1: Protect residential areas from the noise, pollution and physical danger of excessive traffic.

The EIR should evaluate the extent to which the proposed project will increase traffic through the neighborhoods and consider mitigating measures to be taken, such as those suggested by this policy.

THE DRAFT EIR DOES NOT ADDRESS THE PRECEDENT SETTING ASPECT OF THE PROJECT

I-Conroy2-6

The project's proposed deviation from the existing zoning restrictions will set a precedent for similar departures from existing planning. This will encourage and enable similarly scaled projects that are inconsistent with the character of the City's southwestern quadrant. This and similarly scaled projects will permanently disrupt the existing broad skyline, which has always respected vistas of the ocean and topographical features from all parts of the city west of Twin Peaks. These adverse environmental impacts are not identified by the Draft EIR. While a zoning compliant alternative is presented by the Draft EIR, the adverse environmental consequences of a project that is not compliant with existing zoning are not, but should be discussed. This is necessary in order to adequately present the consequences of potential decisions made regarding this project.

THE DRAFT EIR DOES NOT DISCUSS THE ORIGINAL PERMITTING OF THE STONESTOWN MALL AND THE ACCOMODATIONS TO THE SURROUNDING NEIGHBORHOODS

I-Conroy2-7

In the "history" section of the Draft EIR, there is no discussion of the public process by which the Stonestown Mall was first established. The EIR should analyze the initial purpose of the Stonestown Mall as described in the Planning Department documents governing the establishment of the mall, consider the benefits to the surrounding neighborhoods as expressed in those documents, and determine the negative impacts caused by the deviation from the parameters originally established for the Stonestown Mall.

Florentina Craciun, EIR Coordinator
San Francisco Planning Department

CONCLUSION

I-Conroy2-8 The Draft EIR does not adequately inform the public of many of the adverse environmental consequences of the project. The Final EIR should address all significant environmental effects of the project, including those described above.

Very truly yours,

Paul A. Conroy

Project Title: Stonestown Project

Case No: 2021-012028ENV

Date: February 9, 2023

Attn: Florentina Craciun, EIR Coordinator

Email: cpc.stonestown@sfgov.org

Subject: Draft Environmental Impact Report

Stonestown Development Project

Comments

From: Barbara and Robert DeBaun

127 Denslowe Drive, San Francisco, CA 94132

Member, Lakeside Property Owners Association

I-DeBaun-1 We purchased our home on Denslowe Drive in December 2008. Having lived in a very dense and heavily populated neighborhood (NOPA) for over 20 years, we were attracted to the idyllic nature of the Lakeside neighborhood. Certainly, the neighborhood has changed in the past 14 years but its sweet neighborhood 'look and feel' remains.

We are deeply concerned about the impact the proposed Stonestown Project will have on our community.

I-DeBaun-2 1. EIR Section 3-2: 19th Avenue is already a highly congested thoroughfare. The impact of increased traffic in this area, potential diversion of Stonestown related traffic into Lakeside and other adjacent neighborhoods, impact of street parking (supply vs. demand) , pedestrian crossings must be adequately addressed.

I-DeBaun-3 2. Section D-4: the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Holloway Drive and Buckingham way must be adequately addressed.

I-DeBaun-4 3. Section 3.6: there are multiple schools in the area that will be impacted by shadows/loss of sunlight.

I-DeBaun-5 4. Section 3.3: we have been directly impacted by the construction of the Science Building on the SFSU property. Noise, significant vibrations, loss of sunlight due to height of building

I-DeBaun-6 5. Section 3.1: how will the architectural style/height blend with the unique character of the homes in Lakeside and adjacent neighborhoods? Nearly 3,000 housing units and an 18-story hotel will dramatically alter the architectural character of the neighborhood

I-DeBaun-7 6. Section E.13: The need for increased police, fire, emergency and public services for the 2,900 new dwellings and the 18 story hotel must be addressed

I-DeBaun-8 | 7. Section E.17: What steps have been taken to evaluate the health and safety impacts of demolition of existing buildings?

I-DeBaun-9 | 8. Section 3.2: The platform for the SFMTA streetcar on 19th Avenue and Holloway are already not adequate during peak times such as morning and evening rush hours. The impact this project will have on ridership must be addressed.

From: Eugene Birsinger <ebirsingerjr@yahoo.com>
Sent: Thursday, February 9, 2023 7:12 AM
To: CPC.Stonestown
Cc: Laura Birsinger
Subject: Stonestown Project - 2021-012028NV

Follow Up Flag: Follow up
Flag Status: Flagged

To: Floretina Craciun

I-EBirsinger-1 i am writing in regards to the subject project. i am totally against it. I am a Lakeside resident for nearly 30 years. The project would add tremendous congestion to the area. I suggest you take some of the vacant building in downtown SF and convert them to housing.

Besides congestion, here are a few more reasons why I don't like the project:

I-EBirsinger-2 1.) Section 5.C of the EIR Draft: Safety: Stonestown is a mess with crime. Shoplifting is rampant. Car break-ins occur all the time. Police protection is already inadequate. Does the EIR report address these issues?

I-EBirsinger-3 2) Traffic - Section 3.2 of the EIR Draft. Traffic on Winston and Nineteenth Ave is already terrible. Congestion is getting worse. All of these new residents and businesses in this project will add to much traffic. Gridlock will be everywhere. How does the EIR Draft address this issue?? By the way, Muni is not the solution. Muni service is already terrible on Nineteenth Avenue.

I-EBirsinger-4 Terrible project...to much congestion., more crime, and more traffic. SF already has plenty of vacant buildings to use for housing..

Regards,

Gene Birsinger
223 Stonecrest
San Francisco, CA 94132

.

From: Lynn Finnegan <lynn.finnegan@compass.com>
Sent: Thursday, February 9, 2023 4:55 PM
To: CPC.Stonestown
Subject: Comments | Draft EIR for Stonestown Project

Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

I am a 25-year resident of West Portal and Parkside, near Stonestown.

I-Finnegan-1 Though my interpretation of the EIR is elementary, I endorse the draft EIR and am in support of the project offering much-needed additional housing. I believe that a project like this is perfect for all the current open and underutilized space and will attract more business and commerce to the west side of the City.

Lynn Finnegan

Lynn Finnegan | Broker Associate
1699 Van Ness Avenue
San Francisco, CA 94109
c: 415.254.2509
LynnFinneganSF.com
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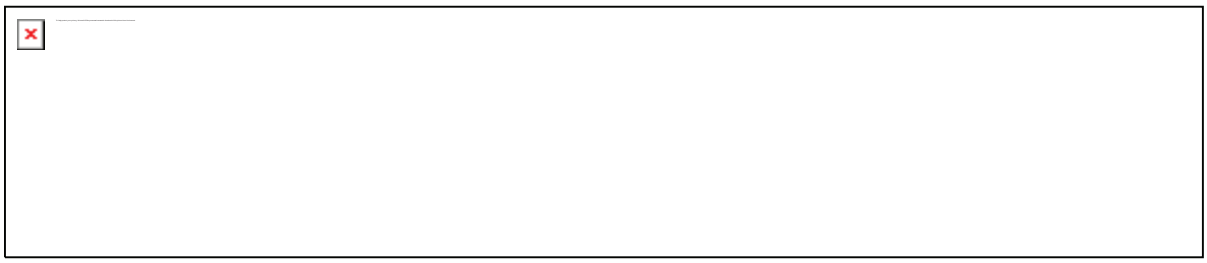

From: David Full <davidjohnfull@gmail.com>
Sent: Sunday, February 12, 2023 12:52 PM
To: CPC.Stonestown
Cc: EngardioStaff (BOS); MelgarStaff (BOS)
Subject: Comments on the Stonestown Draft EIR

Ms. Craciun,

I-Full-1 Thank you for the opportunity to review the Stonestown Development Project EIR. Provided below are my comments on the EIR. I have organized the comments by page number to assist in understanding my comments and concerns. In general, the EIR is internally inconsistent, confusing, and lacking in critical analysis needed to determine the impacts of the proposed project. It is unfortunate that a much-needed housing project in the City and County of San Francisco did not garner more attention and care in preparing the EIR.

I-Full-2 General. Comments on the scope of the EIR were provided (see Appendix A). However, many of the comments were not addressed in the EIR and, in some cases, completely ignored. Why does the City and County of San Francisco offer the opportunity to provide scoping comments and then not acknowledge them or explain how those comments have been incorporated into the EIR? Merely printing the scoping comments may meet the requirements under the California Environmental Quality Act (CEQA), but it certainly is not within the spirit of engaging with the public regarding environmental concerns. The EIR fails to provide any information regarding how these comments were addressed.

I-Full-3 Page 2-5, Figure 2-2. This figure showing the Project Site and Adjacent Land Uses is the same that was provided during the scoping process. I commented on that figure at the time and pointed out numerous errors in the figure. It was not updated or corrected. It is difficult to have confidence in the CEQA process when comments are not addressed and basic errors are not corrected.

Page 2-7, Section 2.D. The characterization of the northeast portion of Buckingham Way is misleading. This portion of Buckingham Way is not being “straightened”. This portion of Buckingham Way is being abandoned and a new street is being created. Characterizing it is a street being “straightened” is misleading.

Page 2-15, Figure 2-7. The legend includes something called “CEQA Heights”. However, this term is not defined. Without such information, how is it possible to understand the importance of this term and what the blue line means?

Page 2-18, Section 2.D.6. The text indicates the proposed project would provide 2,940 vehicle parking spaces embedded within the proposed building podiums and/or below grade (or 3,140 parking spaces with the variant). However, this information is not consistent with Table 2-1 on page 2-12. How can environmental analysis be completed when inconsistent information is provided?

Page 2-20, Section 2.D.8. The EIR continues to indicate that secondary access to the project site is at Eucalyptus Drive and 20th Avenue. However, data provided in Appendix D.1 shows that traffic

I-Full-3 (cont.) volumes at the intersection of Buckingham Way and Winston Drive are actually greater than at Eucalyptus Drive and 20th Avenue. Characterizing the intersection of Eucalyptus Drive and 20th Avenue as the secondary access point is misleading.

Page 2-20, Section 2.D.8, bullet #1. The text indicates that 20th Avenue would have two travel lanes (one lane in each direction) between Eucalyptus and Winston Drives. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction. Which is it? What was used in the travel analysis and trip generation?

I-Full-4 Page 2-23, Figure 2-13. This figure shows a traffic signal at the intersection of Eucalyptus Drive and 20th Avenue. Was a traffic signal warrant study conducted for this intersection to determine that a traffic signal is needed? Where is the result of that study in the EIR? Also, the intersection of Buckingham Way and Winston Drive is proposed to continue to be a stop-sign-controlled intersection. Given that the traffic volumes at this intersection are similar (as presented in Appendix D.1), why does this intersection not need a traffic signal?

I-Full-5 Page 2-24, Figure 2-14. This figure shows that 20th Avenue would have two travel lanes in the southbound direction and one travel lane in the northbound direction. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction, or with the text presented on page 2-20.

Section 2.D.8, bullet #1 (see comment above). Given that this segment of 20th Avenue leads to the "secondary access point" for the proposed project, why is there such contradictory information provided in the EIR. It simply is not possible to understand what is being proposed and what is being analyzed in the EIR when such inconsistencies are presented in the EIR.

Page 2-28, bullet #1. The description on the number of travel lanes on Buckingham Way between 20th Avenue and Winston Drive is not consistent with Figure 2-12 on page 2-22 or Figure 2-18 on page 2-29.

Page 2-28, bullet #2. The description of Street A is misleading in indicating that it "straightens" Buckingham Way. This is a new street and should be described as a new street in the EIR.

Page 2-28, paragraph 2. This paragraph indicates that there will be a traffic signal at Buckingham Way and Winston Drive. However, Figure 2-13 on page 2-23 indicates that this will be a stop-sign-controlled intersection. Which is it? What was assumed when doing the traffic analysis in the EIR?

I-Full-6 Page 2-34, Figure 2-22. An explanation is needed for how bicyclists will be safe when transitioning from one-way bikeway each of 20th Avenue on Winston Drive to a two-way bikeway west of 20th Avenue on Winston Drive. Will there be a separate traffic signal cycle for bicyclists traveling westbound through the intersection? Given the Safe Streets initiative in the City of San Francisco, this needs to be addressed. In a similar fashion explain the same transition at the intersection of 20th Avenue and Eucalyptus Drive and at the intersection of Buckingham Way and Winston Drive.

I-Full-7 Pages 2-35 through 2-39, Figures 2-23 through 2-26. Each of these figures mislabels 20th Avenue north of Buckingham Way.

I-Full-8 Page 2-40, Section 2.D.10. Why is the sustainability plan not available for review? Could there be any impacts associated with the implementation of the sustainability plan? Without providing any information regarding the sustainability plan, it is not possible to provide any comments regarding potential impacts resulting from the implementation of the sustainability plan.

I-Full-9 Page 2-40, Table 2-3. This table does not provide any information on the construction of roadway improvements. This table only describes the construction schedule for buildings. Given that roadway and intersection improvements are an integral part of the proposed project, this information needs to be provided.

Page 2-40, Section 2.E.1, paragraph 2. This paragraph basically states that construction can occur any time, day or night. There needs to be some assurance as to when construction will occur.

I-Full-10 Page 2-42, Section 2.E.2. This section does not describe where excavated materials will be transported. Does the air quality analysis include the emissions associated with the use of trucks to transport this material? Without a destination of where excavated materials will be transported, how can the air quality analysis be considered complete?

I-Full-11 Page 2-42, Section 2.E.3. This section does not provide any information regarding a construction traffic plan. Will construction vehicles be restricted to certain streets? What guarantee is there that construction trucks will not use residential streets to access the project site? A construction traffic plan needs to be provided for that purpose.

I-Full-12 Page 3-7, Table 3-1, Key No. 2, paragraph 2. The first sentence is not complete. It is not possible to understand the full scope of the Parkmerced project based on the information provided in this table.

I-Full-13 Page 3.A-9, Section 3.A.3, paragraph 1. It is news to residents in the vicinity of Stonestown that the project site is in the Lakeshore area of San Francisco. This is basic information and does not lead to confidence in the quality of the EIR.

Page 3.A-9, Section 3.A.3, paragraph 2. There is a description of the single-family homes east of the project site and an indication that they are Category B properties. Why is there no similar description of the single-family homes of Merced Manor, immediately north of the project site. This neighborhood was developed in the 1930s and has greater potential for being considered historic than the neighborhood east of 19th Avenue that was developed in the 1930s. This is a major oversight in the EIR and an analysis of the Merced Manor neighborhood and the impacts to the historic character of the neighborhood needs to be addressed in the EIR.

Page 3.A-15, paragraph 3. Something is not quite right with the first sentence. How can the building function as a twin theater from 1970 through 2020 and also acknowledge that the single auditorium was bisected in 1973?

I-Full-14 Page 3.A-22, Mitigation Measure M-CR-1. Why is there not the possibility of incorporating the façade of the theater into a building to be developed on the project site? Could this minimize the impact associated with the impairment of the architectural resource? This should be considered as a measure for mitigating this impact to a historic resource.

I-Full-15 Page 3.A-24, Impact CR-2. This impact analysis is not complete. Given that the EIR does not recognize the potential for Merced Manor to be a neighborhood with historic and architectural resources, this analysis is not complete. The EIR needs to include such an analysis.

I-Full-16 Page 3.B-1, Section 3.B.2, paragraph 2. The statement that there is an "unlikelihood of the project or variant to result in significant transportation and circulation impacts in those areas" is not supported by any evidence. This statement is arbitrary and baseless without any information to back it up.

Page 3.B-2, Figure 3.B-1. Why were the intersections of 20th Avenue and Ocean Avenue and 20th Avenue and Sloat Boulevard not included as a study intersection. The EIR indicates that 20th Avenue

I-Full-16 (cont.) and Eucalyptus Drive is a "secondary access" to the project site yet the intersections immediately north of this "secondary access" are not included as study intersections and other intersections much farther removed from the project site included (e.g., Ocean Avenue and Ashton Avenue). This is a major flaw in the approach to analyzing traffic impacts.

I-Full-17 Page 3.B-4, Table 3.B-1. In this table, the Better Streets Plan Classification for 20th Avenue is listed as N/A. In a short search on-line, it is evident that 20th Avenue north of Eucalyptus Drive is a "Neighborhood Residential" street. The EIR incorrectly considers 20th Avenue only as a street within the project site. This street also exists between Eucalyptus Drive and Sloat Boulevard and no effort has been made in the EIR to properly characterize this street. For example, this table indicates that MUNI route 57 travels on 20th Avenue. It does, but only as far north as Eucalyptus Drive. The EIR needs to make a distinction between the 20th Avenue on the project site and the 20th Avenue north of Eucalyptus Drive. This designation as a "Neighborhood Residential" street is important when considering the impacts of the proposed project.

I-Full-18 Page 3.B-5, Table 3.B-2. What is the point of this table? Why were only some intersections included in this table? Without additional information, such as the level of service (LOS) at these intersections, this information is useless.

Page 3.B-18, paragraph 2. While it is true that the CEQA Guidelines were amended to remove automobile delay as a measure to determine a project's significance, it does prohibit the EIR from disclosing that information. In fact, this information was requested as part of the scoping process and repeated during attendance at a public meeting prior to the release of the Draft EIR. At that public meeting, this commenter was assured that such an analysis would be included in the EIR. Alas, that is not true. No such analysis has been provided. It is puzzling why information regarding traffic counts are provided (see Appendix D.1) but there is nothing in that appendix that provides any context for what these changes in traffic volumes mean. Why was such information provided in such an incomplete state? My biggest concern has been the effects of the project on 20th Avenue between Eucalyptus Drive and Sloat Boulevard. In personal meetings with a Brookfield Properties representative and at public meetings, I had been assured that these concerns would be addressed. Unfortunately, these concerns have not been addressed at all.

I-Full-19 Page 3.B-30, paragraph 4. The text indicates that a Sunday peak period was chosen based on "the size and type of land uses proposed by the project, as well as travel characteristics of the study area". As a resident in the vicinity of Stonestown, Saturday traffic volumes in the neighborhood appear to be greater than that on Sunday. Unfortunately, the EIR does not provide any specific rationale for choosing Sunday over Saturday. A comparison of traffic volumes on those days should be provided.

Page 3.B-36, Table 3.B-11. The text on the preceding page does not provide any details as to how the percent reduction in vehicle trips due to internal trip capture was calculated. There is no information to verify the assumptions that were made for this internal trip capture. This information needs to be provided in the EIR.

I-Full-20 Page 3.B-55. Mitigation Measure M-TR-1. This mitigation measure needs to be expanded to require the construction coordination plan to designate routes to be used by construction vehicles accessing the project site. This plan needs to guarantee that construction truck traffic would not use residential streets in the vicinity of the project site.

I-Full-21 Page 3.B-57, Impact TR-2. As stated in the comments on page 2-34, there is no analysis of the impacts associated with bicyclists needing to weave through intersections and the impact on the

I-Full-21 (cont.) safety of bicyclists as a result of the location of the bike lanes. This analysis needs to be included in the EIR.

I-Full-22 Page 3.B-59, paragraph 2. The EIR indicates that traffic queues on Eucalyptus Drive approaching 19th Avenue could extend back to 20th Avenue. However, there is no indication that any analysis was done to address vehicles that would choose NOT to turn right (eastbound) on Eucalyptus Drive from northbound 20th Avenue. Appendix D.1 indicates that the number of vehicles turning right would be 471 during the p.m. peak hour (or about 8 vehicles per minute). Given the traffic signal timing at the intersection of 19th Avenue and Eucalyptus Drive and the capacity of the roadway, this queue would occur for every traffic signal cycle. Thus, there is the potential for drivers to choose to travel northbound on 20th Avenue toward Ocean Avenue and Sloat Boulevard. No analysis of the ability for eastbound vehicles to queue at either 19th Avenue and Ocean Avenue or at 19th Avenue and Sloat Boulevard has been presented. Given the 20 percent in traffic volumes on 20th Avenue north of Eucalyptus Drive, this analysis should be presented in the EIR. In addition, this increase of 20 percent is on a neighborhood residential street. In accordance with the Better Streets Plan, a "*Neighborhood Residential streets are quieter residential streets with relatively low traffic volumes and speeds. Though they have low levels of activity relative to other street types, they plan a key role to support the social life of a neighborhood.*" An analysis of the impacts to this residential street need to be included in the EIR and mitigation measures to preserve the character of a neighborhood residential street need to be identified and provided.

I-Full-23 Page 3.B-65, MUNI Transit Service, paragraph 2. The 28R MUNI route has been suspended and should not be included in the transit analysis. In addition, Table 3-B-15 on page 3.B-66 and Table 3.B-19 on page 3.B-80 need to be revised to not include the 28R route to determine impacts associated with transit delay. The EIR preparers should search for "28R" and modify the analysis throughout the EIR.

I-Full-24 Page 3.B-70, Induced Automobile Travel, paragraph 2. The statement that the "features fit within the general types of project that would not substantially induce automobile travel" is not supported by any evidence. This project includes all sorts of development that WOULD induce automobile travel. Much more evidence is needed to back up this statement because the traffic volumes presented in Appendix D.1 show that there would be an increase in traffic as a result of the proposed project. That is the very definition of "induced automobile travel". As a result, there is no way to conclude that the project would NOT significantly increase traffic on local streets. This is a major flaw in the EIR.

I-Full-25 Page 3.C-14, Construction Noise, paragraph 2. The text in this paragraph is not consistent with the information on Page 2-40, Section 2.E.1, paragraph 2, which states that construction could occur at any time. The EIR should identify when construction is to occur and to limit construction only to daytime hours.

Page 3.C-21, Daytime Construction Noise, paragraph 2 and Table 3.C-11 on page 3.C-22. The significance standard for construction noise impacts is 80 dBA at 100 feet. Stating that the use of the concrete saw is of "limited duration" is misleading by trying to downplay the fact that it is significant. The "limited duration" statement is irrelevant to the analysis. The concrete saw exceeds the 80 dBA at 100 feet and is, therefore, significant. Stating anything else or qualifying it should not be included in the EIR.

Page 3.C-25, Table 3.C-22. The heading of the sixth column in this table states "Exceed 90 dBA Daytime Standard?" Where did this 90 dBA standard come from? The text on page 3.C-18 indicates

I-Full-25 (cont.) that the threshold is 80 dBA. Which is correct? If it is 80 dBA, then many of the "no" on this table need to be changed to "yes".

I-Full-26 Page 3.C-31, Mitigation Measure M-NO-1, paragraph 1. This is similar to the previous comment. Where did the 90 dBA standard come from? Why does the mitigation measure not require meeting the 80 dBA standard identified on page 3.C-18? This 90 dBA reference also is presented on page 3.C-32.

Page 3.C-31, Mitigation Measure M-NO-1, paragraph 2. Prohibiting nighttime noise should be considered as a way to reduce sleep disturbance for residents in the vicinity of the project site. In addition, can the mitigation measure have financial penalties for exceeding noise levels? There needs to be a real consequence associated with disruptive noise events.

I-Full-27 Page 3.C-33, Nighttime Construction, paragraph 4. The last sentence of this paragraph is meaningless. This states that some City employee can decide to grant permission to do nighttime construction at any time. This does not provide residents who may be affected by construction noise with any real remedy and actually creates greater uncertainty regarding the noise that will occur during construction. Given that construction is scheduled to occur over a seven-year period, it is not unreasonable to provide some better assurances as to when nighttime construction will occur. As written, there is no real mitigation associated with construction noise at nighttime hours. The EIR needs to address this issue.

Page 3.C-35, Impact NO-2. This analysis is inconsistent with other statements made in the EIR. The impact statement is related to an "increase in ambient noise levels along access streets in the project vicinity". Table 3.C-19 on the same page provides roadway noise levels associated with construction truck and worker traffic. The issue is that throughout the rest of the EIR, the intersection of 20th Avenue and Eucalyptus Drive is identified as a "secondary access" to the project site. Yet, no analysis is provided for that access point. Unless there is a guarantee that this intersection will NOT be used for construction truck traffic or worker traffic, this analysis should be included. Or, a statement that this intersection will not be used needs to be included in the EIR. This is a major flaw of the EIR.

I-Full-28 Page 3.D-13, paragraph 2. This paragraph identifies the "sensitive receptors" near the project site. Why were the residential land uses west of the project site (i.e., the multi-story buildings along Buckingham Way and Winston Drive) not included? These are directly adjacent to the project site and should be considered "sensitive receptors". The analysis should be revised to include these land uses as "sensitive receptors".

Page 3.D-13, paragraph 3. The last sentence of this paragraph indicates that "a small portion of the project site that borders 19th Avenue does meet the APEZ criteria" but does not actually indicate where this small portion is actually located. Figure 3D.-1 on page 3.D-14 does not provide any information in this regard.

Page 3.D-14, Figure 3.D-1. Why is this land use map so different from the one presented in Figure 2-2 on page 2-5? There are literally dozens of differences between these two land use maps and leads the reader to wonder which is correct. This lack of consistency in the EIR is most troubling because it is not possible to clearly understand the analysis when basic information is not reliable.

Page 3.D-14, Figure 3.D-1. Although this land use map actually acknowledges commercial uses along Ocean Avenue (compare with Figure 2-2 on page 2-5), there are still a variety of land uses that are not correct on this figure. For example, what is the "commercial" land use on 21st Avenue? What is meant by the "residential-mixed use" designation? This is not explained in the EIR. I, for one, can

I-Full-28 (cont.) assure you that my residence on 20th Avenue, which is designated as "residential-mixed use" on Figure 3.D-1 is a single-family home with no other land uses associated with it. Given the number of such parcels identified on this figure as "residential-mixed use" within residential neighborhoods, it undermines any confidence that the preparers of the EIR did their due diligence in preparing the document.

I-Full-29 Page 4-5, Section 4.D. It is difficult to understand why the EIR preparers chose to identify so many "potential areas of controversy and unresolved issues". Is it not the intent of the EIR to actually analyze the impacts of the project? For example, the third bullet identifies "project and cumulative impacts on traffic congestion and parking". This should not be an "unresolved issue". This very topic was included in scoping comments as being requested to be analyzed and included in the EIR. However, no such analysis was conducted. The only reason this is an "unresolved issue" is because the EIR preparers chose not to conduct the analysis. In reviewing Appendix D, all of the information is available regarding the number of vehicle trips through 28 intersections in the vicinity of the project site. Providing information regarding the level of service (LOS) at these intersections could have been provided, but was not. Many of the other topics on this list were either focused out of the EIR in the Notice of Preparation or have been analyzed in the EIR. Why are these on this list?

I-Full-30 Page 5-26, Section 5.C.3. Why does this alternative include two very different aspects of the proposed project? The partial preservation of the theater mitigates very different impacts than the relocation of parking. Putting them in one alternative does not make sense and undermines the intent behind the alternatives process.

I-Full-31 Page 5-28, paragraph 1. The second reason for this alternative is to "redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue)". This is curious because nowhere in the EIR does it acknowledge that there would be "substantial vehicle delay" on either roadway. Where is this analysis? What is the "substantial delay"? How can an alternative be based on information that has not been provided in the EIR?

Page 5-30, Table 5-3. There is a major mathematical error in this table. The net change in vehicle trips is 27, not 275 as stated in the table. In addition, without information regarding the level of service (LOS) of intersections on 19th Avenue and 20th Avenue, how is the reduction of 2.2% in vehicle trips meaningful? Without the background information on existing and future LOS, it is not possible to understand what this alternative would accomplish.

Page 5-31, Emergency Access Impacts. Paragraph 2 and Table 5-4 focuses on the intersection of Buckingham Way and Winston Drive. In the traffic analysis, the queue lengths on Eucalyptus Drive between 20th Avenue and 19th Avenue was considered to be an impact. Why was this intersection not included?

I-Full-32 Page 5-65, Table 5-12. The CEQA significance determination notes on the table identify "LSM" as less than significant with mitigation. The table actually uses the acronym LTSM. Is the reader to conclude that these are the same?

Thank you.

Dave Full
Merced Manor Resident

From: Karen Lam <kylam88@yahoo.com>
Sent: Friday, February 10, 2023 7:57 PM
To: CPC.Stonestown
Subject: Merced Manor and Lakeshore neighbors

Dear Florentina Craciun:

I-Gardner-1 I would like to voice my opinion regarding the Stonestown developers plan to build a 90 foot tall residential tower near Stonestone mall directly next to Rolph Nicol Park. This was not communicated to the Lakeshore community and I do not agree with this development. This was originally a 4 story building and that was what we were told and approved. You have my vote "NO" on this 90 foot tall residential tower.

Thank you for listening,
Karen Gardner
Lakeshore resident

Aaron Goodman
25 Lisbon St. SF, CA 94112
E: amgodman@yahoo.com

January 11, 2023

RE: Stonestown EIR (Written Comments)

Florentina Cracium (Senior Environmental Planner - SF Environmental Planning Division)
CPC.Stonestown@sfgov.org (emailed copy of comments)

I have been involved as an architect and urban planner, in the westside redevelopment issues for some time, providing comments and attending meetings on the 19th Ave SFMTA Transit Long Range Proposal for the M-Line undergrounding and options, the Parkmerced Masterplan, SFSU-CSU Masterplan, and Balboa Reservoir Projects.

I-Goodman-1

I attended the initial Stonestown proposal meetings and submitted comments in person on the need to look carefully at the transit options and alternatives to properly link and loop transit lines into and around the 3 major projects on the west side.

I also suggested and submitted some simple pencil sketches on an alternative for the M-Line and L-Taraval to be linked via SLOAT Blvd and the 20th Street being the connection point vs. the undergrounding of the M-Line through the Ocean Ave neighborhood and residential areas.

The suggestion was to help quicken the transit changes which have so far been negligent on all redevelopment projects since their inception.

The L-Taraval if linked back up Sloat deals with the loss of the ocean highway area and the need to bring the train line up to sunset blvd or loop the L-Taraval up sloat and to a "T" intersection where the undergrounding could begin off of 19th Ave and on the broader sloat blvd area. The existing pumpkin patch site and Stern Grove music festival and outsidelands music festival could all benefit from the entry to stern grove and a mixed use redevelopment for access to the underground station at the pumpkin patch and run the train on 20th south into Stonestowns redevelopment area.

We had suggested the need to look at the YMCA (existing main facility) and the YMCA Annex and pet-co site as where the train would turn up along the existing ramp for cars exists, and bring it up level and alongside 19th Ave on the west side of the street across from Mercy HS. This could also become a new urban plaza with additional density and office space on both sides of the existing parking lot for the fitness sports center, and possible reworking of the church buildings as noted as possible future redevelopment sites.

There is a need to look comprehensively at ALL 3 projects and the lacking movement on the M-Line undergrounding or at or above grade. Using topography there is significant changes out to the Daly City BART station, and providing the direct linkage to Daly City BART is a key component of ANY mall

I-Goodman-1 (cont.)

redevelopment. The fact that Parkmerced and SFSU both ignored this entirely only making it a gesture with the SFMTA calling it Tier-5 future connections ignores the upfront need to get people out of there cars and onto the main transit linkages.

When this project and the other projects are in construction or moving forward, trucks, deliveries, and work crews will be at ALL sites, and it would be preferable to have access via public transportation already implemented vs lagging severely in changes and implementation.

We had discussed this also prior with Peter Albert who worked with the SFMTA on transit issues on the other initial projects.

The stonestown proposal cannot be expected to fix all the transit issues, but Parkmerced and SFSU also ignored the lacking MOU's an push and need to get a transit plan in place and moving forward. Due to the SFMTA being overly invested downtown they have missed a great opportunity to increase the linkages and equitable investment in transit on the westside of San Francisco.

The delays getting downtown and to other districts or future lines like the Geary system or future subway, and the presidio via sunset blvd indicates a lacking equitable policy on transit solutions across the board as a network system.

I-Goodman-2

I would like to see increased height of many of the proposed buildings along 19th Ave. possibly forming a better plaza across from mercy high school with the change in topography and inclusion of a plaza and transit entry point vs. just a big parking lot.

I-Goodman-3

The lack of traffic and transit coordination is highlighted by the turn at the Target, and Trader Joe's from Winston and the problems with timing and dangerous turning at this location, and the impacts of traffic flows from the sunset and 19th ave into and around the stonestown mall during school and work hours.

The other issue is the lack of forthright communication on the 1952 Interchange at Brotherhood Way, the Alemany "fly-over" that connects to Daly City and south I-280 and the need to look at the Junniperro Serra intersection interchange out to daly city BART as a new entrance into SF and redevelopment project that addresses lacking transit connectivity, air-rights and redevelopment of Caltrans and BART property, and looks at including Daly City and there mall and office block tower area towards parkmerced and possibly plinthing over the freeway to improved pedestrian and housing options nearby. The Tier-5 level connection issues that are needed for federal funding and linkages and address of the older overpass clover-leaf and over-pass flyway is important as an egress route from the city, and infrastructure that is much older and needed to be changed and improved due to the pressures of redevelopment.

The cambon supermarket site also may cause a need for a station stop for muni at or above if it is redeveloped as a senior center and housing towers per John Jweinat's proposal, so the need to discuss the transit issues becomes a priority when you see the domino effect of redevelopment and lacking progress on the M-line or future extension to Daly City BART not even in initial planning for the M-Line or linkages to other bi-county transit hubs.

I-Goodman-4 The stonestown theater is I believe a great façade and front that should be re-utilized in any future plaza or housing concept. The back theater portion may be torn down and a new building attached on the back side, of the theater. The need for a central community space, digital zone for school kids from Lowell who often hang at the mall, and the new housing could be a wonderful pop-concept for the front of the theater with some space for seating and protected shelter areas for youth and entertainment for them after school including a green-scaped area, and food services that promote better after hours public spaces and lighting alongside treescapes and a revitalized theater entry zone. This could also serve after hours community organizations and meetings if designed as a community hub. I strongly support the preservation of the front portion of the stonestown theater into a more positive public/private area that is available and useable by youth and seniors in the community.

I-Goodman-5 I will attached any prior documents I have sent under separate email to be included in the comments for the EIR deadline for written comments.

Thank you for your time and consideration in the review of the SFMTA plans and the need to push all three developers to the table for a more robust and serious conversation on the transit changes that can help people get to the mall without a car, and connect other districts to the mall area.

Regards

Aaron Goodman

From: Donald Hardeman <dhardeman@hannabrophy.com>
Sent: Tuesday, February 7, 2023 3:30 PM
To: CPC.Stonestown
Cc: Donald Hardeman
Subject: COMMENT ON THE ADEQUACY OF THE DRAFT EIR FOR THE STONESTOWN DEVELOPMENT PROJECT AND OPPOSITION TO THE PROPOSED 90 FOOT RESIDENTIAL TOWER NEXT TO ROLPH NICOL PARK
Attachments: Rolph Nicol Park.jpg; Looking southwest from Rolph Nicol Park to the spot of the proposed 90 foot tower.jpg; Photograph of the open space to the west of the Fenceline, not addressed by the EIR.jpg; Looking south from 25th Ave. and Eucalyptus Street toward the spot of the proposed project, with the fate of the trees to the right uknown.jpg

Follow Up Flag: Follow up
Flag Status: Flagged

I-Hardeman-1

1) OPPOSITION TO THE CONSTRUCTION OF A 90 FOOT RESIDENTIAL TOWER ADJACENT TO ROLPH NICOL PARK

* For years, Brookfield Properties represented to the neighborhood that the building in the northwest corner of the existing parking lot, directly adjacent to Rolph Nicol park, would be 4 floors. Yet the draft EIR now indicate plans to build a 90 foot tower.

I-Hardeman-2

* A small neighborhood park, Rolph Nicol is used daily by people in the neighborhood to walk their dogs, congregate, chat, and to enjoy a respite from the 3,500 students and their vehicles that inundate the neighborhood daily to attend school (see below). A tower situated immediately adjacent to the park, rising above the tree line, would permanently alter this sanctuary forever. The EIR acknowledges that the building would create shadows on the park

I-Hardeman-3

- The park and the adjoining open space includes an ecosystem for many species of birds, including songbirds, hawks, owls, and crows, as well as a pack of coyotes. The EIR does NOT address the impact of the project on this ecosystem.

I-Hardeman-4

- The neighborhoods immediately impacted by the project, Merced Manor and Lakeshore, consists of single story single homes. A 90 foot tower 300 feet from Eucalyptus Avenue would scar the skyline, rise above the trees in park and dominate the view for blocks. This is NOT the 19th avenue corridor--

I-Hardeman-4 (cont.)

-this is next to a small neighborhood park! The proximity of the proposed 90 foot high residential building will dramatically and irreversibly adversely affect our small park, creating a monolith looming over what has always been a haven of nature and quiet.

I-Hardeman-5

- Reduction of the proposed building height to 40 feet, which the developer represented for years to the neighborhood, is a much better fit for the area, and would have much less of a negative impact on the park.

- Paragraph 4 of the EIR claims that the goal of the plan is to prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space " to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to nature and to the existing surrounding residential neighborhood of Merced Manor." In reality, the proposed 90 foot building will have the opposite effect; it will harm the open space and create a disconnect from Merced Manor. The originally proposed 40 foot building conforms with the neighborhood and will significantly reduce the impact on the park.

- Revision to the originally proposed 40 foot height for this particular building would have an insignificant impact on the total housing that will be built with this massive project, while the benefit to the park and the people who use it daily would be incredibly significant.

I-Hardeman-6

2) THE EIR DOES NOT ADDRESS THE INTENTIONS OF THE DEVELOPER WITH RESPECT TO THE OPEN SPACE TO THE WEST OF THE FENCE LINE

This open space, which extends from Winston Drive to Rolph Nicol park, serves as a continuation of the biodiversity and animal habitat of the park. How many trees will be cut down by the private developer? What is the impact of the development on this space? The EIR Is silent, and therefore inadequate.

I-Hardeman-7

3) THE TRAFFIC STUDY IS INADEQUATE

Lowell high school has the largest enrollment of any school in the SFUSD, and is directly adjacent to the proposed tower. As indicated, each school day our neighborhood is inundated with over 3,500 students, primarily using Eucalyptus Ave (2,786 students at Lowell High School, 466 students at Lakeshore Elementary, and 306 students at St. Stephens). The vehicle traffic creates gridlock on Eucalyptus Ave from 22nd avenue to Middlefield Ave, and the streets running perpendicular to Eucalyptus, particularly 24th, 25th 26th, Inverness and

I-Hardeman-7 (cont.)

Forest View Avenues. Yet, the traffic study not only downplayed the vehicle traffic, it also stopped at 25th Avenue. While the project itself ends parallel to 25th Ave, the effect of the project extends well to the west. The EIR does not adequately address the increased traffic in the area which as noted, is already at gridlock twice a day.

I-Hardeman-8

To summarize, a 90-foot building built by a PRIVATE developer to MAXIMIZE PROFITS AT THE EXPENSE OF THE ENJOYMENT OF OUR PUBLIC PARK SHOULD NOT BE ALLOWED. It will forever alter the use and enjoyment of our park.

Respectfully submitted,

Don Hardeman

Don Hardeman
3065 26th Ave
San Francisco, CA 94132

Project Title: Stonestown Project
Case No: 2021-012028ENV
Date: January 14, 2023
Attn: Florentina Craciun, EIR Coordinator
Email: CPC.Stonestown@sfgov.org

Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

From: James P. Herlihy
160 Broadmoor Drive, San Francisco, CA 94132
Member, Lakeside Property Owners Association

I-Herlihy1-1 1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

I-Herlihy1-2 2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.

I-Herlihy1-3 3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6

I-Herlihy1-4 4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3

I-Herlihy1-5 5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5

I-Herlihy1-6 6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1

I-Herlihy1-7 7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13

I-Herlihy1-8 8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of

I-Herlihy1-8 (cont.)

unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15

I-Herlihy1-9

9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17

I-Herlihy1-10

10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services.

I-Herlihy1-11

11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4

I-Herlihy1-12

12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2

I-Herlihy1-13

13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore.

Project Title: Stonestown Project
Case No: 2021-01202BENV
Date: February 8, 2023
Attn: Florentina Craciun, EIR Coordinator
Email: CPC.Stonestown@sfgov.org

Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

From: James P. Herlihy
160 Broadmoor Drive, San Francisco, CA 94132
Member Lakeside PropertyOwners Association

I-Herlihy2-1 CEQA Guidelines section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5-1 outlines alternatives B, C, D. E which range from 2890 dwelling units to 1758 dwelling units. Assuming 2 person occupancy per unit that would result in 5600 residents on the high side to 3500 residents on the low side on the Stonestown property where there are no residents today. Unavoidable negative impacts are noted in the draft on transit, traffic, emergency services and infrastructure (Sewer, water etc).

No consideration is given to an Alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure.Such an Alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor, Lakeshore and Ingleside Terraces to provide additional housing to San Franciscans.

I-Herlihy2-2 The proposed 18 story, 200 room hotel is inconsistent with the proposed mixed use residential and commercial nature of the project and should be eliminated from the project. San Francisco has an oversupply of hotel rooms as it is.

I-Herlihy2-3 Table 5-1 Alternatives B,C,D,E show site maps of a towering wall of apartments on 19th Avenue stretching 0.25 miles on the West side of 19th Avenue from Eucalyptus Drive to Buckingham Way. The DEIR is silent on the environmental impact of this significant "Western Wall" on 19th Avenue.

I-Herlihy2-4 I urge the San Francisco Planning Commision to reject the DEIR.

From: Debbie Herzfeld <debsellssf@yahoo.com>
Sent: Thursday, February 9, 2023 8:36 AM
To: CPC.Stonestown
Subject: Opposed to plan

Follow Up Flag: Follow up
Flag Status: Flagged

I-Herzfeld-1 This plan is absurd. The impact on our neighborhood for noise construction parking cars and so many new redid we Mrs will not only negatively impact our quiet enjoyment of our homes but traffic and ability to transport from one part if the city to another. This is the suburban side if SF. Do not turn it j to another

I-Herzfeld-2 downtown. Stop this ridiculous project if at least scale it way back. Do your residence building on the back side of Stonestown not along 19 th Ave.

Debbie Herzfeld

Sent from my iPhone

Project title: Stonestown Redevelopment
Case #: 2021-012028ENV
ATTN: FLORENTINA CRACIUN, EIR Coordinator

Subject: Environmental Impact on Sonestown Development Project

From: Hyesoon Ho
Owner of 1400 Holloway Ave. San Francisco, CA 94132

I-Ho-1 I just wanted to notify my concern on the Sonestown Redevelopment Project. The size of the project is too large for the existing infrastructure. There is always heavy traffic from

I-Ho-2 Holloway Ave. to Sloat Blvd on 19th Ave. Without any added underground public transportations, the traffic would get much worse and the Air quality would go down dramatically by increased traffics.

I oppose the Project.

From: Dennis Hong
To: Craciun, Florentina (CPC); Hillis, Rich (CPC); CPC-Commissions Secretary; Race, Patrick (CPC)
Cc: MelgarStaff (BOS); Breed, Mayor London (MYR); Reuel Cooke; CPC.Stonestown
Subject: DEIR Case 2021-012028ENV - ADEQUACY - Stonestown Mall
Date: Monday, February 6, 2023 1:18:48 PM

Dear SF Planning Commission and everyone,

Per the request of the SFPC for February 2/9, 2023 meeting/s. I have been reviewing the current DEIR of December 14, 2022 and feel at this time it meets and fills the definition/requirement under **adequacy**. I'm sorry I will not be able to be at your meeting but will do my best with your remote system. Please use my email here along with the projects DEIR - with my full support, that my email here has been received and will be part of the RTC when ready..

#10. 2021-012028ENV (F. CRACIUN: (628) 652-7510) 3251 20TH AVENUE – Public Comment on the adequacy of the Environmental Impact Report for the Stonestown Development project. The proposed project would redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multiphase, mixed-use residential and retail community. Under the proposed project,

I-Hong-1 Thank you for the opportunity to comment and support this Wonderful Project - the Stonestown Development project. I have been commenting on this Project's DEIR etc since February 4, 2021 both with the sponsors/workshops and the SF Planning Department. I'm a San Francisco native with 78+ years. I currently live in District 7 as a resident and home owner. I have been shopping here since the early 60's when it was an open mall. Currently, it is still a very unique mall, professionally maintained with many special and unique shops Which in my opinion shows the credibility of the sponsors ability to maintain such a project. Because I use public transportation since I ditched my car it still meets and exceeds my shopping requirements. With the exception for the fog (Karl), the plan professionally address everything a mall should be including the additional 2,930 residential units on the west side of the city. Which will add to the "SF Housing Element Plan".

At this time I would like your support and approval for this phase. And to include my comments to the RTC phase.

OK, on to the next phase, my comments to the DEIR for the RTC due by February 13, 2023.

If anyone has any comments to my opinion/Email here please feel free to let me know.

A lot of the success to this project todate is due to the continued onsite work shops and the community out reach done to date.

The following is a cut/paste for this agenda item for 2/9/2023:

10. 2021-012028ENV (F. CRACIUN: (628) 652-7510) 3251 20TH AVENUE – Public Comment on the adequacy of the Environmental Impact Report for the Stonestown Development project. The proposed project would redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multiphase, mixed-use residential and retail community.

I-Hong-2 After reviewing the document and as a shopper since the mid 1960's and ditching my car, I would like to entertain and see if Muni/MTA could make the "M" some how make the stop at 19th and Winston a bit safer, i.e. run under ground in to the mall. Currently I believe there are plans to upgrade the 19th route. Currently there are several muni stops in the mall itself but are from the West Portal station and not from downtown via the tunnel. But lets save this for the RTC phase.

I-Hong-3 I also believe that this projects number of housing units will certainly help the SF Housing Element pan out nicely. I would also like to encourage that that project be expedited both in the process and the permit process as allowed.

In closing if anyone haves and comments or questions to my rambling email here please reach out to my email with your thoughts.

All the best,
Dennis

Ihave bith been comeemnthing on this Project, DEIR etc sine June ____ and I fully support it bith with the current Adecary and the deir. Per cut and paste below:

Thank you all for letting me comment here. I'm a Native San Francisco. A property owner and currently live in District 7. I have been shopping since the mid 1960's when it was an open mall and still shop here.

Hello SFPCTeam, Dennis here, Not sure how and when to make my support here.

1,

From: Donna Howe
To: CPC.Stonestown
Subject: Support for Stonestown Plan
Date: Saturday, January 14, 2023 3:33:17 PM

I-Howe-1 As a lifelong resident of San Francisco (age 69) and a near neighbor (Ingleside Terraces), I whole-heartedly support the plans submitted for changes to Stonestown. I believe it will be a positive change. The addition of housing, lodging, open space, improved traffic patterns and the temporary jobs that construction will bring are all things needed in this western part of the city. Yes, there will be some disruptions, but the positives outweigh the negatives. This is progress.

Donna Keuper Howe
donna.howe@comcast.net
85 Entrada Court, SF, CA 94127

Sent from my iPhone

From: jerry iwata <jerry.iwata@sbcglobal.net>
Sent: Tuesday, February 7, 2023 4:23 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

I-Iwata-1 I am a Lakeside resident and am opposed to the planned redevelopment.

Jerry Iwata
1 Banbury drive
SF, Ca 94132

From: kevinkashi <kevinkashi@gmail.com>
Sent: Wednesday, February 8, 2023 8:10 AM
To: CPC.Stonestown
Cc: craigsargent55@gmail.com; Joel Engardio; MelgarStaff (BOS)
Subject: FW: ACTION REQUESTED BY 2/9 - Stonestown Redevelopment Project
Attachments: Stonestown EIR Comments.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Please see below for my concerns.

Thank you.

Sent from my Galaxy

-------- Original message --------
From: kevinkashi <kevinkashi@gmail.com>
Date: 2/7/23 7:20 PM (GMT-08:00)
To: sflakesidepoa@gmail.com, craigsargent55@gmail.com
Cc: Joel Engardio <jengardio@gmail.com>
Subject: FW: ACTION REQUESTED BY 2/9 - Stonestown Redevelopment Project

Good afternoon everyone. Sorry I couldn't attend this meeting.

I-Kashi-1

I reviewed the attached comments and like to add that the Stonestown project must include pre-construction survey, vibration monitoring devices, and noise monitoring stations in the Lakeside neighborhood. This responsibility must be shared by the designer, the owner, and the contractor.

The recent development by SFSU shook the ground severely and continuously for about three months. This happened during the demolition and caused damage to my house and the neighborhood. We have cracks throughout the house inside and outside and more than half of our windows do not open. I went through these damages with the SFSU staff, contractor, and their insurance companies. I asked SFSU staff to install vibration monitoring devices in the neighborhood for the entire duration but that was ignored.

I have a claim for $250k to repair the walls and cracks and replace a few windows. Like most claims SFSU, the general contractor, subcontractor, and their insurance companies are dragging their feet. Last I heard was that they were trying to decide if they were actually responsible.

The homes in Lakeside neighborhood were built in the early 30's. Walls were made with lath and plaster with canvas cover and a coat of paint over it. This system of construction is vulnerable to continuous vibrations. Vibrations delaminate the canvas and the plaster from the lath.

I-Kashi-1 (cont)

Do not make the same mistake. Take proactive action and hire structural engineers and architects and install monitoring devices. Broaden your perspective and consider the history in the neighborhood. This entire neighborhood was built on densely compacted dry sand that was imported from West Portal tunnel.

There is a muni wall at 19th Avenue and Wyton Lane. This wall has been cracked for many decades. The vibrations from SFSU demolition made this wall fail. Although this is not entirely the fault of SFSU team but keep in mind that deferred maintenance and lack of attention by the City has made public infrastructures vulnerable. This burdens Stonestown Development with additional responsibilities.

I-Kashi-2

If you review the record drawings for 19th Avenue, you would notice that the side slope from the back of the sidewalk towards the property lines on Lakeside is cut to a 1:1 slope over imported sand. This is why the sidewalk on 19th Avenue is useless and constantly covered with soil and vegetation. Public sidewalk should have been protected with retaining walls decades ago. Once again, deferred maintenence has made the sidewalk vulnerable which burdens the Stonestown Development.

If you have questions you may contact me at your convenience.

All the best.

Kevin.

Sent from my Galaxy

-------- Original message --------
From: Craig Sargent <sflakesidepoa@gmail.com>
Date: 2/7/23 2:08 PM (GMT-08:00)
To: Craig Sargent <craigsargent55@gmail.com>
Subject: ACTION REQUESTED BY 2/9 - Stonestown Redevelopment Project

Dear Neighbors:

Thanks to those of you who attended last night's meeting. During that meeting we discussed one time sensitive item that needs our attention and action by **2/9** - the Stonestown Redevelopment Project.

The redevelopment project calls for building 2.900 new housing units, an 18-story hotel on 19th Avenue, several 6-story parking structures among other features.

The majority of homeowners who attended last night's meeting are opposed to this project, as it would negatively impact our neighborhood in a number of ways (traffic, over-densification, 8-years of construction, strain on infrastructure, etc). You can learn more about the impacts by obtaining a copy of the EIR (environmental impact report) by contacting:

Florentina Craciun,
CPC.Stonestown@sfgov.org,
628-652-7510 (EIR Co-ordinator at SF Planning).

If you're opposed to this project, **we need your help.** We're hoping to get ~100 Lakeside residents to submit their concerns by Thursday 2/9. To do this, email the coordinator directly and express your concerns as a resident of Lakeside, and site the reasons for your concerns.
CPC.Stonestown@sfgov.org

The EIR is organized into 6 chapters.
Key sections are:

Scoping Comments from the Public - Chapter 1, Section 1.D.2, page 1.3

Project Description- Chapter 2, Page 2.1

Alternatives - Chapter 5, Section 5 - 1

Written comments must reference the EIR, and should be emailed to Florentina by February 9, 2023.

Here is an example from our neighbor Jim attached!

All the best,
Craig Sargent

Attachment:

Project Title: Stonestown ProjectCase No:
2021-012028ENV

Date: January 14, 2023

Attn: Florentina Craciun, EIR CoordinatorEmail:
CPC.Stonestown@sfgov.org

Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

From: James P. Herlihy
160 Broadmoor Drive, San Francisco, CA 94132Member,
Lakeside Property Owners Association

1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.
3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St. Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6
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7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13
8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15

9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17
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13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore.

From: Liang, Xinyu (CPC)
To: MM K
Cc: Craciun, Florentina (CPC)
Subject: RE: Stonestown Development project
Date: Monday, January 30, 2023 9:56:10 AM

Hi Mee Mee,

Thanks for reaching out. Florentina, the environmental planner on this project cc'd in this email, can provide you more information on the traffic study and mitigation method.

Thanks,

Xinyu Liang, AICP, Senior Planner
District 6, Current Planning Division
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400, San Francisco, CA 94103
Direct: (628)652-7316 | www.sfplanning.org
San Francisco Property Information Map

From: MM K <mmkiong@gmail.com>
Sent: Friday, January 27, 2023 10:13 AM
To: Liang, Xinyu (CPC) <xinyu.liang@sfgov.org>
Subject: Stonestown Development project

Dear Ms Liang,

I-Kiong-1 I am concerned about the negative impact to the traffic situation with this new development which will add even more cars to the road from 19th to South 280 which is already experiencing "bottleneck" condition during peaking hours given there is no public transportation from that neighborhood to the south bay.

May I know what the developer is doing to mitigate this?

Thank you
Mee Mee Kiong
415.418.0889

Project Title: Stonestown Project Case No: 2021-012028ENV

Date: February 5, 2023

Attn: Florentina Craciun, EIR Coordinator Email: CPC.Stonestown@sfgov.org

Subject: **Draft Environmental Impact Report Stonestown Development Project Comments**

From:

Laura Birsinger
223 Stonecrest Drive
San Francisco, CA 94132
Lakeside Homeowner/Resident (29 years), St Stephen Church Parishioner, YMCA Member and Stonestown Patron

Hello Florentina-

See my comments/concerns below related to the above mentioned Stonestown project.

	Area of Concern/Comment:	Section Reference in EIR Draft
I-LBirsinger-1	**Noise** • Address how nearby residents can be assured that very early morning loud demolition/construction practices will not occur during the many phases of this project? • Recent construction at Stonestown (tear down of Olive Garden and conversion to restaurant and bank) included frequent instances of very loud work between 2:00 and 6:00 am • A point of contact is required should there be any such occurrences. This contact must be able to take action real time. (Relying on the police to control is not a viable solution.).	3.c
I-LBirsinger-2	**Vibration** • Address how nearby residents (plus churches and schools) can be assured that vibrations resulting from extensive construction don't damage the integrity of their structures? (Of particular concern is the potential damage resulting from the anchoring taller buildings may require, such as the possible hotel.) • A point of contact must be provided to deal promptly with any structural issues which occur. • Note that residents on Denslowe Drive reported cracks in their walls and other structural damage most likely caused by the recent SFSU major building project, so this concern is valid.	3.c
I-LBirsinger-3	**Traffic** • Address how increased traffic patterns in/out of Stonestown will be managed.	3.2

I-LBirsinger-4	• Of particular concern is for pedestrians crossing at the intersections of 19th and 20th Avenues at Winston and Eucalyptus. These pedestrians are students, shoppers, and residents walking to and from public transportation.	
I-LBirsinger-5	**Safety/Crime** • Address how the draft EIR indication that there will be no additional need for public services (<u>including</u> Police) was measured. • Stonestown is currently a mecca for shoplifting and car break ins. Each day's police blotter includes at least four instances within the Stonestown boundaries (mall, roads and parking areas). Those only reflect crimes actually reported. The security at the complex is already less than adequate. • Due to the well-known lack of police presence city-wide in San Francisco, the developers must consider an alternative to keep shoppers, merchants and residents safe. What are the plans to ensure safety? Perhaps an <u>enhanced private</u> security team should be considered as a means of reducing the crime.	5.c (no increase in demand for public services-including Police)

Thank you for addressing our concerns,

Laura Birsinger

From: Marie <marie415@gmail.com>
Sent: Thursday, February 9, 2023 9:40 AM
To: CPC.Stonestown
Subject: Stonestown Revelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Craciun,

I-Lee-1 I'm a long-time resident of Lakeside and I'm against the enormous project coming to Stonestown. I live a block away and my cross street is Winston. I'm very concerned about the traffic and air quality this huge project will bring to my neighborhood.

I-Lee-2 Please conduct the necessary research on traffic. At times (holidays or after school hours), it's very difficult to get across Winston with traffic backed up to Junipero Sierra Blvd. I can't imagine what will happen once 2800 additional units are added at Stonestown. 19th avenue (highway 1) is already congested as it is. Please don't add to the madness.

I-Lee-3 I truly hope the city conducts surveys and research to make sure the neighbors will not be adversely affected by this project because that's the reason we moved to this neighborhood.

--
Marie Lee

From: Michele Ho Lewis <htwelei@yahoo.com>
Sent: Saturday, February 11, 2023 2:49 PM
To: CPC.Stonestown
Subject: Objection to Development of 90 Foot Tall Tower

Dear Florentino Craciun,

I-Lewis-1 As a resident of Lakeshore Neighborhood, I strongly object the housing development plan, due to negatively impact
1- the enjoyment of the park
2- Current serene, quiet and beautiful skyline and landscape and
3- Blocking the easy access to the shopping mall.

Thank you for your considerations,
Best wishes,
Mrs Lewis
129 Inverness Dr
SF, CA 94132
415-323-0082

From: LG <lsgguard2004-mail@yahoo.com>
Sent: Monday, February 13, 2023 1:06 PM
To: CPC.Stonestown
Subject: Stonestown Draft EIR-public comments

San Francisco Planning Department
Attention: Florentina Craciun, Environmental Coordinator
Project Title: Stonestown Project
Case No: 2021-012028ENV
Date: February 13, 2023

We are 32 year residents and homeowners in the Lakeside neighborhood, across 19th Avenue from the proposed project. We are writing to express our concerns about the Draft EIR report:

I-LG-1
- Cumulative effect of multiple construction projects on traffic and mass transit (Chapter 3). The report only considers projects within a .5 mile radius, however, new residents of the large Balboa Reservoir project (1000+ units) can also be expected to patronize Stonestown and increase traffic congestion on Ocean Avenue and Holloway Avenue from City College to 19th Avenue.

I-LG-2
- Increased demand on outdated infrastructure (electric, water, sewer) (Section 3.7) Although the developer proposes to build new infrastructure on the project site, it will be connected to existing resources. Considering frequent drought conditions, flooding and sewage spills, is it safe to add thousands of new residents without clear plans and funding to upgrade infrastructure?

I-LG-3
- The increased demand for public services from fire protection, police and Emergency medical services is not adequately addressed (Appendix B Section E.13) The Initial Study (page 65) acknowledges that the Police Department is understaffed, yet concludes that the additional demands of 7,000 new residents (plus those from the additional near-by projects) would not have a significant impact. The statistics used to support this conclusion came from 2018-2021 (including 2 years of Covid restrictions)

I-LG-4
- Transportation Demand Management intended to reduce use of cars does not address the needs of seniors, the disabled and families with young children. Some of us are not able to walk long distances, ride bikes, etc. Does Demand Management mean charging for parking at the mall?

I-LG-5
- Impact of project (cumulative) on cleanliness, public health and quality of life. The images of the proposed project are pristine, but the reality is that 19th Avenue is covered with graffiti and trash is dumped everywhere. What will prevent this project from attracting more of the same?

I-LG-6
- More detail about the risks of exposure to dust and toxic materials is needed. The Draft EIR seems to say that the anticipated risks of additional cancer cases and other morbidities are acceptable. However, considering the number of schools (pre-school through university) in the area, even a small increase would be tragic. (Appendix B. Section E. 17).

I-LG-7
- The Draft EIR is limited to a few selected topics, but for those of us who live in the surrounding neighborhoods there are additional issues deemed insignificant that will have a

I-LG-7
(cont.)

huge impact on our homes and families. These issues are deserving of further study and efforts to mitigate. In addition, building these huge projects without definite plans and funding in place to improve infrastructure, public transit and public services in the area will affect both current and future residents.

Thank you for this opportunity to express our concerns.

From: J L <jefflifur@gmail.com>
Sent: Sunday, February 12, 2023 3:16 PM
To: CPC.Stonestown
Subject: Comments to Draft Stonestown Development Project EIR

Dear: Florentina Craciun, EIR Coordinator

I-Lifur-1 As a daily user of the Rolph Nicol Jr. park, I strongly object to the misleading and false conclusion stated in the draft Stonestown Development Project EIR that the increased shading of Rolph Nicol Jr. park would be "less than significant" and "would not be expected to substantially affect people's enjoyment of the park". As a daily user of the park, the additional shading which will cast significant additional shading throughout most of the day including before 11 am and after 3 pm when I and many others in the Merced Manor neighborhood use the park will significantly adversely impact enjoyment of the park. Furthermore, the nature of shading of ninety feet tall buildings (NW1, NW2, NW3 and W1) is significantly different from the filtered light through the existing eucalyptus trees. No light passes through a building. The language in the EIR needs to reflect the actual impact on residents who use the park and not dismiss the impact as "not substantial" which is simply not true. The sunlight in the colder morning and late afternoon hours, especially during the winter months is even more critical to the enjoyment of the park and this is completely disregarded by the draft report. The fact that the proposed buildings will block the southern exposure to light (up to 74% of the light at its peak in the early morning according to the report) will absolutely have a detrimental impact on the park and those of us who use it. The proposed development, instead of ruining the park should add green space directly along the entire border of the park back for a distance of at least 2.5 times the height of the nearest building (i.e. at least 225 feet from the edge of the park in the case of 90-foot high buildings) to ensure natural light is not blocked at any time of the year.

I-Lifur-2 Ensuring there is additional green space on both sides of the current border of the park will also ensure the ongoing presence of birds in the Rolph Nicol park which is home to hawks, owls, crows and numerous song birds. The small, peaceful park will naturally become much more congested with the influx of so many people living right next to it. This is bound to drive away the birds and will also increase the level of trash left in the park along with noise levels. Instead of leaving the small park to fend for itself, the developer should be required to expand the park on its side of the border allowing greater space to absorb the increased usage that will come with the greater population density. The City already has trouble maintaining Rolph Nicol park at its current level of usage. It was left for long periods without watering which largely eliminated the beautiful thick meadow used for play, and users of the park frequently have to spend time clearing litter from the park before and while using it. The increased usage will further strain the park. Expanding the green space along the park will help mitigate the worst impacts on the existing park and help ensure the quality of life for all residents that only sufficient park and green space areas can make possible.

Finally, the up to 2-year construction period for the project so close to the Rolph Nicol park with the unavoidable pollution, dust, and noise that accompany such massive projects, will also disrupt its animal life, quiet enjoyment of the park and the beautiful, quiet open space sanctuary that it currently is. Further set back from the park would help mitigate such disruption during the long construction period.

Thank you,
-Jeff Lifur

'cc: provided separately to Supervisor Engardio

From: Cynthia Lo <cynthia.m.lo@gmail.com>
Sent: Saturday, February 11, 2023 9:42 PM
To: CPC.Stonestown
Cc: dlhsf1@aol.com
Subject: Development Behind Rolph Nicol Park

Dear EIR Coordinator, Florentina Craciun,

I-Lo-1 As a native San Franciscan, residents of Merced Manor for almost ten years now, my family, dog and I take pride in being able to take long walks around our spacious neighborhood. Our residential homes as well as nearby schools, church and YMCA are all set back from the street/sidewalk, creating a sense of comfort and relaxation. These low-rise buildings are not looking over our shoulders as we stroll.

Here at Merced Manor and Lakeshore, we are a close knit community. Beyond the hustle and bustle of school hours, Rolph Nicol Park is our neighborhood hangout; we gather here throughout the day. The park has no adjacent buildings on two sides and is filled with tall trees, shrubs, a large grass area and a small play structure, creating a zen-like environment. During the day, the sun will peak through the trees painting a perfect back-drop. During the night, the distant lights of Stonestown can be seen, like illuminating a dark room with reassuring night lights. The new plan of constructing 90-foot buildings behind the park will destroy the scenery, bring gloominess and impact the entire neighborhood.

I-Lo-2 Moreover, Eucalyptus Dr houses an elementary school, a high school, a church with a K-8 school, a family YMCA and specifically, an entrance on 20th Ave directly to Stonestown. On any given school day, this street is traffic jammed three to four times for drop-offs/pick-ups. With the new plans, creating double to triple more residents, this mall entrance will ultimately create chaos.

I-Lo-3 In conclusion, erecting multiple 90-foot towers will significantly affect nearby residents and alter lifestyles in more ways imaginable. Please reconsider to previous plans of 4-story buildings.

Thank you for taking our concerns.

Cynthia Lo and Family
3070 26th Ave
San Francisco, CA. 94132

My name is Andrew Moore and I am a 20 year resident of the Lakeside community which is a neighborhood of approximately 500 homes across 19th Avenue from the Stonestown Shopping Mall. Lakeside was developed by the same family that built the shopping mall.

I-Moore-1 I am writing to state my objections to the the draft environmental impact report for the Stonestown Development Project. While it is a heavy lift for a lay person to synthesize the intricacies of the EIR, the gist of what is proposed is problematic for the following reasons.

The report itself is clear from the outset that "the proposed project or variant would result in **significant and unavoidable impacts** in the following areas, **even with implementation of feasible mitigation measures.**" (Summary, p. S-2, emphasis added) These areas are Historic Architectural Resources, Transportation and Circulation, Noise, Air Quality and Wind. In essence, the quality of life—both for those currently living in the area and those who might move to the area—would decline as a result of this project.

I-Moore-2 Setting aside the considerable direct impact that the project will have for some eight years on the lives of the residents of Lakeside (particularly noise, pollution, and congestion—for which there is no direct compensation), the size of the project is incompatible with the scale and the mass of buildings in the surrounding area. The plan calls for changing the zoning to raise the height limits to 90 feet (and 150 feet for a hotel). In particular there would be a string of buildings of 90 feet in height (and one of 150 feet) along 19th Avenue which would be a visually jarring Manhattanization of this thoroughfare. Other than a few buildings at San Francisco State (which are a mile away and not controlled by the City) there are no buildings along 19th Avenue (or its continuation as Park Presidio) which are close to 90 feet in height. People the world over visit San Francisco because much of it is beautiful—esthetics matter greatly.

I-Moore-3 Apart from the esthetics, these buildings would create permanent shadows during certain times of the day over dozens of homes on the first two streets in Lakeside to the east of 19th Avenue. (see map, Appendix H, page 14) While the report analyzes the impact of the shadows on the Junipero Serra Playground (which is enclosed by Lakeside), the permanent impact on the homes affected by the shadows created by the proposed buildings along 19th Avenue is not discussed.

I-Moore-4 Another concern is parking. While the project calls for a total of 4,250 spaces overall, if we subtract the permanent parking for residents, it is not clear how many parking spaces are available for visitors to mall. From my causal observation, the majority of the current spaces available at the mall are used daily, let alone the congestion during the holidays. No mention or analysis is made of where people will park when they wish to visit the mall, or the impact upon the tenants at the mall when people decide not to visit due to inadequate parking.

I-Moore-5 Finally, no where is there a discussion of the economic feasibility of the project. That is, what analysis and projections have been made showing that people are willing to pay for the kinds of residential properties proposed at the price points necessary for the developer to go ahead with the project. While this may not technically be a consideration for the EIR, it really is an environmental issue. If the builder can not show that the project is highly viable as currently envisioned, it is too easy to claim that something different (and likely less desirable than what currently exists) should be put in its place down the road. Ultimately, the environment in which people currently live would be the loser.

Thank you for your consideration of the points presented.

From: Nasrin Naraghi <nnaraghi1@gmail.com>
Sent: Thursday, February 9, 2023 1:24 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Program Coordinator,

I-Naraghi-1 My family has been living in the Lakeside neighborhood since 2010 and like the close proximity to Stonestown and the other retail outlets in the area. As it is, the traffic congestion has become much more dense. We feel the Stonestown redevelopment will adversely affect the standard of living in our neighborhood due to the following factors:

1. Congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

I-Naraghi-2 2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.

I-Naraghi-3 3) Causing potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6

I-Naraghi-4 4) The construction and operational noise in the surrounding neighborhoods. Section 3.3

I-Naraghi-5 5) The adverse effect of Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5

I-Naraghi-6 6) The architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1

I-Naraghi-7 7) The increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13

I-Naraghi-8 8) The geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of an unstable landfill. In the early 1950s the site was a canyon which was filled in with construction

I-Naraghi-8 (cont.) debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15

I-Naraghi-9 9) The risks posed by demolition of existing buildings for hazardous materials. The Petco site was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17

I-Naraghi-10 10) The cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services.

I-Naraghi-11 11) The new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4

I-Naraghi-12 12) The impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2

I-Naraghi-13 13) The impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore

Thank you for your kind attention,

Fred & Nasrin Naraghi
165 Broadmoor Dr
San Francisco, CA 94132

From: Hemai <hemionus@gmail.com>
Sent: Thursday, February 9, 2023 12:46 PM
To: CPC.Stonestown
Subject: concerns from a Lakeside resident re Stonestown Project EIR

Follow Up Flag: Follow up
Flag Status: Flagged

I-Parthasarathy-1 Hello, I am a homeowner in Lakeside and am writing to express my concern about the environmental impact of the proposed Stonestown project. I am particularly concerned about the traffic on Winston Drive and 19th Avenue, the resulting decrease in air quality (which is already noticeable the closer you get to 19th avenue) and hazards to pedestrians. The traffic situation at the corner of Winston & 19th is already quite bad: I have witnessed multiple accidents and was personally almost run over by a car. I am particularly concerned for the many schoolchildren in the area.

Below, please find these concerns expressed in more detail as comments to the EIR
Yours sincerely,

Hemai Parthasarathy
175 Stonecrest Drive
San Francisco, CA 94132

Project Title: Stonestown Project
Case No: 2021-012028ENV
Date: January 14, 2023
Attn: Florentina Craciun, EIR Coordinator
Email: CPC.Stonestown@sfgov.org
Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

I-Parthasarathy-2 1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

I-Parthasarathy-3 2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.

I-Parthasarathy-4 3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6

I-Parthasarathy-5 4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3

I-Parthasarathy-6 | 5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5

I-Parthasarathy-7 | 6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1

I-Parthasarathy-8 | 7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13

I-Parthasarathy-9 | 8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15

I-Parthasarathy-10 | 9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17

I-Parthasarathy-11 | 10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services.

I-Parthasarathy-12 | 11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4

I-Parthasarathy-13 | 12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2

I-Parthasarathy-14 | 13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore.

David Pilpel
2151 27th Ave
San Francisco CA 94116-1730

Florentina Craciun, Senior Environmental Planner
Planning Department
49 S Van Ness Ave Ste 1400
San Francisco CA 94103-3799

February 13, 2023

Re: Case No. 2021-012028ENV, Stonestown Development Project Draft EIR Public Comments

Dear Ms. Craciun,

I write to comment on the Draft Environmental Impact Report (EIR) for this project.

I-Pilpel-1 1. I urge that a new alternative be developed that would create fewer housing units, retail space, and other uses, and reduce density and height further than the Code Compliant or Reduced Density Alternatives. I believe that adding another alternative as described would increase the choice of alternatives and allow a better range of alternatives for analysis and decisionmaking on this important project on the west side of San Francisco.

I-Pilpel-2 2. I believe that this Project is not appropriate for an LEED proposal. The economy, locally and globally, is highly uncertain at this time. Downtown, educational institutions, housing, shopping, and transportation are incredibly speculative right now. Thoughtful and prudent consideration of long-term impacts is needed, with no rush to a decision on entitlements and growth.

I-Pilpel-3 3. The Draft EIR admits that the Project would cause "significant and unavoidable impacts related to transportation and circulation, air quality, noise, historic architectural resources, and wind after implementation of mitigation measures." The Draft EIR fails to fully address transportation and circulation impacts and air quality impacts. After admitting that the Project would "substantially delay public transit," the Draft EIR claims that impact is unavoidable. The Draft EIR does not adequately address or mitigate impacts on either automobiles or public transit.

I-Pilpel-4 4. The environmental impacts must be addressed and not relegated to a Statement of Overriding Conseiderations (SOC). The impacts will have regional impacts, not just local impacts. 19th Avenue, part of State Route 1, connects the Golden Gate Bridge to Interstate 280 in Daly City.

I-Pilpel-5 5. The Draft EIR cites to unsupported conclusions in the Initial Study (IS). The IS is not a substitute or exemption for the analysis and mitigation requirements covering those conclusions, including conclusions of no impacts to "land use and land use planning, population and housing, cultural resources …, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous material, energy resources …, and wildfire." The Project will clearly have impacts on land use, population,

I-Pilpel-5 (cont.) housing, greenhouse gas emissions, energy resources, and wildfire, and those impacts must be analyzed in the EIR and mitigated.

I-Pilpel-6 6. Greenhouse gas (GHG) emissions must be analyzed in the DEIR. (see, e.g., IBC Business Owners for Sensible Development v. City of Irvine (2023) 2023 Cal.App.LEXIS at p. *28-35 [EIR must analyze project's incremental contribution to GHG, which may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions; must also consider source of such emissions and total GHG emissions])

I-Pilpel-7 7. The Draft EIR dismisses the Project's impacts from changing the entire character of the area from two-story structures to include some 20-story structures.

I-Pilpel-8 The Air Quality impacts are narrowed to include only construction impacts, which does not comply with CEQA.

I-Pilpel-9 8. The Project would eliminate parking and traffic lanes both in the Project area (Stonestown itself) and surrounding streets. The surrounding area is already significantly impacted by traffic related to 19th Avenue (State Route 1), San Francisco State University, and Parkmerced.

I-Pilpel-10 9. I found no coherent discussion in the Draft EIR of Vehicles Miled Traveled (VMT), energy consumption from being stuck in traffic, or emergency evacuation methods and routes.

10. The Draft EIR implausibly claims that the Project would have no impacts on VMT. New high-rises with thousands of residential units will of course impact VMT, which must be analyzed and mitigated.

I-Pilpel-11 11. I also found no coherent discussion or mitigation of how added traffic will affect long-term air quality. I found the air quality discussion to be mostly about construction air quality impacts.

Thanks for considering my comments; please keep me informed by mail on this project.

Sincerely,

/s/
David Pilpel

From: Jan Ressl <janressl@gmail.com>
Sent: Monday, February 13, 2023 8:08 PM
To: CPC.Stonestown
Cc: dlhsfl@aol.com
Subject: Re: Stonestown Residential Tower

Hi Florentina,

I-Ressl-1 I'm writing to you to express my disappointment regarding the proposed residential tower to be built behind Stonestown Mall. My understanding was that the building was originally going to be 4 stories tall, but has now suddenly changed to 90 feet (almost 8 stories) without any consultation with the neighborhood. Given that the developer has made several assurances about the proposed work, on the basis of which we decided not to oppose the construction, my husband and I are very worried that the developer feels free to discard any promises they've made if it is to their convenience.

We think it is essential that the city deny their permit until such time as a transparent public hearing has been made on their proposed amendment to increase the height to 90 feet.

If they build it at the promised 4 stories, we would have no objection. But from our perspective, they are trying to pull a fast one. It would be unacceptable if the city allowed them to get away with it.

Thanks for your time,

Jan Ressl & Ajith Ramanathan

From: Christine Riley <christineriley71@yahoo.com>
Sent: Wednesday, February 8, 2023 1:36 PM
To: Craciun, Florentina (CPC)
Subject: Stonestown Development

Hello Florentina,

I-Riley-1 This is Christine Riley, a San Francisco native and a homeowner in Lakeside Village.
I have been keeping informed on the plans for the Stonestown Development Project for several years. The purpose of this message is to share my concerns with you.

I am not opposed to expanding the property to include housing and additional commercial and open space. I also applaud Brookfield Properties for keeping their neighbors informed as the project has evolved.

I-Riley-2 However, after reviewing the Environmental Impact Report, and as a resident that lives directly across the street from the mall, I am deeply concerned with three specific areas that the development will have on our neighborhood. The addition of 2,930 residences and a hotel will surely impact traffic, public transportation and emergency services.

As a neighbor I have first hand experience in observing the congestion that currently exists, the air quality issues that additional vehicles will add, and the need for additional transportation options and staffing for emergency responders. I recommend scaling the project down in size to be less invasive.

Thank you for the opportunity to voice my opinion. I hope that you and the Planning Commission take into consideration the views of those of us that will be impacted the most.

Best regards,
Christine Riley

Sent from my iPa

From: William Schneider <schneiderwg@netscape.net>
Sent: Wednesday, February 8, 2023 10:56 AM
To: CPC.Stonestown; jimherlihy@gmail.com; craigsargent55@gmail.com
Subject: Stonestown Development

Follow Up Flag: Follow up
Flag Status: Flagged

I-Schneider-1 St Stevens church attempted to develop the land behind the Cinemas- 40 Years ago it was determined to be toxic and landfill that would not support tall buildings. Please research and respond. Thank You, William Schneider

From: Howard Strassner <ruthow1@gmail.com>
Sent: Thursday, January 26, 2023 7:43 PM
To: CPC.Stonestown
Subject: Stonestown DEIR Comments
Attachments: senior housing ideal.docx; EIR stonestown.doc

attached

On an Ideal Senior Housing Facility –HS Jan/2023

This concept of an ideal facility was developed as I searched for my near future new home but I did discovered some close facsimiles in Oakland. The 18 story building proposed Stonestown would be my ideal is construction started five years ago. But, it could be available for some ones future.

The facility should be large, probably more than 200 units. This will allow for good management and many people meeting opportunities for residents. Residence in the facility should be limited to people who have started to collect social security to self-select for common interests because senior housing is more than just housing. Because seniors are trending downward in abilities and upward in needs for service the units should be proportionally allocated to a few people who only want to downsize and desire only limited services with the majority of units for people who need more services but are mostly independent. This means that all new residents must be able to walk in without assistance and that most people will age in place in the same unit or at least in the same building. I don't believe that those with an extreme loss of memory and/or very great needs for personal care should live in this facility. The latter should not mean that those who can and/do walk, wheel or motor themselves to facility functions should be required to move. The growing number of the latter group, over time, to enjoy the facility is another reason for a larger facility.

Seniors also come with a range of available finances and needs for space. Many can use a large studio, about 500 square feet. Many will only be able to afford a small studio. A few, perhaps couples, may feel a need for larger, separate one bedroom units. "Murphy" beds, back to the 1920s, can make entertaining more feasible in small units. Kitchens should all be minimal: two burners, no oven, small microwave, small refrigerator and a little counter space and storage. Hopefully SF and developers can see that these small units make it easier for people to downsize and release their larger houses for families who need more space. This will allow most seniors to age in place and not have to move until near the end. In addition, many people who are ready to downsize from two or three bedrooms have a lower floor that can be improved to provide an additional housing unit.

The residence should include food service. A few residents will want 21 meals per week. Most will want the flexibility of 14 meals per week. Saving a few meal tickets to treat family to meal will be nice. Some residents will want very few senior meals per week and will pay a little more per meal. Residents should be able to change their food needs as they age. Maybe the dining room should

I-Strassner-1 (cont.)

have two sittings. All of the residents should contribute proportionally to the various kinds of common space. This might constitute a small subsidy for those with reduced means. Services should be available but elective. Weekly cleaning is nice but cleaning a small space can be better than doing a tai chi exercise on you tube. Again, choice is good but maybe except for recovery after illness a choice should be long term, to allow management to plan. Shuttle vans are also a good service.

An ideal location would have: good transit service nearby; accessible pleasant nearby walks in parks and neighborhoods and close by food shopping for those who elect to do some of their own cooking. These virtues are part of the 18 story building proposed for the Stonestown parking lot and the building can be designed to include all of the above virtues too. The problem is facility management. Senior facilities used to be owned and operated as non-profits. I suggest that the future residents pay the rent for their unit to Brookfield; in the typical supply and demand method. However, their payment for their share of the essential senior common spaces should be paid to a new carefully organized cooperative management organization. This organization will also provide the services and meals that the residents will choose. While the latter is difficult, it will have more benefits to the resident seniors and society in general than the growing corporatization of senior facilities that used to be managed by nonprofit religious or other groups. The alternative to a cooperative would be close government supervision similar to a monopoly because seniors after they move in and age can't really move. Thus they become utility consumers.

Attachment:

SAN FRANCISCO GROUP

January 27, 2023

Florentina Cracium, Coordinator
CPC.Stonestown@#sfgov.org
Planning Department, 1660 Mission Street
San Francisco CA 94103-2414

Re: Stonestown DEIR Comments, Case No. 2021-012028ENV

Dear Ms. Cracium,

Thank you for the opportunity to comment on the subject SEIR. The Sierra Club appreciates your electronic publishing of the DEIR to save paper, printing and mailing cost.

The subject document has over 600 pages that attempt to deal with prospective environmental failures. Thankfully, the Stonestown project, of dense housing near good transit is inherently a benefit to the environment by providing residents with thermally efficient housing and a more economic life of less driving. The Sierra Club has reviewed the subject Draft EIR and we have a few suggestions to improve the final EIR and make the ultimate project more even beneficial to the environment:

1) Because of San Francisco's great need of additional affordable housing the Study should have included a statement about how many additional affordable units, of what kind, would be provided if an outside source of funding, of how much, was available.

2) Because of SF's increasing numbers of elderly residents and our great need for market rate housing the study should have included as a partial alternative the impacts of using the eighteen story building as a senior "independent living" residence. This alternative should note that many of the residents of this senior facility would be people who are ready to downsize from a two or three bedroom home or apartment but now see little advantage to moving. If they can move into a nearby senior residence they will release their larger, nearly empty, houses for families who need more space. In addition some of these homes have a lower floor that can be improved to provide a second housing unit, but, that is too big a project for an elderly person. An attachment is provided to show how this building might work as an Ideal senior residence.

3) Because of SF's great need of housing of all sorts the Study should have included an alternative of greater density and height (without shading an existing park) with up to the maximum number of units, with existing zoning, or more. This alternative would provide the developer with greater profits from the currently wasted parking lot land and more shoppers for the remaining shopping center. The studies discussion of the problems and benefits of increased density on this site might give the public and their elected representatives a chance to select a larger project or a better understanding of why the proposed size is just right.

Another Sierra Club member may be commenting on other aspects of this project

Thank you for your consideration,

Howard Strassner, Member SF Group Executive Committee of the Sierra Club
419 Vicente, San Francisco CA 94116, 661-8786, (h,w)
email: ruthow1@gmail.com

From: stroxel@pacbell.net
Sent: Saturday, February 11, 2023 11:10 PM
To: CPC.Stonestown
Subject: Comments and Opposition to the Increase in Height of the Proposed Residential Towers adjacent to Rolph Nicol Park and Playground

My name is Suzanne Troxel. I am a native San Franciscan who has lived in Merced Manor for almost 37 years.

I-Troxel-1 I am writing to express my concerns regarding recent changes that have been made to the Stonestown Development Plan (the Plan) as outlined in the EIR dated December 14, 2022. According to the Plan, and as confirmed by Reuel Cooke, Manager of Community Development for Brookfield Properties, there will now be three eight (8) story buildings adjacent to Rolph Nicol Park and Playground (the Park) . The previous Plan indicated that the adjacent buildings would be four (4) stories in height. The proposed buildings are now twice their original proposed height.

I-Troxel-2 The Park is not only used by the adjacent neighborhoods of Merced Manor and Lakeshore Acres, but also by students and family of students attending Lowell High School, Lakeshore Elementary School, St. Stephens School and other neighborhood schools, families that visit or live near Stonestown and many others. Eight story buildings looming over the Park to its south will impact the light and sun that the Park receives and generally change its atmosphere. The weather in this neighborhood is often foggy and colder than other parts of San Francisco, so restricting the current light and sun that the Park receives will have an even more adverse impact on the Park.

Respectively submitted,

Suzanne Troxel
2980 24th Avenue
San Francisco, CA 94132
stroxel@pacbell.net
415 999-7329

From: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Sent: Tuesday, January 3, 2023 11:49 AM
To: Susan Yogi
Subject: FW: Comments on Stonestown EIR

Florentina Craciun, AICP
Senior Environmental Planner
Environmental Planning Division
San Francisco Planning
49 South Van Ness Avenue, Suite 1400,
San Francisco, CA 94103
Direct: 628.652.7510 www.sfplanning.org

San Francisco Property Information Map

From: Kath Tsakalakis <kath@trefo.com>
Sent: Friday, December 23, 2022 5:28 PM
To: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Subject: Comments on Stonestown EIR

Dear Florentina,

Hope you're well. I'd like to submit these written comments for the Stonestown EIR. By way of background, my family lives in Lakeside near Stonestown. I'm relatively involved with the community as the co-founder of the Friends of Lakeside Village nonprofit and Business Council, a member of the San Francisco Council of District Merchants Associations since 2021 (website: lakeside.mainfare.com). These comments represent my personal perspective – they are not a consensus from our neighborhood committee or Business Council.

I-Tsakalakis-1

Firstly, I would like to say that I wholeheartedly support the Stonestown project. It will be a massive improvement to our neighborhood. In particular, the project will:

1. **Continue bringing Stonestown retail into this century**, building on the progress already made with the new anchor tenants (Whole Foods, Cinema, Sports Basement, and Target).
2. **Add a much-needed hotel to the west side** of San Francisco within easy reach of the airport and freeways. Currently people are forced to stay downtown or on the Peninsula.
3. **Add much-needed homes.** While there may be 61,000 empty homes in San Francisco today (due to an apparent supply-demand-price mismatch, source: kron4.com article), the only solution long-term to revive our small landlocked city is building up with higher density. I would like to see the maximum number of homes.
4. **Add more green space while adding parking spaces**. Today, the acres of above ground parking are an eyesore and throwback to a bygone era.

I-Tsakalakis-2

It may be that I missed this in the 628-page EIR, but I would like to see **more green walls on the residential, commercial, and retail buildings**. Singapore is a shining example of how greenery makes a high rise, dense city more beautiful and livable. This link shows many examples that could easily be incorporated into the

I-Tsakalakis-2 (cont.)

Stonestown design: http://www.greenroofs.com/2019/05/01/green-walls-becoming-more-popular-in-singapore-buildings/ As a member of the Board of Trustees, I worked with the Cathedral School for Boys (by Grace Cathedral) on a recent renovation, and a feature greatly appreciated by the neighbors as well as kids and teachers was green walls.

I-Tsakalakis-3

While there was discussion of public transportation in the EIR, there doesn't seem to be acknowledgement that the M-line is woefully inadequate today. **What will the Stonestown developers contribute financially to improving the M-line?** The Stonestown station has a small platform that barely accommodates passengers today. It also makes no sense for stations to be located above ground in the middle of the busy 6-lane 19th Avenue. The M-line should go underground from West Portal station so that trains can be longer and not muddle along with cars/ bicycles/ buses. Locating stations on the West side of 19th would remove the need for most passengers to cross 19th Avenue from the Mall. By comparison, there is relatively little demand for public transport from the low-density Lakeside district on the East side of 19th Avenue. The K should also go underground until at least after St. Francis Circle.

I look forward to hearing from you with any questions.
Yours sincerely,
Kath Tsakalakis
Mobile 415-636-2421

From: Y & D tsang <tsangmission@gmail.com>
Sent: Wednesday, February 8, 2023 11:48 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Florentina:

I-Tsang-1 I and my family strongly object to the redevelopment project particularly in light of the traffic flow. It is already a mess right now with traffic jams
daily along 19th Ave. The added business and residential traffic will be unbearable.
Our house is in Lakeside at the corner of Wyton and Denslowe east of 19ty Ave. Wyton is a narrow walkway which does not and cannot support
heavy traffic which the developer portrays to be a main conduit crossing 19th Ave. This will destroy my neighborhood and the value of our house.
We spent three years applying for remodeling of our home including planting trees along Wyton and 19th Ave. which application is pending approval
after completing the recording process with the county recorder. This redevelopment project and intended diverging of traffic kills our entire effort to
improve our house and value.

As of now, we constantly repaint over graffiti on our fence facing the sidewalk east of 19th Ave. We can't imagine how much worse it will become with

I-Tsang-2 increased traffic. The infrastructure required to support the increased population density and activities is huge and will adversely impact the neighborhood.

I-Tsang-1 (cont.) It directly kills our effort to improve our neighborhood. Come and drive along 19th Ave. and see firsthand the already congested traffic.

With respect,

Ower of Denslowe
D.W Tsang
dwtsang@gmail.com

From: T W
To: CPC.Stonestown; T W
Subject: Stonestown Development Project
Date: Friday, February 3, 2023 1:51:44 PM

I-Will-1 Please provide safe access during all phases of construction between the student-accessed pathway in Rolph Nichol park and the stop-sign controlled crosswalk on Buckingham Way in front of the existing movie theater for Lowell High School students to access the Stonestown Mall during the 10-years planned development. Lowell High School is a neighbor of the Stonestown mall, and is the biggest high school in San Francisco with 2,800 students. Lowell students are frequent mall customers both during lunch and after school.

I-Will-2 Please provide sufficient underground and above ground parking for mall customers and proposed residents of the Stonestown housing development. There are many retailers at Stonestown that selling goods that require car transport, such as family groceries at Whole Foods and Trader Joe's, ski and snowboard (skis/boots/poles) rentals and returns at Sports Basement, and multi-bag purchases made during Target runs. As a mall, Stonestown has pivoted incredibly well bringing in highly desirable retailers and restaurants. Please continue to provide convenient automobile access for shoppers so that Stonestown continues to thrive.

Thank you,

Tina Will

Project Title: Stonetown Project
Case No: 2021-012028ENV
Date: 2-9-2023
ATTN: Florentina Craciun, EIR Coordinator
From: Grace Wong

I-Wong-1

I don't believe 19th Ave can handle additional 2900 unit traffic in this area. rightnow the traffic already packed in rush hour. plus M-car on 19th Ave will show down more incoming traffic from freeway. Hotel business will bring more traffic on 19th Ave. 19th Ave is main street connected Sunset and Richmond residential District. SFSU has a lot students walks on 19th Ave. We need a safe street not a heavy traffic street.

From: Pei Zhu <peizz8@icloud.com>
Sent: Wednesday, February 8, 2023 6:56 PM
To: CPC.Stonestown
Subject: Opposed to Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

Hi there,

I-Zhou-1 I opposed to the above project as this project will bring negative impact to our neighborhood such as , overloaded parking, traffic, increasing noisy, more people will share public facilities while limited accessibility and pollution over long time construction period.

Regards,
Peiling Zhou
Owner of 243 Stratford Dr

ATTACHMENT C

Revised Variant Initial Study Topics Analysis

ATTACHMENT C
REVISED VARIANT ANALYSIS FOR THE INITIAL STUDY TOPICS

C.A Land Use and Planning

The land use and planning impacts of the variant have been described and analyzed in initial study Section E.1, Land Use and Planning, pp. 8 through 10, included as draft EIR Appendix B. The analysis concluded that the draft EIR variant would not physically divide an existing community and would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Furthermore, the analysis determined that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to land use and planning. As described below, land use and planning impacts of the revised variant would be similar to those of the draft EIR variant, and the impact conclusions would be the same.

C.A.1 Physical Division of an Established Community

The revised variant would include additional residential units, fewer non-retail sales and service uses, and no hotel uses. However, the revised variant would have the same site layout and block and street network configuration as the draft EIR variant. Like the draft EIR variant, the revised variant would not include major roadways, bridges, or freeways that could serve as a barrier to site access, nor would the revised variant remove any features that currently provide access. Therefore, the revised variant would have the same impact as the variant and would result in a less-than-significant impact related to physical division of a community. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the physical division of an established community.

C.A.2 Conflict with Applicable Land Use Plans

The revised variant would have the same overall characteristics and components as the draft EIR variant, including creating a new SUD that would rezone the project site and establish development controls for construction of a multi-phase, mixed-use project, creation of a new Special Sign District establishing signage controls, and would include amendments to the general plan and planning code to create the SUD and Special Sign District. Like the draft EIR variant, the revised variant would result in an impact related to land use and planning under CEQA if it would substantially conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect, such that a substantial adverse physical change in the environment would result. To the extent that physical environmental impacts may result from such plan/policy conflicts with the revised variant, this section discloses and analyzes these physical impacts under the relevant environmental topic sections below.

To the extent that the revised variant would conflict with current zoning and the general plan, as with the draft EIR variant, the project sponsor would seek amendments to these plans to bring the plans and the revised variant into conformity. Therefore, the revised variant would not result in conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project as reflected in the planning code or general plan. Potential conflicts with applicable general plan objectives and policies would continue to be analyzed and considered as part of the review of entitlement applications required for

the revised variant, independent of environmental review under CEQA. They also would be considered by the decision makers during their deliberations on the merits of the revised variant and as part of their actions to approve, modify, or disapprove the revised variant. Through this process, the revised variant, like the draft EIR variant, would be consistent with all land use provisions in the general plan and zoning. Therefore, like the draft EIR variant, the revised variant would result in a less-than-significant impact related to conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to land use.

C.A.3 Cumulative Impacts

The initial study concluded that the draft EIR variant, in combination with the cumulative projects, would not result in cumulative land use impacts, including cumulative impacts related to physical division of a community or a conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect. A cumulative land use impact would occur if the revised variant, in combination with the cumulative projects, would result in the physical division of an established community or result in a significant physical environmental impact due to conflicts with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. As with the variant, the revised variant would not physically divide an existing community, and therefore would not combine with cumulative projects to result in a significant physical environmental impact related to dividing an established community.

The cumulative projects would result in an intensification of land uses in the project vicinity. However, they would be infill projects and would be consistent with the City's objectives for increasing the supply of housing and development in the vicinity of major transit stops and therefore would not result in conflicts with land use plans or policies adopted for the purpose of avoiding or mitigating environmental impacts. In addition, the cumulative projects would not combine with the proposed project or variant to alter the land use pattern of the immediate area or physically divide an established community. Therefore, as with the draft EIR variant, the revised variant, in combination with the cumulative projects, would not result in cumulative land use impacts, and the impact would be less than significant. The revised variant would not result in any new or more severe cumulative land use impacts than those identified in the draft EIR.

C.B Population and Housing

The population and housing impacts of the variant have been described and analyzed in initial study Section E.2, Population and Housing, pp. 10 through 17, included as draft EIR Appendix B. The analysis in the initial study concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to inducement of substantial unplanned population growth. Like the draft EIR variant, the revised variant would not displace any residents or housing units because no residential uses or housing units currently exist on the project site. Therefore, housing and population displacement is not applicable and is not addressed further in this section. As described below, population and housing impacts of the revised variant would be similar to those of the draft EIR variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the population and housing.

C.B.1 Population Growth Due to Construction

The magnitude, duration of construction, and construction phasing for the revised variant would be similar to those for the variant analyzed in the draft EIR. Phases 1 through 5 would be the same, and Phase 6 would be extended by three months because of the additional vertical construction required for the tower on Block S3. As with the draft EIR variant, the maximum number of construction workers for the revised variant would range from 349 to 610 workers per day. For the same reasons as discussed for the draft EIR variant in initial study Section E.2, construction workers for the revised variant would likely be drawn from the local and regional construction workforce, such that the revised variant would not induce population growth by attracting a substantial number of construction workers from outside of the region. Therefore, like the draft EIR variant, the revised variant would result in less-than-significant construction-related impacts related to population growth. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to construction-related population growth.

C.B.2 Population Growth Due to Operation

As presented in **RTC Table C-1**, the revised variant would develop 3,491 residential units (411 more units than the 3,080 units proposed under the variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than the draft EIR variant's 7,269 residents). The revised variant would include a 104,000-square-foot decrease in non-retail sales and service uses and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant, which would result in approximately 775 total employees at the project site (483 fewer employees than the 1,258 employees under the draft EIR variant).

RTC Table C-1 Proposed Variant and Revised Variant Residents and Employees

	Generation Rate	Draft EIR Variant	Revised Variant
RESIDENTS			
Units		3,080 units	3,491 units
Residential	2.36 persons/household[a]	**7,269 residents**	**8,239 residents**
EMPLOYEES			
Retail Sales and Service Use	550 gsf/employee	291 employees	291 employees
Non-Retail Sales and Service Use	250 gsf/employee	800 employees	384 employees
Hotel	1,500 gsf/employee	67 employees	0
Institutional	630 gsf/employee	100 employees	100 employees
Total Employees		***1,258 employees***	***775 employees***

SOURCES: U.S. Census Bureau (2021); LEED (2019)

ABBREVIATION: gsf = gross square feet

NOTES:

[a] The 2.36 persons per household rate is based on the U.S. Census Bureau 2016–2020 data.

[b] The employee generation rates are based on Leadership in Energy and Environmental Design (LEED) Reference for Building Design and Construction, Version 4.1, Appendix 2, Table 1, "Default Occupancy Numbers." For retail sales and service use, the general retail rate was used. For non-retail sales and service use, the general office rate was used. For institutional use, the educational (daycare) rate was used.

Although the revised variant's addition of 8,239 new residents on the project site would be substantial for the vicinity, it would not be substantial for the city as a whole, as it would represent approximately 1.4 percent of the projected increase in citywide population growth of 591,359 residents (an increase of 0.2 percent compared to the draft EIR variant's 1.2 percent). Additionally, as with the draft EIR variant, the number of new residents would not be considered a substantial adverse impact in and of itself for the following reasons: the site is located near a major transit corridor and highway (I-280 and 19th Avenue) and is served by existing transportation infrastructure such as streets, buses, and light rail (Muni), and regional transit (SamTrans). Like the draft EIR variant, the revised variant would conform to densities allowed in the general plan and project site's zoning district under the planning code through the general plan amendment and SUD process.

As discussed in initial study Section E.2, p. 15, the project site is located within the 19th Avenue Priority Development Area as specified in Plan Bay Area 2050, prepared by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). ABAG's housing unit projection for the 19th Avenue Priority Development Area is 11,170 in 2040, compared to a 2010 housing unit number of 5,220. The revised variant represents the maximum increase of 3,491 new housing units at the project site and would represent 67 percent of the housing unit growth within the 19th Avenue Priority Development Area during that period (compared to 59 percent for the draft EIR variant). The growth projections in the 19th Avenue Priority Development Area represent planned growth in the city, as Priority Development Areas are locally designated areas within existing communities that have been identified and approved by local cities or counties for future growth.

The revised variant would include a 104,000-square-foot decrease in non-retail sales and service uses and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant, which would result in approximately 775 total employees at the project site, or 483 fewer employees than the 1,258 employees analyzed for the draft EIR variant. Therefore, the number of permanent employees for the revised variant would be smaller than the number analyzed for the draft EIR variant, which concluded that the variant would not result in substantial unplanned employment growth.

Like the draft EIR variant, the revised variant would not include expansion of water or wastewater treatment facilities, but would include the construction of new electric, telecommunication, and sewer lines to serve the project site. However, this infrastructure would not indirectly induce substantial population growth in the project area because proposed infrastructure modifications would be sized to meet project needs and would not enable additional development. Therefore, like the draft EIR variant, the revised variant would not result in any indirect impacts related to population growth as a result of expansion of infrastructure.

For these reasons, the increase in population, housing, and employment attributable to the revised variant would not constitute substantial unplanned growth not planned for in citywide projections, and this impact would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the population growth.

C.B.3 Cumulative Impacts

As discussed in initial study Section E.2, pp. 16 and 17, combined population and housing growth from cumulative projects in the project vicinity would include approximately 18,402 residents and 15,649 residential units by 2050. At full buildout, the revised variant would add 3,491 housing units and a residential population of 8,239 persons to the project site. Therefore, the maximum residential scenario under the

revised variant, in combination with the cumulative projects, would provide approximately 12.8 percent (3,491 + 15,649 = 19,140 units) of the total number of units projected by 2050[1] (compared to 12.5 percent for the draft EIR variant) and would generate approximately 5 percent (8,239 + 18,402 = 26,641) of the projected increase in citywide population growth of 532,595[2] (compared to 4.8 percent for the draft EIR variant).

As discussed above, the revised variant would generate an estimated 775 employees (483 fewer employees than the variant). The revised variant, in combination with the cumulative projects, would generate approximately 2,750 jobs (775 + 1,975), which represents approximately 1.9 percent of the 147,000 new jobs expected for the city by 2050[3] (compared to 2.2 percent for the draft EIR variant).

Conservatively assuming that all employment-related growth attributable to the revised variant and cumulative projects would require housing in the city, the employment growth would account for about 1.3 percent of the projected increase of 213,000 households in the city by 2050[4] (compared to 1.5 percent for the draft EIR variant). As with the draft EIR variant, the increase in population and housing growth attributable to the revised variant, in combination with the cumulative projects, would not result in an increase in employment growth not planned for in citywide projections.

Therefore, as with the draft EIR variant, the increase in population, housing, and employment growth attributable to the revised variant, in combination with the cumulative projects, would not constitute substantial unplanned growth not planned for in citywide projections, and the cumulative impact would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative population and housing.

C.C Archeological Resources, Human Remains, and Tribal Cultural Resources

The impacts of the variant on cultural resources have been described and analyzed in draft EIR initial study Section E.3, Cultural Resources (archeological resources and human remains), pp. 17 through 29, and initial study Section E.4, Tribal Cultural Resources, pp. 30 through 40, included as draft EIR Appendix B. As described below, cultural resources impacts of the revised variant would be the same as or similar to those of the draft EIR variant.

Initial study Section E.3, Cultural Resources, concluded that although no known archeological resources, human remains, or tribal cultural resources are present on the project site, the possibility that these resources are present and could be subject to inadvertent disturbance during construction of the variant cannot be entirely discounted. Implementation of Mitigation Measure M-CR-2, Archeological Monitoring, during construction would address impacts on any previously unrecorded and buried (or otherwise obscured) archeological deposits by requiring the project sponsor and its contractors to adhere to the

[1] The planning department estimates an increase of approximately 150,000 housing units by 2050. San Francisco Planning Department, *San Francisco Housing Element 2022 Update Draft EIR* (2022), p. 4.1-72.
[2] The planning department's projected increase in citywide population growth in 2050 would be 532,595 persons. San Francisco Planning Department, *San Francisco Housing Element 2022 Update Draft EIR* (2022), Table 4.1-5, p. 4.1-63 (873,965 persons in 2020), and Table 4.1-9, p. 4.1-68 (1,406,560 persons in 2050).
[3] The planning department estimates that in 2050, there will be an increase of approximately 147,000 jobs. San Francisco Planning Department, *San Francisco Housing Element 2022 Update Draft EIR* (2022), Table 4.1-8, p. 4.1-67 (771,000 jobs in 2020), and Table 4.1-9, p. 4.1-68 (918,000 jobs in 2050).
[4] Association of Bay Area Governments, *Growth Pattern,* updated January 21, 2021, https://www.planbayarea.org/sites/default/files/FinalBlueprintRelease_December2020_GrowthPattern_Jan2021Update.pdf, accessed June 11, 2022.

appropriate procedures and protocols identified in an archeological monitoring program as outlined below to identify and appropriately treat archeological resources discovered during construction activities.

The revised variant would involve the same construction activities and construction footprint as the draft EIR variant. As with the draft EIR variant, implementation of Mitigation Measure M-CR-2 would be required to address impacts on any previously unknown archeological resources, human remains, or tribal cultural resources discovered during construction activities. Therefore, as with the draft EIR variant, potential construction-related impacts of the revised variant on previously unrecorded archeological resources, human remains, or tribal cultural resources would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to archeological resources.

C.C.1 Cumulative Impacts

The initial study concluded that no cumulative projects would overlap with or be directly adjacent to construction activities at the project site, and thus, the cumulative projects would not have the potential to affect the same unknown archeological resources, human remains, or tribal cultural resources as the variant, should any such resource be identified during construction. The analyses in the initial study concluded that the draft EIR variant would not combine with the cumulative projects to result in a significant cumulative impact on archeological resources, human remains, or tribal cultural resources, and no mitigation measures are required. This same conclusion applies to the revised variant because it would involve the same construction footprint as analyzed in the draft EIR and initial study for the variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the cumulative archeological resources impacts.

C.D Greenhouse Gas Emissions

The impacts of the variant related to greenhouse gas (GHG) emissions have been described and analyzed in initial study Section E.8, Greenhouse Gas Emissions, pp. 43 through 57, included as draft EIR Appendix B. As described below, GHG impacts of the revised variant would be the same as or similar to those of the draft EIR variant. Accordingly, the following mitigation measures identified for the draft EIR variant in the initial study would also apply to the revised variant:

- Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure
- Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips

Like the draft EIR variant, the revised variant would increase the intensity of the use of the 43-acre site by redeveloping the approximately 27 acres of surface parking and existing structures surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phase, mixed-use community. Therefore, like the draft EIR variant, the revised variant would contribute to annual long-term increases in GHG emissions as a result of increased vehicle trips (mobile-source emissions) and residential and non-residential operations that would result in an increase in energy use, water use, wastewater treatment, and solid waste disposal. As with the draft EIR variant, construction activities for the revised variant would also result in temporary increases in GHG emissions.

As described in the initial study, CEQA Guidelines section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. In accordance with section 15064.4, the significance of GHG impacts should consider the extent to which the proposed action would increase or reduce GHG emissions, exceed a locally applicable threshold of significance, or comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The CEQA Guidelines also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to reduce GHG emissions (section 15064(h)(3)). In compliance with CEQA Guidelines sections 15064.4 and 15064(h)(3), the GHG analysis provides a qualitative discussion of the degree to which the draft EIR variant would comply with regulations to reduce GHG emissions through the city's 2017 GHG Reduction Strategy. The analysis also evaluates the draft EIR variant against the air district's adopted GHG significance threshold that allows projects which are consistent with a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b) to conclude that the draft EIR variant's GHG impact is less than significant.

The draft EIR variant would be subject to regulations adopted to reduce GHG emissions as identified in the 2017 GHG reduction strategy. Compliance with the applicable regulations would reduce the draft EIR variant's GHG emissions related to transportation, energy efficiency (including all-electric buildings), renewable energy, waste reduction, wood burning, and use of refrigerants. The draft EIR variant would comply with green-building requirements for energy efficiency, such as the City's Green Building Code and CALGreen code requirements. The draft EIR variant's waste-related emissions would be reduced through compliance with the City's Resource Conservation Ordinance. The draft EIR variant would meet planning code section 169 (TDM program) through implementation of Mitigation Measure M-TR-4a that would develop a TDM plan.

The project sponsor is required to comply with these regulations, which have proven effective as the city's GHG emissions have decreased 41 percent in 2019 when compared to 1990 emissions levels, which far exceeds the statewide 2020 GHG reduction target (1990 levels) and achieves the city's local 2025 target (40 percent below 1990 levels) six years in advance of the target year. Furthermore, the city's GHG emission reductions in 2019 also met the statewide 2030 target (40 percent below 1990 levels) more than 10 years in advance of the target year. Therefore, because the draft EIR variant would be subject to regulations adopted to reduce GHG emissions, the draft EIR variant would be consistent with San Francisco's 2017 GHG reduction strategy and would not generate significant GHG emissions nor conflict with state, regional, and local GHG reduction plans and regulations including executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan.

The draft EIR variant also meets the air district's performance based GHG threshold. As demonstrated in the GHG checklist for the draft EIR variant, the draft EIR variant does not include natural gas infrastructure. With implementation of Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure, the draft EIR variant would include 2019 CALGreen Tier 2 electric vehicle infrastructure standards. Furthermore, as discussed in EIR Section 3.B, Transportation, the draft EIR variant would be located in a vehicle miles traveled (VMT) - efficient area where VMT per capita is more than 15 percent below the regional average. Lastly, as discussed in topic E.19, Energy, the draft EIR variant would not result in a wasteful, inefficient, or unnecessary use of energy.

For these reasons, the initial study concluded that the draft EIR variant's impact related to GHG emissions would be less than significant with mitigation.

The revised variant would have the same overall characteristics and components as the draft EIR variant. As presented in RTC Table 2-1, p. 2-15, the residential square footage and unit count, non-retail sales and service uses, number of vehicle parking spaces, number of bicycle parking spaces, and number of towers are the components of the revised variant that differ from the variant analyzed in the draft EIR. Overall, the revised variant would represent an increase of 411 residential units (334,000 square feet), a 104,000-square-foot decrease in non-retail sales and service uses, and a 100,000-square-foot decrease in hotel uses compared to the variant. As shown in RTC Table 2-2, p. 2-18, construction phasing for the revised variant would also be similar to that for the draft EIR variant. Phases 1 through 5 would be the same, and Phase 6 would be extended by three months because of the additional vertical construction required for the tower on Block S3. The magnitude and duration of construction for the revised variant would be similar to those for the variant analyzed in the draft EIR. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a slightly larger building envelope for Block NW2 and a tower on Block S3, which would change from a midrise building to a tower building. This would require one additional diesel emergency backup generator for operations. The diesel emergency generators would only be used for periodic testing (50 hours per year of non-emergency testing operation consistent with Airborne Toxic Control Measure for Stationary Compression Ignition Engines (17 CCR section 93115), and in emergency situations. San Francisco is not in the PG&E power shut off area during the 2021 and 2022 wildfire season.[5]As for the draft EIR variant, the GHG impacts of the revised variant are evaluated qualitatively pursuant to CEQA Guidelines sections 15064.4 and 15183.5(b) and by evaluating the draft EIR variant against the air district's adopted GHG significance threshold that allows projects which are consistent with a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b) by complying with regulations to reduce GHG emissions through the city's 2017 GHG Reduction Strategy. Additionally, the GHG impacts of the revised variant are evaluated using the air district's performance based GHG threshold.

Although the revised variant could increase construction-related GHG emissions and decrease operational GHG emissions as compared to the draft EIR variant, the GHG impacts of the revised variant are evaluated qualitatively in the same manner as the draft EIR variant. As described in Section 2.E.2, Transportation and Circulation, p. 2.E.2, the revised variant would result in VMT similar to those of the draft EIR variant. As with the draft EIR variant, with implementation of Mitigation Measure M-TR-4a, the revised variant would meet planning code section 169 (TDM program) through implementation of Mitigation Measure M-TR-4a that would develop a TDM plan and would therefore be consistent with the City's 2017 GHG reduction strategy. The revised variant would also be consistent with the GHG reduction goals of Executive Orders S-3-05, B-30-15, and B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the 2017 Clean Air Plan, and would not conflict with these plans. Additionally, with implementation of Mitigation Measure M-AQ-1h, the revised variant would meet the air district's performance criteria related to GHGs. For these reasons, similar to the impact for the draft EIR variant, the revised variant's impact related to GHG emissions would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to GHG impacts.

C.E Recreation

The impacts of the variant related to recreation have been described and analyzed in initial study Section E.11, Recreation, pp. 58 through 62, included as draft EIR Appendix B. The analysis concluded that

[5] Community Wildfire Safety Program, Public Safety Power Shutoff Progress Map, https://www.pge.com/en_US/residential/outages/public-safety-power-shuttoff/cwsp-progress-map.page/

the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to recreation. As described below, recreation impacts of the revised variant would be similar to those of the draft EIR variant.

The revised variant would have the same overall characteristics and components as the draft EIR variant and would not alter the 6 acres of publicly accessible open space on the project site. The revised variant would also include two ADA pathway improvements through Rolph Nichol Jr. Playground. Similar to the draft EIR variant, the revised variant would increase the intensity of use of the 43-acre site by redeveloping the approximately 27 acres of surface parking and existing structures surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phase, mixed-use community. As presented in the discussion in Section 3.D.2, Population and Housing, p. 2, the revised variant would develop 3,491 residential units (411 more units than under the draft EIR variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than the variant's 7,269 new residents). Although the revised variant's addition of 8,239 new residents on the project site would be substantial for the vicinity, it would not be substantial for the city as a whole, as it would represent approximately 1.4 percent of the projected increase in citywide population growth of 591,359 residents (an increase of 0.2 percent compared to the draft EIR variant's 1.2 percent). The revised variant would include the same amount of new open spaces—parks, plazas, parkways, and landscaped alleys—throughout the project site as the draft EIR variant to offset the increased demand by project residents. Given the proposed network of new publicly accessible open spaces at the project site, Rolph Nicol Jr. Playground ADA pathway improvements, and the new private residential open space as guided by planning code requirements, implementation of the revised variant would increase the availability of a variety of publicly and privately accessible recreational facilities and open spaces on the project site.

As also presented in Section 3.D.2, Population and Housing, p. 2, the revised variant would reduce non-retail sales and service uses by 104,000 square feet and hotel uses by 100,000 square feet compared to the draft EIR variant. Thus, the revised variant would result in approximately 775 total employees at the project site, or 483 fewer employees than under the variant. Fewer employees would likely use existing parks and recreational facilities in the project area with implementation of the revised variant than with the draft EIR variant. In addition, the revised variant would remove the use of existing parks and recreational facilities in the project area by hotel guests that would occur with implementation of the variant. The draft EIR assumed that both variant employees and hotel guests would use the existing parks and recreational facilities and identified a less-than-significant recreation impact for the variant.

As also presented in the preceding discussion of Population and Housing, the magnitude and duration of construction for the revised variant would be similar to those of the variant analyzed in the draft EIR. For the same reasons described in initial study Section E.2, Population and Housing, construction workers for the revised variant would also likely be drawn from the local and regional construction workforce, such that the revised variant would not induce population growth by attracting a substantial number of construction workers from outside of the region. As with the draft EIR variant, the maximum number of construction workers for the revised variant would range from 349 to 610 workers per day. Construction workers for the revised variant may use existing parks and recreational facilities in the project area during breaks or after work shifts, but this use would be limited and would not substantially increase or accelerate the physical deterioration or degradation of existing recreational resources. For these reasons, the revised variant would result in less-than-significant recreation impacts and no mitigation measures are required. The revised

variant would not result in any new or more severe impacts than those identified in the draft EIR related to recreational resources.

C.E.1 Cumulative Impacts

The draft EIR concluded that cumulative recreation impacts for the variant would be less than significant because existing and proposed recreational facilities would be able to accommodate the increased demand for recreational resources generated by the variant and cumulative projects. The draft EIR determined that the City accounted for such growth in January 2019 in its update of the general plan's 2014 Recreation and Open Space Element.

As discussed in the draft EIR, there are 11 parks, open spaces, or other recreational facilities within less than 1 mile of the project site, and the variant would create approximately 6 acres of publicly accessible open space on the project site. The draft EIR also identified that the SFSU Future State 2035 Vision Plan also includes approximately 3.6 acres of public open space to support proposed new student housing units, apartments, and campus employees. With its 970 additional permanent residents, 483 fewer employees, and removal of hotel guest stays, the revised variant would be of similar magnitude to the variant analyzed in the draft EIR. Like the draft EIR variant, the revised variant would create approximately 6 acres of publicly accessible open space on the project site—parks, plazas, parkways, and landscaped alleys that would offset the increased demand by project residents. Similar to the draft EIR variant, the revised variant, in combination with cumulative projects, would not result in a significant cumulative impact on recreational resources. This impact would be less than significant and no mitigation measures are required. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the cumulative recreation impacts.

C.F Public Services

The impacts of the variant on public services are described and analyzed in initial study Section E.13, Public Services, pp. 63 through 68, included as draft EIR Appendix B. The analysis concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts on fire protection and emergency medical services, police protection services, schools, and libraries and no mitigation measures are required. Despite the smaller number of employees on the project site, the revised variant would generate more demand for fire and police protection, schools, and libraries than the variant analyzed in the draft EIR, because of the larger number of permanent residents. However, as described below, impacts of the revised variant on public services would be similar to those of the draft EIR variant.

C.F.1 Fire Protection and Emergency Medical Services

As described in the initial study (p. 63), the San Francisco Fire Department provides fire suppression services and unified emergency medical services and transport, including basic life support and advanced life support services, in the city. The closest fire station is Fire Station 19 at 390 Buckingham Way, immediately west of the project site across Winston Drive. Fire Station 15 is located approximately 1.4 miles east of the project site. The fire department does not have a goal for its personnel-to-residents ratio.

The revised variant would result in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the draft EIR variant) and 775 total employees (483 fewer employees than

under the draft EIR variant), which could increase the demand for fire protection and emergency medical services. However, as with the draft EIR variant, the increase would be incremental, would be funded largely through project-related increases to the city's tax base, and would not be substantial given the overall citywide demand for such services. As discussed in the initial study, fire protection and medical emergency resources are reassessed regularly based on need, to maintain acceptable service performance standards. Like the draft EIR variant, the revised variant would be required to comply with all applicable building and fire codes and would not result in a substantial demand for service and oversight. Therefore, as with the variant, implementation of the revised variant would not require the construction of new fire protection facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.2 Police Protection Services

As described in the initial study (p. 64), the San Francisco Police Department provides police protection in the city. Police department services include responding to calls for police assistance, monitoring and managing traffic, and performing general surveillance duties. The project site is within the police department's Taraval District, and the closest police station is the Taraval Police Station at 2345 24th Avenue, approximately 1 mile north of the project site.

The revised variant would result in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant) and 775 total employees (483 fewer employees than under the draft EIR variant), which could increase the demand for police protection services. However, as with the draft EIR variant, the increased demand for police services related to the revised variant's onsite population of residents, workers, and visitors would be incremental and funded largely through project-related increases to the city's tax base. The increased demand would not be considered substantial, given the relatively low demand for such services at the district level and the ongoing staffing analysis and dynamic resource deployment that occurs citywide. Police department resources are redeployed regularly based on need, to maintain city charter–mandated staffing and acceptable service ratios. Therefore, as with the draft EIR variant, implementation of the revised variant would not require the construction of new police protection facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.3 Schools

As described in the initial study (p. 66), the project site is within the attendance area for Lakeshore Elementary School, located at 220 Middlefield Drive. Other nearby public schools are Feinstein Elementary School (2550 25th Avenue), Sloat Elementary School (50 Darien Way), Aptos Middle School (105 Aptos Avenue), and Lowell High School (1101 Eucalyptus Drive). The San Francisco Unified School District has both attendance-area and citywide schools. As discussed in the initial study, current total enrollment in San Francisco Unified School District schools in October 2021 was 50,566 students, a 6.6 percent decrease in enrollment since before the COVID-19 pandemic (fall 2019). In the broader context, based on demographic trends in San Francisco, the school district does not anticipate large, near-term increases in the number of students. Thus, school district facilities throughout the city are underutilized and the district has more classrooms district-wide than needed.

Implementation of the revised variant would develop 3,491 residential units (411 more units than the variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant). As with the draft EIR variant, some of the new residents associated with the revised variant would be families with school-age children who might attend public (San Francisco Unified School District) schools, while others might attend private schools. The residential uses under both the variant and the revised variant are subject either to the San Francisco Inclusionary Affordable Housing Program (planning code section 415), or to the requirements otherwise specified in the development agreement. The project sponsor would comply with the program by either providing onsite or offsite units or paying an in-lieu fee, as required by the planning code, or as otherwise specified in the development agreement. Using the same conservative approach applied for the draft EIR variant for student generation rates and effects on schools, this analysis assumes that both market-rate and affordable units would generate 0.25 student per unit. Based on this rate, implementing the revised variant would generate approximately 873 students (compared to 770 students under the variant).

Like the draft EIR variant, the revised variant would generate a direct incremental increase in the demand for school services. As discussed in the initial study, the school district is currently not a growth district and, as discussed above, most of its facilities throughout the city are generally underutilized. Therefore, the school district has adequate capacity for the new students generated by the revised variant. Furthermore, with the revised variant as with the variant, the project sponsor would be required to pay a school impact fee based on the construction of net new residential square footage to fund school district facilities and operations. For these reasons, implementation of the revised variant would not result in a substantial unmet demand for school facilities and would not require the construction of new school facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.4 Libraries

As described in the initial study (p. 67), library services are provided by the San Francisco Public Library, which operates a main branch at 100 Larkin Street and 27 other neighborhood branches throughout San Francisco. The library branches nearest to the project site are the Merced Library at 155 Winston Drive (across 19th Avenue from the project site; less than 0.1 mile east) and the Ingleside Library at 1298 Ocean Avenue (1 mile east).

The revised variant would result in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant). This population growth generated by the revised variant would result in an increase in library demand; however, this project-generated demand would not be substantial, given the overall citywide demand for library services. The existing library branches near the project site either have been renovated recently or were newly constructed following passage of the Branch Library Improvement Bond in 2000. The bond funds were used for renovations at the Merced Library in 2011 and construction of a new Ingleside Library building in 2009. These resources would satisfy the demand for library services generated by the 8,239 new residents under the revised variant. Demand would also be absorbed by other neighborhood libraries including the Ingleside and Ocean View branches. For these reasons, implementation of the revised variant would not require the construction of new library facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.5 Cumulative Impacts

As discussed in the initial study (p. 68), the fire and police departments, the school district, the libraries, and other City agencies respond to growth and other changing service needs through ongoing analysis of applicable metrics, such as staffing, capacity, response times, and call volumes. As a result, projected future development would not result in any service gap in citywide police, fire, and emergency medical services. Because there is no shortfall with respect to school or library services, and because reasonably foreseeable projects would be subject to the same school impact fees, there would not be any service gaps in citywide school and library services. For these reasons, the revised variant, like the draft EIR variant, would not combine with cumulative projects in the project vicinity to create a significant cumulative impact on public services. This impact would be less than significant and no mitigation measures are required.

C.G Biological Resources

The impacts of the variant related to biological resources have been described and analyzed in initial study Section E.14, Biological Resources, pp. 68 through 72, included as draft EIR Appendix B. The analysis in the initial study concluded that with compliance with applicable federal, state, and local regulations, the variant would result in less-than-significant project-specific and cumulative impacts on biological resources and no mitigation measures are required.

The revised variant would not involve changes to the project location or the building footprint previously analyzed for the variant. The increase in residential units and decrease in the amount of non-retail sales and service uses and hotel uses under the revised variant would not involve substantial physical changes to the variant analyzed in the initial study, or to the initial study's analysis or conclusions related to biological resources. The revised variant would involve the same area of ground disturbance and a similar amount of construction activity as the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of Block NW2 and a tower on Block S3, which would result in a slightly larger building envelope and change from a midrise building to a tower building, respectively. As discussed in the initial study (p. 71), Blocks NW1, NW2, NW3, S3, and S1 on the project site are within 300 feet of an urban bird refuge (Lake Merced Park) and thus are subject to compliance with the design standards for location-related hazards specified in planning code section 139, which establishes building design standards to reduce avian mortality rates associated with bird strikes. The proposed façades of the buildings on these blocks, including the tower on Block S3 that would be developed under the revised variant, would include no more than 10 percent untreated glazing and minimal lighting, and any lighting would be shielded to prevent uplighting. As with the variant, compliance with planning code section 139 would ensure that the revised variant would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors. During implementation of the revised variant, the project sponsor would be required to comply with the same federal, state, and local regulations identified for the variant in the initial study to ensure that impacts on biological resources would be less than significant. Therefore, the revised variant would result in the same or similar biological resource impacts as analyzed in the initial study for the variant, which would be less than significant.

C.H Geology and Soils

The impacts of the draft EIR variant related to geology and soils have been described and analyzed in initial study Section E.15, Geology and Soils, pp. 73 through 86, included as draft EIR Appendix B. The analysis in the initial study concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to soils, seismicity, or other geological hazards and paleontological resources. Construction of the variant could disturb potentially significant paleontological resources. Mitigation Measure M-GE-6, Inadvertent Discovery of Paleontological Resources during Construction, would ensure that the variant would not result in the destruction of unique paleontological resources. This impact would be less than significant with mitigation.

The increase in residential units and decrease in the amount of non-retail sales and service uses and hotel uses under the revised variant would not involve substantial physical changes to the variant analyzed in the initial study. The revised variant would involve a similar amount of construction activity as the variant because it would not involve changes to the building footprint previously analyzed for the variant. Approximately 26,890 cubic yards of additional excavation would be required to accommodate the Block S3 tower under the revised variant. However, during implementation of the revised variant, as with the variant analyzed in the initial study, the project sponsor would comply with the required seismic safety standards and design review procedures of the California and local building codes, and with the construction site runoff regulations of section 146 of the public works code, to ensure that impacts related to seismic safety, geologic hazards, and erosion would be less than significant. As with the variant, the project sponsor would implement Mitigation Measure M-GE-6 to ensure that the revised variant would not result in impacts related to potential inadvertent discovery of paleontological resources during construction. For these reasons, the revised variant would result in the same project-specific and cumulative impacts related to geology and soils and paleontological resources as the variant, which would be less than significant.

C.I Hydrology and Water Quality

The impacts of the draft EIR variant related to hydrology and water quality have been described and analyzed in initial study Section E.16, Hydrology and Water Quality, pp. 86 through 93, included as draft EIR Appendix B. The analysis in the initial study concluded that the variant would result in less-than-significant project-specific and cumulative impacts related to hydrology and water quality.

The impacts of the revised variant related to hydrology and water quality would be the same as or similar to those of the draft EIR variant. The increase in residential units and decrease in the amount of non-retail sales and service uses and hotel uses under the revised variant would not involve substantial physical changes to the variant analyzed in the initial study. The revised variant would involve the same or a similar amount of construction activity compared to the variant because it would not involve changes to the building footprint previously analyzed for the variant. Approximately 26,890 cubic yards of additional excavation would be required for Block S3 under the revised variant. However, the revised variant, as well as the cumulative projects, would be subject to the same water conservation, stormwater management, and wastewater discharge ordinances and regulations that would be applicable to the variant. As with the draft EIR variant, compliance with these ordinances and regulations would reduce impacts related to hydrology and water quality to less-than-significant levels. For these reasons, the revised variant would result in the same less-than-significant project-specific and cumulative impacts related to hydrology and water quality as the draft EIR variant and no mitigation measures are required.

C.J Hazards and Hazardous Materials

The impacts of the draft EIR variant related to hazards and hazardous materials have been described and analyzed in initial study Section E.17, Hazards and Hazardous Materials, pp. 94 through 103, included as draft EIR Appendix B. The analysis in the initial study concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to hazards and hazardous materials through compliance with applicable regulations and provisions of the building and fire codes. For both construction-related and operational impacts, hazardous materials exposure, handling, and usage would be of the same nature and magnitude under the revised variant as under the variant, and the same regulatory requirements for hazardous materials management would apply. Therefore, for the same reasons as discussed for the variant, the impact conclusions for the revised variant would all be less than significant.

C.K Energy

The energy impacts of the draft EIR variant have been described and analyzed in initial study Section E.19, Energy, pp. 104 through 109, included as draft EIR Appendix B. The analysis in the initial study concluded that the variant would result in less-than-significant project-specific and cumulative impacts related to energy. As described below, the energy impacts of the revised variant would be similar to those of the variant.

As presented in RTC Table 2-1, p. 2-15, the residential square footage and unit count, non-retail sales and services uses, number of vehicle parking spaces, and number of bicycle parking spaces are the components of the revised variant that differ from the variant analyzed in the draft EIR. Overall, the revised variant would represent an increase of 411 residential units (334,000 square feet), a 104,000-square-foot decrease in non-retail sales and service uses, and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a slightly larger building envelope for Block NW2 and tower on Block S3. Construction phasing for the revised variant would be similar to that for the variant analyzed in the draft EIR. Phases 1 through 5 would be the same, and Phase 6 would be extended by three months because of the vertical construction required for the tower on Block S3. The following analysis includes updated energy calculations prepared for the revised variant.[6]

C.K.1 Construction

As with the draft EIR variant, consumption of non-renewable energy would occur during the revised variant's construction and operational phases. During construction, energy would be consumed primarily in the form of indirect energy inherent in the production of materials used for construction and the fuel used by construction equipment. Electricity use associated with water used for dust control during the revised variant's approximately eight-year construction period would total approximately 6,338 kilowatt-hours (kWh), less than the 7,209 kWh for the variant, because less grading would be required.[7]

Project construction activities would require the use of fuel-powered equipment and vehicles. Heavy trucks used during construction of the revised variant would consume approximately 439,749 gallons of diesel

[6] Environmental Science Associates, 2023, Stonestown Mall Redevelopment Project Energy Use Calculations Worksheets, May 2023.
[7] This estimate is conservative for several reasons, among them that the estimate may not account for the use of reclaimed water.

(both onsite and offsite), a slight increase over the 437,312 gallons of diesel for the draft EIR variant because of the additional three months of construction. During construction of the revised variant, worker vehicles would consume approximately 843,818 gallons of gasoline, an increase from the 817,197 gallons of gasoline for the variant. As with the variant, construction of the revised variant would be temporary. Compared to other states and the United States as whole, construction projects in California—particularly in the San Francisco Bay Area—use the most-energy-efficient equipment available so that the projects can meet state and local goals for criteria air pollutant and GHG emissions reductions.

Because it would be temporary, the use of these resources during construction of the revised variant would not be wasteful or inefficient. As with the draft EIR variant, impacts related to the use of energy resources during construction of the revised variant would be less than significant and no mitigation measures are required.

C.K.2 Operation

Operational energy consumption would include onsite usage at buildings; electricity for offsite water treatment and distribution; and fuel used by mobile sources. The revised variant's total estimated net electricity consumption for onsite building use and electric vehicle charging—not including onsite energy production, and not accounting for onsite energy conservation measures—would be approximately 36,690,885 kWh/year. This would be a reduction from the 41,410,464 kWh/year used under the variant because there would be less non-retail sales and service and hotel uses. The revised variant would have the same roof area dedicated to photovoltaic (PV) and/or solar thermal hot water systems as the draft EIR variant; therefore, the estimated renewable-energy output for the revised variant's solar PV system would be 1,612,278 kWh/year, the same as with the variant.

Accounting for baseline conditions, estimated net annual electricity use for water supply, treatment, distribution, and wastewater treatment during operation of the revised variant would total approximately 603,781 kWh/year, less than the 700,951 kWh/year for the draft EIR variant. During operation of the revised variant, mobile sources would use approximately 1,452,613 gallons of gasoline and 239,330 gallons of diesel, compared to the 1,375,469 gallons of gasoline and 226,620 gallons of diesel per year for the draft EIR variant.

Like the draft EIR variant, the revised variant would involve no natural gas use, and when considering baseline conditions, the reduction in natural gas usage associated with the revised variant would be the same at 2,239,356 thousand British thermal units per year. In addition, the revised variant would include the same additional operational energy-reducing features as the draft EIR variant:

- Residential buildings that would meet or exceed 75 GreenPoints or Leadership in Energy and Environmental Design (LEED) Silver.
- Non-residential buildings that would be LEED Gold.
- Compliance with the state building code's title 24 energy conservation standards.
- Water-efficient plumbing fixtures.
- Electric vehicle spaces/charging stations.
- Rainwater reuse building systems and green roofs, where feasible.

- A transportation demand management program that would implement measures to reduce vehicle trips and encourage alternative modes of transportation such as walking, biking, and transit. Key strategies in the transportation demand management program could include providing a bikesharing station, bicycle parking to encourage bicycle use, unbundled parking, carshare parking spaces, and other approaches to discourage the use of single-occupant private vehicles.

Like the draft EIR variant, the revised variant would be required to comply with the standards of title 24 of the California Code of Regulations and the requirements of the 2019 San Francisco Green Building Ordinance. As a mixed-use development, the revised variant, like the variant, would be required to be built to achieve LEED for Neighborhood Development certification at a minimum Gold standard, thus minimizing the amount of fuel, water, or energy used. With implementation of the proposed energy conservation measures described above, the revised variant would reduce its total estimated energy consumption and would meet and improve upon the title 24 energy conservation standards.

Like the draft EIR variant, cumulative projects would be required to comply with the City's Green Building Ordinance and the state's title 24 energy efficiency requirements.

For these reasons, the revised variant would result in the same less-than-significant project-specific and cumulative impacts related to energy as the draft EIR variant and no mitigation measures are required.

C.L Mineral Resources, Agriculture and Forestry Resources, and Wildfire

As discussed in Section E.18, Mineral Resources (p. 104); Section E.20, Agriculture and Forestry Resources (pp. 109 to 110); and Section E.21, Wildfire, respectively, in the initial study included as draft EIR Appendix B, the project site does not contain any known mineral resources delineated in the general plan or any other land use plans and does not include mineral resources that are of value to the region and the residents of the state; the project site does not contain agricultural uses or forest land and is not zoned for such uses; the City and County of San Francisco does not contain any state responsibility area land or lands classified as very high fire severity zones; and there are no landslide-prone areas in the immediate vicinity of the project site. Therefore, none of the significance criteria for mineral resources, agriculture and forestry resources, and wildfire are applicable to the draft EIR variant, and these topics were not discussed further in the initial study.

The same conclusions described above for these resource topics apply to the revised variant. The revised variant would not involve changes to the project location or the building footprints previously analyzed for the variant. Therefore, as with the draft EIR variant, none of the significance criteria for mineral resources, agriculture and forestry resources, and wildfire are applicable to the revised variant, and these topics are not discussed further in this chapter.

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ATTACHMENT G

Revised Variant Wind Memorandum

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January 22, 2024

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Cc: Brookfield Properties
Julia Adams, Development Manager
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Re: Stonestown Galleria – San Francisco, CA
Pedestrian Wind Study – Northwest Corner Update
RWDI Project Number: 2004669

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a pedestrian wind study for the proposed Stonestown Galleria project in San Francisco, California. On August 24, 2022, RWDI issued a Pedestrian Wind Study report which relied on massing received March 15, 2022. Since then, we were informed of the proposed design changes to NW2 and NW3 of the Northwest Block of the project that are being considered. This memo outlines the potential impacts from the proposed changes to the Northwest Block. The conclusions are based on the previous wind study results, our knowledge of the project site and experience with similar projects. As explained below, the number of locations and the total hours of potential hazard exceedances with the revised design of NW2 and NW3 would be similar to those predicted by the previous wind tunnel tests. While wind speeds at two locations may increase with the revised design, wind conditions at two other locations would be expected to improve.

Image 1a shows (approximately) the floor plan of NW2 that was tested in the wind tunnel in 2022, identified in black lines. The proposed floor plan changes to NW2 are shown in red lines with added massing towards the northwest. Image 1b shows the proposed CEQA Envelope Update for NW2 and NW3. The change would regularize the footprint of NW2 and would also include a shift-back of NW3 to accommodate the 50-foot separation between the parcels that is required by the project's proposed Development Agreement.

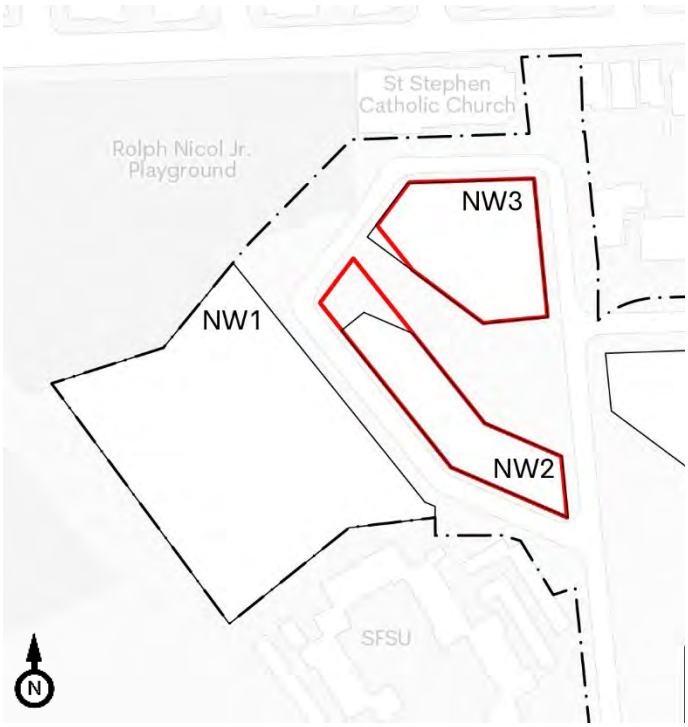


Image 1a: Changes to floorplan for NW2 and NW3 indicated in black (wind tunnel tested) and red lines (considered for CEQA envelope update), received on January 17, 2024.

Image 1b: Proposed CEQA envelope update, received December 7th, 2023.

The wind tunnel tests in 2022 predicted wind hazard exceedances at five locations around the three buildings within the NW Block (Locations 70, 81, 89, 94 and 95 in Image 2) for the Existing + Project and Project + Variant Configurations. The total exceedance number was reduced to three (Locations 81, 89 and 94) for the Project + Cumulative configuration. These hazard exceedances were primarily caused by the prevailing winds from the west-northwest and west directions.

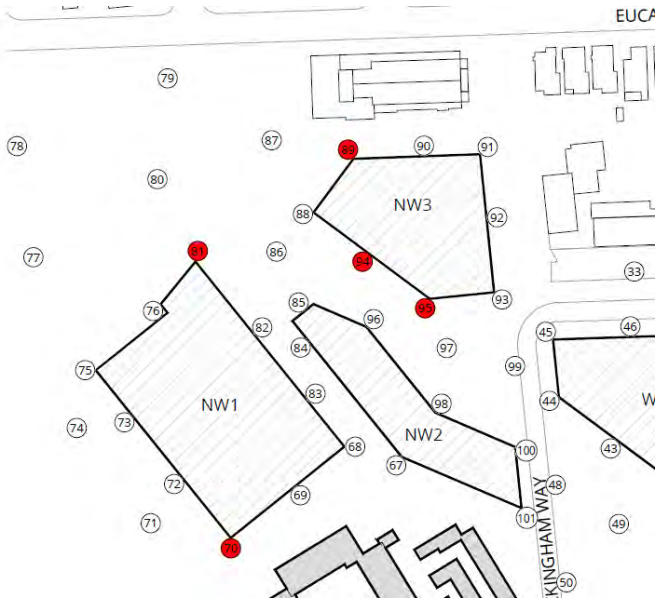


Image 2: Wind Tunnel Results for the Existing + Project and Project + Variant Configurations

Based on the local wind climate, the previous wind tunnel results, and the proposed floor plan changes to NW2 and NW3, it is our opinion that:

- The minor changes proposed to the NW corner would result in localized wind changes in the NW corner and would not substantially affect other portions of the proposed project.

- It was observed in the wind tunnel testing that the prevailing west-northwest and west winds accelerated around the north corner of NW1, resulting in a hazard exceedance at Location 81, as well as along the southwest façade of NW3 (Locations 94 and 95 in Image 2). If NW2 were extended towards Location 86, as currently proposed, the gap between NW2 and NW3 would be sheltered by the added NW2 massing from the prevailing west-northwest and west winds, likely creating improved wind conditions and avoiding hazard exceedances at Locations 94 and 95. However, wind speeds at Locations 86 and 88 might increase due to the added massing of NW2, potentially resulting in new hazard exceedances at those locations.

- With the proposed expansion, other hazard exceedances at Location 70, 81 and 89 would likely remain, as these locations would remain exposed to the prevailing winds.

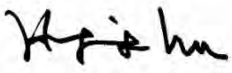
- Overall, the number of locations and the total hours of potential hazard exceedances with the revised design of NW2 and NW3 would be similar to those identified in the previous wind tunnel tests.

It is our understanding that more architectural details will be included as the building design progresses. Together with the existing and proposed landscaping, which was not included in the initial wind tunnel testing, further improvements in wind conditions are expected on and around the project.

We trust this satisfies your current requirements. Please do not hesitate to contact us should you have any questions or require additional assistant.

Yours truly,

Rowan Williams Davies & Irwin Inc. (RWDI)



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ATTACHMENT F

CEQA Air Quality and Health Risk Assessment Methodology

Prepared for
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Prepared by
Ramboll US Consulting, Inc.
San Francisco, California

Project Number
1690018084-001

Date
May 2022

CEQA AIR QUALITY AND HEALTH RISK ASSESSMENT METHODOLOGY

STONESTOWN DEVELOPMENT

SAN FRANCISCO, CALIFORNIA

RAMBOLL

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ACRONYMS AND ABBREVIATIONS

AERMOD	USEPA's Atmospheric Dispersion Modeling System
APEZ	Air Pollution Exposure Zone
ARB	(California) Air Resources Board
ASF	Age Sensitivity Factor
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
Cal/EPA	California Environmental Protection Agency
CalEEMod®	California Emissions Estimator Model
CAP	Criteria Air Pollutant
CEQA	California Environmental Quality Act
CPF	Cancer Potency Factor
Citywide HRA	San Francisco Citywide Health Risk Analysis Database
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
ESA	Environmental Science Associates
g/s	gram per second
HHDT	Heavy-Heavy Duty Trucks
HI	Hazard Index
HQ	Hazard Quotient
HRA	Health Risk Assessment
LDA	Light-Duty Auto
LDT1	Light-Duty Truck 1
MEIR	Maximally Exposed Individual Receptor
mg/kg-day	milligram per kilogram per day
MHDT	Medium-Heavy Duty Trucks
OEHHA	Office Of Environmental Health Hazard Assessment
$PM_{2.5}$	Fine Particulate Matter Less Than 2.5 Micrometers in Aerodynamic Diameter
PM_{10}	Particulate Matter with An Aerodynamic Diameter Less Than 10 Micrometers
Ramboll	Ramboll US Consulting, Inc.
RELs	Reference Exposure Levels
ROG	Reactive Organic Gases
SF DPH	San Francisco Department of Public Health
Planning Department	San Francisco Planning Department Environmental Planning Division
TAC	Toxic Air Contaminant
TOG	Total Organic Gases
$\mu g/m^3$	microgram per cubic meter

USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
χ/Q	"chi over q"

1. INTRODUCTION AND PROJECT DESCRIPTION

At the request of Environmental Science Associates (ESA), Ramboll US Consulting, Inc. (Ramboll) will conduct a California Environmental Quality Act (CEQA) analysis of criteria air pollutants (CAPs) and precursors and local air quality and health impacts associated with the construction and operation of the Stonestown Development Project in San Francisco (referred to hereafter as "Proposed Project" or "Project") on sensitive receptors. This emissions and Health Risk Assessment (HRA) methodology describes the scope and methodology for evaluation of air quality and health impacts from construction and operational sources and cumulative off-site sources at on-site and nearby off-site sensitive receptors. This analysis will be performed to support the Project's CEQA documentation at the request of the San Francisco Planning Department's Environmental Planning Division (planning department).

1.1 Project Description

The Project site is 40.9 acres of privately-owned land and includes the existing Stonestown Galleria, a multi-level indoor shopping mall currently comprised of 775,000 square feet of retail space surrounded primarily by surface parking lots on the western side of San Francisco. The Project Sponsor proposes to renovate the parking lots and some existing development into a master-planned, multi-phased mixed residential, retail, and commercial office community. The existing mall would remain, with changes to the façade, entrances and exits.

The Proposed Project would replace the surface parking lots and 348,455 square feet of existing development, including a structured parking garage, a combined total of 27 acres of the total Project site with approximately 4,700,000 gross square-feet of new building area. This includes approximately up to 2,930 residential dwelling units, up to 4,250 parking spaces, approximately 160,000 square feet of retail in addition to the existing shopping center, up to approximately 200,000 square feet of neighborhood-serving offices and commercial, up to 200 room hotel, and approximately 53,000 square feet of cultural, institutional, and educational uses. In addition, the Project would include six acres of new landscaped parks, plazas, and open space. The Project also proposes to modernize and reconfigure parking to improve efficiency and convenience, including expanding the existing underground garage west, adding new retail parking adjacent to retailers, implementing a clear wayfinding system with automated sensors and parking smart apps, and increasing EV charging stations. The Proposed Project would include transportation and circulation improvements and utilities infrastructure improvements. The roadway network changes would be designed to be accessible for all modes of transportation, including vehicular, bicycle, and pedestrian improvements.

The Project would be built in six overlapping phases, as shown in **Table A** below and **Table 1** attached. The estimated construction schedule and phasing are shown in **Figure 1a**. If phasing or massing change, a revised analysis may be necessary. A childcare facility would be included in the Cultural, Institutional, and Educational space. The Project would also include site circulation improvements, which would be considered in the construction assessment.

1.1.1 Project Variant

There will be one variant to the Proposed Project which would include the development of the Authentic Church parcel. Under the Authentic Church Variant, the Authentic Church parcel would also be developed with an additional 150 residential units; up to approximately 10,000 square feet of cultural, institutional, and educational uses; and 200 parking spaces. This additional construction would occur in Phase 4. The estimated construction schedule and phasing for the Authentic Church Variant are shown in **Figure 1b**. If phasing or massing change, a revised analysis may be necessary.

Table A: Estimated Land Use Descriptions

Land Use Type	Estimated Land Use Quantity							
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Total	Units
Mid-rise Apartments	473	831	465	413	557	190	2,930	DU
Retail Stores	8.0	30	17	52	32	0	160	ksf
Office, Medical, & R&D Space	0	0	56	45	90	0	200	ksf
Hotel	0	0	0	200	0	0	200	rooms
Cultural, Institutional, and Educational	13	0	12	28	0	0	53	ksf
Parks, Plazas, and Open Space	1.0	1.4	1.0	0.70	1.0	0.90	6.0	acres
Parking Lot	1,030	590	660	720	630	340	4,250	spaces

1.2 Objective and Methodology

The purpose of the air quality analysis is to assess potential CAP emissions and health risks and hazards that would result from the construction and operation of the proposed Project consistent with guidelines and methodologies from air quality agencies, specifically, the San Francisco Planning Department, the Bay Area Air Quality Management District (BAAQMD), the California Air Resources Board (ARB), the California Office of Environmental Health Hazard Assessment (OEHHA), and the US Environmental Protection Agency (USEPA). The BAAQMD is in the process of updating their CEQA Guidelines. When released, Ramboll will review these updates and work with the planning department to determine how these should be incorporated into the analysis.

Consistent with the requirements of the planning department, which draw on the guidelines and recommended methods from these agencies, the HRA will evaluate the estimated incremental increase in cancer risk from toxic air contaminants (TACs), including diesel particulate matter (DPM) and gasoline speciated total organic gases (TOG), as well as fine PM concentrations (specifically particulate matter less than 2.5 microns in aerodynamic diameter [$PM_{2.5}$]). The regional criteria air pollutant analysis will qualitatively describe potential short-term construction impacts and long-term operational impacts that could be generated by the proposed Project. The construction and operational emission sources included in the HRA for the Project include diesel-powered construction equipment, on-road haul trucks, and Project-related traffic, including diesel trucks and passenger vehicles. The BAAQMD is in the process of updating the recommended greenhouse gas thresholds and guidance for health risk assessments. As these thresholds and guidance are released, Ramboll will evaluate their applicability to the Project and work with the planning department to determine if updates are appropriate for this scope.

In addition to estimating the air quality and health risk impacts for the Project, Ramboll will conduct an existing plus project HRA of cancer risk and $PM_{2.5}$ concentrations at on- and off-site receptors resulting from other sources of stationary, area, and mobile emissions as calculated in the San

Francisco Citywide Health Risk Analysis database (Citywide HRA) in addition to health impacts from the Project construction and operation on both off-site and on-site receptors. Ramboll will use the Citywide HRA database to determine the existing cancer risk and $PM_{2.5}$ concentrations at on- and off-site sensitive receptors within 1-kilometer of the Project and will add Project operational impacts to determine the cumulative impact. Additionally, impacts from construction projects and new stationary sources within the vicinity of the Project may not be included in the Citywide HRA and will be estimated in a cumulative analysis.

The results of the analysis will be documented in a summary results memo to be presented to ESA and the planning department before being incorporated into the Draft Environmental Impact Report (EIR) as applicable chapter text and technical appendices.

1.3 Document Organization

This scope of work is divided into seven sections as follows:

Section 1.0 – Introduction and Project Description: describes the purpose and scope of the air quality analysis, the objectives and methodology to be used, and outlines the document organization;

Section 2.0 – Emission Estimation Methods: describes the methods that will be used to estimate CAP and TAC emissions from various sources for the Project;

Section 3.0 – Estimated Air Concentrations Methods: discusses the air dispersion modeling, the selection of the dispersion models, the data to be used in the dispersion models (*e.g.*, terrain, meteorology, source characterization), and the identification of receptor locations evaluated in the HRA;

Section 4.0 – Risk Characterization Methods: provides an overview of the methodology for conducting the HRA;

Section 5.0 – Cumulative Analysis Methods: summarizes the approach to be used in the HRA cumulative analysis.

Section 6.0 – References: includes a listing of all references cited in this report.

2. PROJECT EMISSIONS ESTIMATION

In order to determine the incremental CAP and TAC emissions associated with construction and operation of the Project, Ramboll will estimate the baseline operational CAP emissions associated with the project site and the buildout of the Proposed Project. Methodologies to be used to calculate CAP and TAC emissions are summarized below.

2.1 Construction Sources

Construction emission calculation methodologies cover off-road equipment (primarily diesel-fueled) and on-road vehicles (both diesel- and gasoline-fueled).

Ramboll will rely on project-specific data provided by the Project Sponsor, including a detailed construction equipment list, a detailed construction schedule, including phasing, and site map. Where project-specific construction data is not available, the equipment list and/or activity (horsepower-hours) will be estimated using California Emissions Estimator Model (CalEEMod®) defaults based on building size and site acreage. For purposes of this analysis, Ramboll will assume that all construction off-road equipment is diesel powered, and that all off-road equipment emissions of PM with an aerodynamic diameter less than 10 microns (PM_{10}) are DPM, which is a TAC. Emissions will be estimated using CalEEMod® or equivalent methods, as summarized in **Table 2**.

Construction emissions will be converted from annual emissions to average daily emissions assuming 260 work days per year. However, this is a conservative assumption as there will be some construction activity during weekends.

Ramboll will analyze the construction associated with the Proposed Project and the Authentic Church Variant separately based on information provided by the Project Sponsor.

2.1.1 Off-road Equipment

For diesel-powered off-road construction equipment, Ramboll will use CalEEMod® and methodologies consistent with CalEEMod® to estimate emissions. The CalEEMod® emissions methodology for off-road construction equipment relies on the ARB In-Use Off-Road Equipment model (OFFROAD2011), which incorporates statewide survey data to develop emission factors based on the fleet average for each year of construction.[1] The OFFROAD2011 model also identifies average horsepower and load factor for each type of equipment; Ramboll will request the equipment horsepower and load factors from the Project Sponsor, however, if this information is not available, default data in OFFROAD2011, which are included in CalEEMod®, can be used. The methodology to be used to calculate emissions from off-road equipment is presented in **Table 2**.

Emissions without control measures will be calculated assuming fleet average equipment, meaning the emission factors used reflect the fleet predicted to be in use in the OFFROAD2011 model.

2.1.2 Construction On-road Mobile Sources

On-road mobile sources include vehicle trips associated with workers, vendors, and demolition and excavation hauling trips.

The emission factors for running emissions of criteria pollutants in CalEEMod® are from EMFAC2017, the ARB Emission Factors model for on-road emissions. Since the last release of CalEEMod®, ARB

[1] Although ARB has released an updated model as OFFROAD2017, the newer version does not generate "default" fleet data the way OFFROAD2011 does. As such, OFFROAD2011 is still used in CalEEMod® version 2020.4.0. Until ARB updates default fleet mix data, OFFROAD2011 will continue to be used.

released a new version of its model for on-road emissions, EMFAC2021, which will be used in this assessment. Emission factors vary by vehicle type, fuel type, and calendar year. Consistent with CalEEMod® methodology, Ramboll will assume that construction worker trips are 50% Light-Duty Auto (LDA), 25% Light-Duty Truck 1 (LDT1) and 25% LDT2 vehicle classes, vendor trips are 100% diesel Medium-Heavy Duty Trucks (MHDT), and haul trips are 100% diesel Heavy-Heavy Duty Trucks (HHDT) unless additional information is known. EMFAC2021 incorporates the Pavley Clean Car Standards and the Advanced Clean Cars program.

For HRA purposes, Ramboll will only consider DPM and $PM_{2.5}$ emissions from vendor and hauling trucks because construction worker vehicle trips from construction required for the Project is not expected to exceed an average of 5,000 worker trips per day. The BAAQMD recommends a traffic screening criteria of 10,000 vehicles per day for lifetime cancer risk exposure analyses (BAAQMD 2011). This screening criteria was derived from 2003 OEHHA Guidance, which has since been updated. The current OEHHA Guidance roughly increases lifetime cancer risk exposure by a factor of 40%. To be conservative, Ramboll has established a revised screening criteria of 5,000 vehicles per day, consistent with a 100% increase in lifetime exposure. This is especially conservative for construction analyses as the actual exposure period would be much shorter.

The methodology used to calculate emissions from on-road sources is presented in **Table 2**.

2.2 Operational Sources

Ramboll will evaluate the CAP operational emissions for the Project. The analysis will assume that 32 acres of the existing surface parking lots and 348,455 square feet of the existing development on the site would be demolished and replaced with new construction, while the majority of the existing development will remain. Thus, Ramboll will calculate net new emissions as a result of the Project, which will be the difference between the emissions from the proposed land uses and the emissions from the existing sources that will be removed. Sources of operational emissions from the Project and existing conditions include emergency diesel generators, on-road vehicles, energy use, and area sources. Based on information from the Project Sponsor, the first phase of the Project will become operational in 2028 and full buildout will occur in 2032. Therefore, full buildout operational emissions will be based on 2032 emission factors. For interim years for the analysis of combined construction and operational impacts, 2028 emission factors will be used to be conservative. Operational emissions occurring beyond years 2032 would likely be lower due to reductions in vehicle emissions due to vehicle turnover and increasingly stringent regulatory requirements.

In contrast to the analysis for construction, Ramboll will analyze the operational emissions of the Proposed Project explicitly. Emissions for the Authentic Church Variant will also be calculated by scaling Project emissions based on the increase in land uses.

2.2.1 Operational On-road Mobile Sources

On-road mobile sources include vehicle trips associated with residents, retail customers, employees, and vendor deliveries. Vehicles on the roadway emit TACs in their exhaust and CAPs through exhaust, tire wear, and brake wear. In addition, gasoline vehicles emit CAPs and TACs through fuel evaporation. To estimate operational vehicle emissions for the Project, Ramboll will rely on Project-generated trip rates (weekday and weekend) and truck trip estimates from the Transportation Engineer and Project Sponsor, respectively. For trip distances, Ramboll will rely on information provided by the Transportation Engineer. Mobile source emissions from the existing site will be calculated based on information provided by the Transportation Engineer.

Consistent with CalEEMod® methodology, Ramboll will assume that resident, retail customer and employee trips are 50% LDA, 25% LDT1 and 25% LDT2 vehicle classes. Vendor trips are assumed to be entirely MHDT. If information on fleet of existing vehicle trips to the site are known, this would instead be used to determine the fleet for the project uses.

Vehicles on the roadway emit TACs in their exhaust and CAPs through exhaust, tire wear, and brake wear. In addition, gasoline vehicles emit CAPs and TACs through fuel evaporation. To estimate on-road vehicle emissions for the Project, Ramboll will rely on trip generation and VMT data from the Transportation Engineer.

As mentioned above, ARB released a new version of its on-road emissions model (EMFAC2021) after the development of the latest version of CalEEMod®, so the latest on-road emissions model (EMFAC2021) will be used in this assessment. The emission factors used for operation of the Project will be provided from EMFAC2021 for operational year 2032 for full build out and 2028 for interim years.

For HRA purposes, Ramboll will consider DPM and $PM_{2.5}$ emissions from operational vehicle trips for the Project separately because the Project is not expected to result in an average of 5,000 trips per day or more and are therefore below the screening level requiring to be included in a health risk analysis.

The methodology used to calculate emissions from on-road sources is presented in **Table 2**.

2.2.2 Operational On-Site Generators

Operational emissions for the emergency generators will be calculated assuming a maximum of 50 hours per year of non-emergency operation, consistent with the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Section 93115, Title 17, CCR).[2] CAP emissions will be calculated assuming the engine complies with air district's Best Available Control Technology (BACT) limits, which at this time requires all generators 1,000 horsepower or greater to be Tier 4 compliant and all generators less than 1,000 horsepower to be Tier 2 compliant. Emissions will be based on the anticipated generator number and size, provided by the Project Sponsor. We understand the Project will have three 470 HP generators, six 670 HP generators, and three 1,005 HP generators.

Existing buildings in the Phase 2 area have existing generators (i.e., two generators with 100 HP and one generator with 536 HP) that are currently operational. However, we understand these generators will either remain or replaced with similar generators. Therefore, the emissions of these generators will not be considered.

2.2.3 Architectural Coating

Operational architectural coatings account for the reapplication of paint and coatings on interior and exterior surfaces, which would result in emissions of volatile organic compounds (VOCs). Ramboll will use the total building square footage provided by the Project Sponsor and the CalEEMod® default values of architectural coatings per square footage. Ramboll will use CalEEMod®, or equivalent methodology, combined with CalEEMod® default assumptions to estimate emissions from architectural coatings.

[2] California Air Resources Board, Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines, https://ww3.arb.ca.gov/diesel/documents/finalreg2011.pdf, accessed October 29, 2021

Consistent with CalEEMod, existing emissions of re-application of architectural coating will also be calculated based on the square footage being removed.

2.2.4 Consumer Products

Consumer product emissions come from various non-industrial solvents, including cleaning supplies, kitchen aerosols, cosmetics and toiletries, which emit VOCs during their use. Using the estimated building square footage for the Project, Ramboll will use CalEEMod® or equivalent methodology to estimate emissions from consumer products, except the emission factor will be updated to reflect a San Francisco-specific Reactive Organic Gases (ROG) emission factor developed by San Francisco Environmental Planning (1.51×10^{-5} lb ROG/square foot per day) (BAAQMD 2014). If available, Ramboll will derive an updated VOC emission factor using methodology consistent with CalEEMod® but with updated countywide emissions and population.

Existing emissions from consumer products will be estimated using the same methodology.

2.2.5 Energy Use

CAP emissions are generated from energy use associated with buildings. Electricity and natural gas use are the most common for mixed use projects. Combustion of any type of fuel, including natural gas, emits CAPs directly into the atmosphere; these emissions are considered direct emissions associated with a building. CAPs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions since the emissions occur at the power generation source and not at the Project site. Only direct emissions are included in analyses of the Project. There are no direct emissions of CAPs associated with on-site electricity usage.

The San Francisco Board of Supervisors passed an ordinance in 2020 to ban the installation of new natural gas infrastructure in newly constructed buildings. The Project would not construct natural gas infrastructure or use natural gas for operations, therefore, there would be no emissions from energy use.

2.2.6 Landscaping Equipment

Emissions from landscaping equipment for the Project and existing conditions will be calculated using CalEEMod® 2020.4.0 and based on information regarding building square footage and acreage, as well as CalEEMod defaults. As a conservative measure, the recent law (Assembly Bill 1346) banning the sale of gasoline-powered landscaping equipment by 2024 will not be accounted for, since it is unknown how the law will affect emissions due to non-electric equipment already in operation.

2.3 Combined Construction and Operational Emissions

Construction is expected to occur during Project operation because the Project will be constructed over a period of several years. In years when construction is scheduled to coincide with Project operation, construction emissions will be combined with operational emissions. The combined construction and operational emissions will be compared with average daily emissions thresholds, using the 260 days per year for construction (even though there may be some weekend work) and 365 days per year for operations. Operational emissions during interim years where construction overlaps with operation will be calculated by scaling full buildout emissions using 2028 emission factors by the fraction of the Project that would be operating in a specific year. Using an emission factor for a constant year for the entire overlap is conservative because emissions tend to decrease with time as emission sources become cleaner.

2.4 Control Measures

Ramboll, in consultation with San Francisco Environmental Planning, will identify control measures to reduce emissions from the Project following preliminary results of the Project's emissions and health risks. The effectiveness of the control measures will be evaluated quantitatively. The control measures, methodology for evaluating their effectiveness and results will be provided in the results memorandum. The following are preliminary control measures that may be included in the analysis:

- Use of Tier 4 Final off-road construction equipment.
- Limit equipment idling to 2 minutes, although emissions reductions due to this control measure would not be quantified.
- Reduced generator testing hours for those building types that require generators.

The exact control measures to be quantitatively evaluated will be developed by Ramboll, in consultation with San Francisco Environmental Planning, following preliminary results of the Project's emissions and health risks.

3. ESTIMATED AIR CONCENTRATIONS

The air toxics analysis will evaluate health risks and $PM_{2.5}$ concentrations resulting from the Project upon the surrounding community. For the Project, this would include construction off-road equipment, construction haul truck trips, and operational traffic emissions, including emissions from trucks traveling to and from the site. The methodologies used to evaluate emissions from the Project are based on the most recent BAAQMD CEQA Guidelines (BAAQMD 2017), BAAQMD Health Risk Assessment Modeling Protocol (BAAQMD 2020) and the most recent Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA 2015).

3.1 Chemical Selection

The cancer risk analysis in the HRA for the Project is based on DPM and gasoline TOG concentrations from operational traffic, including trucks. Diesel exhaust, a complex mixture that includes hundreds of individual constituents (California Environmental Protection Agency [Cal/EPA] 1998), is identified by the State of California as a known carcinogen (Cal/EPA 2016). Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. Cal/EPA and other proponents of using the surrogate approach to quantifying cancer risks associated with the diesel mixture indicate that this method is preferable to use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded that "potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components" (OEHHA 2003).

The cancer risk analysis for the Project will also include speciated TACs from gasoline-fueled mobile sources. For gasoline vehicles, exhaust and evaporative TOGs from gasoline-fueled vehicles would be evaluated based on the organic chemical profiles from ARB (CARB 2021).

3.2 Sources

As discussed in the next section, concentrations of TACs from the Project construction and operational emissions will be estimated using the USEPA's preferred atmospheric dispersion modeling system (AERMOD).

3.2.1 AERMOD Modeling

Ramboll will use the most recent version of the American Meteorological Society/Environmental Protection Agency regulatory air dispersion model (AERMOD Version 21112) to evaluate ambient air concentrations of TACs and $PM_{2.5}$ at receptors (USEPA 2021). For each receptor location, the model generates air concentrations (or air dispersion factors as unit emissions will be modeled) that result from emissions from multiple sources.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters, meteorological data, topographical data, and receptor parameters. When site-specific information is unknown, Ramboll will use default parameter sets that are designed to produce conservative (i.e., overestimates of) air concentrations (USEPA 2021).

3.2.2 Meteorological Data

Air dispersion modeling applications require the use of meteorological data that ideally are spatially and temporally representative of conditions in the immediate vicinity of the site under consideration.

For this HRA, BAAQMD's Mission Bay meteorological data for the year 2008 will be used, which aligns with the San Francisco Citywide HRA Methodology (San Francisco Department of Public Health [SF DPH], San Francisco Environmental Planning, and Ramboll 2020).

3.2.3 Terrain and Land Use Considerations

Elevation for all emissions sources will be imported from the National Elevation Dataset maintained by the United States Geological Survey ([USGS] 2013). Elevations for all receptors will be consistent with the Citywide HRA modeling.

An important consideration in an air dispersion modeling analysis is whether or not to model an area as urban. Due to the urban nature of San Francisco, the Project will be modeled with the urban population of 873,965, corresponding to the April 1, 2020 US Census population estimate (US Census Bureau 2020). The urban option in AERMOD accounts for increased turbulence associated with the urban heat island effect.

3.2.4 Emission Rates

Emissions will be modeled using the χ/Q ("chi over q") method, such that each source has a unit emission rate (i.e., 1 gram per second [g/s]), and the model estimates dispersion factors (with units of microgram per cubic meter per gram per second [$\mu g/m^3$]/[g/s]). Actual emission rates will be multiplied by the dispersion factors to obtain concentrations.

3.2.4.1 Construction Emission Rates

For the construction phase, emitting activities will be modeled to reflect the actual hours of the day that construction activity would occur, based on information from the Project Sponsor and noise ordinances. The AERMOD EMISFACT option will be used to limit emissions to this time period.

For annual average ambient air concentrations over the construction phase, the estimated annual average dispersion factors will be multiplied by the annual average emission rates. The emission rates would vary day to day, with some days having no emissions. To estimate an annual average, the model assumes a constant emission rate during the entire year. Thus, the average emissions rates will be calculated by taking the total mass of emissions and dividing by the hours considered in the model. The equipment would be expected to operate at most 8 hours per day, but this 8-hour period can occur anytime in the operating window. Because the exact timing of when the equipment would operate is not known, the eight hours of emissions will be averaged over the operating hours of meteorology. While construction using heavy equipment is expected to generally occur Monday through Friday, the emissions were averaged over 365 days per year as meteorology conditions are not dependent upon day of the week (please note this differs from the approach for CAP mass emissions, which will be averaged over 260 workdays per year). Weekends were not excluded from the meteorology data in order to generate more representative averages.

3.2.4.2 Operational Emission Rates

Emergency generators are assumed to be tested at any hour of day; as a result, no variable emission rate factor will be applied.

Traffic emission rates will be calculated based on the actual fleet breakdown, as provided by the Project Applicant. The diurnal pattern of traffic volumes for operations (high volumes during rush hour and during the day, with low volumes overnight) will be incorporated using the AERMOD EMISFACT option and percentage of traffic by hour. The traffic by hour will be developed using ratios of hourly trip rates from EMFAC2021 in San Francisco County for all vehicle types.

3.2.5 Source Parameters

Source location and parameters are necessary to model the dispersion of air emissions. Source parameters for the Project are summarized in **Table 3**.

For construction emissions, area sources will be used to represent the on-site activity in AERMOD. The on-site construction area sources will be modeled with the same release parameters used in the Citywide HRA: a release height of 5 meters and an initial vertical dimension of 1.4 meters. Construction on-road activity will be included with the off-road area sources, to account for the potential for truck travel in any direction. As discussed in Section 2.1.2 above, on-road construction worker trips are negligible and will therefore not be included in the HRA analysis.

For operational emissions, Ramboll will model mobile sources on roadways. On-road emissions will be modeled (consistent with the Citywide HRA methodology) in AERMOD as adjacent volume sources, with the number of sources dependent on the length and width of the roadway segment. For AERMOD modeling, the release height of volume sources for on-road light duty vehicles will be set to 1.7 meters, and the initial vertical dimension will be set to 1.58 meters, consistent with Citywide HRA methodology (SF DPH, San Francisco Environmental Planning, and Ramboll 2020). For on-road trucks, the release height of volume sources will be set to 2.6 meters and the initial vertical dimension will be set to 2.4 meters, consistent with USEPA haul road guidance (USEPA 2012). Initial lateral dimensions will be calculated for each segment based on the width of the modeled roadway plus a six-meter mixing zone, all divided by a factor of 2.15 consistent with the USEPA AERMOD User's Guide. Net new traffic will be modeled on roadways where the Project adds over 5,000 vehicles per day. Traffic volumes and impacted roadways will be provided by the Transportation Engineer.

Unless Project-specific data can be provided, emergency generator emissions will be modeled in AERMOD following the Citywide HRA methodology: as point sources with a release height of 3.7 meters above ground level, an exit temperature of 872 degrees Fahrenheit, an exit velocity of 45 meters per second, and an exit diameter of 0.18 meters. The number and location of generators assumed will be provided by the Project Sponsor for the Project and existing conditions. Generators will be modeled at ground level rather than at elevated locations, consistent with the Citywide HRA. Ground-level modeling will likely produce more conservative (worst-case) results.

3.2.6 Receptors

In order to evaluate health impacts to receptors, receptors will be placed at locations collocated with the receptors used in the Citywide HRA and within 1,000 meters of the Project and modeled traffic sources. Consistent with previous San Francisco Citywide HRA analyses (SF DPH, San Francisco Planning Department, and Ramboll 2020), receptors will be modeled at a height of 1.8 meters above terrain height, a default breathing height for ground-floor receptors. As discussed previously, annual dispersion factors will be estimated for each receptor location.

4. RISK CHARACTERIZATION METHODS

In February 2015, OEHHA released the updated Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015), which combines information from previously-released and adopted technical support documents to delineate OEHHA's revised risk assessment methodologies based on current science. This updated Guidance Manual supersedes the 2003 Hot Spots Guidance Manual (OEHHA 2003) that previously provided methodologies for conducting HRAs under the Air Toxics Hot Spots Program (AB2588). The BAAQMD has issued Guidelines on adopting the OEHHA 2015 Guidance Manual as well as additional guidance published in December 2020 (BAAQMD 2020). This evaluation will utilize the 2015 methodology; details of this methodology are discussed below.

Ramboll will estimate Project health risk impacts from Project construction assuming construction begins in 2024 and at least partial operations beginning in 2028.

Ramboll will estimate health risk impacts associated with both the Proposed Project and the Authentic Church Variant.

4.1 Project Sources Evaluated

Ramboll will evaluate excess lifetime cancer risk and $PM_{2.5}$ concentration for nearby sensitive receptor exposure to emissions from the construction and operation of the Project. The health risks will account for construction off-road equipment, construction haul truck trips, operational traffic and operational truck activity. The HRA will be calculated using the methodology explained in the following sections.

4.1.1 Exposure Assessment

Ramboll will conservatively model all existing Citywide HRA grid (20-meter spacing) receptors within 1 kilometer of the Project (including any roadways with Project-generated traffic volumes in excess of 1,000 vehicles per day). Consistent with the Citywide HRA, all sensitive receptors will be analyzed as residents, with the exception of any on-site daycares, which will be modeled as a daycare. The daycare facilities will likely be in a building in Phase 1 or Phase 3 and are anticipated to be operational upon completion of each of these phases. Therefore, daycare receptors will be analyzed on these buildings.

Potentially Exposed Populations: This analysis will evaluate health risks to on- and off-site sensitive receptors based on OEHHA 2015 Hot Spots Guidelines.

For assessing impacts to exposed populations from emissions resulting from the Project construction and operational emissions, sensitive receptors will be evaluated as a fetus *in utero* at the beginning of the third trimester at the start of construction until age 30 for operational exposures.

Emissions and exposure to sensitive populations would vary across the eight year and two-month construction period. Therefore, multiple exposure scenarios were evaluated to capture the period of maximum impact on each sensitive population and location both on-site and off-site. Health impacts were evaluated for the following scenarios:

- For off-site receptors:
    - Exposure to construction beginning at the start of construction and exposure to operation after construction is completed;
    - Exposure to construction beginning at the start of Phase 2 and exposure to operation after construction is completed;

  - Exposure to construction beginning at the start of Phase 3 and exposure to operation after construction is completed;
  - Exposure to construction beginning at the start of Phase 4 and exposure to operation after construction is completed;
  - Exposure to construction beginning at the start of Phase 5 and exposure to operation after construction is completed; and
  - Exposure to construction beginning at the start of Phase 6 and exposure to operation after construction is completed.

- For on-site receptors:[3]
  - Phase 1 occupants: Exposure to subsequent construction beginning after Phase 1 construction completion and exposure to operation of completed phases;
  - Phase 2 occupants: Exposure to subsequent construction beginning after Phase 2 construction completion and exposure to operation of completed phases;
  - Phase 3 occupants: Exposure to subsequent construction beginning after Phase 3 construction completion and exposure to operation of completed phases;
  - Phase 4 occupants: Exposure to subsequent construction beginning after Phase 4 construction completion and exposure to operation of completed phases;
  - Phase 5 occupants: Exposure to subsequent construction beginning after Phase 5 construction completion and exposure to operation of completed phases;
- For on-site and off-site receptors:
  - Exposure to operations beginning at the conclusion of Project construction when the Project is fully operational.

This results in twelve exposure scenarios. **Figures 1a and 1b** show a Gantt chart of the construction schedule for the Project and Authentic Church Variant, respectively.

These exposure scenarios were developed to capture the maximum impacts from Project construction and operations. Due to the complex timing of Project construction, the selection of exposure scenarios took into consideration the magnitude of potential activity to align with periods where exposure has the biggest impact.

Exposure Assumptions: The exposure parameters used to estimate excess lifetime cancer risks for all potentially exposed populations from construction and operational emissions will be obtained using risk assessment guidelines from OEHHA (2015) and BAAQMD (2016, 2020). **Tables 5** and **7** show the proposed exposure duration, age sensitivity factor, and resulting exposure parameters that will be used for the HRA.

Calculation of Intake: The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, can be calculated as follows:

[3] The Project would include an on-site daycare that would likely be located in the cultural, educational, institutional land use areas of Phase 1 or Phase 3. The daycare exposure will be explicitly analyzed for these phases.

IF_{inh} = DBR * FAH * EF * ED * CF

AT

Where:

IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)

DBR = Daily Breathing Rate (L/kg-day)

FAH = Frequency of Time at Home (unitless)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

AT = Averaging Time (days)

CF = Conversion Factor, 0.001 (m^3/L)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh}, by the chemical concentration in air, C_i. When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the current OEHHA Hot Spots guidance (OEHHA 2015).

4.1.2 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values that are used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

Following the Community HRA methodology for cancer risk calculations, Ramboll will include the carcinogenic toxicity for DPM from on-road vehicles and additional organic gases from on-road gasoline-powered vehicles. Chronic hazard quotient (HQs) calculations for Project operation will utilize toxicity values for chemicals emitted from these same sources.

This analysis utilizes available toxicity values including inhalation cancer potency factors (CPFs), and chronic inhalation reference exposure levels (RELs). Ramboll will utilize the Cal/EPA-approved (Cal/EPA 2017) inhalation cancer potency factor for DPM and chronic inhalation RELs. The CPF for DPM that will be used for the HRA is 1.1 $(mg/kg\text{-}day)^{-1}$. Toxicity values are summarized in **Table 5**.

4.1.3 Age Sensitivity Factors

The estimated excess lifetime cancer risks for a resident will be adjusted using age sensitivity factors (ASFs) that account for an "anticipated special sensitivity to carcinogens" of infants and children as recommended in the OEHHA Technical Support Document (OEHHA 2009) and OEHHA 2015 Guidance (OEHHA 2015). Cancer risk estimates will be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) is applied to ages 16 and older. **Table 6** presents the ASF values that will be used for the HRA.

4.2 Risk Characterization

4.2.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical specific CPF.

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$Risk_{inh} = C_i \times CF \times IF_{inh} \times CPF \times ASF$

Where:

$Risk_{inh}$ = Cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)

C_i = Annual average air concentration for $chemical_i$ ($\mu g/m^3$)

CF = Conversion factor (mg/µg)

IF_{inh} = Intake factor for inhalation (m^3/kg-day)

CPF_i = Cancer potency factor for $chemical_i$
$(mg\ chemical/kg\ body\ weight\text{-}day)^{-1}$

ASF = Age sensitivity factor (unitless)

4.2.2 Estimation of Project Health Risks

Results for cancer risk, chronic Hazard Index (HI), and $PM_{2.5}$ concentrations will be presented for the MEIR, which are the locations where the maximum health impacts are estimated to occur.

4.2.3 Estimation of Existing Plus Project Health Risks

Ramboll will conduct an existing plus project HRA of cancer risk and $PM_{2.5}$ concentrations at on- and off-site receptors resulting from other sources of stationary, area, and mobile emissions as calculated in the Citywide HRA in addition to health impacts from Project operations. We will use the Citywide HRA database to determine the existing cancer risk and $PM_{2.5}$ concentrations at on- and off-site sensitive receptors within 1-kilometer of the Project and will add Project operational impacts to determine the existing plus project impact. The Citywide HRA does not report Chronic HI, therefore, Existing Plus Project results will not be calculated for Chronic HI.

5. CUMULATIVE ANALYSIS

Ramboll will evaluate the cumulative health risk impact resulting from reasonably foreseeable projects within 1,000 meters of the Maximally Exposed Individual Receptor (MEIR) that emit TACs from construction or operations (e.g., new stationary sources proposed as part of a cumulative project). Ramboll will review nearby reasonably foreseeable projects to determine if any would potentially impact the MEIR for the Project. Ramboll will determine relevant projects to consider in consultation with San Francisco Environmental Planning and ESA.

For projects with available health risk assessments or CEQA Air Quality reports, Ramboll will determine risks at the Project MEIR based on these previous efforts. For projects with no health risk information available, Ramboll proposes to use a screening approach to estimate potential health impacts from construction of these projects.

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TABLES

Table 1
Land Use Descriptions
Stonestown Development Project
San Francisco, California

Land Use Type[1]	Project Amount	Variant Amount	Units
Apartments Mid Rise	2,930	3,080	Dwelling Units
Regional Shopping Center	160	160	1000sqft
General Office Building	200	200	1000sqft
Hotel	200	200	Room
Cultural, Institutional, and Educational	53	63	1000sqft
City Park	6	6	Acre
Enclosed Parking with Elevator	4,250	4,450	Spaces

Notes

[1] Land use types shown are CalEEMod® land use descriptions applicable to the Project.

Abbreviations

sqft - square feet

Table 2
Emissions Calculation Methodology
Stonestown Development Project
San Francisco, California

Type	Source	Methodology and Formula	Reference
Construction Equipment	Off-Road Equipment[1]	$Ec = \Sigma(EFc * HP * LF * Hr * C)$	OFFROAD2011 and ARB/USEPA Engine Standards
Construction On-Road Mobile Sources[2]	Exhaust – Running	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2021
	Exhaust - Idling	$E_I = \Sigma(EF_I * Trip\ Number * T_I * C)$	EMFAC2021
Operational Generator Emissions[3]	Stationary Source	$E_{SS} = EF_{SS} * Hr * C$	--
Operational On-Road Mobile Sources[2]	Exhaust - Running	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2021
	Brake Wear and Tire Wear	$E_{BW,TW} = \Sigma(EF_{BW,TW} * VMT * C)$, where VMT = Roadway Link Length * Vehicle Counts	EMFAC2021
	Exhaust - Idling	$E_I = \Sigma(EF_I * Trip\ Number * T_I * C)$	EMFAC2021
	Exhaust - Running Losses	$E_R = \Sigma(EF_{RL} * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2021
Other Operational Sources	Area, Energy	CalEEMod®	CalEEMod®

Notes:

1. E_c: off-road equipment exhaust emissions (lb)
   EF_c: emission factor (g/hp-hr). CalEEMod 2020.4.0 default emission factors used
   HP: equipment horsepower from original buidling Type analysis
   LF: equipment load factor. OFFROAD2011
   Hr: equipment hours
   C: unit conversion factor
2. On-road mobile sources include truck and passenger vehicle trips. Emissions associated with mobile sources were calculated using the following formulas.
   E_R: running exhaust and running losses emissions (lb)
   EF_R: running emission factor (g/mile). From EMFAC2021
   VMT: vehicle miles traveled
   C: unit conversion factor
   The calculation involves the following assumptions:
   a. All material transporting and soil hauling trucks are heavy-heavy duty trucks.
   b. Trip Length: The one-way trip length as calculated based on the truck route or the default length from CalEEMod.
   c. Trip Number: from original building Type analysis

   EF_I: vehicle idling emission factor (g/hr-trip). From EMFAC2021
   T_I: idling time
   C: unit conversion factor
3. Operational emissions from the generator were calculated using the following formulas:
   E_{SS}: Stationary Source emissions.
   EF_{SS}: Stationary Source emission factor
   Hr: hours of operation per year (hr)
   C: unit conversion factor

Abbreviations:

ARB: California Air Resources Board
EF: Emission Factor
EMFAC: EMission FACtor Model
g: gram
HP: horsepower
lb: pound
LF: Load Factor
mi: mile
USEPA: United States Environmental Protection Agency
VMT: vehicle miles traveled

References:

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Table 3
Modeling Parameters
Stonestown Development Project
San Francisco, California

Construction Sources

Source	Source Type[1]	Number of Sources[2]	Source Dimension [m]	Release Height[3] [m]	Initial Vertical Dimension[4] [m]	Initial Lateral Dimension[5] [m]
Construction Equipment	Area	To be determined based on number of phases	Parcel Area	5.0	1.4	--
On-Road Haul Trucks	Volume	Variable	Variable	2.6	2.4	Variable

Operational Sources

Source[6]	Source Type	Number of Sources[2]	Stack Height [m]	Stack Velocity [m/s]	Exit Diameter [m]	Stack Temperature °F
Generators	Point	To be determined based on number of generators	3.7	45	0.2	872

Source	Source Type	Number of Sources[1]	Source Dimension [m]	Release Height[3] [m]	Initial Vertical Dimension[4] [m]	Initial Lateral Dimension[5] [m]
On-Road Light Duty Vehicles	Volume	Variable	Variable	1.7	1.6	Variable
On-Road Trucks[3]	Volume	Variable	Variable	2.6	2.4	Variable

Notes:

1. Construction off-road equipment will be modeled as an area source covering the parcel(s) under construction. The number of sources will depend on the site geometry and construction phases. This information will be provided by the Project Sponsor.
2. The number of on-road sources is based on the geometry of the truck or traffic routes. There will be one generator point source for every generator included in the Project; this information will be provided by the Project Sponsor.
3. Release height of a modeled area source representing construction equipment will be set to 5 meters. A release height of 5 meters was chosen to be consistent with BAAQMD truck release heights. Based on USEPA's AERMOD guidance, initial lateral and vertical dimensions were determined by dividing the side length by 4.3.
4. According to the Community HRA methodology, initial vertical dimension of the modeled construction equipment volume sources will be set to 1.4 meters. On-road truck and car initial vertical dimension based on previous Community HRA modeling and USEPA haul road guidance.
5. According to USEPA AERMOD User's Guide, for a line source modeled as adjacent volume sources, the initial lateral dimension is the length of the side divided by 2.15.
6. Generators will be modeled assuming default parameters in Table 7 of the Community HRA technical guidance document (SF DPH, SF Planning, and Ramboll. 2020.

Abbreviations:

ARB - California Air Resources Board
BAAQMD - Bay Area Air Quality Management District
°F - Fahrenheit
CEQA - California Environmental Quality Act
CRRP - Community Risk Reduction Plan
m - meter
s - second
USEPA - United States Environmental Protection Agency

References:

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Table 4
Exposure Parameters
Stonestown Development Project
San Francisco, California

Population	Receptor Age Group	Exposure Parameters					
		Daily Breathing Rate (DBR)[1] [L/kg-day]	Exposure Duration (ED) [years]	Fraction of Time at Home (FAH)[2] [unitless]	Exposure Frequency (EF)[3] [days/year]	Averaging Time (AT) [days]	Intake Factor, Inhalation (IF_{inh}) [m^3/kg-day]
Residents[4]	3rd Trimester	361	0.25	1.0	350	25,550	0.0012
	Age 0-<2 Years	1,090	2.0	1.0	350	25,550	0.030
	Age 2-<16 Years	572	14	1.0	350	25,550	0.11
	Age 16-30 Years	261	14	0.73	350	25,550	0.037
Daycare Children[5]	Age Six Weeks-<2 Years	1,090	1.9	1.0	350	25,550	0.028
	Age 2-<9 Years	631	4.0	1.0	350	25,550	0.035

Notes:

1. Daily breathing rates reflect default breathing rates from OEHHA 2015 and BAAQMD 2016 as follows: 95th percentile 24-hour daily breathing rate for 3rd trimester and age 0-<2 years; 80th percentile for ages 2 years and older (per BAAQMD 2016 and 2020 Health Risk Assessment (HRA) Modeling Guidelines).

2. Fraction of time spent at home is conservatively assumed to be 1 (i.e., 24 hours/day) for age groups from the third trimester to less than 16 years old based on the recommendation from BAAQMD (BAAQMD 2016 and 2020) and OEHHA (OEHHA 2015). The fraction of time at home for adults age 16-30 reflects default OEHHA guidance (OEHHA 2015) as recommended by BAAQMD (2016 and 2020). The fraction of time at home for the daycare children was conservatively set to be 1, consistent with OEHHA 2015 guidance for resident children.
3. Exposure frequency reflects default residential exposure frequency from OEHHA 2015.
4. All residents will be assumed to be exposed to risks for 30 years beginning at the first year of construction and through remaining years of operation.
5. Daycare children are modeled using parameters consistent with OEHHA 2015 guidance for resident children, which conservatively assumes 24 hours/day exposure.

Calculation:

IF_{inh} = DBR * FAH * EF * ED * CF / AT

CF = 0.001 (m^3/L)

Abbreviations:

AT - averaging time
BAAQMD - Bay Area Air Quality Management District
DBR - daily breathing rate
ED - exposure duration
EF - exposure frequency
IF_{inh} - intake factor
kg - kilogram
L - liter
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment

References:

BAAQMD. 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. January.
BAAQMD. 2020. Health Risk Assessment (HRA) Modeling Protocol. December.
OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 5
Toxicity Values
Stonestown Development Project
San Francisco, California

Fuel[1]	Source	Chemical	CAS Number	Cancer Potency Factor [mg/kg-day]$^{-1}$	Chronic REL (µg/m^3)	Weight Fraction[2]
Diesel	PM_{10}	Diesel PM	9-90-1	1.1	5	1
Gasoline	TOG	1,3-Butadiene	106-99-0	0.6	2	0.0055
		Acetaldehyde	75-07-0	0.01	140	0.0028
		Acrolein	107-02-8	-	0.35	0.0013
		Benzene[3]	71-43-2	0.1	3	0.0036
						0.025
		Ethylbenzene[3]	100-41-4	0.0087	2000	0.0012
						0.011
		Formaldehyde	50-00-0	0.021	9	0.016
		Hexane[3]	110543	-	7000	0.015
						0.016
		Methanol	67-56-1	-	4000	0.0012
		Methyl Ethyl Ketone	78-93-3	-	-	13000
		Naphthalene	91-20-3	0.12	9	0.0005
		Propylene	115-07-1	-	3000	0.031
		Styrene	100-42-5	-	900	0.0012
		Toluene[3]	108-88-3	-	420	0.017
						0.058
		Xylenes[3]	1330-20-7	-	700	0.0058
						0.048

Notes:

1. For the health risk analysis, health effects will be evaluated for emissions from diesel off-road construction equipment, diesel generators and vehicles, which are assumed to be diesel and gasoline-fueled.
2. Speciation fractions shown are for gasoline-fueled vehicles.
3. Benzene, ethylbenzene, hexane, toluene, and xylenes are produced from catalytic exhaust and evaporative losses from gasoline engines. For each of these chemicals, the evaporative loss weight fraction is shown before the exhaust weight fraction in this table.

Abbreviations:

ARB - Air Resources Board
Cal/EPA - California Environmental Protection Agency
CAS - chemical abstract services
mg/kg-day - milligrams per kilogram per day
OEHHA - Office of Environmental Health Hazard Assessment
PM - particulate matter
REL - reference exposure level
TOG - Total Organic Gas

References:

Cal/EPA. 2020. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. October. Available at: https://ww2.arb.ca.gov/sites/default/files/classic//toxics/healthval/contable.pdf.

Table 6
Age Sensitivity Factors
Stonestown Development Project
San Francisco, California

Receptor Age Group	Value[1]
3rd Trimester	10
Age 0-<2 Years	10
Age 2-<9 Years	3
Age 2-<16 Years	3
Age >16 Years	1

Note:

1. Based on OEHHA 2015. Age sensitivity factors are unitless.

Abbreviation:

OEHHA - Office of Environmental Health Hazard Assessment

Source:

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

FIGURES

Figure 1a
Proposed Project Phasing Schedule
Stonestown Redevelopment
San Francisco, CA

Project Construction

Phase	Subphase	Construction Schedule		Number of Work Days	Operational Year	2024				2025				2026				2027				2028				2029				2030				2031				2032			
		Start	End			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase 1	Demolition	04/15/24	06/10/24	40	--																																		
	Site Preparation	04/01/24	06/10/24	50	--																																		
	Grading, Shoring, Excavating	05/28/24	01/14/25	159	--																																		
	Building Construction	12/02/24	01/11/28	796	--																																		
	Paving	02/01/26	05/01/26	64	--																																		
	Architectural Coating	12/01/25	01/11/28	544	2028																																		
Phase 2	Demolition	05/02/25	07/21/25	57	--																																		
	Site Preparation	04/01/25	07/21/25	80	--																																		
	Grading, Shoring, Excavating	06/21/25	05/21/26	239	--																																		
	Building Construction	05/22/26	12/22/28	676	--																																		
	Paving	10/01/28	11/01/28	23	--																																		
	Architectural Coating	06/01/27	12/22/28	409	2028																																		
Phase 3	Demolition	07/02/26	09/20/26	58	--																																		
	Site Preparation	06/01/26	07/01/26	21	--																																		
	Grading and Shoring	08/20/26	07/20/27	239	--																																		
	Building Construction	08/01/26	10/01/28	577	--																																		
	Paving	06/01/27	07/01/27	21	--																																		
	Architectural Coating	10/01/27	10/01/28	261	2028																																		
Phase 4	Demolition	05/02/27	07/21/27	57	--																																		
	Site Preparation	04/01/27	05/01/27	21	--																																		
	Grading, Shoring, Excavate	06/21/27	05/21/28	239	--																																		
	Building Construction	02/01/28	08/15/30	661	--																																		
	Paving	06/20/28	08/20/28	44	--																																		
	Architectural Coating	02/01/29	08/15/30	400	2030																																		
Phase 5	Demolition	06/02/28	08/21/28	58	--																																		
	Site Preparation	04/01/28	06/01/28	44	--																																		
	Grading, Shoring, Excavation	07/21/28	06/21/29	244	--																																		
	Building Construction	04/21/29	11/01/31	673	--																																		
	Paving	07/26/30	09/26/30	44	--																																		
	Architectural Coating	04/21/30	11/01/31	399	2031																																		
Phase 6	Demolition	05/02/29	07/21/29	57	--																																		
	Site Preparation	04/01/29	05/01/29	21	--																																		
	Grading, Shoring, Excavating	06/21/29	05/21/30	239	--																																		
	Building Construction	02/01/30	04/01/32	564	--																																		
	Paving	10/01/31	11/30/31	43	--																																		
	Architectural Coating	11/28/30	04/01/32	350	2032																																		

Key:

Active Construction Period

Full Operation

Figure 1b
Proposed Project Phasing Schedule for the Authentic Church Variant
Stonestown Redevelopment
San Francisco, CA

Variant Construction

Phase	Subphase	Construction Schedule		Number of Work Days	Operational Year	2024				2025				2026				2027				2028				2029				2030				2031				2032			
		Start	End			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase 1	Demolition	04/15/24	06/10/24	40	--																																		
	Site Preparation	04/01/24	06/10/24	50	--																																		
	Grading, Shoring, Excavating	05/28/24	01/14/25	159	--																																		
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Phase 2	Demolition	05/02/25	07/21/25	57	--																																		
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	Paving	10/01/28	11/01/28	23	--																																		
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Phase 3	Demolition	07/02/26	09/20/26	58	--																																		
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	Paving	06/01/27	07/01/27	21	--																																		
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Phase 4	Demolition	06/02/27	09/10/27	73	--																																		
	Site Preparation	04/01/27	06/01/27	44	--																																		
	Grading, Shoring, Excavate	08/10/27	07/10/28	244	--																																		
	Building Construction	03/01/28	12/01/30	732	--																																		
	Paving	08/01/30	10/01/30	44	--																																		
	Architectural Coating	03/01/29	12/01/30	457	2030																																		
Phase 5	Demolition	06/02/28	08/21/28	58	--																																		
	Site Preparation	04/01/28	06/01/28	44	--																																		
	Grading, Shoring, Excavation	07/21/28	06/21/29	244	--																																		
	Building Construction	04/21/29	11/01/31	673	--																																		
	Paving	07/26/30	09/26/30	44	--																																		
	Architectural Coating	04/21/30	11/01/31	399	2031																																		
Phase 6	Demolition	05/02/29	07/21/29	57	--																																		
	Site Preparation	04/01/29	05/01/29	21	--																																		
	Grading, Shoring, Excavating	06/21/29	05/21/30	239	--																																		
	Building Construction	02/01/30	04/01/32	564	--																																		
	Paving	10/01/31	11/30/31	43	--																																		
	Architectural Coating	11/28/30	04/01/32	350	2032																																		

Key:

Active Construction Period

Full Operation

ATTACHMENT E

Revised Variant Air Quality and Health Risk Assessment Results

RAMBOLL

ENVIRONMENT
& HEALTH

MEMO

Project name	**Stonestown Redevelopment Project, San Francisco**
Project no.	**1690018084**
To	**San Francisco Planning Department** **San Francisco, California**
From	**Michael Keinath, PE** **Sarah Manzano**
Subject	**Stonestown Redevelopment Variant Update Air Quality and Health Risk Assessment Results**

March 22, 2024

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1 Introduction and Variant Updates

Ramboll Americas Engineering Solutions, Inc. (Ramboll) updated our California Environmental Quality Act (CEQA) air quality analysis of criteria air pollutants and precursors and local air quality and health impacts associated with the construction and operation of the Stonestown Development Project in San Francisco (referred to hereafter as "Proposed Project" or "Project") to incorporate program updates to the Project Variant land use plan ("Revised Variant") as a response to comments received on the Project. No updates were proposed for the Project.

The updated analysis discussed in this memorandum follows the same methodology and assumptions as described in the "CEQA Air Quality and Health Risk Assessment Methodology" (Ramboll, May 2022, referred to hereafter as "Methodology Report") and the Air Quality Technical Memorandum (Ramboll, November 2022, referred to hereafter as "AQTM"), except where explicitly noted, and incorporates program updates for the Revised Variant. This technical memorandum presents a summary of the methodology, noting deviations from the Methodology Report or AQTM, and provides updated results for air quality and health impact analysis of the construction and operation of the proposed Project Variant presented in the Draft Environmental Impact Report (EIR). The tables and figures shown in the attachment of this memorandum have the same table numbers as those in the AQTM for ease of reference to the AQTM. However, only information for the Revised Variant is shown in the tables and the EIR Project is excluded as the EIR Project remains unchanged. Values that are different from the analysis in the AQTM are shown in bold in the attached tables. This analysis has been performed to support the CEQA documentation at the request of the San Francisco Planning Department.

Ramboll analyzed proposed land use changes for the Revised Variant. Compared to the Variant analyzed in the AQTM, the Revised Variant would change the following land use characteristics, by phase:

- Phase 1:
  - Increase of 76 residential units and 12,432 square feet of residential space;
  - Add 84 residential parking spaces; and

- Construction of two new Americans with Disabilities Act (ADA) pathway improvements through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive and landscaping.

- Shared Across Phases 2 and 3:
  - A net reduction of 76 residential units and 12,432 square feet of residential space, along with the removal of 84 residential parking spaces. [1]
- Phase 3:
  - A net increase of 124 residential units;[2] and
  - A reduction of 35,000 square feet of office land use.
- Phase 4:
  - Convert the hotel to 96 residential units.
- Phase 5:
  - Convert a total of 69,000 square feet of office land use to 66 residential units.
- Phase 6:
  - Add 130,000 square feet of residential space that adds 125 residential units by including five towers instead of four; and
  - Add an emergency generator to Building S3.
- Add additional parking to all phases to account for the additional residential units.

In summary, compared to the AQTM, the Revised Variant represents an increase of 411 residential units, decrease in 104,000 square feet of non-retail sales and service use, and the removal of 100,000 square feet of hotel, for a total increase of 130,000 square feet of new building area. The updated land use for the Revised Variant is shown in **Table A** below and **Table 1** attached.

[1] These reductions would occur across Phases 2 and 3, although the specific distribution between Phase 2 and Phase 3 will be determined as building plans evolve. For the purposes of this analysis, it is assumed that 6,841 square feet and 40 residential units were allocated from Phase 2, and 5,591 square feet and 36 residential units from Phase 3. However, operational emissions are anticipated to be similar, regardless of any different allocation between the two phases.

[2] The net increase involves converting 111 residential units to senior units and adding 90 senior units to a total of 201 senior units. The senior units were assumed to provide 1 bedroom per unit (compared to an average of 1.5 bedrooms per unit for the prior unit mix). This resulted in updated trip information provided by the transportation engineer, which does not affect the rest of the emissions analysis, as senior units are treated the same as regular residential units. This net increase of 124 units does not take into account the reduction in units associated with the reduction of units shared across Phases 2 and 3. Therefore, Phase 3 would have less of an increase in dwelling units than 124 units. For the purposes of this analysis, we assume an increase of 88 units (124 units – 36 units).

Table A: Land Use and Construction Phasing

Land Use Type	CalEEMod Land Use Category	Estimated Land Use Quantity							
		Units	Phase 1[B]	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Total
Residential	Apartments Mid Rise	DU	549	791	553	659	624	315	3,491
Retail Sales and Services	Regional Shopping Center	ksf	10	36	20	58	36	0	160
Non-Retail Sales and Service	General Office Building	ksf	0	0	24	47	25	0	96
Hotel	Hotel	rooms	0	0	0	0	0	0	0
Institutional	General Office Building	ksf	13	0	12	38	0	0	63
Parks, Plazas, and Open Space	City Park	acres	1.0	1.4	1.0	0.70	1.0	0.90	6.0
Structured Parking[A]	Enclosed Parking with Elevator	spaces	1,259	712	748	974	762	406	4,861

Source: Table 1 and Table 20 of this analysis and the AQTM
Note:
A. Parking spaces include those proposed for the Revised Variant and the 250 existing parking spaces, with specific allocations for each phase, as all parking spaces need to be included in this analysis.
B. Phase 1 would also include construction of two new ADA pathway improvements through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive and landscaping in the park.

The updated construction schedule and phasing for the Revised Variant are shown in **Figure 1b**. Construction activity analyzed in the AQTM for the Project Variant would change for Phase 6 to account for the conversion from a mid-rise building to a residential tower. The Project Sponsor confirmed the construction schedule for all other phases would remain the same as analyzed in the AQTM. The conversion of square footage from office to residential and conversion to senior units is not expected to change the construction schedule or equipment use. The increase in residential units in Phase 1 may slightly increase building construction, but this would be negligible because this equates to a 2.5% increase in square footage across the phase. However, according to the Project Sponsor, the increase in parking would increase excavation activity by 24%, which reflects the increase in number of underground residential parking spaces. As a result, construction activity in Phases 2 and 3 would be reduced by a commensurate amount of construction hours due to the reduction in parking in these phases. However, the construction duration would not change for these three phases. The landscaping and construction of the accessible concrete pathways through Rolph Nichol Jr. Playground would largely be completed by electric or natural gas equipment for landscaping and diesel equipment for the construction of the concrete paths. This diesel activity is included in the Phase 1 construction and schedule.

Construction during Phase 6 would be extended by approximately three months for the Revised Variant. The updated construction schedule for the Revised Variant is shown in **Table 2**. The table shows the numbers of work days per construction subphase for each construction phase. It also shows the amount of demolished area, which includes building demolition and parking area. Compared to the Project Variant analyzed in the AQTM, the Demolition and Grading, Shoring, Excavation subphases of

Phase 6 of the Revised Variant would be shorter, the Phase 6 Building Construction subphase would increase by 2 months, the Phase 6 Paving and Architectural Coating subphases would increase by a few days, and the sequencing would slightly change, overall resulting in extending the Phase 6 construction by three months.

Table 3 shows the updated construction equipment usage associated with the Revised Variant. The Revised Variant would increase the building height of S3 in Phase 6; therefore, an electric tower crane would be used instead of the diesel crane that was analyzed in Phase 6 for the Project Variant in the AQTM. The Revised Variant also proposes more excavation and less grading for Phase 6.[3] All other changes to construction equipment usage in Phase 6 are a result of changes in schedule duration discussed above. Excavation activity in Phase 1 is also expected to increase by 24% compared to the Draft EIR Variant due to the additional parking spaces and a commensurate amount of construction activity is expected to decrease in Phases 2 and 3. These changes are reflected in the updated utilization in Phases 1-3 in **Table 3**.

2 Methodology and Results

The results presented in this memorandum used the same methods described in the Methodology Report and AQTM. Deviations due to updated data for the Revised Variant are discussed below. Unless explicitly stated, assumptions and calculations are the same as the AQTM. Tables numbers correspond to the related table in the AQTM. If a table is not presented here, it is either not relevant to the Revised Variant or remains the same as the corresponding table in the AQTM.

2.1 Construction CAP Emissions

2.1.1 Updated Construction Information and Emissions

Construction emissions were calculated using the same methodologies as the AQTM with the updated construction information provided by the Project Sponsor.

The updated construction schedule for the Revised Variant is shown in **Table 2**, with table numbers corresponding to the related table in the AQTM. As discussed above, all the schedule updates would occur in Phase 6.

Table 3 shows the updated construction equipment activity for each phase of the Revised Variant, as provided by the Project Sponsor. As mentioned above, **Table 3** shows a 24% increase in excavation activities in Phase 1, due to the increase in underground parking. Meanwhile, the same volume of excavation activities, evenly distributed between Phases 2 and 3, would decrease. In addition, graders are removed, and cranes are electrified in Phase 6.

Table 4a shows the emissions from the on-site operation of the dump and concrete construction trucks for the uncontrolled scenario using fleet average emissions from EMFAC2021. **Table 4b** shows the onsite truck emissions for a controlled scenario where only trucks with a model year 2018 or newer visit the site. Compared to the AQTM, the onsite truck emissions increased in the Phase 1 Grading, Shoring, Excavating subphase due to the increased excavation to account for the increase in parking, while emissions for Phases 2 and 3 decreased for the corresponding subphase. Additionally, onsite truck emissions slightly changed in Phase 6 because the updates in the construction schedule would change the calculated truck run and idle hours, trips, and vehicle-miles traveled (VMT) for each year. Additional hauling trips are added to Phase 6 for the additional building area and **Table 5** shows the updated on-road emissions for the Revised Variant.

[3] Note that less grading is generally needed when digging a bigger hole because the larger size of the hole allows for a more gradual slope. This is consistent with the updated construction equipment that shows that graders were removed from grading, shoring, excavating subphase in Phase 6.

Tables 8a and **8b**[4] shows the calculation of emissions from entrained roadway dust for the Revised Variant to account for the additional hauling trips.

Updated fugitive dust emissions from grading equipment are presented in **Table 10,** fugitive dust from material loading activities is presented in **Table 11,** and fugitive dust emissions from bulldozing are presented in **Table 12.**

Updated ROG emissions from paving off-gassing due to the changes of parking spaces for the Revised Variant are shown in **Table 13**.

Updated architectural coating emissions for the Revised Variant are shown in **Table 14** for uncontrolled emissions and **Table 15** for controlled emissions.

2.1.2 Construction Emissions Summary

Uncontrolled construction emissions by source are shown in **Table 16**, and controlled construction emissions by source are shown in **Table 17**. A summary of annual average daily construction CAP emissions from the construction of the Revised Variant is shown in **Table 18** and controlled annual average daily construction CAP emissions are shown in **Table 19.** As discussed above, controlled construction emissions incorporate architectural coating controls, Tier 4 construction equipment with the exception of bore/drill rigs and cranes, and model year 2018 or newer trucks.

The maximum annual average construction emissions for any year are summarized in **Table B**, below, along with the maximum annual average construction emissions for any year as reported in the Draft EIR. The total construction emissions for each year were averaged over the number of days construction would occur in that year. The maximum annual averaged NOx emissions occurring in 2027 decreased slightly for both the uncontrolled and controlled scenarios due to the reduction of residential land uses in Phases 2 and 3. The changes are not attributed to Phase 6 updates because the year of maximum emissions for each pollutant was not a year that included Phase 6.

Table B. Summary of Maximum Annual Average Daily Construction CAP Emissions (lb/day)

		ROG	NO_X	PM_{10}	$PM_{2.5}$
Revised Variant	Uncontrolled	58	30	13	3.4
	Controlled	11	7.7	9.2	1.7
Draft EIR Variant	Uncontrolled	58	31	13	3.4
	Controlled	11	7.8	9.2	1.7

Source: Tables 36 and 37 of this analysis and the AQTM. For the Revised Variant uncontrolled scenario, the maximum NOx, PM_{10}, and $PM_{2.5}$ emissions occur in 2027, while the maximum ROG emissions occur in 2028. For the controlled scenario, the maximum ROG, PM10, and $PM_{2.5}$ emissions occur in 2028 except for maximum NOx emissions in 2027. The years of maximum emissions for the Draft EIR Variant are the same as the Revised Variant.

2.2 Operational CAP Emissions

2.2.1 Updated Operational Information and Emissions

Operational emissions were estimated for the Revised Variant, as described in the Methodology Report and the AQTM. The revised scaling factors for interim year emissions is shown in **Table 20**, which take into account the changes in land use for all phases and the buildout date of Phase 6.

[4] Note that all the table numbers in this memorandum correspond to the related table in the AQTM.

As shown in **Appendix D,** the Transportation Engineer for the Project provided updated daily average project-generated (i.e., net new) vehicle trip rates and daily trip lengths,[5,6] summarized in **Table 21b** for the Revised Variant. Criteria air pollutant mobile source emissions from Revised Variant operation are summarized in **Table 23b**. Controlled mobile source emissions are shown in **Table 24b**.[7]

The Revised Variant would involve the operation of one additional emergency generator compared to the Project Variant analyzed in the AQTM. Uncontrolled and controlled emissions from the maintenance and testing of the emergency generators are shown in **Table 26a** and **Table 26b**, respectively.[8]

Architectural coating emissions for the Revised Variant are shown in **Table 27** for uncontrolled emissions and **Table 28** for controlled emissions.[9]

Table 30 shows the emissions from the Existing Site and Revised Variant based on the consumer product use which accounts for the addition.

As discussed in the Methodology Report and AQTM, the buildings would be all-electric and there are no direct emissions of criteria air pollutants associated with on-site electricity use. Therefore, emissions from the Revised Variant energy use would be zero.

Landscaped area, and thus emissions from landscaping, have not changed from the AQTM.

2.2.2 Operational Emissions Summary

A summary of full buildout annual CAP emissions and annual average daily CAP emissions from operations of the Revised Variant is shown in **Table 34b**. **Table 34b** also shows operational emissions during intermediate years when a portion of the site would be operational. **Table 35b** shows the controlled operational emissions for the Revised Variant. The Net Full Buildout emissions are summarized in **Table C**, below, for the Revised Variant compared to the Variant analyzed in the Draft EIR.

Compared to Draft EIR, emissions increased due to the increase in building square footage, the addition of a generator, conversion of office to residential, and the increase in vehicle miles traveled. The increased use of consumer products and increased architectural coating due to the increase in square footage was the largest contributor to the increase in ROG emissions. As shown in **Table 21a**, the vehicle miles traveled increased with the Revised Variant due to the increase in residential units and the conversion from office to residential land use. This was the main contributor to the increase in NO_X and PM emissions. NO_X emissions also increased by 2.1% due to the additional generator.[10]

[5] Trip generation rates by land use were provided by the transportation engineer. The rates used are the total external vehicle trips as shown in Table 3 of the Revised Variant Impact Analysis Memorandum, which incorporate internal trip capture and expected driving mode share, broken out by land use.

[6] Kittelson & Associates, 2022. Revised Variant Impact Analysis Memorandum. June 8.

[7] Controlled emissions assume a 10% emissions reduction from a Travel Demand Management Plan, consistent with the AQTM assumptions.

[8] Controlled emissions assume all generators will have Tier 4 engines, consistent with the AQTM assumptions.

[9] Controlled emissions assume indoor and outdoor painting will use super-compliant coatings, which are paints that have been reformulated to exceed the SCAQMD's Rule 1113 (Architectural Coatings) requirements, consistent with the AQTM assumptions.

[10] In the Draft EIR, controlled emissions for the Variant incorrectly included uncontrolled emissions from the generators and therefore overestimated controlled emissions. The corrected full buildout annual average daily net operational NO_X emissions in the Draft EIR should be 27.6 lb/day for the controlled scenario. Emissions for all other pollutants remain unchanged from what was reported in the Draft EIR.

As discussed above, the controlled operational scenario assumed super compliant coatings, TDM, electrical landscaping equipment, and emergency generators that meet Tier 4 standards.

Table C. Summary of Full Buildout Annual Average Daily Net Operational CAP Emissions (lb/day)

		ROG	NO_X	PM_{10}	$PM_{2.5}$
Revised Variant	Uncontrolled	117	40	59	11
	Controlled	84	28	53	9.3
Draft EIR Variant	Uncontrolled	114	39	56	10
	Controlled	83	35	50	9.0
Source: Tables 36 and 37 of this analysis and the AQTM. Note the controlled NOx emissions went down compared to the Draft EIR because the Draft EIR incorrectly reported uncontrolled emergency generator emissions as the controlled scenario for the Variant.					

2.3 Combined Construction and Operational Emissions

The Revised Variant operation would overlap with construction during the interim years. **Table 36** shows the uncontrolled combined construction and operational emissions. **Table 37** shows combined construction and operational emissions for the controlled scenarios. As discussed above, the controlled scenario assumes:

- Super Compliant architectural coatings in construction and operations;
- Tier 4 diesel engines for construction off-road equipment with the exception of bore/drill rigs and cranes, which are assumed to have Tier 2 engines;
- Restricting on-road heavy duty trucks visiting the site to engine model year 2018 or newer;
- The Transportation Demand Management Plan (TDM);
- Requiring only electrical landscaping equipment; and
- Tier 4 engines for any emergency generators.

The maximum annual average net construction and operational emissions for any year are summarized in **Table D**, below, for the Revised Variant compared to the Variant analyzed in the Draft EIR. Overall, the CAP emission increases are due to the increased residential building area, the added emergency generator, and the increased number of parking spaces, as discussed above in the construction and operational emissions sections.

Table D. Summary of Maximum Annual Average Daily Net Construction and Operational CAP Emissions (lb/day)

		ROG	NO_X	PM_{10}	$PM_{2.5}$
Revised Variant	Uncontrolled	127	46	59	11
	Controlled	84	31	53	9.3
Draft EIR Variant	Uncontrolled	124	46	56	10
	Controlled	83	36	50	9.0

Source: Tables 36 and 37 of this analysis and the AQTM. For the Revised Variant, the uncontrolled maximum ROG and NOx emissions occur in 2031, and maximum PM_{10} and $PM_{2.5}$ emissions occur at the full buildout. For the controlled scenario, the maximum ROG, PM_{10}, and $PM_{2.5}$ emissions occur at the full buildout, except for the maximum NOx emissions, which occur in 2031. For the Draft EIR Variant, maximum emissions occur in 2032 with the exception of NOx emissions and uncontrolled ROG emissions, which both occur in 2031.

2.4 Project Health Risks for Receptors

The health risk assessment (HRA) was updated to reflect the updated construction information and additional generator associated with the Revised Variant. The methodology for this HRA is detailed in the Methodology Report and the AQTM. Construction areas did not change with the Revised Variant.[11]

2.4.1 Non-Worker Receptors

For non-worker receptors, a summary of the results of the HRA is presented below. The age sensitivity weighted intake factors for Scenario 12 (i.e., Exposure to operations beginning at the conclusion of all Project construction) was updated due to the change of the full buildout date, as shown in **Table 39m**. All other exposure scenarios remain the same.

Maximum Revised Variant Impacts

The updated maximum uncontrolled and controlled Proposed Variant health impacts by population type along with background health impacts (existing plus project health impacts) are summarized in **Tables 41a-b**. These results are the maximum health impacts regardless of if the receptor meets Air Pollution Exposure Zone (APEZ) criteria. Breakdowns of the health impacts by source are shown in the same table. The updated locations of the uncontrolled Maximally Exposed Individuals (MEIs) for cancer risk, chronic HI, and $PM_{2.5}$ concentration by receptor type are shown in **Figure 6a**. Only the location of maximally exposed individual worker (MEIW) for cancer risk changed from the southwest of the mall to the northwest and the locations of all other MEIs remained the same as AQTM.

Maximum health impacts over all the population types are summarized in **Table F** below. The Revised Variant impacts decrease for both cancer risk (about 4% for uncontrolled scenario) and $PM_{2.5}$ concentration (about 12-14% for both scenarios). The change is due to the elimination of the grader, the use of an electric crane (rather than diesel), and shortened duration of Demolition and Grading, Shoring, Excavating subphases in Phase 6, which affect both DPM and exhaust $PM_{2.5}$ emissions starting from 2029, the start of construction of Phase 6. Additionally, the MEI of the uncontrolled cancer risk is situated adjacent to and on the downwind side of Phase 3, where construction activities are reduced compared to the Draft EIR Variant to account for the reduction in built area that was transferred to Phase 1. Due to the proximity of the MEI to Phase 3 and the distance to Phase 1, the MEI experienced

[11] Construction activity of the two new ADA pathway improvements through Rolph Nichol Jr. Playground was included within the Phase 1 modeling area since any portion of diesel construction activity outside of this area would be minimal.

a decrease in health impacts as a result of this change. Operational impacts increased slightly due to the additional generator. However, in most locations, the reduction in risk from construction outweighs the increase from operations. Both the controlled and uncontrolled cancer risk decreases due to these three factors. For the controlled cancer risk, the decrease from construction was counteracted by the increase in cancer risk from the additional generator and increased construction in Phase 1 at the MEI location. $PM_{2.5}$ concentration reduced more than cancer risk for the following reasons: (1) the elimination of the grader further reduces fugitive $PM_{2.5}$ emissions in Phase 6, and (2) the MEI for $PM_{2.5}$ concentration for both uncontrolled and controlled scenarios occur in 2029 at an offsite resident receptor adjacent to Phase 6, while the MEIs for cancer risk are far away from Phase 6.

Table F. Maximum Uncontrolled and Controlled Revised Variant Health Impacts from Construction and Operation

	Scenario	Excess Lifetime Cancer Risk (in a million)[1]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[1]
Revised Variant	Uncontrolled	23.5	0.29
	Controlled	8.9	0.24
Draft EIR Variant	Uncontrolled	24.4	0.33
	Controlled	8.9	0.28

Source: Tables 41a and 41b of this analysis and the AQTM
Notes:
1. Maximum cancer risk and $PM_{2.5}$ concentration indicate the maximum Revised Variant (or Draft EIR Variant) impacts from the combined construction and operational sources across all the 12 exposure scenarios.

As discussed above, the controlled HRA scenario assumes:

- Tier 4 diesel engines for construction off-road equipment with the exception of bore/drill rigs and cranes or equivalent, which are assumed to be Tier 2;
- Restricting on-road heavy duty trucks visiting the site to engine model year 2018 or newer; and
- Tier 4 engines for any emergency generators.

Maximum Revised Variant Impacts that Meet APEZ Criteria

The updated maximum impact in and out of the APEZ are presented in **Tables 42a-b** for uncontrolled and controlled scenarios.

Table G below shows the project's greatest contribution to health impacts under uncontrolled and controlled scenarios for the Revised Variant that meets APEZ criteria. There are certain receptor points that exceed the APEZ criteria within the project site before the addition of the Project impacts. Those points are considered as part of the APEZ since they meet the APEZ criteria. The health impacts for the Revised Variant are at a similar level to the ones for the Draft EIR Variant except for the uncontrolled cancer risk, which is lower for the Revised Variant. The reason for the decrease of in cancer risk is discussed above and is consistent for these receptors. The MEIs for $PM_{2.5}$ in the APEZ occur in 2026 in the AQTM and continue to be in 2026 for the Revised Variant. The reduction in excavation in Phases 2 and 3 occurs in 2026. However, these impacts are very minimal, and are not significant enough to be reflected in the report tables. Phase 6 is not under construction by 2026, so the $PM_{2.5}$ concentration in 2026 is unaffected by the changes in Phase 6.

Table G. Maximum Uncontrolled and Controlled Revised Variant Health Impacts from Construction and Operation that Meet APEZ Criteria

		Excess Lifetime Cancer Risk (in a million)[1]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[1]
Revised Variant	Uncontrolled	23.5	0.23
	Controlled	6.5	0.19
Draft EIR Variant	Uncontrolled	24.4	0.23
	Controlled	6.5	0.19

Source: Tables 42a and 42b of this analysis and the AQTM

Notes:

1. Maximum cancer risk and $PM_{2.5}$ concentration indicate the maximum Revised Variant (or Draft EIR Variant) impacts from the combined construction and operational sources across all the 12 exposure scenarios.

Maximum Revised Variant Impacts that Do Not Meet APEZ Criteria

Table H shows the greatest project contribution to health risks and the maximum health risk impacts under uncontrolled and controlled scenarios for receptors that do not meet APEZ criteria for both the Revised Variant and the Draft EIR Variant. The breakdowns of the Revised Variant and existing background cancer risks and $PM_{2.5}$ concentrations are also included in **Tables 42a-b.**

Maximum Variant Impacts, shown in the table below, are based on the combined construction and operational sources across all the 12 exposure scenarios for the Project. For both uncontrolled and controlled scenarios, the maximum Revised Variant impacts decrease for cancer risk and $PM_{2.5}$ concentration outside of the APEZ. The $PM_{2.5}$ concentration decreased by a larger percentage than cancer risk because the MEI locations for $PM_{2.5}$ are adjacent to Phase 6 and are therefore heavily impacted by changes in Phase 6 construction. The maximum Variant MEIs outside of the APEZ for cancer risk moved to Buckingham Way and 19th Ave. Due to the distance from Phases 1-3 and 6, and proximity to Phase 5, impacts at this receptor are dominated by Phase 5 and less impacted by emission reductions in Phase 6, as well as by changes across Phases 1-3. For controlled cancer risk, the MEI is less affected by changes in Phases 1-3, and the decrease in construction risk due to Phase 6 changes was counteracted by the increase in operational risk from the generator.

Maximum total impacts in the table below refer to the maximum overall impact, which is the background plus Variant contribution. Compared to the Draft EIR Variant, the Revised Variant contribution decreased by a larger percent under the uncontrolled scenarios than the controlled scenarios. In the controlled scenarios, the reductions in construction were roughly similar to the increase in construction of Phase 1 and operation due to the generator. However, in the uncontrolled scenario, the construction reduction outweighed the increase in operations. The maximum total impacts are affected less by the changes in Phases 1-3 and 6 because their impacts are driven by background sources other than the Variant's contribution.

2.4.2 Worker Receptors

Health impacts to any potential offsite worker receptors were evaluated, as described in the AQTM. The updated uncontrolled and controlled Revised Variant health risks from construction and operational sources are summarized in **Tables 45a-b**. As shown in **Tables 45a-b**, the updated

uncontrolled and controlled cancer risks for the MEIW from the Revised Variant were calculated to be 4.8 and 2.9 in a million, respectively, compared to 5.1 and 2.9 in a million for the Draft EIR Variant. Total existing plus Project cancer risks at these locations were 35 and 48 in a million, respectively. Compared to the Draft EIR Variant, the uncontrolled cancer risks for the MEIW decreased by 5% while the controlled decreases are minor (about 0.8%). Similar to other receptors, the controlled construction risk decreased, and the operational risk increased by approximately the same amount (due to the additional generator). For uncontrolled cancer risk, construction risk is much larger, so the decrease outweighs the increase from the generator. Furthermore, the MEIW for the controlled cancer risk is near Phase 5, which is relatively far away from Phase 6, so would be less affected by changes in Phase 6. The emission reductions from Phase 6 construction resulted in the MEIW location for uncontrolled risk changing from near Phase 6 to the northwest of the mall, as shown in **Figure 6a**.

The $PM_{2.5}$ annual average concentration including fugitive dust for the uncontrolled and controlled scenarios are 0.50 µg/m^3 and 0.43 µg/m^3, respectively, compared to 0.59 µg/m^3 and 0.51 µg/m^3 for the Draft EIR Variant. Total existing plus Variant $PM_{2.5}$ concentration at these locations were 8.8 and 8.7 µg/m^3, respectively. Compared to the Draft EIR Variant, the uncontrolled $PM_{2.5}$ concentration decreased by 16% and the controlled decreased by 15%. Both MEIWs' locations for $PM_{2.5}$ concentrations are adjacent to Phase 6 so are directly impacted by $PM_{2.5}$ emission reductions in Phase 6, as discussed above.

The maximum uncontrolled non-cancer chronic HI at the MEIW was updated to be 0.017 while the controlled chronic HI was 0.0053, compared to 0.022 and 0.0058 for the Draft EIR Variant. The chronic HI at these locations is dominated by construction, so the reduction in construction emissions caused the reduction in chronic HI.

The updated breakdowns of the workers' health impacts are shown in **Tables 45a-b** for the Revised Variant.

All worker receptors analyzed did not meet APEZ criteria, so a comparison between meeting and not meeting APEZ criteria was not performed for the worker population.

2.5 Cumulative Analysis

The cumulative analysis and discussion from the AQTM remain unchanged for the Revised Variant. The cumulative analysis in the AQTM discussed the impact of nearby reasonably foreseeable future projects and did not quantitively analyze the impact of these other projects due to their distance from the site or availability of information on specific improvements. The AQTM discussed that while the reasonably foreseeable future projects may increase TAC emissions in the area, the project's contribution to cumulative health risks would remain the same. This conclusion would remain the same for the Revised Variant.

Table H. Maximum Uncontrolled and Controlled Revised Variant Health Impacts from Construction and Operation that Do Not Meet APEZ Criteria

		Excess Lifetime Cancer Risk (in a million)		$PM_{2.5}$ Concentration ($\mu g/m^3$)	
		Variant Contribution	Total with Background	Variant Contribution	Total with Background
Revised Variant	**Uncontrolled Scenario**				
	Maximum Variant Impact[1]	21.2	78.1	0.28	8.5
	Maximum Total Impact[2]	16.2	112.5	0.074	9.8
	Controlled Scenario				
	Maximum Variant Impact[1]	8.9	65.8	0.24	8.4
	Maximum Total Impact[2]	6.1	102.4	0.072	9.9
Draft EIR Variant	**Uncontrolled Scenario**				
	Maximum Variant Impact[1]	23.4	70.1	0.33	8.5
	Maximum Total Impact[2]	18.4	112.2	0.074	9.8
	Controlled Scenario				
	Maximum Variant Impact[1]	8.9	65.8	0.28	8.5
	Maximum Total Impact[2]	6.1	102.4	0.073	9.8

Source: Tables 42a and 42b of this analysis and the AQTM

Notes:

1. Maximum cancer risk and $PM_{2.5}$ concentration indicate the maximum Revised Variant (or Draft EIR Variant) impacts from the combined construction and operational sources across all the 12 exposure scenarios.
2. Maximum total impacts indicate the maximum background plus Revised Variant (or Draft EIR Variant) impacts.

TABLES

Table 1: Land Use Summary for Existing Conditions and Revised Variant

Table 2: Construction Phasing Schedule for Revised Variant

Table 3: Construction Equipment for Revised Variant

Table 4a: Uncontrolled Construction Off-Highway Truck Emissions for Revised Variant

Table 4b: Controlled Construction Off-Highway Truck Emissions for Revised Variant

Table 5: Construction Trips for Revised Variant

Table 8a: Emission Calculations for Modeled Entrained Roadway Dust for Revised Variant

Table 8b: Emission Calculations for Entrained Roadway Dust Mass Emissions for Revised Variant

Table 10: Fugitive Dust Emissions from Off-Road Grading Activity for Revised Variant

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Table 14: Estimated Emissions from Construction Architectural Coating Off-Gassing for Revised Variant

Table 15: Estimated Emissions from Controlled Construction Architectural Coating Off-Gassing for Revised Variant

Table 16: Summary of Uncontrolled Construction Emissions by Source for Revised Variant

Table 17: Summary of Controlled Construction Emissions by Source for Revised Variant

Table 18: Uncontrolled Construction Emissions by Year for Revised Variant

Table 19: Controlled Construction Emissions by Year for Revised Variant

Table 20: Building Operational Capacity for Emissions Scaling for Revised Variant

Table 21b: Trips and VMT for Revised Variant Operations

Table 23b: Project Revised Variant Uncontrolled Mobile Emissions Summary

Table 24b: Project Revised Variant Controlled Mobile Emissions Summary

Table 26a: Uncontrolled Generator Emissions from Project Operations for Revised Variant

Table 26b: Controlled Generator Emissions from Project Operations for Revised Variant

Table 27: Uncontrolled Architectural Coating Emissions from Existing Conditions and Project Operations for Revised Variant

Table 28: Controlled Architectural Coating Emissions from Existing Conditions and Project Operations for Revised Variant

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Table 34b: Summary of Variant Uncontrolled Operational CAP Emissions for Revised Variant

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Table 36: Uncontrolled Construction and Net New Operational CAP Emissions by Year for Revised Variant

Table 37: Controlled Construction and Net New Operational CAP Emissions by Year for Revised Variant

Table 39m: Age Sensitivity Weighted Intake Factors by Year and Age Bin for Scenario 12 and Revised Variant

Table 41a: Maximum Uncontrolled Revised Variant Health Impacts by Population Type

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Table 42a: Maximum Uncontrolled Existing Plus Revised Variant Cancer Risk and $PM_{2.5}$ Concentration for APEZ and non-APEZ receptors

Table 42b: Maximum Controlled Existing Plus Revised Variant Cancer Risk and $PM_{2.5}$ Concentration for APEZ and non-APEZ receptors

Table 45a: Maximum Uncontrolled Revised Variant Health Impacts for Workers

Table 45b: Maximum Controlled Revised Variant Health Impacts for Workers

FIGURES

Figure 1b: Revised Variant Phasing Schedule

Figure 6a: Uncontrolled Maximally Exposed Individuals

APPENDICES

Appendix B: Emissions for Health Risk Assessment

Appendix D: Transportation Data

TABLES

Table 1
Land Use Summary for Existing Conditions and Proposed Project for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Site	Land Use Type	Description[1]	CalEEMod Land Use Subtype[2]	Land Use Quantity	
				Value	Units
Existing Conditions on the Site	Parking	Underground parking and surface parking lots	Structured Parking	1,659	ksf
	Cultural, Institutional, Educational	Church	Place of Worship	25	ksf
	Retail	Shopping center	Regional Shopping Center	59	ksf
Proposed Project Variant	Residential	Residential	Apartments Mid Rise	**3,491**	DU
	Retail	Retail Sales and Services	Regional Shopping Center	160	ksf
	Commercial	Non-Retail Sales and Services	General Office Building	**96**	ksf
	Recreational	Parks, Plazas, and Open Space	City Park	6.0	acres
	Recreational	Hotel	Hotel	**0**	rooms
	Cultural, Institutional, Educational	Institutional	General Office Building	63	ksf
	Parking	Structured Parking	Enclosed Parking with Elevator	**4,861**	spaces

Notes:

1. Project land uses obtained from the Stonestown Development Program Table sent to Ramboll on 2/17/22.
2. CalEEMod land use subtype represents the land uses as input into CalEEMod.

Abbreviations:

CalEEMod - California Emissions Estimator Model
DU - Dwelling Unit
ksf - 1000 square feet

Table 2
Construction Phasing Schedule for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Phase[1]	Construction Subphase[1]	Start Date	End Date[2]	Days per Week[3]	Number of Work Days	Demolished Area
Phase 1	Demolition	4/15/2024	6/10/2024	5	40	26,600
	Site Preparation	4/1/2024	6/10/2024	5	50	
	Grading, Shoring, Excavating	5/28/2024	1/14/2025	5	159	
	Building Construction	12/2/2024	1/11/2028	5	796	
	Paving	2/1/2026	5/1/2026	5	64	
	Architectural Coating	12/1/2025	1/11/2028	5	544	
Phase 2	Demolition	5/2/2025	7/21/2025	5	57	353,410
	Site Preparation	4/1/2025	7/21/2025	5	80	
	Grading, Shoring, Excavating	6/21/2025	5/21/2026	5.1	239	
	Building Construction	5/22/2026	12/22/2028	5.1	676	
	Paving	10/1/2028	11/1/2028	5	23	
	Architectural Coating	6/1/2027	12/22/2028	5	409	
Phase 3	Demolition	7/2/2026	9/20/2026	5.1	58	225,529
	Site Preparation	6/1/2026	7/1/2026	5	21	
	Grading and Shoring	8/20/2026	7/20/2027	5	239	
	Building Construction	8/1/2026	10/1/2028	5.1	577	
	Paving	6/1/2027	7/1/2027	5	21	
	Architectural Coating	10/1/2027	10/1/2028	5	261	
Phase 4[4]	Demolition	6/2/2027	9/10/2027	5.1	73	318,112
	Site Preparation	4/1/2027	6/1/2027	5.1	44	
	Grading, Shoring, Excavate	8/10/2027	7/10/2028	5.1	244	
	Building Construction	3/1/2028	12/1/2030	5.1	732	
	Paving	8/1/2030	10/1/2030	5.0	44	
	Architectural Coating	3/1/2029	12/1/2030	5.0	457	
Phase 5	Demolition	6/2/2028	8/21/2028	5.1	58	166,949
	Site Preparation	4/1/2028	6/1/2028	5	44	
	Grading, Shoring, Excavation	7/21/2028	6/21/2029	5.1	244	
	Building Construction	4/21/2029	11/1/2031	5.1	673	
	Paving	7/26/2030	9/26/2030	5	44	
	Architectural Coating	4/21/2030	11/1/2031	5	399	
Phase 6	Demolition	5/2/2029	**6/21/2029**	5	**36**	321,767
	Site Preparation	4/1/2029	5/1/2029	5	21	
	Grading, Shoring, Excavating	**6/1/2029**	**2/1/2030**	5	**169**	
	Building Construction	**2/5/2030**	**6/15/2032**	5	**615**	
	Paving	**9/1/2031**	**11/15/2031**	5	**54**	
	Architectural Coating	**2/1/2031**	**6/30/2032**	5	**368**	

Notes:

1. Construction phasing information was provided by the Project Sponsor. Construction may occur between 7am-8pm, per San Francisco City and County requirements. A small portion of construction in Phase 1 would occur at night. However, sensitive populations near this construction are a school, which operates during the day. Therefore, it is conservative to assume all emissions would occur during the day, concurrent with school operating hours.
2. Occupancy is expected to begin in 2028 through 2032 for Phases 1 through 6.
3. The 5.1 workdays per week account for the occasional construction work on weekends.
4. The Phase 4 Variant would include the development of the Authentic Church parcel.

Table 3
Construction Equipment for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Phase	Construction Subphase	Equipment[1]	CalEEMod Equipment[2]	Fuel[3]	Number[1]	Horsepower[1]	Daily Usage[4] (hours/day)	Utilization[5]
Phase 1	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavating	Excavators	Excavators	Diesel	2	158	8	**31%**
		Graders	Graders	Diesel	1	187	8	**12%**
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	**6%**
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	**6%**
		Scrapers	Scrapers	Diesel	1	367	8	**6%**
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	**43%**
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	97	8	**37%**
	Building Construction	Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 2	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavating	Excavators	Excavators	Diesel	2	158	8	**22%**
		Graders	Graders	Diesel	1	187	8	**9%**
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	**4%**
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	**4%**
		Scrapers	Scrapers	Diesel	1	367	8	**4%**
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	**31%**
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	**28%**
	Building Construction	Cranes	Cranes	Diesel	2	231	7	25%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 3	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading and Shoring	Excavators	Excavators	Diesel	2	158	8	**22%**
		Graders	Graders	Diesel	1	187	8	**9%**
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	**4%**
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	**4%**
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	**31%**
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	97	8	**26%**
	Building Construction	Cranes	Cranes	Diesel	1	231	7	20%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%

Table 3
Construction Equipment for Revised Variant
Stonestown Redevelopment
San Francisco, California

Phase 4[7]	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavate	Excavators	Excavators	Diesel	2	158	8	25%
		Graders	Graders	Diesel	1	187	8	10%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	5%
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	5%
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	35%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	30%
	Building Construction	Cranes	Cranes	Diesel	1	231	7	20%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 5	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavation	Excavators	Excavators	Diesel	2	158	8	25%
		Graders	Graders	Diesel	1	187	8	10%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	5%
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	5%
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	35%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	30%
	Building Construction	Cranes	Cranes	Diesel	2	231	7	25%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 6	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavating	Excavators	Excavators	Diesel	2	158	8	25%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	5%
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	5%
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	35%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	97	8	30%
	Building Construction	Cranes	Cranes	**Electric**	1	231	7	20%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%

Table 3
Construction Equipment for Revised Variant
Stonestown Redevelopment
San Francisco, California

Notes:

1. Equipment lists and numbers were based on CalEEMod defaults and provided by the Project Sponsor. Where a range of equipment numbers were specified, the maximum equipment number was used.
2. CalEEMod equipment types are assigned using CalEEMod User's Guide Appendix C.
3. All equipment is conservatively assumed to be diesel-fueled.
4. Construction activities are assumed to occur during 7AM to 8PM hours, consistent with the construction allowances in San Francisco's Police Code Article 29, Section 2907.
5. Where no utilization was provided, utilization was assumed to be 100%, that is, the equipment is used for the entirety of the phase. This is likely conservative, as not all equipment would be used every construction day.
6. The uncontrolled tier is assumed to be consistent with the fleet average tier. For estimating controlled emissions, Ramboll will assume the project will use Tier 4 final equipment.
7. The Phase 4 Variant would include the development of the Authentic Church parcel.

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4a
Uncontrolled Construction Off-Highway Truck Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Construction Phase	Construction Subphase	Year	Onsite Truck Use[1]				Onsite Truck Emissions[2]			
			Run Hours	Starts	Miles	Idle Hours	ROG	NOx	PM_{10}	$PM_{2.5}$
							(lbs)			
Phase 1	Grading, Shoring, Excavating	2024	**500**	**500**	**7,503**	**500**	**4.6**	**194**	**2.8**	**1.3**
		2025	**32**	**32**	**482**	**32**	**0.29**	**12**	**0.18**	**0.078**
	Building Construction	2024	66	66	993	66	0.60	26	0.37	0.17
		2025	806	806	12,085	806	7.3	299	4.4	2.0
		2026	806	806	12,085	806	7.1	287	4.3	1.9
		2027	806	806	12,085	806	7.0	276	4.3	1.9
		2028	24	24	364	24	0.21	7.9	0.13	0.054
Phase 2	Grading, Shoring, Excavating	2025	**287**	**287**	**4,310**	**287**	**2.6**	**107**	**1.6**	**0.70**
		2026	**209**	**209**	**3,132**	**209**	**1.8**	**74**	**1.1**	**0.49**
	Building Construction	2026	448	448	6,723	448	4.0	160	2.4	1.1
		2027	730	730	10,955	730	6.3	250	3.9	1.7
		2028	714	714	10,715	714	6.1	233	3.7	1.6
Phase 3	Grading and Shoring	2026	**198**	**198**	**2,972**	**198**	**1.8**	**71**	**1.1**	**0.47**
		2027	**297**	**297**	**4,457**	**297**	**2.6**	**102**	**1.6**	**0.68**
	Building Construction	2026	234	234	3,507	234	2.1	83	1.3	0.55
		2027	558	558	8,366	558	4.8	191	2.9	1.3
		2028	420	420	6,303	420	3.6	137	2.2	0.94
Phase 4 Variant	Grading, Shoring, Excavate	2027	251	251	3,766	251	2.2	86	1.3	0.58
		2028	335	335	5,021	335	2.8	109	1.7	0.75
	Building Construction	2028	468	468	7,016	468	4.0	153	2.4	1.0
		2029	558	558	8,368	558	4.6	173	2.8	1.2
		2030	512	512	7,681	512	4.1	154	2.5	1.0
Phase 5	Grading, Shoring, Excavation	2028	286	286	4,289	286	2.4	93	1.5	0.64
		2029	300	300	4,498	300	2.5	93	1.5	0.63
	Building Construction	2029	779	779	11,692	779	6.4	242	3.9	1.6
		2030	1,116	1,116	16,735	1,116	8.9	334	5.5	2.3
		2031	932	932	13,984	932	7.4	271	4.6	1.9
Phase 6	Grading, Shoring, Excavating	2029	**205**	**205**	**3,080**	**205**	**1.7**	**64**	1.0	**0.43**
		2030	**31**	**31**	**460**	**31**	**0.25**	**9.2**	**0.15**	**0.062**
	Building Construction	2030	**494**	**494**	**7,416**	**494**	4.0	**148**	**2.4**	1.0
		2031	547	547	**8,203**	547	4.3	159	**2.7**	1.1
		2032	**250**	**250**	**3,753**	**250**	**1.9**	**71**	**1.2**	**0.49**

Notes:

1. An average emission factors is calculated using the following criteria:
   - Number of HHDT vehicles and schedule are provided by the Project Sponsor.
   - Run hours are calculated as number of equipment * utilization percent * number of construction days * hours/day as provided by the project sponsor.
   - Trips are calculated assuming there is one trip per hour, calculated as number of hours * 1 trip/hour.
   - Miles are calculated as hours * 15 miles per hour.
   - Total Vehicles are calculated as number of equipment for a given subphase * equipment utilization percent * number of construction subphase days as provided by the project sponsor.
2. Concrete Trucks and Dump Trucks are assumed to be similar to heavy-heavy duty trucks (HHDT) as defined in EMFAC2021. Emission factors are from EMFAC2021 ("Emission Rates" mode) for HHDT diesel vehicles (aggregated model year) in San Francisco County. RUNEX emission factors are specific to vehicle speed of 15 mph. All other emission factor types, except IDLEX emission factors, are for aggregated speed. IDLEX emission factors are from EMFAC2021 ("Project Analysis") for HHDT diesel vehicles in San Francisco County. Emission factors were multiplied by the appropriate usage parameter based on the units. Emission factors in units of g/trip, g/mi, and g/vehicle/day, were multiplied by trips, miles, and total vehicles, respectively, in order to obtain mass emissions.

Abbreviations:

EMFAC2021 - California Air Resources Board EMission FACtor model
HHDT - heavy heavy-duty trucks
IDLEX - Idle exhaust emissions
lb - pound
NOx - nitrogen oxides
PM - Particulate Matter
PM10 - particulate matter less than 10 microns
PM2.5 - particulate matter less than 2.5 microns
ROG - reactive organic gases
RUNEX - Running exhaust emissions

References:

California Air Resources Board. EMFAC2021. Available online at: https://arb.ca.gov/emfac/emissions-inventory

Table 4b
Controlled Construction Off-Highway Truck Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Construction Phase	Construction Subphase	Year	Onsite Truck Use[1,3]				Onsite Truck Emissions[2,3]			
			Run Hours	Starts	Miles	Idle Hours	ROG	NOx	PM_{10}	$PM_{2.5}$
							(lbs)			
Phase 1	Grading, Shoring, Excavating	2024	**500**	**500**	**7,503**	**500**	**3.0**	**80**	**2.0**	**0.72**
		2025	**32**	**32**	**482**	**32**	**0.20**	**5.1**	**0.13**	**0.046**
	Building Construction	2024	66	66	993	66	0.40	11	0.27	0.10
		2025	806	806	12,085	806	4.9	129	3.3	1.2
		2026	806	806	12,085	806	4.9	129	3.3	1.2
		2027	806	806	12,085	806	4.9	129	3.3	1.2
		2028	24	24	364	24	0.15	3.9	0.10	0.035
Phase 2	Grading, Shoring, Excavating	2025	**287**	**287**	**4,310**	**287**	**1.7**	**46**	**1.2**	**0.41**
		2026	**209**	**209**	**3,132**	**209**	**1.3**	**33**	**0.85**	**0.30**
	Building Construction	2026	448	448	6,723	448	2.7	72	1.8	0.64
		2027	730	730	10,955	730	4.4	117	3.0	1.1
		2028	714	714	10,715	714	4.3	114	2.9	1.0
Phase 3	Grading and Shoring	2026	**198**	**198**	**2,972**	**198**	**1.2**	**32**	**0.81**	**0.28**
		2027	**297**	**297**	**4,457**	**297**	**1.8**	**48**	**1.2**	**0.43**
	Building Construction	2026	234	234	3,507	234	1.4	37	1.0	0.34
		2027	558	558	8,366	558	3.4	89	2.3	0.80
		2028	420	420	6,303	420	2.5	67	1.7	0.61
Phase 4 Variant	Grading, Shoring, Excavate	2027	251	251	3,766	251	1.5	40	1.0	0.36
		2028	335	335	5,021	335	2.0	53	1.4	0.48
	Building Construction	2028	468	468	7,016	468	2.8	75	1.9	0.68
		2029	558	558	8,368	558	3.4	89	2.3	0.81
		2030	512	512	7,681	512	3.1	82	2.1	0.75
Phase 5	Grading, Shoring, Excavation	2028	286	286	4,289	286	1.7	46	1.2	0.41
		2029	300	300	4,498	300	1.8	48	1.2	0.44
	Building Construction	2029	779	779	11,692	779	4.7	124	3.2	1.1
		2030	1,116	1,116	16,735	1,116	6.8	179	4.6	1.6
		2031	932	932	13,984	932	5.6	151	3.9	1.4
Phase 6	Grading, Shoring, Excavating	2029	**205**	**205**	**3,080**	**205**	1.2	**33**	**0.85**	**0.30**
		2030	**31**	**31**	**0,460**	**31**	**0.19**	**4.9**	**0.13**	**0.045**
	Building Construction	2030	**494**	**494**	**7,416**	**494**	3.0	**79**	**2.0**	**0.72**
		2031	547	547	**8,203**	547	3.3	89	2.3	0.80
		2032	**250**	**250**	**3,753**	**250**	**1.52**	**41**	**1.0**	**0.37**

Notes:

1. An average emission factors is calculated using the following criteria:
   - Number of HHDT vehicles and schedule are provided by the Project Sponsor.
   - Run hours are calculated as number of equipment * utilization percent * number of construction days * hours/day as provided by the project sponsor.
   - Trips are calculated assuming there is one trip per hour, calculated as number of hours * 1 trip/hour.
   - Miles are calculated as hours * 15 miles per hour.
   - Total Vehicles are calculated as number of equipment for a given subphase * equipment utilization percent * number of construction subphase days as provided by the project sponsor.
2. Concrete Trucks and Dump Trucks are assumed to be similar to heavy-heavy duty trucks (HHDT) as defined in EMFAC2021. Emission factors are from EMFAC2021 ("Emission Rates" mode) for HHDT diesel vehicles (model years 2018 and up) in San Francisco County. RUNEX emission factors are specific to vehicle speed of 15 mph. All other emission factor types, except IDLEX emission factors, are for aggregated speed. IDLEX emission factors are from EMFAC2021 ("Project Analysis") for HHDT diesel vehicles in San Francisco County (model years 2018 and up). A weighted average emission factor for each year of construction was calculated across model years (2018-year of construction), weighted by the VMT of each model year. Emission factors were multiplied by the appropriate usage parameter based on the units. Emission factors in units of g/trip, g/mi, and g/vehicle/day, were multiplied by trips, miles, and total vehicles, respectively, in order to obtain mass emissions.
3. Another control scenario where HHDT diesel vehicles with model years within the past 10 years are calculated in Appendix E.

Abbreviations:

EMFAC2021 - California Air Resources Board EMission FACtor model
HHDT - heavy heavy-duty trucks
IDLEX - Idle exhaust emissions
lb - pound
NOx - nitrogen oxides
PM - Particulate Matter
PM10 - particulate matter less than 10 microns
PM2.5 - particulate matter less than 2.5 microns
ROG - reactive organic gases
RUNEX - Running exhaust emissions

References:

California Air Resources Board. EMFAC2021. Available online at: https://arb.ca.gov/emfac/emissions-inventory

Table 5
Construction Trips for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Phase	Subphase	Construction Days	Worker Trip Rates[1] (trips/day)	Vendor Trip Rates[1] (trips/day)	Hauling Trips[1] (one-way trips/subphase)	Trip Lengths[2] (miles/one way trip)			Worker VMT (miles)	Vendor VMT (miles)	Hauling VMT (miles)
						Worker	Vendor	Hauling			
Phase 1	Demolition	40	15	20	472	11.1	5	28	6,678	3,968	13,222
	Site Preparation	50	7.5	--	--	11.1	5	28	4,174	--	--
	Grading, Shoring, Excavating	159	**53**	**37**	**6,944**	11.1	5	28	**93,262**	**29,337**	**194,432**
	Building Construction	796	349	30	3,570	11.1	5	28	3,095,314	118,445	99,960
	Paving	64	13	15	270	11.1	5	28	8,904	4,762	7,560
	Architectural Coating	544	70	--	--	11.1	5	28	423,078	--	--
Phase 2	Demolition	57	15	60	1,309	11.1	5	28	9,516	16,963	36,650
	Site Preparation	80	7.5	--	--	11.1	5	28	6,678	--	--
	Grading, Shoring, Excavating	239	**40**	**31**	**8,328**	11.1	5	28	**106,137**	**37,223**	**233,184**
	Building Construction	676	610	20	5,800	11.1	5	28	4,589,606	67,059	162,400
	Paving	23	13	10	150	11.1	5	28	3,200	1,141	4,200
	Architectural Coating	409	122	--	--	11.1	5	28	555,369	--	--
Phase 3	Demolition	58	15	20	418	11.1	5	28	9,731	5,782	11,694
	Site Preparation	21	7.5	--	--	11.1	5	28	1,789	--	--
	Grading and Shoring	239	**35**	**16**	**2,333**	11.1	5	28	**92,670**	**19,406**	**65,324**
	Building Construction	577	365	10	1,897	11.1	5	28	2,345,936	28,621	53,116
	Paving	21	13	20	215	11.1	5	28	2,981	2,126	6,020
	Architectural Coating	261	73	--	--	11.1	5	28	212,570	--	--
Phase 4[3]	Demolition	73	15	20	3,181	11.1	5.0	28	12,164	7,227	89,071
	Site Preparation	44	7.5	--	--	11.1	5.0	28	3,710	--	--
	Grading, Shoring, Excavate	244	43	25	5,000	11.1	5.0	28	115,452	30,265	140,000
	Building Construction	732	599	20	3,100	11.1	5.0	28	4,879,846	72,636	86,800
	Paving	44	13	10	220	11.1	5.0	28	6,062	2,161	6,160
	Architectural Coating	457	120	--	--	11.1	5.0	28	609,326	--	--
Phase 5	Demolition	58	15	30	618	11.1	5	28	9,731	8,673	17,304
	Site Preparation	44	7.5	--	--	11.1	5	28	3,637	--	--
	Grading, Shoring, Excavation	244	43	35	8,100	11.1	5	28	115,452	42,371	226,800
	Building Construction	673	443	20	5,100	11.1	5	28	3,317,666	66,781	142,800
	Paving	44	13	10	215	11.1	5	28	6,161	2,197	6,020
	Architectural Coating	399	89	--	--	11.1	5	28	393,552	--	--
Phase 6	Demolition	**36**	15	20	1,190	11.1	5	28	**5,963**	**3,543**	**33,320**
	Site Preparation	21	7.5	--	--	11.1	5	28	1,789	--	--
	Grading, Shoring, Excavating	**169**	40	10	**1,800**	11.1	5	28	**75,048**	**8,361**	**50,400**
	Building Construction	**615**	**227**	10	**1,000**	11.1	5	28	**1,552,633**	**30,504**	**28,000**
	Paving	**54**	13	10	65	11.1	5	28	**7,453**	**2,657**	**1,820**
	Architectural Coating	**368**	**45**	--	--	11.1	5	28	**185,739**	--	--

EMFAC Data[4]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Francisco County Calendar Years 2024-2032 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	50% LDA, 25% LDT1, 25% LDT2	Gasoline
Vendor		100% MHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

1. Worker, vendor, and hauling trip numbers are calculated from CalEEMod default methodology as described in Appendix C section 4.6.1:
   - 1.25 workers per piece of equipment are assumed for all phases except building construction and architectural coating which results in one roundtrip per worker.
   - For building construction, the trips are proportional to the land use type and size.
   - For the architectural coating the trips are equal to 20% of the building construction
2. Worker and vendor trip lengths are based on CalEEMod Appendix G defaults for San Francisco County. Hauling trip length was provided by the Project Sponsor.
3. The Phase 4 Variant would include the development of the Authentic Church parcel.
4. Emissions were calculated using emission factors from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions except for the controlled emissions for the vendor and hauling trips which used VMT-weighted emission factors for model year 2018 or newer MHDT and HHDT respectively.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks
MHDT - medium heavy-duty trucks
HHDT - heavy heavy-duty trucks
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 8a
Emission Calculations for Modeled Entrained Roadway Dust for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 1	Demolition	2024	40	15	20	472	900	1,200	708	2,808	1.2	0.17
	Site Preparation	2024	50	8	0	0	563	0	0	563	0.23	0.035
	Grading, Shoring, Excavating	2024	149	**53**	**37**	**6,525**	**11,810**	**8,337**	**9,787**	**29,935**	**12**	**1.9**
	Grading, Shoring, Excavating	2025	10	**53**	**37**	**419**	**758**	**535**	**629**	**1,922**	**0.80**	**0.12**
	Building Construction	2024	21	349	30	94	11,017	946	141	12,104	5.0	0.75
	Building Construction	2025	256	349	30	1,147	134,034	11,509	1,721	147,264	61	9.1
	Building Construction	2026	256	349	30	1,147	134,034	11,509	1,721	147,264	61	9.1
	Building Construction	2027	256	349	30	1,147	134,034	11,509	1,721	147,264	61	9.1
	Building Construction	2028	7.7	349	30	35	4,039	347	52	4,438	1.8	0.28
	Paving	2026	64	13	15	270	1,200	1,440	405	3,045	1.3	0.19
	Architectural Coating	2025	22	70	0	0	2,290	0	0	2,290	0.95	0.14
	Architectural Coating	2026	257	70	0	0	26,958	0	0	26,958	11	1.7
	Architectural Coating	2027	257	70	0	0	26,958	0	0	26,958	11	1.7
	Architectural Coating	2028	7.8	70	0	0	812	0	0	812	0.34	0.050
Phase 2	Demolition	2025	57	15	60	1,309	1,283	5,130	1,963	8,376	3.5	0.52
	Site Preparation	2025	80	8	0	0	900	0	0	900	0.37	0.056
	Grading, Shoring, Excavating	2025	138	**40**	**31**	**4,823**	**8,284**	**6,519**	**7,234**	**22,037**	**9.1**	**1.4**
	Grading, Shoring, Excavating	2026	101	**40**	**31**	**3,505**	**6,021**	**4,738**	**5,258**	**16,016**	**6.6**	**1.0**
	Building Construction	2026	160	610	20	1,373	146,463	4,802	2,060	153,325	63	10
	Building Construction	2027	261	610	20	2,238	238,656	7,825	3,357	249,838	103	16
	Building Construction	2028	255	610	20	2,189	233,426	7,653	3,283	244,362	101	15
	Paving	2028	23	13	10	150	431	345	225	1,001	0.41	0.062
	Architectural Coating	2027	153	122	0	0	28,051	0	0	28,051	12	1.7
	Architectural Coating	2028	256	122	0	0	46,796	0	0	46,796	19	2.9
Phase 3	Demolition	2026	58	15	20	418	1,311	1,749	626	3,686	1.5	0.23
	Site Preparation	2026	21	8	0	0	241	0	0	241	0.10	0.015
	Grading and Shoring	2026	95	**35**	**16**	**933**	**4,996**	**2,348**	**1,400**	**8,743**	**3.6**	**0.54**
	Grading and Shoring	2027	143	**35**	**16**	**1,400**	**7,494**	**3,521**	**2,100**	**13,115**	**5.4**	**0.81**
	Building Construction	2026	111	365	10	366	61,000	1,670	549	63,219	26	3.9
	Building Construction	2027	266	365	10	873	145,523	3,984	1,310	150,817	62	9.4
	Building Construction	2028	200	365	10	658	109,641	3,002	987	113,629	47	7.1
	Paving	2027	21	13	20	215	402	643	323	1,367	0.57	0.085
	Architectural Coating	2027	66	73	0	0	7,182	0	0	7,182	3.0	0.45
	Architectural Coating	2028	196	73	0	0	21,467	0	0	21,467	8.9	1.3
Phase 4[2]	Demolition	2027	73	15	20	3,181	1,639	2,186	4,772	8,597	3.6	0.53
	Site Preparation	2027	44	7.5	0	0	500	0	0	500	0.21	0.031
	Grading, Shoring, Excavate	2027	105	43	25	2,143	6,668	3,923	3,214	13,805	5.7	0.86
	Grading, Shoring, Excavate	2028	139	43	25	2,857	8,891	5,230	4,286	18,407	7.6	1.1
	Building Construction	2028	223	599	20	943	200,044	6,682	1,414	208,140	86	13
	Building Construction	2029	266	599	20	1,125	238,615	7,970	1,687	248,272	103	15
	Building Construction	2030	244	599	20	1,032	219,002	7,315	1,548	227,866	94	14
	Paving	2030	44	13	10	220	817	654	330	1,801	0.75	0.11
	Architectural Coating	2029	218	120	0	0	39,202	0	0	39,202	16	2.4
	Architectural Coating	2030	239	120	0	0	42,917	0	0	42,917	18	2.7

Table 8a
Emission Calculations for Modeled Entrained Roadway Dust for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 5	Demolition	2028	58	15	30	618	1,311	2,623	927	4,861	2.0	0.30
	Site Preparation	2028	44	8	0	0	490	0	0	0,490	0.20	0.030
	Grading, Shoring, Excavation	2028	119	43	35	3,954	7,595	6,254	5,930	19,779	8.2	1.2
	Grading, Shoring, Excavation	2029	125	43	35	4,146	7,965	6,559	6,220	20,744	8.6	1.3
	Building Construction	2029	186	443	20	1,406	123,261	5,568	2,109	130,938	54	8.1
	Building Construction	2030	266	443	20	2,012	176,433	7,969	3,019	187,421	78	12
	Building Construction	2031	222	443	20	1,682	147,430	6,659	2,522	156,612	65	10
	Paving	2030	44	13	10	215	830	664	323	1,817	0.75	0.11
	Architectural Coating	2030	182	89	0	0	24,152	0	0	24,152	10	1.5
	Architectural Coating	2031	217	89	0	0	28,888	0	0	28,888	12	1.8
Phase 6	Demolition	2029	**36**	15	20	1,190	**804**	**1,071**	1,785	**3,660**	1.5	**0.23**
	Site Preparation	2029	21	8	0	0	241	0	0	241	0.10	0.015
	Grading, Shoring, Excavating	2029	**147**	40	10	**1566**	**8,799**	**2,200**	**2,349**	**13,347**	**5.5**	**0.83**
	Grading, Shoring, Excavating	2030	**22**	40	10	**234**	**1,316**	**329**	**351**	**1,996**	**0.83**	**0.12**
	Building Construction	2030	**235**	**227**	10	**383**	**80,107**	**3,532**	**574**	**84,213**	**35**	**5.2**
	Building Construction	2031	260	**227**	10	**423**	**88,603**	3,906	**635**	**93,145**	**39**	**5.8**
	Building Construction	2032	**119**	**227**	10	**194**	**40,539**	**1,787**	**291**	**42,617**	**18**	**2.6**
	Paving	2031	**54**	13	10	65	**1,004**	**804**	98	**1,906**	**0.79**	**0.12**
	Architectural Coating	2031	**238**	**45**	0	0	**16,203**	0	0	**16,203**	**6.7**	**1.0**
	Architectural Coating	2032	**130**	**45**	0	0	**8,829**	0	0	**8,829**	**3.7**	**0.55**

Notes:

1. Trip rates for worker, vendor, and hauling are obtained from Table 5. Trip lengths for worker, vendor, and hauling were set to the modeled length of 1.5 miles.
2. The Phase 4 Variant would include the development of the Authentic Church parcel.

Abbreviations:

VMT - vehicle miles traveled
CalEEMod - California Emissions Estimator Model
$PM_{2.5}$ - particulate matter less than 2.5 microns
PM_{10} - particulate matter less than 10 microns
lb - pound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 8b
Emission Calculations for Entrained Roadway Dust Mass Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 1	Demolition	2024	40	15	20	472	6,678	3,968	13,222	23,868	10	1.5
	Site Preparation	2024	50	8	0	0	4,174	0	0	4,174	1.7	0.26
	Grading, Shoring, Excavating	2024	149	**53**	**37**	**6,525**	**87,634**	**27,567**	**182,699**	**297,900**	**123**	**18**
	Grading, Shoring, Excavating	2025	10	**53**	**37**	**419**	**5,628**	**1,770**	**11,733**	**19,131**	**7.9**	**1.2**
	Building Construction	2024	21	349	30	94	81,742	3,128	2,640	87,510	36	5.4
	Building Construction	2025	256	349	30	1,147	994,533	38,057	32,117	1,064,707	441	66
	Building Construction	2026	256	349	30	1,147	994,533	38,057	32,117	1,064,707	441	66
	Building Construction	2027	256	349	30	1,147	994,533	38,057	32,117	1,064,707	441	66
	Building Construction	2028	7.7	349	30	35	29,972	1,147	968	32,087	13	2.0
	Paving	2026	64	13	15	270	8,904	4,762	7,560	21,226	8.8	1.3
	Architectural Coating	2025	22	70	0	0	16,989	0	0	16,989	7.0	1.1
	Architectural Coating	2026	257	70	0	0	200,030	0	0	200,030	83	12
	Architectural Coating	2027	257	70	0	0	200,030	0	0	200,030	83	12
	Architectural Coating	2028	7.8	70	0	0	6,028	0	0	6,028	2.5	0.37
Phase 2	Demolition	2025	57	15	60	1,309	9,516	16,963	36,650	63,129	26	3.9
	Site Preparation	2025	80	8	0	0	6,678	0	0	6,678	2.8	0.41
	Grading, Shoring, Excavating	2025	138	**40**	**31**	**4,823**	**61,464**	**21,556**	**135,038**	**218,058**	**90**	**14**
	Grading, Shoring, Excavating	2026	101	**40**	**31**	**3,505**	**44,673**	**15,667**	**98,146**	**158,486**	**66**	**10**
	Building Construction	2026	160	610	20	1,373	1,086,757	15,879	38,454	1,141,089	472	71
	Building Construction	2027	261	610	20	2,238	1,770,831	25,874	62,660	1,859,364	770	115
	Building Construction	2028	255	610	20	2,189	1,732,018	25,307	61,286	1,818,611	753	113
	Paving	2028	23	13	10	150	3,200	1,141	4,200	8,541	3.5	0.53
	Architectural Coating	2027	153	122	0	0	208,142	0	0	208,142	86	13
	Architectural Coating	2028	256	122	0	0	347,227	0	0	347,227	144	22
Phase 3	Demolition	2026	58	15	20	418	9,731	5,782	11,694	27,207	11	1.7
	Site Preparation	2026	21	8	0	0	1,789	0	0	1,789	0.74	0.11
	Grading and Shoring	2026	95	**35**	**16**	**933**	**37,068**	**7,763**	**26,130**	**70,960**	**29**	**4.4**
	Grading and Shoring	2027	143	**35**	**16**	**1,400**	**55,602**	**11,644**	**39,194**	**106,440**	**44**	**6.6**
	Building Construction	2026	111	365	10	366	452,621	5,522	10,248	468,391	194	29
	Building Construction	2027	266	365	10	873	1,079,781	13,173	24,448	1,117,403	463	69
	Building Construction	2028	200	365	10	658	813,534	9,925	18,420	841,879	349	52
	Paving	2027	21	13	20	215	2,981	2,126	6,020	11,127	4.6	0.69
	Architectural Coating	2027	66	73	0	0	53,287	0	0	53,287	22	3.3
	Architectural Coating	2028	196	73	0	0	159,283	0	0	159,283	66	10
Phase 4[2]	Demolition	2027	73	15	20	3,181	12,164	7,227	89,071	108,462	45	6.7
	Site Preparation	2027	44	7.5	0	0	3,710	0	0	3,710	1.5	0.23
	Grading, Shoring, Excavate	2027	105	43	25	2,143	49,479	12,971	60,000	122,450	51	7.6
	Grading, Shoring, Excavate	2028	139	43	25	2,857	65,973	17,294	80,000	163,267	68	10
	Building Construction	2028	223	599	20	943	1,484,327	22,094	26,402	1,532,823	635	95
	Building Construction	2029	266	599	20	1,125	1,770,521	26,354	31,493	1,828,368	757	114
	Building Construction	2030	244	599	20	1,032	1,624,998	24,188	28,905	1,678,091	695	104
	Paving	2030	44	13	10	220	6,062	2,161	6,160	14,383	6.0	0.89
	Architectural Coating	2029	218	120	0	0	290,880	0	0	290,880	120	18
	Architectural Coating	2030	239	120	0	0	318,447	0	0	318,447	132	20

Table 8b
Emission Calculations for Entrained Roadway Dust Mass Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 5	Demolition	2028	58	15	30	618	9,731	8,673	17,304	35,708	14.8	2.2
	Site Preparation	2028	44	8	0	0	3,637	0	0	3,637	1.5	0.23
	Grading, Shoring, Excavation	2028	119	43	35	3,954	56,352	20,681	110,700	187,733	78	12
	Grading, Shoring, Excavation	2029	125	43	35	4,146	59,100	21,690	116,100	196,890	82	12
	Building Construction	2029	186	443	20	1,406	914,600	18,410	39,366	972,376	403	60
	Building Construction	2030	266	443	20	2,012	1,309,133	26,352	56,348	1,391,833	576	86
	Building Construction	2031	222	443	20	1,682	1,093,933	22,020	47,085	1,163,038	481	72
	Paving	2030	44	13	10	215	6,161	2,197	6,020	14,378	6.0	0.89
	Architectural Coating	2030	182	89	0	0	179,207	0	0	179,207	74	11
	Architectural Coating	2031	217	89	0	0	214,345	0	0	214,345	89	13
Phase 6	Demolition	2029	**36**	**15**	20	1,190	**5,963**	**3,543**	33,320	**42,825**	**18**	2.7
	Site Preparation	2029	21	8	0	0	1,789	0	0	1,789	0.74	0.11
	Grading, Shoring, Excavating	2029	**147**	40	10	**1,566**	**65,286**	**7,274**	**43,844**	**116,403**	**48**	**7.2**
	Grading, Shoring, Excavating	2030	**22**	40	10	**234**	**9,762**	**1,088**	**6,556**	**17,406**	**7.2**	**1.1**
	Building Construction	2030	**235**	227	10	**383**	**594,396**	**11,678**	**10,719**	**616,793**	**255**	**38**
	Building Construction	2031	260	227	10	**423**	**657,437**	**12,916**	**11,856**	**682,210**	**282**	**42**
	Building Construction	2032	**119**	227	10	**194**	**300,800**	**5,910**	**5,425**	**312,134**	**129**	**19**
	Paving	2031	**54**	13	10	65	**7,453**	**2,657**	1,820	**11,930**	**4.9**	**0.74**
	Architectural Coating	2031	**238**	**45**	0	0	**120,226**	0	0	**120,226**	**50**	**7.5**
	Architectural Coating	2032	**130**	**45**	0	0	**65,513**	0	0	**65,513**	**27**	**4.1**

Notes:

1. Trip rates for worker, vendor, and hauling are obtained from Table 5. Trip lengths for worker, vendor, and hauling were set to the modeled length of 11.1, 4.96, and 28 miles respectively.
2. The Phase 4 Variant would include the development of the Authentic Church parcel.

Abbreviations:

VMT - vehicle miles traveled
CalEEMod - California Emissions Estimator Model
$PM_{2.5}$ - particulate matter less than 2.5 microns
PM_{10} - particulate matter less than 10 microns
lb - pound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 10
Fugitive Dust Emissions from Off-Road Grading Activity for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Year	Maximum Area Disturbed[1]	Grading VMT[2]	$PM_{2.5}$ Emission Factor[3]	Emissions w/o Watering[4,5]		Emissions w/ Watering[4,5]	
					$PM_{2.5}$		$PM_{2.5}$	
		acre/day	mile/day	lb/VMT	lb/day	ton/yr	lb/day	ton/yr
Phase 1	2024	2.00	1.38	0.17	0.23	0.017	0.060	0.0044
	2025				0.23	0.0011	0.060	2.9E-04
Phase 2	2025	2.00	1.38		0.23	0.016	0.060	0.0041
	2026				0.23	0.012	0.060	0.0030
Phase 3	2026	1.00	0.69		0.11	0.0055	0.030	0.0014
	2027				0.11	0.0082	0.030	0.0021
Phase 4	2027	1.00	0.69		0.11	0.0060	0.030	0.0016
	2028				0.11	0.0080	0.030	0.0021
Phase 5	2028	1.00	0.69		0.11	0.0068	0.030	0.0018
	2029				0.11	0.0072	0.030	0.0019
Phase 6	2029	**0.50**	**0.34**		**0.06**	**0.0042**	**0.015**	**0.0011**
	2030				**0.06**	**0.0006**	**0.015**	**0.0002**

Notes:

1. Maximum graded area is based on Project-specific estimate following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.1 Grading Equipment Passes.
2. VMT per day calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equation is:
   VMT = A_S/W_b x (43,560 sqft/acre)/(5,280 ft/mile), where:

   A_S = A_S, acres graded per day (varies by sub-activity)
   12 = W_b, blade width of grading equipment (CalEEMod® default)
3. Emission factors calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equations are:
   $EF_{PM10} = 0.051 \times (S)^{2.0} \times F_{PM10}$
   $EF_{PM2.5} = 0.04 \times (S)^{2.5} \times F_{PM2.5}$ where:

   7.1 = S, mean vehicle speed (mph) (AP-42 default)
   0.6 = F_{PM10}, PM_{10} scaling factor (AP-42 default)
   0.031 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor (AP-42 default)
4. Fugitive PM emissions will be controlled by watering the construction site three times per day, which is estimated to reduce emissions by 74% per CalEEMod® recommendation.
5. The mass emissions shown below are converted from ton per year to gram per second for the health risk assessment. The conversion is based on 365 days per year and 13 hours per day, consistent with the modeled hours from 7 AM - 8 PM.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
ft - feet
lb - pounds
mph - miles per hour
PM2.5 - particulate matter less than 2.5 microns
VMT - vehicle miles traveled
yr - years

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 11
Fugitive Dust Emissions from Truck Loading Activity for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Subphase	Year	Number of Days	Haul Trips	Total Material Loaded[1]	Material Loaded	Emission Factor[2]	Emissions w/o Watering[3,4]		Emissions w/ Watering[3,4]	
							$PM_{2.5}$	$PM_{2.5}$		$PM_{2.5}$	
			days	# trips	ton	ton	lb/ton	lb/day	ton/yr	lb/day	ton/yr
Phase 1	Demolition	2024	40	472	1,224	1,224	3.5E-05	0.0011	2.2E-05	2.8E-04	5.6E-06
	Grading, Shoring, Excavating	2024	149	**6,525**	**62,765**	**58,978**		**0.014**	**0.0010**	**0.0036**	**2.7E-04**
	Grading, Shoring, Excavating	2025	10	**419**		**3,788**		**0.014**	**6.7E-05**	**0.0036**	**1.7E-05**
Phase 2	Demolition	2025	57	1,309	16,257	16,257		0.010	2.9E-04	0.0026	7.5E-05
	Grading, Shoring, Excavating	2025	138	**4,823**	**42,622**	**24,682**		**0.0063**	**4.4E-04**	**0.0016**	**1.1E-04**
	Grading, Shoring, Excavating	2026	101	**3,505**		**17,939**		**0.0063**	**3.2E-04**	**0.0016**	**8.2E-05**
Phase 3	Demolition	2026	58	418	10,374	10,374		0.0063	1.8E-04	0.0016	4.8E-05
	Grading and Shoring	2026	95	**933**	**28,349**	**11,340**		**0.0042**	**2.0E-04**	**0.0011**	**5.2E-05**
	Grading and Shoring	2027	143	**1,400**		**17,010**		**0.0042**	**3.0E-04**	**0.0011**	**7.8E-05**
Phase 4	Demolition	2027	73	3,181	14,633	14,633		0.0071	2.6E-04	0.0018	6.7E-05
	Grading, Shoring, Excavate	2027	105	2,143	52,526	22,511		0.0076	4.0E-04	0.0020	1.0E-04
	Grading, Shoring, Excavate	2028	139	2,857		30,015		0.0076	5.3E-04	0.0020	1.4E-04
Phase 5	Demolition	2028	58	618	7,680	7,680		0.0046	1.4E-04	0.0012	3.5E-05
	Grading, Shoring, Excavation	2028	119	3,954	78,783	38,454		0.011	6.8E-04	0.0030	1.8E-04
	Grading, Shoring, Excavation	2029	125	4,146		40,329		0.011	7.1E-04	0.0030	1.8E-04
Phase 6	Demolition	2029	**36**	1,190	14,801	14,801		**0.015**	**2.6E-04**	**0.0038**	**6.8E-05**
	Grading, Shoring, Excavating	2029	**147**	**1,566**	42,830	**37,259**		**0.0090**	**6.6E-04**	**0.0023**	**1.7E-04**
	Grading, Shoring, Excavating	2030	**22**	**234**		**5,571**		**0.0090**	**9.8E-05**	**0.0023**	**2.6E-05**

Notes:

1. Total materials loaded for demolition phases were the building waste converted from square feet to tons assuming an average soil density of 1.5 grams per cubic centimeter, per the CalEEMod® User's Guide, Appendix C Section 4.4.3 Truck Loading. Total materials loaded for grading phases were the total material moved during grading.
2. Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 13.2.4 for aggregate handling. The equation is:
   $EF = k \times (0.0032) \times (U/5)^{1.3} / (M/2)^{1.4}$, where the following default values are used:
   - 0.35 = k_{PM10}, PM_{10} particle size multiplier
   - 0.053 = $k_{PM2.5}$, $PM_{2.5}$ particle size multiplier
   - 4.6 = mean wind speed (U), metes per second
   - 10.3 = mean wind speed (U), miles per hour
   - 12 = material moisture content (M), %
3. Fugitive PM emissions will be controlled by watering the construction site three times per day, which is estimated to reduce emissions by 74% per CalEEMod® recommendation.
4. The mass emissions shown below are converted from ton per year to gram per second for the health risk assessment. The conversion is based on 365 days per year and 13 hours per day, consistent with the modeled hours from 7 AM - 8 PM.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
lbs - pounds
PM2.5 - particulate matter less than 2.5 microns

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 12
Fugitive Dust Emissions from Off-Road Bulldozing Activity for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Subphase	Year	Number of Days	CalEEMod Equipment	Total Equipment Work Hours[1] (hours/day)	Utilization	$PM_{2.5}$ Emission Factor[2] (lbs/hour)	Emissions w/o Watering[3,4]		Emissions w/ Watering[3,4]	
								$PM_{2.5}$		$PM_{2.5}$	
			days					lb/day	ton/yr	lb/day	ton/yr
Phase 1	Demolition	2024	40	Rubber Tired Dozers	16	40%	0.41	2.6	0.053	0.69	0.014
	Site Preparation	2024	50	Rubber Tired Dozers	8	45%		1.5	0.037	0.39	0.010
	Grading, Shoring, Excavating	2024	149	Rubber Tired Dozers	8	**6%**		**0.21**	**0.015**	**0.053**	**0.0040**
	Grading, Shoring, Excavating	2025	10	Rubber Tired Dozers	8	**6%**		**0.21**	**0.0010**	**0.053**	**2.6E-04**
Phase 2	Demolition	2025	57	Rubber Tired Dozers	16	40%		2.6	0.075	0.69	0.020
	Site Preparation	2025	80	Rubber Tired Dozers	8	45%		1.5	0.060	0.39	0.015
	Grading, Shoring, Excavating	2025	138	Rubber Tired Dozers	8	**4%**		**0.15**	**0.010**	**0.038**	**0.0026**
	Grading, Shoring, Excavating	2026	101	Rubber Tired Dozers	8	**4%**		**0.15**	**0.0073**	**0.038**	**0.0019**
Phase 3	Demolition	2026	58	Rubber Tired Dozers	16	40%		2.6	0.077	0.69	0.020
	Site Preparation	2026	21	Rubber Tired Dozers	8	45%		1.5	0.016	0.39	0.0041
	Grading and Shoring	2026	95	Rubber Tired Dozers	8	**4%**		**0.15**	**0.0069**	**0.038**	**0.0018**
	Grading and Shoring	2027	143	Rubber Tired Dozers	8	**4%**		**0.15**	**0.010**	**0.038**	**0.0027**
Phase 4	Demolition	2027	73	Rubber Tired Dozers	16	40%		2.6	0.10	0.69	0.025
	Site Preparation	2027	44	Rubber Tired Dozers	8	45%		1.5	0.033	0.39	0.0086
	Grading, Shoring, Excavate	2027	105	Rubber Tired Dozers	8	5%		0.17	0.0087	0.043	0.0023
	Grading, Shoring, Excavate	2028	139	Rubber Tired Dozers	8	5%		0.17	0.012	0.043	0.0030
Phase 5	Demolition	2028	58	Rubber Tired Dozers	16	40%		2.6	0.077	0.69	0.020
	Site Preparation	2028	44	Rubber Tired Dozers	8	45%		1.5	0.032	0.39	0.0084
	Grading, Shoring, Excavation	2028	119	Rubber Tired Dozers	8	5%		0.17	0.010	0.043	0.0026
	Grading, Shoring, Excavation	2029	125	Rubber Tired Dozers	8	5%		0.17	0.010	0.043	0.0027
Phase 6	Demolition	2029	**36**	Rubber Tired Dozers	16	40%		2.6	**0.047**	0.69	**0.012**
	Site Preparation	2029	21	Rubber Tired Dozers	8	45%		1.5	0.016	0.39	0.0041
	Grading, Shoring, Excavating	2029	**147**	Rubber Tired Dozers	8	5%		0.17	**0.012**	0.043	**0.0032**
	Grading, Shoring, Excavating	2030	**22**	Rubber Tired Dozers	8	5%		0.17	**0.0018**	0.043	**4.7E-04**

Notes:

1. Construction schedule is based on Project-specific estimate. Includes planned hours for all tracked dozers to be used during the given phase.
2. Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.2 Bulldozing, which is based on AP-42, Section 11.9 for bulldozing equipment. The equation is: $EF_{PM2.5} = C_{TSP} \times s^{1.2} / M^{1.3} \times F_{PM2.5}$, where the following default values are used:

   5.7 = C_{TSP}, arbitrary coefficient
   6.9 = s, material silt content (%)
   7.9 = M, material moisture content (%)
   0.105 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor
3. Fugitive emissions were controlled by watering three times per day and a control efficiency of 74% (CalEEMod® default) was used in estimating the emissions.
4. The mass emissions shown below are converted from ton per year to gram per second for the health risk assessment. The conversion is based on 365 days per year and 13 hours per day, consistent with the modeled hours from 7 AM - 8 PM.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
lbs - pounds
PM2.5 - particulate matter less than 2.5 microns
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 13
Estimated Emissions from Construction Paving Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Land Use Type	Asphalt-Paved Area (acre)[1]	Asphalt Paving Off-Gassing ROG Emission Factor (lb/acre)[2]	Asphalt Paving Off-Gassing ROG Emissions (lb/activity)
Phase 1	Paving	Parking	**11**	2.62	**28**
Phase 2	Paving	Parking	**6.1**		**16**
Phase 3	Paving	Parking	**6.4**		**17**
Phase 4	Paving	Parking	**8.4**		**22**
Phase 5	Paving	Parking	**6.6**		**17**
Phase 6	Paving	Parking	**3.5**		**9.2**
Total	--	--	**42**	--	**110**

Notes:

1. This analysis assumes that all parking areas are asphalt paving areas.
2. Emission factor from CalEEMod User's Guide, Appendix A.

Abbreviations:

lb - pound
ROG - reactive organic gas
sqft - square foot

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 14
Estimated Emissions from Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Inputs[1,2]

Parameter		Input	Units
Residential Surface Area to Floor Area Ratio		2.7	--
Non-Residential Surface Area to Floor Area Ratio		2.0	--
Painted Stripes Area in Parking Structures		6%	--
Painted Building Area in Parking Structures		5%	--
Application Rate		100%	--
Fraction of Surface Area	Non-Parking Interior Surfaces	75%	--
	Non-Parking Exterior Shell	25%	--
	Parking Interior Surfaces	90%	--
	Parking Exterior Shell	10%	--
Indoor Paint or Parking Stripes VOC Content		100	g/L
Outdoor Paint VOC Content		150	g/L

Proposed Revised Variant Emissions by Phase

Phase	Land Use Type	Description	CalEEMod® Land Use	Square Footage[2] (square feet)	Building Surface Area[2] (square feet)	Painted Parking Stripes Area[2] (square feet)	Architectural Coating VOC emissions[3] (lbs)	Architectural Coating VOC Emissions by Phase (lbs)
Phase 1	Residential	Residential	Apartments Mid Rise	**528,930**	**1,428,111**	**--**	**7,449**	**7,935**
	Retail	Retail Sales and Services	Regional Shopping Center	10,000	20,000	--	104	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	13,000	26,000	--	136	
	Parking	Structured Parking	Enclosed Parking with Elevator	**472,123**	**23,606**	**28,327**	**246**	
Phase 2	Residential	Residential	Apartments Mid Rise	**816,156**	**2,203,620**	**--**	**11,494**	**12,009**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	376	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	60,984	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**266,999**	**13,350**	**16,020**	**139**	
Phase 3	Residential	Residential	Apartments Mid Rise	**522,407**	**1,410,499**	**--**	**7,357**	**8,087**
	Retail	Retail Sales and Services	Regional Shopping Center	20,000	40,000	--	209	
	Commercial	Non-Retail Sales and Services	General Office Building	**24,000**	**48,000**	--	**250**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	12,000	24,000	--	125	
	Parking	Structured Parking	Enclosed Parking with Elevator	**280,499**	**14,025**	**16,830**	**146**	
Phase 4	Residential	Residential	Apartments Mid Rise	**624,498**	**1,686,143**	--	**8,795**	**10,477**
	Retail	Retail Sales and Services	Regional Shopping Center	58,000	116,000	--	605	
	Commercial	Non-Retail Sales and Services	General Office Building	47,000	94,000	--	490	
	Recreational	Parks, Plazas, and Open Space	City Park	30,492	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	0	
	Cultural, Institutional, Educational	Institutional	General Office Building	38,000	76,000	--	396	
	Parking	Structured Parking	Enclosed Parking with Elevator	**365,249**	**18,262**	**21,915**	**191**	
Phase 5	Residential	Residential	Apartments Mid Rise	**683,997**	**1,846,793**	--	**9,633**	**10,418**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	376	
	Commercial	Non-Retail Sales and Services	General Office Building	**25,000**	**50,000**	--	**261**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**285,749**	**14,287**	**17,145**	**149**	
Phase 6	Residential	Residential	Apartments Mid Rise	**357,999**	**966,596**	--	**5,042**	**5,121**
	Retail	Retail Sales and Services	Regional Shopping Center	--	--	--	--	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	39,204	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**152,249**	**7,612**	**9,135**	**79**	
Total VOC Emissions (lbs)								**54,047**

Table 14
Estimated Emissions from Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant Emissions by Year

Phase	Year	Work Days per Year	VOC Emissions by Phase (lbs)	VOC Emissions by Year (lbs)
Phase 1	2025	22	7,935	319
	2026	257		3,752
	2027	257		3,752
	2028	8		113
Phase 2	2027	153	12,009	4,501
	2028	256		7,508
Phase 3	2027	66	8,087	2,027
	2028	196		6,060
Phase 4	2029	218	10,477	5,001
	2030	239		5,475
Phase 5	2030	182	10,418	4,744
	2031	217		5,674
Phase 6	2031	238	5,121	3,315
	2032	130		1,806

Notes:

[1] Inputs and assumptions are consistent with CalEEMod® 2022.1 for BAAQMD. Indoor and outdoor paint VOC content parameters were obtained from CalEEMod Appendix G Table G-17 Architectural Coating Emissions Factors by Air District.

[2] Building square footage is based on Methodology Report. Residential building surface area assumed to be 2.7 times the square footage and non-residential square footage is assumed to be 2.0 times the square footage, consistent with CalEEMod® Appendix C. Parking surface area is representative of the surface area of the lot that is painted, in accordance with the CalEEMod default of 6% for stripes and 5% for the building.

[3] Calculated based on CalEEMod® assumption that 1 gallon of paint covers 180 square feet and that building area is assumed to be 75% indoors and 25% outdoors except for parking land uses which are 90% indoors and 10% outdoors.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - Emission Factor
g - grams
L - liter
lb - pound
VOC - Volatile Organic Compound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 15
Estimated Emissions from Controlled Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Inputs[1,2]

Parameter		Input	Units
Residential Surface Area to Floor Area Ratio		2.7	--
Non-Residential Surface Area to Floor Area Ratio		2.0	--
Painted Stripes Area in Parking Structures		6%	--
Painted Building Area in Parking Structures		5%	--
Application Rate		100%	--
Fraction of Surface Area	Non-Parking Interior Surfaces	75%	--
	Non-Parking Exterior Shell	25%	--
	Parking Interior Surfaces	90%	--
	Parking Exterior Shell	10%	--
Super-Compliant Indoor Paint or Parking Stripes VOC Content		10	g/L
Outdoor Paint VOC Content		20	g/L

Proposed Revised Variant Emissions by Phase

Phase	Land Use Type	Description	CalEEMod® Land Use	Square Footage[2] (square feet)	Building Surface Area[2] (square feet)	Painted Parking Stripes Area[2] (square feet)	Architectural Coating VOC emissions[3] (lbs)	Architectural Coating VOC Emissions by Phase (lbs)
Phase 1	Residential	Residential	Apartments Mid Rise	**528,930**	**1,428,111**	**--**	**828**	**879**
	Retail	Retail Sales and Services	Regional Shopping Center	10,000	20,000	--	12	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	13,000	26,000	--	15	
	Parking	Structured Parking	Enclosed Parking with Elevator	**472,123**	**23,606**	**28,327**	**25**	
Phase 2	Residential	Residential	Apartments Mid Rise	**816,156**	**2,203,620**	**--**	**1,277**	**1,333**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	42	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	60,984	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**266,999**	**13,350**	**16,020**	**14**	
Phase 3	Residential	Residential	Apartments Mid Rise	**522,407**	**1,410,499**	**--**	**817**	**897**
	Retail	Retail Sales and Services	Regional Shopping Center	20,000	40,000	--	23	
	Commercial	Non-Retail Sales and Services	General Office Building	**24,000**	**48,000**	--	**28**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	12,000	24,000	--	14	
	Parking	Structured Parking	Enclosed Parking with Elevator	**280,499**	**14,025**	**16,830**	**15**	
Phase 4	Residential	Residential	Apartments Mid Rise	**624,498**	**1,686,143**	--	**977**	**1,162**
	Retail	Retail Sales and Services	Regional Shopping Center	58,000	116,000	--	67	
	Commercial	Non-Retail Sales and Services	General Office Building	47,000	94,000	--	54	
	Recreational	Parks, Plazas, and Open Space	City Park	30,492	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	38,000	76,000	--	44	
	Parking	Structured Parking	Enclosed Parking with Elevator	**365,249**	**18,262**	**21,915**	**19**	
Phase 5	Residential	Residential	Apartments Mid Rise	**683,997**	**1,846,793**	--	**1,070**	**1,156**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	42	
	Commercial	Non-Retail Sales and Services	General Office Building	**25,000**	**50,000**	--	**29**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**285,749**	**14,287**	**17,145**	**15**	
Phase 6	Residential	Residential	Apartments Mid Rise	**357,999**	**966,596**	--	**560**	**568**
	Retail	Retail Sales and Services	Regional Shopping Center	--	--	--	--	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	39,204	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**152,249**	**7,612**	**9,135**	**8.1**	
Total VOC Emissions (lbs)								**5,997**

Table 15
Estimated Emissions from Controlled Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant Emissions by Year

Phase	Year	Work Days per Year	VOC Emissions by Phase (lbs)	VOC Emissions by Year (lbs)
Phase 1	2025	22	879	35
	2026	257		416
	2027	257		416
	2028	8		13
Phase 2	2027	153	1,333	500
	2028	256		833
Phase 3	2027	66	897	225
	2028	196		672
Phase 4	2029	218	1,162	555
	2030	239		608
Phase 5	2030	182	1,156	526
	2031	217		630
Phase 6	2031	238	568	368
	2032	130		200

Notes:

[1] Inputs and assumptions are consistent with CalEEMod® 2022.1 for BAAQMD. Indoor and outdoor paint VOC content parameters were obtained from CalEEMod Appendix G Table G-17 Architectural Coating Emissions Factors by Air District. Supercompliant paints are used starting in Phase 2.

[2] Building square footage is based on Methodology Report. Residential building surface area assumed to be 2.7 times the square footage and non-residential square footage is assumed to be 2.0 times the square footage, consistent with CalEEMod® Appendix C. Parking surface area is representative of the surface area of the lot that is painted, in accordance with the CalEEMod default of 6% for stripes and 5% for the building.

[3] Calculated based on CalEEMod® assumption that 1 gallon of paint covers 180 square feet and that building area is assumed to be 75% indoors and 25% outdoors except for parking land uses which are 90% indoors and 10% outdoors.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - Emission Factor
g - grams
L - liter
lb - pound
VOC - Volatile Organic Compound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb / yr			
Phase 1	Demolition	2024	On-Site Exhaust	40	410	18	17
			Mobile Exhaust	3.6	139	1.0	0.93
			Roadway Dust	--	--	15	3.0
	Site Preparation	2024	On-Site Exhaust	28	303	13	12
			Mobile Exhaust	1.1	0.80	0.019	0.017
			Roadway Dust	--	--	1.9	0.31
	Grading, Shoring, Excavating	2024	On-Site Exhaust	**53**	**654**	**20**	**19**
			Mobile Exhaust	**46**	**1,796**	**13**	**12**
			Roadway Dust	--	--	**187**	**39**
		2025	On-Site Exhaust	**3.1**	**37**	**1.1**	**1.0**
			Mobile Exhaust	**2.8**	**109**	**0.78**	**0.75**
			Roadway Dust	--	--	**12**	**2.5**
	Building Construction	2024	On-Site Exhaust	4.9	65	1.6	1.5
			Mobile Exhaust	23	54	0.64	0.59
			Roadway Dust	--	--	41	6.9
		2025	On-Site Exhaust	55	757	17	15
			Mobile Exhaust	267	614	7.4	6.9
			Roadway Dust	--	--	499	84
		2026	On-Site Exhaust	52	723	14	13
			Mobile Exhaust	255	575	7.0	6.6
			Roadway Dust	--	--	499	84
		2027	On-Site Exhaust	49	694	12	11
			Mobile Exhaust	246	540	6.6	6.2
			Roadway Dust	--	--	499	84
		2028	On-Site Exhaust	1.4	20	0.30	0.28
			Mobile Exhaust	7.2	15	0.19	0.18
			Roadway Dust	--	--	15	2.5
	Paving	2026	On-Site Exhaust	15	137	6.6	6.1
			Mobile Exhaust	3.3	82	0.60	0.58
			Roadway Dust	--	--	12	2.3
			Paving	**28**	--	--	--
	Architectural Coating	2025	On-Site Exhaust	3.5	24	0.76	0.70
			Mobile Exhaust	4.5	3.0	0.074	0.068
			Roadway Dust	--	--	7.7	1.3
			Architectural Coating	**319**	--	--	--
		2026	On-Site Exhaust	39	279	7.5	6.9
			Mobile Exhaust	50	33	0.83	0.77
			Roadway Dust	--	--	91	15
			Architectural Coating	**3,752**	--	--	--
		2027	On-Site Exhaust	37	270	6.2	5.7
			Mobile Exhaust	48	31	0.79	0.73
			Roadway Dust	--	--	91	15
			Architectural Coating	**3,752**	--	--	--
		2028	On-Site Exhaust	1.1	7.9	0.15	0.14
			Mobile Exhaust	1.4	0.87	0.023	0.021
			Roadway Dust	--	--	2.7	0.45
			Architectural Coating	**113**	--	--	--

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb / yr			
Phase 2	Demolition	2025	On-Site Exhaust	49	479	21	19
			Mobile Exhaust	7.5	388	2.7	2.6
			Roadway Dust	--	--	39	8.2
	Site Preparation	2025	On-Site Exhaust	38	400	17	16
			Mobile Exhaust	1.8	1.2	0.029	0.027
			Roadway Dust	--	--	3.0	0.50
	Grading, Shoring, Excavating	2025	On-Site Exhaust	**36**	**414**	**13**	**12**
			Mobile Exhaust	**31**	**1,258**	**9.0**	**8.6**
			Roadway Dust	--	--	**136**	**28**
		2026	On-Site Exhaust	**25**	**284**	**8.5**	**7.8**
			Mobile Exhaust	**22**	**862**	**6.3**	**6.1**
			Roadway Dust	--	--	**99**	**21**
	Building Construction	2026	On-Site Exhaust	53	640	17	16
			Mobile Exhaust	278	552	7.2	6.7
			Roadway Dust	--	--	532	89
		2027	On-Site Exhaust	81	980	25	23
			Mobile Exhaust	436	848	11	10
			Roadway Dust	--	--	866	146
		2028	On-Site Exhaust	75	915	22	20
			Mobile Exhaust	414	780	10	10
			Roadway Dust	--	--	847	142
	Paving	2028	On-Site Exhaust	5.1	43	2.1	1.9
			Mobile Exhaust	1.2	35	0.27	0.26
			Roadway Dust	--	--	5.0	1.0
			Paving	**16**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	22	161	3.7	3.4
			Mobile Exhaust	50	32	0.82	0.76
			Roadway Dust	--	--	95	16
			Architectural Coating	**4,501**	--	--	--
		2028	On-Site Exhaust	35	261	5.0	4.6
			Mobile Exhaust	82	50	1.3	1.2
			Roadway Dust	--	--	158	26
			Architectural Coating	**7,508**	--	--	--
Phase 3	Demolition	2026	On-Site Exhaust	53	518	22	21
			Mobile Exhaust	4.0	119	0.87	0.84
			Roadway Dust	--	--	16	3.2
	Site Preparation	2026	On-Site Exhaust	11	113	4.7	4.4
			Mobile Exhaust	0.45	0.29	0.0074	0.0068
			Roadway Dust	--	--	0.81	0.13
	Grading and Shoring	2026	On-Site Exhaust	**18**	**216**	**6.1**	**5.6**
			Mobile Exhaust	**12**	**248**	**1.9**	**1.8**
			Roadway Dust	--	--	**40**	**7.9**
		2027	On-Site Exhaust	**26**	**301**	**8.3**	**7.6**
			Mobile Exhaust	**18**	**352**	**2.7**	**2.6**
			Roadway Dust	--	--	**60**	**12**
	Building Construction	2026	On-Site Exhaust	27	331	8.4	7.7
			Mobile Exhaust	115	179	2.6	2.4
			Roadway Dust	--	--	217	36
		2027	On-Site Exhaust	61	749	17	16
			Mobile Exhaust	264	401	6.0	5.5
			Roadway Dust	--	--	518	86
		2028	On-Site Exhaust	44	541	11	10
			Mobile Exhaust	193	284	4.3	4.0
			Roadway Dust	--	--	390	65
	Paving	2027	On-Site Exhaust	4.9	43	2.0	1.9
			Mobile Exhaust	1.4	54	0.40	0.39
			Roadway Dust	--	--	6.7	1.4
			Paving	**17**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	9.4	69	1.6	1.5
			Mobile Exhaust	13	8.2	0.21	0.19
			Roadway Dust	--	--	24	4.0
			Architectural Coating	**2,027**	--	--	--
		2028	On-Site Exhaust	27	200	3.8	3.5
			Mobile Exhaust	37	23	0.59	0.55
			Roadway Dust	--	--	72	12
			Architectural Coating	**6,060**	--	--	--

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb / yr			
Phase 4	Demolition	2027	On-Site Exhaust	62	593	25	23
			Mobile Exhaust	12	710	5.3	5.1
			Roadway Dust	--	--	733	256
	Site Preparation	2027	On-Site Exhaust	21	217	8.8	8.1
			Mobile Exhaust	0.90	0.57	0.015	0.014
			Roadway Dust	--	--	121	66
	Grading, Shoring, Excavate	2027	On-Site Exhaust	25	287	8.0	7.3
			Mobile Exhaust	18	515	3.9	3.7
			Roadway Dust	--	--	198	45
		2028	On-Site Exhaust	33	363	10	9.0
			Mobile Exhaust	24	646	5.0	4.8
			Roadway Dust	--	--	264	59
	Building Construction	2028	On-Site Exhaust	49	602	13	12
			Mobile Exhaust	352	481	7.4	6.9
			Roadway Dust	--	--	169	118
		2029	On-Site Exhaust	56	696	14	13
			Mobile Exhaust	403	538	8.3	7.7
			Roadway Dust	--	--	202	140
		2030	On-Site Exhaust	50	620	11	10
			Mobile Exhaust	358	468	7.2	6.7
			Roadway Dust	--	--	185	129
	Paving	2030	On-Site Exhaust	9.2	74	3.6	3.4
			Mobile Exhaust	1.9	47	0.37	0.36
			Roadway Dust	--	--	5.4	1.6
			Paving	20	--	--	--
	Architectural Coating	2029	On-Site Exhaust	28	219	3.5	3.3
			Mobile Exhaust	66	40	1.0	0.94
			Roadway Dust	--	--	28	22
			Architectural Coating	**5,001**	--	--	--
		2030	On-Site Exhaust	30	237	3.3	3.0
			Mobile Exhaust	69	41	1.0	1.0
			Roadway Dust	--	--	31	24
			Architectural Coating	**5,475**	--	--	--
Phase 5	Demolition	2028	On-Site Exhaust	49	453	19	18
			Mobile Exhaust	4.3	156	1.2	1.1
			Roadway Dust	--	--	21	4.3
	Site Preparation	2028	On-Site Exhaust	20	205	8.3	7.6
			Mobile Exhaust	0.85	0.52	0.014	0.012
			Roadway Dust	--	--	1.7	0.27
	Grading, Shoring, Excavation	2028	On-Site Exhaust	28	310	8.3	7.7
			Mobile Exhaust	24	878	6.8	6.5
			Roadway Dust	--	--	116	24
		2029	On-Site Exhaust	29	313	8.3	7.6
			Mobile Exhaust	24	858	6.7	6.4
			Roadway Dust	--	--	121	25
	Building Construction	2029	On-Site Exhaust	55	725	15	14
			Mobile Exhaust	210	448	5.6	5.2
			Roadway Dust	--	--	457	77
		2030	On-Site Exhaust	76	999	19	18
			Mobile Exhaust	290	610	7.6	7.1
			Roadway Dust	--	--	654	111
		2031	On-Site Exhaust	62	808	15	14
			Mobile Exhaust	234	487	6.1	5.7
			Roadway Dust	--	--	546	92
	Paving	2030	On-Site Exhaust	9.4	76	3.7	3.4
			Mobile Exhaust	1.9	46	0.37	0.35
			Roadway Dust	--	--	8.2	1.6
			Paving	15	--	--	--
	Architectural Coating	2030	On-Site Exhaust	23	180	2.5	2.3
			Mobile Exhaust	39	23	0.59	0.54
			Roadway Dust	--	--	81	13
			Architectural Coating	**4,744**	--	--	--
		2031	On-Site Exhaust	26	214	2.6	2.4
			Mobile Exhaust	45	26	0.67	0.62
			Roadway Dust	--	--	97	16
			Architectural Coating	**5,674**	--	--	--

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 6	Demolition	2029	On-Site Exhaust	**30**	**275**	**12**	**11**
			Mobile Exhaust	**1.5**	**10**	**0.14**	**0.14**
			Roadway Dust	--	--	**2.5**	**0.55**
	Site Preparation	2029	On-Site Exhaust	10	100	4.0	3.7
			Mobile Exhaust	0.40	0.24	0.0063	0.0058
			Roadway Dust	--	--	**0.17**	**0.037**
	Grading, Shoring, Excavating	2029	On-Site Exhaust	**24**	**243**	**7.4**	**6.8**
			Mobile Exhaust	**15**	**21**	**0.39**	**0.37**
			Roadway Dust	--	--	**10**	**2.9**
		2030	On-Site Exhaust	**3.4**	**33**	**0.95**	**0.87**
			Mobile Exhaust	**2.2**	**3.0**	**0.055**	**0.051**
			Roadway Dust	--	--	**1.4**	**0.42**
	Building Construction	2030	On-Site Exhaust	**37**	**507**	**7.0**	**6.5**
			Mobile Exhaust	**130**	**81**	**2.0**	**1.8**
			Roadway Dust	--	--	**60**	**15**
		2031	On-Site Exhaust	**40**	**549**	**6.9**	**6.4**
			Mobile Exhaust	**138**	**85**	**2.1**	**1.9**
			Roadway Dust	--	--	**67**	**16**
		2032	On-Site Exhaust	**18**	**247**	**2.8**	**2.6**
			Mobile Exhaust	**61**	**37**	**0.90**	**0.83**
			Roadway Dust	--	--	**30**	**7.5**
	Paving	2031	On-Site Exhaust	**11**	**82**	**4.1**	**3.8**
			Mobile Exhaust	**1.6**	**1.6**	**0.031**	**0.028**
			Roadway Dust	--	--	**1.2**	**0.23**
			Paving	**9.2**	--	--	--
	Architectural Coating	2031	On-Site Exhaust	**29**	**234**	**2.8**	**2.6**
			Mobile Exhaust	**25**	**15**	**0.38**	**0.35**
			Roadway Dust	--	--	**12**	**2.5**
			Architectural Coating	**3,315**	--	--	--
		2032	On-Site Exhaust	**15**	**126**	**1.3**	**1.2**
			Mobile Exhaust	**13**	**7.6**	**0.19**	**0.18**
			Roadway Dust	--	--	**6.3**	**1.4**
			Architectural Coating	**1,806**	--	--	--

Notes:

[1] Construction emissions were estimated with methodology equivalent to CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the Variant site. For PM, the construction emissions of fugitive dust include the entrained roadway dust and tire/brake wear from construction vehicles. Uncontrolled emissions use the default construction equipment tier and CalEEMod equipment emisison factors.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 1	Demolition	2024	On-Site Exhaust	5.3	28	1.1	1.1
			Mobile Exhaust	1.9	8.5	0.11	0.10
			Roadway Dust	--	--	11	1.8
	Site Preparation	2024	On-Site Exhaust	3.7	19	0.74	0.74
			Mobile Exhaust	1.1	0.80	0.019	0.017
			Roadway Dust	--	--	1.90	0.311
	Grading, Shoring, Excavating	2024	On-Site Exhaust	**15**	**153**	**2.8**	**2.7**
			Mobile Exhaust	**25**	**108**	**1.5**	**1.4**
			Roadway Dust	--	--	**136**	**23**
		2025	On-Site Exhaust	**1.0**	**10**	**0.18**	**0.17**
			Mobile Exhaust	**1.6**	**6.1**	**0.086**	**0.081**
			Roadway Dust	--	--	**8.7**	**1.4**
	Building Construction	2024	On-Site Exhaust	1.1	15	0.15	0.15
			Mobile Exhaust	22	18	0.38	0.35
			Roadway Dust	--	--	40	6.6
		2025	On-Site Exhaust	13	183	1.8	1.8
			Mobile Exhaust	261	198	4.5	4.1
			Roadway Dust	--	--	486	80
		2026	On-Site Exhaust	13	183	1.8	1.8
			Mobile Exhaust	250	183	4.3	4.0
			Roadway Dust	--	--	486	80
		2027	On-Site Exhaust	13	183	1.8	1.8
			Mobile Exhaust	241	170	4.1	3.8
			Roadway Dust	--	--	486	80
		2028	On-Site Exhaust	0.40	5.5	0.054	0.054
			Mobile Exhaust	7.1	4.8	0.12	0.11
			Roadway Dust	--	--	15	2.4
	Paving	2026	On-Site Exhaust	4.1	21	0.81	0.81
			Mobile Exhaust	2.3	5.1	0.076	0.071
			Roadway Dust	--	--	9.4	1.5
			Paving	**28**	**--**	**--**	**--**
	Architectural Coating	2025	On-Site Exhaust	0.32	1.7	0.065	0.065
			Mobile Exhaust	4.5	3.0	0.074	0.068
			Roadway Dust	--	--	7.7	1.3
			Architectural Coating	35	--	--	--
		2026	On-Site Exhaust	3.8	20	0.76	0.76
			Mobile Exhaust	50	33	0.83	0.77
			Roadway Dust	--	--	91	15
			Architectural Coating	**416**	--	--	--
		2027	On-Site Exhaust	3.8	20	0.76	0.76
			Mobile Exhaust	48	31	0.79	0.73
			Roadway Dust	--	--	91	15
			Architectural Coating	**416**	--	--	--
		2028	On-Site Exhaust	0.12	0.60	0.023	0.023
			Mobile Exhaust	1.4	0.87	0.023	0.021
			Roadway Dust	--	--	2.7	0.45
			Architectural Coating	**13**	--	--	--

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 2	Demolition	2025	On-Site Exhaust	7.6	39	1.5	1.5
			Mobile Exhaust	2.8	20	0.24	0.23
			Roadway Dust	--	--	28	4.5
	Site Preparation	2025	On-Site Exhaust	5.9	31	1.2	1.2
			Mobile Exhaust	1.8	1.2	0.029	0.027
			Roadway Dust	--	--	3.0	0.50
	Grading, Shoring, Excavating	2025	On-Site Exhaust	**11**	**99**	**2.0**	**2.0**
			Mobile Exhaust	**17**	**69**	**1.0**	**0.92**
			Roadway Dust	--	--	**99**	**16**
		2026	On-Site Exhaust	**7.9**	**72**	**1.5**	**1.5**
			Mobile Exhaust	**12**	**45**	**0.65**	**0.62**
			Roadway Dust	--	--	**71**	**12**
	Building Construction	2026	On-Site Exhaust	17	313	8.6	7.7
			Mobile Exhaust	273	195	4.7	4.3
			Roadway Dust	--	--	520	85
		2027	On-Site Exhaust	28	476	14	13
			Mobile Exhaust	429	296	7.3	6.7
			Roadway Dust	--	--	847	139
		2028	On-Site Exhaust	27	446	13	12
			Mobile Exhaust	407	271	6.7	6.2
			Roadway Dust	--	--	828	136
	Paving	2028	On-Site Exhaust	1.5	7.6	0.29	0.29
			Mobile Exhaust	0.77	1.8	0.029	0.027
			Roadway Dust	--	--	3.8	0.61
			Paving	**16**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	2.3	12	0.46	0.46
			Mobile Exhaust	50	32	0.82	0.76
			Roadway Dust	--	--	95	16
			Architectural Coating	**500**	--	--	--
		2028	On-Site Exhaust	3.8	20	0.76	0.76
			Mobile Exhaust	82	50	1.3	1.2
			Roadway Dust	--	--	158	26
			Architectural Coating	**833**	--	--	--
Phase 3	Demolition	2026	On-Site Exhaust	7.8	40	1.6	1.6
			Mobile Exhaust	2.5	6.9	0.10	0.093
			Roadway Dust	--	--	12	1.9
	Site Preparation	2026	On-Site Exhaust	1.6	8.2	0.32	0.32
			Mobile Exhaust	0.45	0.29	0.0074	0.0068
			Roadway Dust	--	--	0.81	0.13
	Grading and Shoring	2026	On-Site Exhaust	**6.1**	**61**	**1.1**	**1.1**
			Mobile Exhaust	**9.5**	**17**	**0.28**	**0.26**
			Roadway Dust	--	--	**33**	**5.4**
		2027	On-Site Exhaust	**9.1**	**91**	**1.7**	**1.6**
			Mobile Exhaust	**14**	**23**	**0.39**	**0.37**
			Roadway Dust	--	--	**49**	**8.1**
	Building Construction	2026	On-Site Exhaust	7.6	119	2.8	2.6
			Mobile Exhaust	113	79	1.9	1.8
			Roadway Dust	--	--	214	35
		2027	On-Site Exhaust	18	269	6.8	6.2
			Mobile Exhaust	261	175	4.4	4.0
			Roadway Dust	--	--	509	84
		2028	On-Site Exhaust	14	197	5.0	4.7
			Mobile Exhaust	191	124	3.1	2.9
			Roadway Dust	--	--	384	63
	Paving	2027	On-Site Exhaust	1.4	7.1	0.27	0.27
			Mobile Exhaust	0.76	2.7	0.039	0.036
			Roadway Dust	--	--	4.9	0.79
			Paving	**17**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	1.0	5.1	0.19	0.19
			Mobile Exhaust	13	8.2	0.21	0.19
			Roadway Dust	--	--	24	4.0
			Architectural Coating	**225**	--	--	--
		2028	On-Site Exhaust	2.9	15	0.58	0.58
			Mobile Exhaust	37	23	0.59	0.55
			Roadway Dust	--	--	72	12
			Architectural Coating	**672**	--	--	--

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 4	Demolition	2027	On-Site Exhaust	9.7	50	1.9	1.9
			Mobile Exhaust	3.4	31	0.43	0.41
			Roadway Dust	--	--	48	7.7
	Site Preparation	2027	On-Site Exhaust	3.3	17	0.66	0.66
			Mobile Exhaust	0.90	0.57	0.015	0.014
			Roadway Dust	--	--	1.7	0.28
	Grading, Shoring, Excavate	2027	On-Site Exhaust	8.6	81	1.6	1.6
			Mobile Exhaust	12	29	0.46	0.43
			Roadway Dust	--	--	55	9.0
		2028	On-Site Exhaust	11	108	2.1	2.1
			Mobile Exhaust	16	35	0.57	0.53
			Roadway Dust	--	--	73	12
	Building Construction	2028	On-Site Exhaust	15	219	5.6	5.2
			Mobile Exhaust	349	225	5.7	5.2
			Roadway Dust	--	--	697	114
		2029	On-Site Exhaust	18	257	6.5	6.1
			Mobile Exhaust	399	253	6.3	5.8
			Roadway Dust	--	--	831	136
		2030	On-Site Exhaust	17	228	5.7	5.4
			Mobile Exhaust	354	219	5.5	5.0
			Roadway Dust	--	--	763	125
	Paving	2030	On-Site Exhaust	2.8	14	0.55	0.55
			Mobile Exhaust	1.3	2.5	0.042	0.039
			Roadway Dust	--	--	6.3	1.0
			Paving	22	--	--	--
	Architectural Coating	2029	On-Site Exhaust	3.2	17	0.65	0.65
			Mobile Exhaust	66	40	1.0	0.94
			Roadway Dust	--	--	132	22
			Architectural Coating	555	--	--	--
		2030	On-Site Exhaust	3.5	18	0.71	0.71
			Mobile Exhaust	69	41	1.0	1.0
			Roadway Dust	--	--	145	24
			Architectural Coating	608	--	--	--
Phase 5	Demolition	2028	On-Site Exhaust	7.8	40	1.6	1.6
			Mobile Exhaust	2.4	7.7	0.11	0.10
			Roadway Dust	--	--	16	2.5
	Site Preparation	2028	On-Site Exhaust	3.2	17	0.65	0.65
			Mobile Exhaust	0.85	0.52	0.014	0.012
			Roadway Dust	--	--	1.7	0.27
	Grading, Shoring, Excavation	2028	On-Site Exhaust	10	93	1.8	1.8
			Mobile Exhaust	14	43	0.65	0.62
			Roadway Dust	--	--	84	14
		2029	On-Site Exhaust	10	96	1.9	1.8
			Mobile Exhaust	14	41	0.64	0.60
			Roadway Dust	--	--	88	14
	Building Construction	2029	On-Site Exhaust	21	359	10	8.9
			Mobile Exhaust	206	137	3.4	3.1
			Roadway Dust	--	--	443	73
		2030	On-Site Exhaust	30	491	13	12
			Mobile Exhaust	285	185	4.5	4.1
			Roadway Dust	--	--	634	104
		2031	On-Site Exhaust	25	398	10	10
			Mobile Exhaust	230	147	3.6	3.3
			Roadway Dust	--	--	530	87
	Paving	2030	On-Site Exhaust	2.8	15	0.56	0.56
			Mobile Exhaust	1.4	2.5	0.042	0.039
			Roadway Dust	--	--	6.3	1.0
			Paving	17	--	--	--
	Architectural Coating	2030	On-Site Exhaust	2.7	14	0.54	0.54
			Mobile Exhaust	39	23	0.59	0.54
			Roadway Dust	--	--	81	13
			Architectural Coating	**526**	--	--	--
		2031	On-Site Exhaust	3.2	17	0.65	0.65
			Mobile Exhaust	45	26	0.67	0.62
			Roadway Dust	--	--	97	16
			Architectural Coating	**630**	--	--	--

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 6	Demolition	2029	On-Site Exhaust	**4.8**	**25**	**1.0**	**1.0**
			Mobile Exhaust	**1.5**	**10**	**0.14**	**0.14**
			Roadway Dust	--	--	**2.5**	**0.55**
	Site Preparation	2029	On-Site Exhaust	1.6	8.2	0.32	0.32
			Mobile Exhaust	0.40	0.24	0.0063	0.0058
			Roadway Dust	--	--	**0.17**	**0.037**
	Grading, Shoring, Excavating	2029	On-Site Exhaust	**8.7**	**77**	**1.7**	**1.6**
			Mobile Exhaust	**15**	**21**	**0.39**	**0.37**
			Roadway Dust	--	--	**10**	**2.2**
		2030	On-Site Exhaust	**1.3**	**11**	**0.25**	**0.24**
			Mobile Exhaust	**2.2**	**3.0**	**0.055**	**0.051**
			Roadway Dust	--	--	**1.5**	**0.32**
	Building Construction	2030	On-Site Exhaust	**11**	**128**	**1.6**	**1.6**
			Mobile Exhaust	**130**	**81**	**2.0**	**1.8**
			Roadway Dust	--	--	**61**	**13**
		2031	On-Site Exhaust	**12**	**141**	**1.8**	**1.8**
			Mobile Exhaust	**138**	**85**	**2.1**	**1.9**
			Roadway Dust	--	--	**67**	**15**
		2032	On-Site Exhaust	**5.4**	**64**	**0.81**	**0.80**
			Mobile Exhaust	**61**	**37**	**0.90**	**0.83**
			Roadway Dust	--	--	**31**	**6.7**
	Paving	2031	On-Site Exhaust	**3.4**	**18**	**0.68**	**0.68**
			Mobile Exhaust	**1.6**	**1.6**	**0.031**	**0.028**
			Roadway Dust	--	--	**1.2**	**0.23**
			Paving	**9.2**	--	--	--
	Architectural Coating	2031	On-Site Exhaust	**3.5**	**18**	**0.71**	**0.71**
			Mobile Exhaust	**25**	**15**	**0.38**	**0.35**
			Roadway Dust	--	--	**12**	**2.5**
			Architectural Coating	**368**	--	--	--
		2032	On-Site Exhaust	**1.9**	**10**	**0.39**	**0.39**
			Mobile Exhaust	**13**	**7.6**	**0.19**	**0.18**
			Roadway Dust	--	--	**6.3**	**1.4**
			Architectural Coating	**200**	--	--	--

Notes:

1. Construction emissions were estimated with methodology equivalent to CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the project site. For PM, the construction emissions of fugitive dust include the entrained roadway dust and tire/brake wear for construction vehicles. For PM, the construction emissions of fugitive dust include the entrained roadway dust.
Controlled construction emissions incorporate architectural coating controls, Tier 4 construction equipment with the exception of bore/drill rigs and cranes, and model year 2018 or newer trucks.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 18
Uncontrolled Construction Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Uncontrolled Construction Daily CAP Emissions[1]			
	ROG	NOx	PM_{10}	$PM_{2.5}$
	lb/day			
2024	**1.0**	**17**	**1.6**	**0.57**
2025	3.1	**17**	**3.0**	**0.80**
2026	19	23	6.3	**1.4**
2027	45	**30**	13	3.4
2028	58	28	8.5	2.2
2029	**23**	**17**	**3.5**	**1.3**
2030	**44**	**16**	**4.2**	**1.4**
2031	**37**	10	**2.9**	**0.64**
2032	**15**	**3.2**	**0.32**	**0.11**

Notes:

1. Daily emissions are conservatively averaged over number of work days (i.e., 260 days) per year, not including weekends.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 19
Controlled Construction Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Controlled Construction Daily CAP Emissions[1]			
	ROG[2]	NOx	PM_{10}	$PM_{2.5}$
	lb/day			
2024	**0.39**	**1.8**	**1.0**	**0.19**
2025	1.4	**2.5**	2.5	0.45
2026	4.7	**5.4**	**5.6**	1.0
2027	**9.0**	**7.7**	8.7	1.6
2028	11	7.5	9.2	1.7
2029	**5.1**	5.2	**5.9**	**1.1**
2030	**8.2**	**5.7**	**6.7**	**1.2**
2031	**5.7**	**3.3**	**2.8**	**0.54**
2032	**2.2**	**0.91**	**0.30**	**0.079**

Notes:

1. Daily emissions are conservatively averaged over number of work days (i.e., 260 days) per year, not including weekends.

2. Emissions incorporate architectural coating controls, Tier 4 construction equipment with the exception of bore/drill rigs and cranes, and model year 2018 or newer trucks.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-

Table 20
Building Operational Capacity For Emissions Scaling for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Phase[1]	Percent Breakdown of Land Use Type by Phase							Percent of Year Phase is Operational[2]					
	Residential	Retail Sales and Services	Non-Retail Sales and Services	Parks, Plazas, and Open Space	Hotel	Institutional	Structured Parking	2028	2029	2030	2031	2032	2033
Phase 1	**15%**	6%	--	17%	--	21%	**26%**	97%	100%	100%	100%	100%	100%
Phase 2	**23%**	23%	--	23%	--	--	**15%**	2%	100%	100%	100%	100%	100%
Phase 3	15%	13%	**25%**	17%	--	19%	**15%**	25%	100%	100%	100%	100%	100%
Phase 4	**18%**	36%	**49%**	12%	**--**	60%	**20%**	--	--	8%	100%	100%	100%
Phase 5	19%	23%	**26%**	17%	--	--	16%	--	--	--	16%	100%	100%
Phase 6	**10%**	--	--	15%	--	--	8%	--	--	--	--	**54%**	100%
Total	**100.0%**	**100%**	**100%**	**100%**	**0%**	**100%**	**100%**	**--**	**--**	**--**	**--**	**--**	**--**

Year	Operational Capacity						
	Residential	Retail Sales and Services	Non-Retail Sales and Services	Parks, Plazas, and Open Space	Hotel	Institutional	Structured Parking
2028	**18.8%**	10%	**6%**	21%	0%	25%	**29%**
2029	**52.8%**	41%	**25%**	57%	0%	40%	**56%**
2030	**54.3%**	44%	**29%**	58%	**0%**	45%	58%
2031	**73.7%**	81%	**78%**	71%	**0%**	100%	79%
2032	**95.4%**	100%	100%	**93%**	**0%**	100%	**96%**

Notes:

1. Construction area/subphasing information and full buildout square footage by building provided by Project Applicant.

2. The percentage of year that each building is operational is calculated using the last day of construction for each building. For each partial year of construction, the building is assumed to be operational during the fraction of the year between the last day of construction and the end of that year. The building is assumed to be 0% operational for each full year of construction and 100% operational for each full year after the end of construction.

Abbreviations:

% - percent

Table 21b
Trips and VMT for Revised Variant Operations
Stonestown Redevelopment
San Francisco, California

Land Use Category	CalEEMod Land Use	Land Use Size[1]	Metric	Weekday Trips/Day-Size Unit[2,3]	Weekend Trips/Day-Size Unit[2,3]	VMT/Person/ Day[2,3]	Population[4]	Weekday Trips[2,3]	Weekend Trips[2,3]	Average Daily Trips	Annual Trips	Weekday VMT[5]	Weekend VMT[5]	Average Daily VMT[5]	Annual VMT[5]
Residential	Apartments Mid Rise	**3,491**	DU	**1.5**	1.3	13	**8,239**	**5,306**	**4,389**	**5,044**	**1,841,187**	**102,985**	**85,189**	**97,900**	**35,733,566**
Retail	Regional Shopping Center	160	ksf	37	33	7.6	291	5,955	5,302	5,769	2,105,539	17,018	15,152	16,485	6,016,961
Commercial	General Office Building	**96**	ksf	**10**	**1.5**	10	**384**	**961**	**144**	**727**	**265,506**	**3,917**	**585**	**2,965**	**1,082,184**
Hotel	Hotel	**--**	rooms	1.6	1.3	--	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Institutional (excl. childcare)	General Office Building	38	ksf	37	5.6	--	100	1,414	211	1,070	390,673	8,091	1,209	6,125	2,235,488
Childcare	Day-Care Center	15	ksf	**23**	2.9	--	100	347	44	260	95,036	1,469	186	1,102	402,317
Religious Institution	Place of Worship	10	ksf	**2.5**	6.0	**--**	100	25	60	35	12,824	143	346	201	73,380
					Total Project		**9,114**	**13,983**	**10,090**	**12,871**	**4,697,942**	**133,479**	**102,321**	**124,577**	**45,470,516**

Notes:

1. Land uses analyzed for trip generation estimations were based on Project square footages provided by the Project sponsor.
2. Trip generation estimates presented above were provided by the traffic engineer. For weekend trip generation rates, weekday trip generation rates were scaled by the CalEEMod default ratio between weekend and weekday trips.
3. There is no credit taken for a reduction in trips to the existing mall due to the removal of retail space. Trips associated with the recreational area are also not taken into account because it is assumed that anyone using the recreational area would already be onsite for other reasons
4. Population estimates are taken from the Initial Study Stonestown Development Project Attachment A
5. VMT per capita estimates were provided by the traffic engineer for Residential and Commercial land uses and multipled by population. Where VMT per capita estimates were not available, the CalEEMod default trip length for each land use was multiplied by the estimated trip rates to calculate VMT.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
DU - Dwelling Units
VMT - Vehicle Mile Travelled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 23b
Project Revised Variant Uncontrolled Mobile Emissions Summary
Stonestown Redevelopment
San Francisco, California

Fleet Type	Year[1]	Trip Rates[2]	Vehicle Miles Traveled[2]	CAP Emissions							
		Annual	Annual	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
		Trips/yr	Miles/yr	tons/year				lbs/day			
Residential	2032	**1,841,187**	**35,733,566**	**2.7**	**3.7**	**8.4**	**1.5**	**15**	**20**	**46**	**8.0**
Retail	2032	2,105,539	6,016,961	1.5	1.3	1.4	0.25	8.2	7.0	7.8	1.4
Commercial	2032	**265,506**	**1,082,184**	**0.20**	**0.19**	**0.26**	**0.045**	**1.1**	**1.0**	**1.4**	**0.24**
Hotel	2032	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Institutional (excl. childcare)	2032	390,673	2,235,488	0.33	0.33	0.53	0.092	1.8	1.8	2.9	0.50
Childcare	2032	95036	402,317	0.073	0.069	0.095	0.017	0.40	0.38	0.52	0.091
Religious Institution	2032	12824	73,380	0.011	0.011	0.017	0.0030	0.059	0.060	0.095	0.017
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**4.8**	**5.6**	**11**	**1.9**	**27**	**31**	**59**	**10**
Emissions for Partial Buildout[1]											
Residential	2028	**1,841,187**	**35,733,566**	**3.2**	**4.8**	**8.4**	**1.5**	**18**	**26**	**46**	**8.2**
Retail	2028	2,105,539	6,016,961	1.7	1.6	1.4	0.25	10	8.6	7.8	1.4
Commercial	2028	**265,506**	**1,082,184**	**0.24**	**0.23**	**0.26**	**0.045**	**1.3**	**1.3**	**1.4**	**0.25**
Hotel	2028	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Institutional (excl. childcare)	2028	390,673	2,235,488	0.39	0.42	0.53	0.094	2.1	2.3	2.9	0.51
Childcare	2028	95036	402,317	0.086	0.085	0.10	0.017	0.47	0.47	0.52	0.092
Religious Institution	2028	12824	73,380	0.013	0.014	0.017	0.0031	0.069	0.075	0.10	0.017
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**5.7**	**7.1**	**11**	**1.9**	**31**	**39**	**59**	**10**
Partial Buildout[1]											
Project 2028 Emissions				**0.90**	**1.2**	**1.9**	**0.33**	**4.9**	**6.5**	**10**	**1.8**
Project 2029 Emissions				**2.7**	**3.4**	**5.4**	**0.94**	**15**	**19**	**29**	**5.2**
Project 2030 Emissions				**2.8**	**3.6**	**5.6**	**0.98**	**15**	**20**	**30**	**5.4**
Project 2031 Emissions				**4.4**	**5.5**	**8.2**	**1.4**	**24**	**30**	**45**	**7.9**
Project 2032 Emissions				**4.7**	**5.4**	**10**	**1.8**	**26**	**30**	**56**	**9.8**

Notes:

1. Full buildout operational emissions are based on 2032 emission factors. For interim years, 2028 emission factors were used to be conservative. Emission factors are presented in Table 18. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 15.
2. Daily trip rates and VMT were provided by the Transportation Engineer, for more detail see Table 21b. Annual trips and VMT are calculated assuming 365 days of operation per year for all fleets.

Abbreviations:

lb - pound
VMT- vehicle miles traveled
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
ROG - reactive organic gases
CAP - Criteria Air Pollutants

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

RAMBOLL

Table 24b
Project Revised Variant Controlled Mobile Emissions Summary
Stonestown Redevelopment
San Francisco, California

Fleet Type	Year[1]	Trip Rates[2]	Vehicle Miles Traveled[2]	CAP Emissions							
		Annual	Annual	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
		Trips/yr	Miles/yr	tons/year				lbs/day			
Residential	2032	1,841,187	35,733,566	2.5	3.3	7.6	1.3	14	18	41	7.2
Retail	2032	2,105,539	6,016,961	1.3	1.2	1.3	0.22	7.3	6.3	7.0	1.2
Commercial	2032	265,506	1,082,184	0.18	0.17	0.23	0.040	1.0	0.9	1.3	0.22
Hotel	2032	0	0	0	0	0	0	0	0	0	0
Institutional (excl. childcare)	2032	390,673	2,235,488	0.30	0.30	0.47	0.083	1.6	1.6	2.6	0.45
Childcare	2032	95,036	402,317	0.066	0.062	0.085	0.015	0.36	0.34	0.47	0.082
Religious Institution	2032	12,824	73,380	0.010	0.010	0.016	0.0027	0.053	0.054	0.085	0.015
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**4.4**	**5.0**	**9.7**	**1.7**	**24**	**28**	**53**	**9.2**
Emissions for Partial Buildout[1]											
Residential	2028	1,841,187	35,733,566	2.9	4.3	7.6	1.3	16	24	42	7.3
Retail	2028	2,105,539	6,016,961	1.6	1.4	1.3	0.23	8.6	7.7	7.0	1.3
Commercial	2028	265,506	1,082,184	0.21	0.21	0.23	0.041	1.2	1.2	1.3	0.22
Hotel	2028	0	0	0	0	0	0	0	0	0	0
Institutional (excl. childcare)	2028	390,673	2,235,488	0.35	0.37	0.48	0.084	1.9	2.1	2.6	0.46
Childcare	2028	95,036	402,317	0.077	0.077	0.086	0.015	0.42	0.42	0.47	0.083
Religious Institution	2028	12,824	73,380	0.011	0.012	0.016	0.0028	0.062	0.067	0.086	0.015
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**5.1**	**6.4**	**9.7**	**1.7**	**28**	**35**	**53**	**9.4**
Partial Buildout[1]											
Project 2028 Emissions				**0.81**	**1.1**	**1.7**	**0.30**	**4.4**	**5.9**	**9.3**	**1.6**
Project 2029 Emissions				**2.4**	**3.1**	**4.8**	**0.85**	**13**	**17**	**26**	**4.7**
Project 2030 Emissions				**2.5**	**3.2**	**5.0**	**0.88**	**14**	**18**	**27**	**4.8**
Project 2031 Emissions				**4.0**	**4.9**	**7.4**	**1.3**	**22**	**27**	**40**	**7.1**
Project 2032 Emissions				**4.2**	**4.8**	**9.3**	**1.6**	**23**	**27**	**51**	**8.9**

Notes:

1. Full buildout operational emissions are based on 2032 emission factors. For interim years, 2028 emission factors were used to be conservative. Emission factors are presented in Table 18. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 16.
2. Daily trip rates and VMT were provided by the Transportation Engineer, for more detail see Table 21b. Annual trips and VMT are calculated assuming 365 days of operation per year for all
3. Mitigated emissions were calculating assuming a 10% reduction according to a Transportation Management Plan.

Abbreviations:

lb - pound
VMT- vehicle miles traveled
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
ROG - reactive organic gases
CAP - Criteria Air Pollutants

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

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Table 26a
Generator Emissions from Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Generator Information[1]

Scenario	Number of Generators	Engine Control[2]	Size	Fuel Type	Annual Operation[3]	Buildings with Generator[4]
			HP		hr/yr	
Full Buildout	3	Tier 2	470	Diesel	50	NW1, NW2, and NW3
	6	Tier 2	670	Diesel	50	W1, E1, E3, E4, S1, and S3
	4	Tier 4	1,005	Diesel	50	W3, W4, S2, and **S3**

Revised Variant Generator Emissions

Size (hp)	Quantity	Annual Emissions (ton/yr)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Full Buildout Conditions Generator Emissions[3]					
470	3	0.020	0.35	0.012	0.012
670	6	0.057	1.0	0.033	0.033
1,005	**4**	**0.033**	**0.111**	**0.0044**	**0.0044**
	Total Emissions	**0.11**	**1.5**	**0.049**	**0.049**

Notes:

1. Number, size, fuel, and location of emergency generators were provided by the Project Applicant. Any existing emergency generator that would be removed as a result of the Project would be replaced with a similar generator.
2. All generators above 1000 hp were assumed to be Tier 4, consistent with BAAQMD requirements for Best Available Control Technology (BACT)
3. Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the ATCM for Stationary Compression Ignition Engines (17 CCR 93115).
4. Building names indicate the generator location. Each listed building will install one generator.

Abbreviations:

ATCM - Air Toxics Control Measure
BACT - Best Available Control Technology
BAAQMD - Bay Area Air Quality Management District
g - grams
hp - horsepower
hr - hour
NOx - oxides of nitrogen
PM_{10} - PM less than 10 microns in diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. Airborne Toxic Control Measures (ATCM), 17 CCR § 93115. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf

BAAQMD. Best Available Control Technology (BACT) Guideline. Available online at: https://www.baaqmd.gov/~/media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en.

Table 26b
Controlled Generator Emissions from Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Generator Information[1]

Scenario	Number of Generators	Engine Control[2]	Size	Fuel Type	Annual Operation[3]	Buildings with Generator[4]
			HP		hr/yr	
Full Buildout	3	Tier 4	470	Diesel	50	NW1, NW2, and NW3
	6	Tier 4	670	Diesel	50	W1, E1, E3, E4, S1, and S3
	4	Tier 4	1,005	Diesel	50	W3, W4, S2, and **S3**

Revised Variant Generator Emissions

Size (hp)	Quantity	Annual Emissions (ton/yr)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Full Buildout Conditions Generator Emissions[3]					
470	3	0.012	0.023	0.0012	0.0012
670	6	0.033	0.066	0.0033	0.0033
1,005	**4**	**0.033**	**0.111**	**0.0044**	**0.0044**
	Total Emissions	**0.078**	**0.20**	**0.0089**	**0.0089**

Notes:

1. Number, size, fuel, and location of emergency generators were provided by the Project Applicant. Any existing emergency generator that would be removed as a result of the Project would be replaced with a similar generator.
2. All generators were assumed to be Tier 4, consistent with information provided by the Project Sponsor.
3. Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the ATCM for Stationary Compression Ignition Engines (17 CCR 93115).
4. Building names indicate the generator location. Each listed building will install one generator.

Abbreviations:

ATCM - Air Toxics Control Measure
BACT - Best Available Control Technology
BAAQMD - Bay Area Air Quality Management District
g - grams
hp - horsepower
hr - hour
NOx - oxides of nitrogen
PM_{10} - PM less than 10 microns in diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. Airborne Toxic Control Measures (ATCM), 17 CCR § 93115. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf

BAAQMD. Best Available Constrol Technology (BACT) Guideline. Available online at: https://www.baaqmd.gov/~/media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en.

Table 27
Uncontrolled Architectural Coating Emissions from Existing Conditions and Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Land Use Type	Description[1]	Building Area	Building Surface Area[1]	Painted Parking Stripes Area[1]	Application Rate[2]	Indoor or Parking Stripe Paint VOC EF[3]	Outdoor Paint VOC EF[3]	Architectural Coating VOC Emissions[4]
		sqft	sqft	sqft		g/L	g/L	lb/yr
Existing Conditions								
Parking	Underground parking and surface parking lots	1,658,558	82,928	99,513	0.10	100	150	86
Cultural, Institutional, Educational	Church	25,000	50,000	--	0.10	100	150	26
Retail	Shopping center	59,275	118,550	--	0.10	100	150	62
							Total Existing Conditions Emissions	**174**
Full Buildout								
Residential	Residential	**3,534,000**	**9,541,800**	--	0.10	100	150	**4,976**
Recreational	Parks, Plazas, and Open Space	261,361	0	--	0.10	--	--	--
Parking	Structured Parking	**1,822,875**	**91,144**	**109,373**	0.10	100	150	**95**
Recreational	Hotel	**0,000**	**0,000**	--	0.10	100	150	**0**
Cultural, Institutional, Educational	Institutional	63,000	126,000	--	0.10	100	150	66
Commercial	Non-Retail Sales and Services	**96,000**	**192,000**	--	0.10	100	150	**100**
Retail	Retail Sales and Services	160,000	320,000	--	0.10	100	150	167
							Total Full Buildout Emissions	**5,404**
Partial Buildout[5]								
							2028 Emissions	**921**
							2029 Emissions	**2,593**
							2030 Emissions	**2,676**
							2031 Emissions	**3,771**
							2032 Emissions	**4,849**

Notes:

1. Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.
2. Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.
3. Consistent with CalEEMod Appendix G Table G-17, which is based on BAAQMD Regulation 8 Rule 3 paint VOC regulations, uses VOC EF of 100 g/L for flat paints, generally used indoors, and 150 g/L for all other architectural coatings.
4. Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.
5. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 20.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
g - grams
L - liters

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 28
Controlled Architectural Coating Emissions from Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Land Use Type	Description	Building Area	Building Surface Area[1]	Painted Parking Stripes Area[1]	Application Rate[2]	Indoor or Parking Stripe Paint VOC EF[3]	Outdoor Paint VOC EF[3]	Architectural Coating VOC Emissions[4]
		sqft	sqft	sqft		g/L	g/L	lb/yr
Full Buildout								
Residential	Residential	**3,534,000**	**9,541,800**	--	0.10	10	20	**553**
Recreational	Parks, Plazas, and Open Space	261,361	0	--	0.10	--	--	--
Parking	Structured Parking	**1,822,875**	**91,144**	**109,373**	0.10	10	20	**9.7**
Recreational	Hotel	**0**	**0**	--	0.10	10	20	**0**
Cultural, Institutional, Educational	Institutional	63,000	126,000	--	0.10	10	20	7.3
Commercial	Non-Retail Sales and Services	**96,000**	**192,000**	--	0.10	10	20	**11**
Retail	Retail Sales and Services	160,000	320,000	--	0.10	10	20	19
							Total Full Buildout Emissions	**600**
Partial Buildout[5]								
							2028 Emissions	**111**
							2029 Emissions	**311**
							2030 Emissions	**321**
							2031 Emissions	**446**
							2032 Emissions	**574**

Notes:

1. Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.
2. Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.
3. Consistent with SCAQMD's Super-Compliant Architectural Coatings standard, a VOC EF of 10 g/L was used for indoor paint. A VOC EF of 20 g/L for all other architectural coatings was used.
4. Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.
5. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 20.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
g - grams
L - liters
lb - pound
sqft - square feet
VOC - volatile organic compound
yr - year
SCAQMD - South Coast Air Quality Management District

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

SCAQMD. Super-Compliant Architectural Coatings. Available online at: https://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings

Table 30
Consumer Product Emissions from Existing Conditions and Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Land Use Type	Description	Consumer Products VOC emissions[1,2] lb/yr
Existing Conditions		
Parking	Underground parking and surface parking lots	344
Cultural, Institutional, Educational	Church	134
Retail	Shopping center	317
	Total Existing Conditions Emissions	**794**
Full Buildout		
Residential	Residential	**18,890**
Recreational	Parks, Plazas, and Open Space	1,397
Parking	Structured Parking	**378**
Recreational	Hotel	**0**
Cultural, Institutional, Educational	Institutional	337
Commercial	Non-Retail Sales and Services	**513**
Retail	Retail Sales and Services	855
	Total Full Buildout Emissions	**22,370**
Partial Buildout[3]		
	2028 Emissions	**4,145**
	2029 Emissions	**11,600**
	2030 Emissions	**11,957**
	2031 Emissions	**16,644**
	2032 Emissions	**21,387**

Notes:

1. The consumer products VOC EF for office, retail, and residential land uses are shown in Table 29.
2. Consumer product VOC EFs for parking and open space were taken from CalEEMod 2022.1.0. These defaults take into account pesticide and fertilizer use in city parks and degreaser use in parking areas.
3. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 20.

Abbreviations:

CalEEMod - California Emissions Estimator Model
lb - pound
VOC - volatile organic compound
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 34b
Summary of Variant Uncontrolled Operational CAP Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Emissions Source	CAP Emissions[1]							
	(ton/year)				(lb/day)[2]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing Conditions[3]								
Architectural Coating	0.087	0	0	0	0.48	0	0	0
Consumer Products	0.40	0	0	0	2.2	0	0	0
Landscaping	0.050	0	0	0	0.27	--	--	--
Natural Gas Use	0.0078	0.071	0.0054	0.0054	0.043	0.39	0.029	0.029
Total Emissions	**0.54**	**0.071**	**0.0054**	**0.0054**	**3.0**	**0.39**	**0.029**	**0.029**
Full Buildout Conditions[4]								
Architectural Coating	**2.7**	0	0	0	**15**	0	0	0
Consumer Products	11	0	0	0	**61**	0	0	0
Landscaping	3.0	0.23	0.020	0.020	16	1.3	0.11	0.11
Natural Gas Use	0	0	0	0	0	0	0	0
Mobile	**4.85**	**5.6**	**11**	**1.9**	27	**31**	**59**	**10**
Emergency Generators	**0.11**	**1.5**	**0.049**	**0.049**	**0.60**	**8.1**	**0.27**	**0.27**
Total Emissions	**22**	**7.3**	**11**	**1.9**	**120**	**40**	**59**	**11**
Partial Buildout Emissions[5]								
2028 Emissions	4.1	1.6	**1.9**	**0.35**	22	**8.8**	10	1.9
2029 Emissions	11	**4.1**	**5.4**	1.0	**62**	22	30	**5.3**
2030 Emissions	12	4.3	**5.6**	1.0	**64**	24	**31**	**5.6**
2031 Emissions	17	**6.7**	**8.3**	1.5	**93**	**36**	**45**	**8.2**
2032 Emissions	21	**7.0**	10	**1.9**	**114**	**38**	**57**	10
Net Emissions[6]								
Net 2028 Emissions	3.5	1.5	**1.9**	**0.35**	19	**8.4**	10	**1.9**
Net 2029 Emissions	11	4.0	**5.4**	**0.97**	**59**	22	30	**5.3**
Net 2030 Emissions	11	4.3	**5.6**	1.0	**61**	23	**31**	**5.5**
Net 2031 Emissions	**16**	6.6	**8.3**	1.5	**90**	36	**45**	**8.2**
Net 2032 Emissions	20	**6.9**	10	**1.9**	**111**	38	**57**	**10**
Net Full Buildout Emissions	**21**	**7.2**	**11**	**1.9**	**117**	**40**	**59**	**11**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1. Emissions too small to be reported by CalEEMod are indicated by "--".
2. Operational emissions shown represent activity and emissions across 365 days per year.
3. Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use types provided by the Project Applicant and CalEEMod defaults. Mobile source and generator existing emissions are not shown as all existing generators will remain or be replaced with like generators, and a credit is not taken for any existing vehicle trips displaced by the project.
4. Full buildout operational emissions are based on Table 21 through Table 33.
5. Operational emissions were estimated for partial buildout years 2028 through 2032 by scaling full buildout emissions for each emissions source by the percent that each parcel is operational for each year relative to full buildout, using scaling factors by land use type and year, as shown in Table 20.
6. Net emissions were calculated as the difference between partial buildout emissions for each year and existing condition emissions.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NOx - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 35b
Summary of Variant Controlled Operational CAP Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Emissions Source	CAP Emissions[1]							
	(ton/year)				(lb/day)[2]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing Conditions[3]								
Architectural Coating	0.087	--	--	--	0.48	--	--	--
Consumer Products	0.40	--	--	--	2.2	--	--	--
Landscaping	0.050	--	--	--	0.27	--	--	--
Natural Gas Use	0.0078	0.071	0.0054	0.0054	0.043	0.39	0.029	0.029
Total Emissions	**0.54**	**0.071**	**0.0054**	**0.0054**	**3.0**	**0.39**	**0.029**	**0.029**
Full Buildout Conditions[4]								
Architectural Coating	**0.30**	--	--	--	1.6	--	--	--
Consumer Products	11	--	--	--	**61**	--	--	--
Landscaping	--	--	--	--	--	--	--	--
Natural Gas Use	--	--	--	--	--	--	--	--
Mobile	4.4	**5.0**	**9.7**	**1.7**	24	**28**	**53**	**9.2**
Emergency Generators	**0.078**	**0.20**	**0.0089**	**0.0089**	**0.43**	**1.1**	**0.049**	**0.049**
Total Emissions	**16**	**5.2**	**9.7**	**1.7**	**87**	**29**	**53**	**9.3**
Partial Buildout Emissions[5]								
2028 Emissions	**3.0**	1.1	**1.7**	**0.30**	16	**6.0**	**9.4**	**1.7**
2029 Emissions	8.4	3.2	**4.8**	**0.86**	46	17	26	**4.7**
2030 Emissions	8.7	3.3	**5.0**	**0.89**	48	18	**28**	**4.9**
2031 Emissions	13	5.1	**7.4**	1.3	69	**28**	**41**	**7.2**
2032 Emissions	15	5.0	**9.3**	1.6	84	**28**	**51**	**8.9**
Net Emissions[6]								
Net 2028 Emissions	2.4	1.0	**1.7**	**0.30**	13	**5.6**	**9.3**	1.6
Net 2029 Emissions	**7.8**	3.1	**4.8**	**0.85**	43	17	26	**4.7**
Net 2030 Emissions	**8.1**	3.2	**5.0**	**0.88**	45	18	27	**4.8**
Net 2031 Emissions	12	5.0	**7.4**	1.3	**66**	27	**41**	**7.2**
Net 2032 Emissions	15	5.0	**9.3**	1.6	81	27	**51**	**8.9**
Net Full Buildout Emissions	**15**	**5.2**	**9.7**	**1.7**	**84**	**28**	**53**	**9.3**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1. Emissions too small to be reported by CalEEMod are indicated by "--".
2. Operational emissions shown represent activity and emissions across 365 days per year.
3. Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use type and energy use rates provided by the Project Applicant.
4. Full buildout operational emissions are based on Table 21 through Table 33. Controlled emissions incorporate controls from a Transportation Demand Management Program, supercompliant paints for architectural coating, tier 4 generators, and electric landscaping equipment.
5. Operational emissions were estimated for partial buildout years 2028 through 2032 by scaling full buildout emissions for each emissions source by the percent that each parcel is operational for each year relative to full buildout, using scaling factors by land use type and year, as shown in Table 20. Mitigated emissions were calculating assuming a 10% reduction according to a Transportation Management Plan.
6. Net emissions were calculated as the difference between partial buildout emissions for each year and existing condition emissions.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NOx - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 36
Uncontrolled Construction and Net New Operational CAP Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Average Daily CAP Emissions[1,2] (lb/day)											
	Construction Emissions Only				Net Operational Emissions[3]				Construction and Net Operational Emissions[3]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2024	**1.0**	**17**	**1.6**	**0.57**	--	--	--	--	**1.0**	**17**	**1.6**	**0.57**
2025	3.1	**17**	**3.0**	**0.80**	--	--	--	--	3.1	**17**	**3.0**	**0.80**
2026	**19**	23	6.3	**1.4**	--	--	--	--	19	23	6.3	**1.4**
2027	45	**30**	13	3.4	--	--	--	--	45	**30**	13	3.4
2028	58	28	8.5	2.2	19	**8.4**	10	**1.9**	78	36	19	4.1
2029	**23**	**17**	**3.5**	**1.3**	**59**	22	30	**5.3**	82	**39**	33	6.6
2030	**44**	**16**	**4.2**	**1.4**	**61**	23	**31**	**5.5**	**105**	**39**	35	6.9
2031	**37**	10	**2.9**	**0.64**	**90**	36	**45**	**8.2**	**127**	46	48	**8.8**
2032	**15**	**3.2**	**0.32**	**0.11**	**111**	38	**57**	**10**	**125**	**41**	**57**	10
Full Buildout	--	--	--	--	**117**	**40**	**59**	**11**	**117**	**40**	**59**	**11**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.
2. Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout, as shown in Table 20.
3. Uncontrolled construction emissions can be found in Table 18. Net Uncontrolled operational emissions were calculated by subtracting the emissions from the existing conditions from the project emissions, as reported in Table 34a and Table 34b.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_x - nitrogen oxides
PM - particulate matter
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 37
Controlled Construction and Net New Operational CAP Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Average Daily CAP Emissions[1,2] (lb/day)											
	Construction Emissions Only[3]				Net Operational Emissions Only[3]				Construction and Net Operational Emissions[3]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2024	**0.39**	**1.8**	**1.0**	**0.19**	--	--	--	--	**0.39**	**1.8**	**1.0**	**0.19**
2025	1.4	**2.5**	2.5	0.45	--	--	--	--	1.4	**2.5**	2.5	0.45
2026	4.7	**5.4**	**5.6**	1.0	--	--	--	--	4.7	**5.4**	**5.6**	1.0
2027	**9.0**	**7.7**	8.7	1.6	--	--	--	--	**9.0**	**7.7**	8.7	1.6
2028	11	7.5	9.2	1.7	13	**5.6**	**9.3**	**1.6**	**24**	13	**19**	**3.3**
2029	**5.1**	5.2	**5.9**	**1.1**	43	17	26	**4.7**	48	22	**32**	**5.7**
2030	**8.2**	**5.7**	**6.7**	**1.2**	45	18	27	**4.8**	53	**23**	**34**	**6.1**
2031	**5.7**	**3.3**	**2.8**	**0.54**	66	27	**41**	**7.2**	72	31	43	**7.7**
2032	**2.2**	**0.91**	**0.30**	**0.079**	81	27	**51**	**8.9**	83	28	**51**	**9.0**
Full Buildout	--	--	--	--	**84**	28	**53**	**9.3**	**84**	28	**53**	**9.3**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.
2. Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout, as shown in Table 20.
3. Controlled construction emissions can be found in Table 19. Net Controlled operational emissions were calculated by subtracting the emissions from the existing conditions from the project emissions, as reported in Table 35a and Table 35b. The controlled scenario incorporates construction emission reductions for Tier 4 construction equipment with the exception of bore/drill rigs and cranes and model year truck restrictions, as well as a operational emissions reductions from a transportation demand management program, Tier 4 generators, supercompliant paints, and electric landscaping equipment during operations. Mitigated emissions were calculating assuming a 10% reduction according to a Transportation Management Plan.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_x - nitrogen oxides
PM - particulate matter
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 39m
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Scenario 12 and Revised Variant
Stonestown Redevelopment
San Francisco, California

Year[1]	Resident					Onsite Daycare Child			Offsite Daycare Child		Pre-School - 8th Grade Child			
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]			Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd Trimester	0-2	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	2-9	2-9	2-16	(m^3/kg-day)
2032	**0.50**	**0.50**			**0.10**	1		0.15	1	0.026	1			0.019
2033		1			**0.15**	1		0.15	1	0.026	1			0.019
2034		**0.75**	**0.25**		**0.117**	**0.50**	**0.50**	**0.087**	1	0.026	1			0.019
2035			1		0.024		1	0.026	**1.00**	0.026	**0.50**	**0.50**		**0.016**
2036			1		0.024		1	0.026				1		0.014
2037			1		0.024		1	0.026				1		0.014
2038			1		0.024		1	0.026				1		0.014
2039			1		0.024		1	0.026				**0.50**	**0.50**	0.012
2040			1		0.024		1	0.026					1	0.011
2041			1		0.024		**0.50**	**0.0129**					1	0.011
2042			1		0.024								1	0.011
2043			1		0.024								1	0.011
2044			1		0.024								**0.50**	**0.0054**
2045			1		0.024									
2046			1		0.024									
2047			1		0.024									
2048			**0.75**	**0.25**	**0.018**									
2049				1	0.0026									
2050				1	0.0026									
2051				1	0.0026									
2052				1	0.0026									
2053				1	0.0026									
2054				1	0.0026									
2055				1	0.0026									
2056				1	0.0026									
2057				1	0.0026									
2058				1	0.0026									
2059				1	0.0026									
2060				1	0.0026									
2061				1	0.0026									
2062				**0.75**	**0.0019**									

Notes:

1. Exposure Scenario 12 begins at the conclusion of Project construction when the Project is fully operational in 2032.
2. The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.
3. The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.
4. Intake Factors are based on exposure assumptions in Methodology Table 4.

Abbreviations:

IF - intake factor
m^3 - cubic meter
kg - kilogram

References:

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

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Table 41a
Maximum Uncontrolled Revised Variant Health Impacts by Population Type
Stonestown Redevelopment
San Francisco, California

Onsite

Receptor Type	Resident			Daycare		
Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	18.9	0.0085	**0.25**	**14.7**	0.0039	0.15
Background[5]	91	--	**8.2**	91	--	8.2
Total	110	--	**8.5**	105	--	8.4
MEI Location						
UTMx	546240	546020	546000	546240	545940	545940
UTMy	4175980	4175920	4175660	4175980	4175920	4175920
Exposure Scenario[6]	S12	S7	S8	S12	S7	S7
Year Occurred[6]	--	2028	2029	--	2028	2028
Source Contribution						
Construction	0	0.0078	**0.17**	0	0.0034	0.075
Operations	**17.0**	6.9E-04	**0.0014**	**12.9**	5.5E-04	0.0026
Traffic	1.9	--	0.071	1.9	--	0.071

Offsite

Receptor Type	Resident			Daycare			Pre-school to 8th Grade Students		
Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	**23.5**	0.013	**0.28**	**6.1**	0.013	0.29	**12.8**	0.012	0.20
Background[5]	125	--	8.2	86	--	9.1	94	--	9.5
Total	**148**	--	**8.5**	92	--	9.4	**106**	--	9.7
MEI Location									
UTMx	546300	545920	545920	546240	546240	546240	546320	546300	546320
UTMy	4176000	4175600	4175580	4176040	4176040	4176040	4175960	4175960	4175960
Exposure Scenario[6]	S3	S1	S1	S3	S1	S1	S2	S1	S1
Year Occurred[6]	--	2029	2029	--	2026	2026	--	2026	2026
Source Contribution									
Construction	**14.6**	0.013	**0.25**	**3.8**	0.013	0.22	**9.1**	0.012	0.13
Operations	**7.1**	2.1E-04	**0.0012**	**0.40**	0	0	**1.8**	0	0
Traffic[7]	1.9	--	0.026	1.9	--	0.071	1.9	--	0.071

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a resident child, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). TACs in this project include DPM.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
7. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf
BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

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Table 41b
Maximum Controlled Revised Variant Health Impacts by Population Type
Stonestown Redevelopment
San Francisco, California

Onsite

Receptor Type	Resident			Daycare		
Source	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**
Maximum Project Impacts[4]	6.2	0.0038	**0.22**	4.0	0.0015	0.14
Background[5]	71	--	**8.2**	66	--	8.2
Total	77	--	**8.4**	70	--	8.4
MEI Location						
UTMx	546220	546020	546000	546220	545940	545940
UTMy	4175640	4175920	4175660	4175900	4175920	4175920
Exposure Scenario[6]	S10	S7	S8	S9	S7	S7
Year Occurred[6]	--	2028	2029	--	2028	2028
Source Contribution						
Construction	**2.2**	0.0037	**0.15**	1.3	0.0014	0.067
Operations	**2.1**	**8.8E-05**	**4.4E-04**	**0.83**	**6.7E-05**	**3.4E-04**
Traffic	1.9	--	0.071	1.9	--	0.071

Offsite

Receptor Type	Resident			Daycare			Pre-school to 8th Grade Students		
Source	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**
Maximum Project Impacts[4]	8.9	**0.0039**	**0.24**	**2.8**	**0.0028**	0.24	4.4	**0.0020**	0.17
Background[5]	57	--	**8.2**	86	--	**9.4**	94	--	9.5
Total	66	--	**8.4**	89	--	**9.6**	98	--	9.7
MEI Location									
UTMx	546220	546220	545920	546240	546240	546240	546320	546320	546320
UTMy	4175500	4175500	4175580	4176040	4176040	4176040	4175940	4175960	4175960
Exposure Scenario[6]	S6	S1	S1	S3	S1	S1	S3	S1	S1
Year Occurred[6]	--	2030	2029	--	2027	2026	--	2027	2026
Source Contribution									
Construction	**6.3**	**0.0038**	**0.21**	**0.93**	**0.0028**	**0.16**	2.2	**0.0020**	0.10
Operations	**0.65**	**1.6E-04**	**4.4E-04**	**0.046**	--	--	**0.29**	--	--
Traffic[7]	1.9	--	0.026	1.9	--	0.071	1.9	--	0.071

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a resident child, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). TACs in this project include DPM.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
7. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf
BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

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Table 42a
Maximum Uncontrolled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Meet APEZ Criteria

Source	Excess Lifetime Cancer Risk (in a million)	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)
Maximum Revised Variant Impact[1]	**23.5**	0.23
MEI Location		
UTMx	546300	546280
UTMy	4176000	4176560
Receptor Type	Offsite Resident	Offsite Resident
Exposure Scenario[4]	S3	S1
Year Occurred[4]	--	2026
Source Contribution		
Construction	**14.6**	0.16
Operations	**7.1**	0
Traffic	1.9	0.071

Not Meet APEZ Criteria

Source	Excess Lifetime Cancer Risk (in a million)		$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)	
	Revised Variant Contribution	**Total with Background[2]**	**Revised Variant Contribution**	**Total with Background[2]**
Maximum Revised Variant Impact[1]	**21.2**	**78.1**	**0.28**	8.5
MEI Location				
UTMx	546220		545920	
UTMy	4175500		4175580	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S5		S1	
Year Occurred	--		2029	
Source Contribution				
Construction	**16.1**		**0.25**	
Operations	**3.2**		**0.0012**	
Traffic[5]	1.9		0.026	
Maximum Total Impact[1]	**16.2**	113	0.074	9.8
MEI Location				
UTMx	546300		546200	
UTMy	4175660		4176540	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S4		S1	
Year Occurred[4]	--		2028	
Source Contribution				
Construction	**11.3**		0.0031	
Operations	**3.0**		2.3E-05	
Traffic	1.9		0.071	

Table 42a
Maximum Uncontrolled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Notes:

1. Maximum project impacts indicate the maximum cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
2. Background cancer risks and $PM_{2.5}$ concentrations were obtained from the 2020 San Francisco Citywide HRA database.
3. Maximum total impacts indicate the maximum background plus revised variant impacts. Note the background cancer risk for receptors not in an APEZ was < 100 in a million and background $PM_{2.5}$ for receptors not in an APEZ was <10 ug/m^3.
4. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
5. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf

BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

Table 42b
Maximum Controlled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Meet APEZ Criteria

Source	Excess Lifetime Cancer Risk (in a million)	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)
Maximum Revised Variant Impact[1]	6.5	0.19
MEI Location		
UTMx	546300	546260
UTMy	4176000	4176040
Receptor Type	Offsite Resident	Offsite Daycare
Exposure Scenario[4]	S3	S1
Year Occurred[4]	--	2026
Source Contribution		
Construction	3.7	0.12
Operations	**0.94**	0
Traffic	1.9	0.071

Not Meet APEZ Criteri

Source	Excess Lifetime Cancer Risk (in a million)		$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)	
	Revised Variant Contribution	Total with Background[2]	Revised Variant Contribution	Total with Background[2]
Maximum Revised Variant Impact[1]	8.9	65.8	**0.24**	**8.4**
MEI Location				
UTMx	546220		545920	
UTMy	4175500		4175580	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S6		S1	
Year Occurred	--		2029	
Source Contribution				
Construction	**6.3**		**0.21**	
Operations	**0.65**		**0**	
Traffic[5]	1.9		0.026	
Maximum Total Impact[1]	6.1	102.4	0.072	9.9
MEI Location				
UTMx	546300		546220	
UTMy	4175660		4176840	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S5		S1	
Year Occurred[4]	--		2027	
Source Contribution				
Construction	**3.3**		**9.3E-04**	
Operations	**1.0**		--	
Traffic	1.9		0.071	

Table 42b
Maximum Controlled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Notes:

1. Maximum project impacts indicate the maximum cancer risks or $PM_{2.5}$ concentration from the Revised Variant. Total impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
2. Background cancer risks and $PM_{2.5}$ concentrations were obtained from the 2020 San Francisco Citywide HRA database.
3. Maximum total impacts indicate the maximum background plus revised variant impacts. Note the background cancer risk for receptors not in an APEZ was < 100 in a million and background $PM_{2.5}$ for receptors not in an APEZ was <10 ug/m^3.
4. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
5. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf
BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

Table 45a
Maximum Uncontrolled Revised Variant Health Impacts for Workers
Stonestown Redevelopment
San Francisco, California

Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	**4.8**	**0.017**	**0.50**
Background[5]	30	--	8.3
Total	35	--	8.8
MEIW Location			
UTMx	546060	546020	546020
UTMy	4175900	4175600	4175600
Exposure Scenario[6]	S1	S1	S1
Year Occurred[6]	--	2029	2029
Source Contribution			
Construction	2.5	**0.017**	**0.42**
Operations	**0.49**	**2.7E-04**	**0.0014**
Traffic	1.9	--	0.071

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a worker, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). The TAC in this project is DPM. With the impacts of the additional excavation in the northwest corner, the cancer risk due to construction with Phase 6 impact only was scaled up by 24% as a conservative estimate.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management Distric
MEIW - maximally exposed individual worker
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf

Table 45b
Maximum Controlled Revised Variant Health Impacts for Workers
Stonestown Redevelopment
San Francisco, California

Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	2.9	**0.0053**	**0.43**
Background[5]	45	--	8.3
Total	48	--	8.7
MEIW Location			
UTMx	546160	546160	546020
UTMy	4175600	4175600	4175600
Exposure Scenario[6]	S2	S1	S1
Year Occurred[6]	--	2030	2029
Source Contribution			
Construction	**0.88**	**0.0052**	**0.36**
Operations	**0.098**	**1.4E-04**	5.2E-04
Traffic	1.9	--	**0.071**

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a worker, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). The TAC in this project is DPM.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEIW - maximally exposed individual worker
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf

FIGURES

Figure 1b
Proposed Project Phasing Schedule for Revised Variant
Stonestown Redevelopment
San Francisco, California

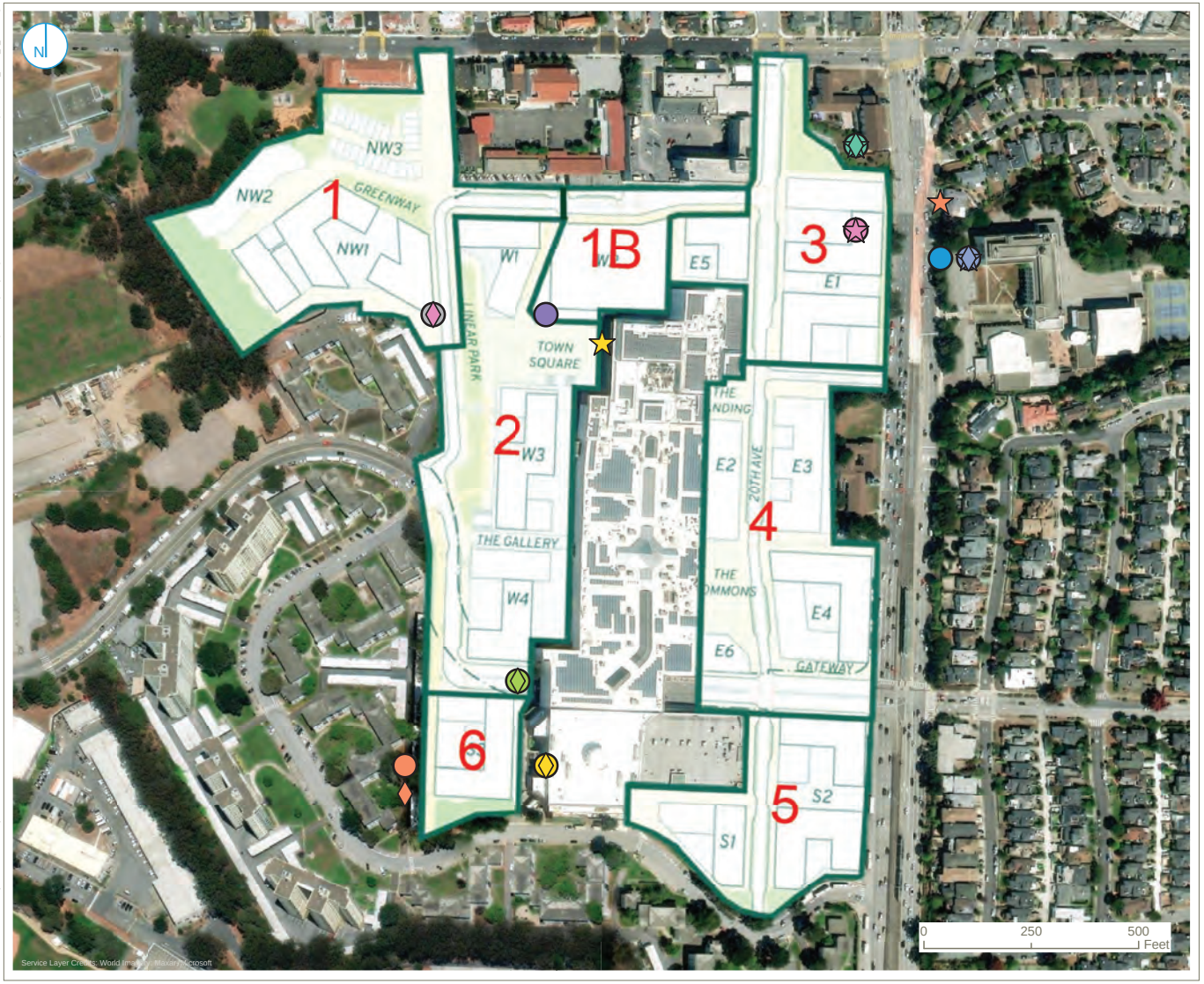
Variant Construction

Phase	Subphase	Construction Schedule		Number of Work Days	Operational Year	2024				2025				2026				2027				2028				2029				2030				2031				2032			
		Start	End			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase 1	Demolition	04/15/24	06/10/24	40	--																																		
	Site Preparation	04/01/24	06/10/24	50	--																																		
	Grading, Shoring, Excavating	05/28/24	01/14/25	159	--																																		
	Building Construction	12/02/24	01/11/28	796	--																																		
	Paving	02/01/26	05/01/26	64	--																																		
	Architectural Coating	12/01/25	01/11/28	544	2028																																		
Phase 2	Demolition	05/02/25	07/21/25	57	--																																		
	Site Preparation	04/01/25	07/21/25	80	--																																		
	Grading, Shoring, Excavating	06/21/25	05/21/26	239	--																																		
	Building Construction	05/22/26	12/22/28	676	--																																		
	Paving	10/01/28	11/01/28	23	--																																		
	Architectural Coating	06/01/27	12/22/28	409	2028																																		
Phase 3	Demolition	07/02/26	09/20/26	58	--																																		
	Site Preparation	06/01/26	07/01/26	21	--																																		
	Grading and Shoring	08/20/26	07/20/27	239	--																																		
	Building Construction	08/01/26	10/01/28	577	--																																		
	Paving	06/01/27	07/01/27	21	--																																		
	Architectural Coating	10/01/27	10/01/28	261	2028																																		
Phase 4	Demolition	06/02/27	09/10/27	73	--																																		
	Site Preparation	04/01/27	06/01/27	44	--																																		
	Grading, Shoring, Excavate	08/10/27	07/10/28	244	--																																		
	Building Construction	03/01/28	12/01/30	732	--																																		
	Paving	08/01/30	10/01/30	44	--																																		
	Architectural Coating	03/01/29	12/01/30	457	2030																																		
Phase 5	Demolition	06/02/28	08/21/28	58	--																																		
	Site Preparation	04/01/28	06/01/28	44	--																																		
	Grading, Shoring, Excavation	07/21/28	06/21/29	244	--																																		
	Building Construction	04/21/29	11/01/31	673	--																																		
	Paving	07/26/30	09/26/30	44	--																																		
	Architectural Coating	04/21/30	11/01/31	399	2031																																		
Phase 6	Demolition	05/02/29	06/21/29	36	--																																		
	Site Preparation	04/01/29	05/01/29	21	--																																		
	Grading, Shoring, Excavating	06/01/29	02/01/30	169	--																																		
	Building Construction	02/05/30	06/15/32	615	--																																		
	Paving	09/01/31	11/15/31	54	--																																		
	Architectural Coating	02/01/31	06/30/32	368	2032																																		

Key:

Active Construction Period

Full Operation



Project and Revised Variant Cancer Risk MEIs

- Offsite Daycare
- Offsite Resident
- Offsite School Children
- Onsite Daycare and Resident
- Worker

Chronic HI MEIs

- Project and Revised Variant Offsite Daycare
- Project and Revised Variant Offsite Resident
- Project and Revised Variant Worker
- Project Offsite School Children
- Project Onsite Daycare
- Project Onsite Resident
- Revised Variant Offsite School Children
- Revised Variant Onsite Daycare
- Revised Variant Onsite Resident

Project and Revised Variant PM2.5 MEIs

- Offsite Daycare
- Offsite Resident
- Offsite School Children
- Onsite Daycare
- Onsite Resident
- Worker

UNCONTROLLED MAXIMALLY EXPOSED INDIVIDUALS

Stonestown Redevelopment
San Francisco, California

FIGURE 06a

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

APPENDIX B
EMISSIONS FOR HEALTH RISK ASSESSMENT

Revised Variant Construction Emissions Scaling Factors

Emission scaling factors will need to apply to Scenarios 2-11

						S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
				Exposure Start Date		4/1/2024	4/1/2025	6/1/2026	4/1/2027	4/1/2028	4/1/2029	1/12/2028	12/23/2028	10/2/2028	12/2/2030	11/2/2031	7/1/2032
				5 days/week		S1-2024	S2-2025	S3-2026	S4-2027	S5-2028	S6-2029	S7-2028	S8-2028	S9-2028	S10-2030	S11-2031	S12-2032
Parcel	Subphase	Start Date	End Date	# Construction Days		2024	2025	2026	2027	2028	2029	2028	2028	2028	2030	2031	2032
Phase 1	Demolition	4/15/2024	6/10/2024	40	0.153424658	1	0	0	0	0	0	0	0	0	0	0	0
Phase 1	Site Preparation	4/1/2024	6/10/2024	50	0.191780822	1	0	0	0	0	0	0	0	0	0	0	0
Phase 1	Grading, Shoring, Excavating	5/28/2024	1/14/2025	159	0.609863014	1	0	0	0	0	0	0	0	0	0	0	0
Phase 1	Building Construction	12/2/2024	1/11/2028	796	3.053150685	1	0.753424658	0.58630137	0.753424658	0	0	0	0	0	0	0	0
Phase 1	Paving	2/1/2026	5/1/2026	64	0.245479452	1	1	0	0	0	0	0	0	0	0	0	0
Phase 1	Architectural Coating	12/1/2025	1/11/2028	544	2.086575342	1	1	0.58630137	0.753424658	0	0	0	0	0	0	0	0
Phase 2	Demolition	5/2/2025	7/21/2025	57	0.218630137	1	1	0	0	0	0	0	0	0	0	0	0
Phase 2	Site Preparation	4/1/2025	7/21/2025	80	0.306849315	1	1	0	0	0	0	0	0	0	0	0	0
Phase 2	Grading, Shoring, Excavating	6/21/2025	5/21/2026	239	0.916712329	1	1	0	0	0	0	0	0	0	0	0	0
Phase 2	Building Construction	5/22/2026	12/22/2028	676	2.592876712	1	1	0.58630137	0.753424658	0.745098039	0	0.969187675	0	0.229691877	0	0	0
Phase 2	Paving	10/1/2028	11/1/2028	23	0.088219178	1	1	1	1	1	0	1	0	0.10130719	0	0	0
Phase 2	Architectural Coating	6/1/2027	12/22/2028	409	1.568767123	1	1	1	1	0.745098039	0	0.969187675	0	0.229691877	0	0	0
Phase 3	Demolition	7/2/2026	9/20/2026	58	0.223561644	1	1	1	0	0	0	0	0	0	0	0	0
Phase 3	Site Preparation	6/1/2026	7/1/2026	21	0.082191781	1	1	1	0	0	0	0	0	0	0	0	0
Phase 3	Grading and Shoring	8/20/2026	7/20/2027	239	0.915068493	1	1	1	0.552238806	0	0	0	0	0	0	0	0
Phase 3	Building Construction	8/1/2026	10/1/2028	577	2.213260274	1	1	1	0.753424658	0.669090909	0	0.96	0	0	0	0	0
Phase 3	Paving	6/1/2027	7/1/2027	21	0.082191781	1	1	1	1	0	0	0	0	0	0	0	0
Phase 3	Architectural Coating	10/1/2027	10/1/2028	261	1.002739726	1	1	1	1	0.669090909	0	0.96	0	0	0	0	0
Phase 4	Demolition	6/2/2027	9/10/2027	73	0.279452055	1	1	1	1	0	0	0	0	0	0	0	0
Phase 4	Site Preparation	4/1/2027	6/1/2027	44	0.170465753	1	1	1	1	0	0	0	0	0	0	0	0
Phase 4	Grading, Shoring, Excavate	8/10/2027	7/10/2028	244	0.936164384	1	1	1	1	0.526041667	0	0.942708333	0	0	0	0	0
Phase 4	Building Construction	3/1/2028	12/1/2030	732	2.808493151	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0	0	0
Phase 4	Paving	8/1/2030	10/1/2030	44	0.167123288	1	1	1	1	1	1	1	1	1	0	0	0
Phase 4	Architectural Coating	3/1/2029	12/1/2030	457	1.753424658	1	1	1	1	1	0.753424658	1	1	1	0	0	0
Phase 5	Demolition	6/2/2028	8/21/2028	58	0.223561644	1	1	1	1	1	0	1	0	0	0	0	0
Phase 5	Site Preparation	4/1/2028	6/1/2028	44	0.167123288	1	1	1	1	1	0	1	0	0	0	0	0
Phase 5	Grading, Shoring, Excavation	7/21/2028	6/21/2029	244	0.936164384	1	1	1	1	1	0.476744186	1	0.024657534	0.249315068	0	0	0
Phase 5	Building Construction	4/21/2029	11/1/2031	673	2.582136986	1	1	1	1	1	1	1	1	1	0.082191781	0	0
Phase 5	Paving	7/26/2030	9/26/2030	44	0.169863014	1	1	1	1	1	1	1	1	1	0	0	0
Phase 5	Architectural Coating	4/21/2030	11/1/2031	399	1.531506849	1	1	1	1	1	1	1	1	1	0.082191781	0	0
Phase 6	Demolition	5/2/2029	6/21/2029	36	0.136986301	1	1	1	1	1	1	1	1	1	0	0	0
Phase 6	Site Preparation	4/1/2029	5/1/2029	21	0.082191781	1	1	1	1	1	1	1	1	1	0	0	0
Phase 6	Grading, Shoring, Excavating	6/1/2029	2/1/2030	169	0.646575342	1	1	1	1	1	1	1	1	1	0	0	0
Phase 6	Building Construction	2/5/2030	6/15/2032	615	2.35890411	1	1	1	1	1	1	1	1	1	0.082191781	0.164383562	0
Phase 6	Paving	9/1/2031	11/15/2031	54	0.205479452	1	1	1	1	1	1	1	1	1	1	0.043887147	0
Phase 6	Architectural Coating	2/1/2031	6/30/2032	368	1.410958904	1	1	1	1	1	1	1	1	1	1	0.164383562	0

Revised Variant Generation Emissions Scaling Factors

Emission scaling factors will need to apply to Scenarios 5-12 (Variant)			S1	S2	S3	S4	S5	S6	S7	S8	S9	S10V	S11	S12
		Scenario Exposure Start Date	4/1/2024	4/1/2025	6/1/2026	4/1/2027	4/1/2028	4/1/2029	1/12/2028	12/23/2028	10/2/2028	12/2/2030	11/2/2031	7/1/2032
			S1-2024	S2-2025	S3-2026	S4-2027	S5-2028	S6-2029	S7-2028	S8-2028	S9-2028	S10V-2030	S11-2031	S12-2032
Generator	Phase	Operational Date	2024	2025	2026	2027	2028	2029	2028	2028	2028	2030	2031	2032
NW1	P1	1/12/2028	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0.082191781	0.164383562	0.504109589
NW2	P1	1/12/2028	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0.082191781	0.164383562	0.504109589
NW3	P1	1/12/2028	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0.082191781	0.164383562	0.504109589
W1	P2	12/23/2028	1	1	1	1	1	0.753424658	1	1	1	0.082191781	0.164383562	0.504109589
W3	P2	12/23/2028	1	1	1	1	1	0.753424658	1	1	1	0.082191781	0.164383562	0.504109589
W4	P2	12/23/2028	1	1	1	1	1	0.753424658	1	1	1	0.082191781	0.164383562	0.504109589
S1	P5	11/2/2031	1	1	1	1	1	1	1	1	1	1	1	0.504109589
S2	P5	11/2/2031	1	1	1	1	1	1	1	1	1	1	1	0.504109589
S3	P6	7/1/2032	1	1	1	1	1	1	1	1	1	1	1	1
E1	P3	10/2/2028	1	1	1	1	1	0.753424658	1	0.024657534	1	0.082191781	0.164383562	0.504109589
E3	P4 Variant	12/2/2030	1	1	1	1	1	1	1	1	1	1	0.164383562	0.504109589
E4	P4 Variant	12/2/2030	1	1	1	1	1	1	1	1	1	1	0.164383562	0.504109589

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	PM25	1.9E-05	2025	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	1.8E-04	2026	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	1.5E-04	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	3.7E-06	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	1.0E-05	2024	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.2E-05	2024	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	4.4E-06	2024	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.2E-06	2024	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.1E-05	2024	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2024	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	1.1E-04	2025	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.3E-04	2025	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	5.2E-05	2025	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.4E-05	2025	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.1E-04	2025	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.3E-05	2025	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	8.8E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.1E-04	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	5.1E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	2.9E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	8.8E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.1E-05	2026	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	7.2E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	9.0E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	4.9E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	2.4E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	7.5E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	9.0E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	1.9E-06	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	2.2E-06	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	1.4E-06	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	5.9E-07	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	2.0E-06	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	2.2E-07	2028	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	2.4E-05	2024	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	PM25	6.9E-05	2024	UNMIT	Demolition_Excavators	Excavators
PAREA1	PM25	3.5E-04	2024	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	1.6E-05	2024	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	1.6E-04	2024	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	5.9E-05	2024	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	3.3E-05	2024	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	1.0E-04	2024	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	6.2E-05	2024	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	8.4E-05	2024	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	9.8E-07	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	8.8E-06	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	3.2E-06	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	2.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	5.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	3.3E-06	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	4.3E-06	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	4.4E-05	2026	UNMIT	Paving_Pavers	Pavers
PAREA1	PM25	7.8E-05	2026	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA1	PM25	3.9E-05	2026	UNMIT	Paving_Rollers	Rollers
PAREA1	PM25	2.5E-04	2024	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	8.3E-05	2024	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	9.0E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	1.2E-04	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	2.1E-04	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA2	PM25	5.5E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	6.8E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	2.8E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	1.8E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA2	PM25	5.5E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	6.8E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA2	PM25	3.1E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA2	PM25	7.4E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	9.2E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	4.5E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.4E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA2	PM25	7.7E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	9.2E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA2	PM25	2.8E-04	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA2	PM25	6.2E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	7.3E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	4.2E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	1.9E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA2	PM25	6.6E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.3E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA2	PM25	2.9E-05	2025	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	PM25	8.5E-05	2025	UNMIT	Demolition_Excavators	Excavators
PAREA2	PM25	3.9E-04	2025	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA2	PM25	1.0E-05	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	9.0E-05	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	3.3E-05	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	1.9E-05	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	5.2E-05	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	3.0E-05	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	9.3E-05	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.4E-06	2026	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	5.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	2.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	1.3E-05	2026	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	4.2E-05	2026	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	2.0E-05	2026	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	5.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.3E-05	2028	UNMIT	Paving_Pavers	Pavers
PAREA2	PM25	2.7E-05	2028	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA2	PM25	1.1E-05	2028	UNMIT	Paving_Rollers	Rollers
PAREA2	PM25	3.1E-04	2025	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	1.1E-04	2025	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	3.9E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	9.3E-05	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	5.9E-05	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA3	PM25	3.8E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	4.7E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	1.5E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.3E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA3	PM25	3.8E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	4.7E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA3	PM25	1.3E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA3	PM25	7.5E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	9.3E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	3.4E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	2.5E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA3	PM25	7.8E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	9.3E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA3	PM25	8.9E-05	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA3	PM25	4.8E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	5.7E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	2.5E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.5E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA3	PM25	5.2E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	5.7E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA3	PM25	2.5E-05	2026	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	PM25	7.3E-05	2026	UNMIT	Demolition_Excavators	Excavators
PAREA3	PM25	4.5E-04	2026	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	7.0E-06	2026	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	5.3E-05	2026	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	2.0E-05	2026	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	1.2E-05	2026	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	4.0E-05	2026	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	2.5E-05	2026	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.0E-05	2027	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	7.3E-05	2027	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	2.6E-05	2027	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	1.8E-05	2027	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	5.5E-05	2027	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	3.2E-05	2027	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.4E-05	2027	UNMIT	Paving_Pavers	Pavers
PAREA3	PM25	2.4E-05	2027	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA3	PM25	1.2E-05	2027	UNMIT	Paving_Rollers	Rollers
PAREA3	PM25	9.2E-05	2026	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	2.3E-05	2026	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	8.7E-05	2029	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	8.1E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	9.9E-05	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	5.4E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	6.4E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	2.8E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	1.7E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	5.8E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	6.3E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA4V	PM25	1.2E-04	2029	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	5.7E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	6.4E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	3.1E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	1.7E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	6.3E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	6.3E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA4V	PM25	9.9E-05	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	4.8E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	5.0E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	2.8E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	PM25	1.3E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	5.3E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	4.9E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA4V	PM25	2.6E-05	2027	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	PM25	8.4E-05	2027	UNMIT	Demolition_Excavators	Excavators
PAREA4V	PM25	5.1E-04	2027	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	8.5E-06	2027	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	6.0E-05	2027	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	PM25	2.2E-05	2027	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	1.5E-05	2027	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	4.6E-05	2027	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	5.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.1E-05	2028	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	7.3E-05	2028	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	PM25	2.7E-05	2028	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	2.0E-05	2028	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	6.0E-05	2028	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	6.2E-05	2028	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	2.2E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA4V	PM25	4.8E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	PM25	1.9E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA4V	PM25	1.7E-04	2027	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	4.1E-05	2027	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	6.2E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	6.3E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	2.0E-04	2029	UNMIT	Building Construction_Cranes	Cranes
PAREA5	PM25	4.0E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	4.5E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	4.3E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	1.2E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA5	PM25	4.4E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	4.4E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA5	PM25	2.7E-04	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA5	PM25	5.2E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	5.4E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	6.0E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	1.5E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA5	PM25	5.8E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	5.4E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA5	PM25	2.2E-04	2031	UNMIT	Building Construction_Cranes	Cranes
PAREA5	PM25	3.9E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	3.9E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	4.9E-05	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	1.0E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA5	PM25	4.4E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	3.9E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA5	PM25	1.7E-05	2028	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	PM25	6.1E-05	2028	UNMIT	Demolition_Excavators	Excavators
PAREA5	PM25	4.0E-04	2028	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	9.4E-06	2028	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	6.2E-05	2028	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	2.3E-05	2028	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	1.7E-05	2028	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	5.1E-05	2028	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	5.3E-05	2028	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	9.5E-06	2029	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	6.2E-05	2029	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	2.2E-05	2029	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	1.7E-05	2029	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	5.3E-05	2029	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	5.0E-05	2029	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	2.3E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA5	PM25	4.8E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA5	PM25	1.9E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA5	PM25	1.7E-04	2028	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	3.5E-05	2028	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	6.9E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	3.3E-05	2032	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	4.6E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	4.8E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	2.7E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	1.3E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA6	PM25	5.1E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	4.8E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA6	PM25	4.6E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	4.6E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	2.9E-05	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	1.2E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA6	PM25	5.2E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	4.5E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA6	PM25	1.9E-05	2032	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	1.8E-05	2032	UNMIT	Building Construction_Generator Sets	Generator Sets

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	1.3E-05	2032	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	4.8E-06	2032	UNMIT	Building Construction_Pumps	Pumps
PAREA6	PM25	2.2E-05	2032	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.8E-06	2032	UNMIT	Building Construction_Welders	Welders
PAREA6	PM25	8.9E-06	2029	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	PM25	3.5E-05	2029	UNMIT	Demolition_Excavators	Excavators
PAREA6	PM25	2.4E-04	2029	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.1E-05	2029	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	7.3E-05	2029	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	PM25	1.1E-05	2029	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	6.3E-05	2029	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	3.0E-05	2029	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.5E-06	2030	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	1.0E-05	2030	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	PM25	1.7E-06	2030	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	6.9E-06	2030	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	4.1E-06	2030	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	2.5E-05	2031	UNMIT	Paving_Pavers	Pavers
PAREA6	PM25	5.2E-05	2031	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA6	PM25	2.2E-05	2031	UNMIT	Paving_Rollers	Rollers
PAREA6	PM25	8.2E-05	2029	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.6E-05	2029	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	PM25	2.2E-07	2025	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	1.8E-07	2025	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.6E-07	2025	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.5E-06	2026	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.1E-06	2026	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2026	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.3E-06	2027	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.0E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.6E-08	2028	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	5.8E-08	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.7E-07	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.1E-08	2024	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.0E-09	2024	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.4E-08	2024	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-09	2024	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.1E-06	2024	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	9.1E-07	2024	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2024	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-07	2024	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-06	2024	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.2E-07	2025	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.1E-08	2025	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.5E-07	2025	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-08	2025	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2025	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	1.1E-05	2025	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.7E-07	2025	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-06	2025	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2025	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	9.6E-09	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.2E-07	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.2E-08	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2026	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.2E-07	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.6E-06	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.8E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	8.5E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.9E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.1E-08	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2027	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.8E-07	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.4E-06	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-09	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	2.3E-10	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	2.9E-10	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.3E-07	2028	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	2.9E-07	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-08	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-06	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2024	UNMIT	Demolition_Hauling	Hauling
PAREA1	PM25	5.2E-09	2024	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	3.0E-08	2024	UNMIT	Demolition_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	PM25	1.7E-09	2024	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	8.8E-08	2024	UNMIT	Demolition_Worker	Worker
PAREA1	PM25	7.4E-08	2024	UNMIT	Demolition_Worker	Worker
HAUL	PM25	2.3E-07	2024	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.3E-07	2024	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	3.0E-07	2024	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.4E-06	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	7.1E-08	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.1E-07	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	1.2E-08	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	1.2E-06	2024	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	9.7E-07	2024	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.1E-06	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.6E-06	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	3.9E-06	2024	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.2E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	4.0E-09	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.1E-08	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	6.3E-10	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	7.2E-08	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	6.1E-08	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.7E-07	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.5E-08	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.5E-07	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.7E-08	2026	UNMIT	Paving_Hauling	Hauling
PAREA1	PM25	2.3E-09	2026	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	2.7E-08	2026	UNMIT	Paving_Vendor	Vendor
PAREA1	PM25	1.5E-09	2026	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	1.1E-07	2026	UNMIT	Paving_Worker	Worker
PAREA1	PM25	9.3E-08	2026	UNMIT	Paving_Worker	Worker
HAUL	PM25	9.9E-08	2026	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	2.0E-07	2026	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	4.0E-07	2026	UNMIT	Paving_Worker	Worker
HAUL	PM25	5.5E-08	2024	UNMIT	Site Preparation_Worker	Worker
PAREA1	PM25	4.6E-08	2024	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.9E-07	2024	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	2.4E-06	2027	UNMIT	Architectural Coating_Worker	Worker
PAREA2	PM25	2.1E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.3E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.8E-06	2028	UNMIT	Architectural Coating_Worker	Worker
PAREA2	PM25	3.3E-06	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.6E-05	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.1E-08	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.0E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2026	UNMIT	Building Construction_Worker	Worker
PAREA2	PM25	1.1E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.0E-07	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.6E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.7E-08	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.3E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA2	PM25	7.1E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.1E-05	2027	UNMIT	Building Construction_Worker	Worker
PAREA2	PM25	1.8E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	7.4E-07	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.7E-07	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.2E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.5E-08	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.2E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA2	PM25	6.3E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.9E-05	2028	UNMIT	Building Construction_Worker	Worker
PAREA2	PM25	1.7E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	6.6E-07	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.5E-07	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.7E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.5E-07	2025	UNMIT	Demolition_Hauling	Hauling
PAREA2	PM25	1.2E-08	2025	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2025	UNMIT	Demolition_Vendor	Vendor
PAREA2	PM25	6.0E-09	2025	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2025	UNMIT	Demolition_Worker	Worker
PAREA2	PM25	1.0E-07	2025	UNMIT	Demolition_Worker	Worker
HAUL	PM25	5.4E-07	2025	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	8.1E-07	2025	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2025	UNMIT	Demolition_Worker	Worker
HAUL	PM25	9.4E-07	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	4.6E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.4E-07	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	7.6E-09	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	7.9E-07	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	6.6E-07	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	2.0E-06	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.0E-06	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.7E-06	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.2E-07	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	2.9E-08	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.9E-08	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	5.5E-07	2026	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	4.7E-07	2026	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.3E-06	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.0E-06	2026	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	2.2E-08	2028	UNMIT	Paving_Hauling	Hauling
PAREA2	PM25	1.0E-09	2028	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	UNMIT	Paving_Vendor	Vendor
PAREA2	PM25	2.8E-10	2028	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2028	UNMIT	Paving_Worker	Worker
PAREA2	PM25	3.1E-08	2028	UNMIT	Paving_Worker	Worker
HAUL	PM25	4.5E-08	2028	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	1.4E-07	2028	UNMIT	Paving_Worker	Worker
HAUL	PM25	8.6E-08	2025	UNMIT	Site Preparation_Worker	Worker
PAREA2	PM25	7.2E-08	2025	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-07	2025	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	6.2E-07	2027	UNMIT	Architectural Coating_Worker	Worker
PAREA3	PM25	5.3E-07	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.7E-06	2028	UNMIT	Architectural Coating_Worker	Worker
PAREA3	PM25	1.5E-06	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.1E-06	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.4E-08	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA3	PM25	3.1E-09	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.1E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA3	PM25	1.7E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.6E-06	2026	UNMIT	Building Construction_Worker	Worker
PAREA3	PM25	4.7E-06	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.3E-07	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.0E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.4E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA3	PM25	6.5E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.7E-08	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA3	PM25	3.6E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2027	UNMIT	Building Construction_Worker	Worker
PAREA3	PM25	1.1E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.9E-07	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.9E-07	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.8E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	9.7E-08	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA3	PM25	4.4E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA3	PM25	2.5E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	8.9E-06	2028	UNMIT	Building Construction_Worker	Worker
PAREA3	PM25	7.8E-06	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	7.3E-08	2026	UNMIT	Demolition_Hauling	Hauling
PAREA3	PM25	3.5E-09	2026	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	3.3E-08	2026	UNMIT	Demolition_Vendor	Vendor
PAREA3	PM25	1.8E-09	2026	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2026	UNMIT	Demolition_Worker	Worker
PAREA3	PM25	1.0E-07	2026	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.5E-07	2026	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.4E-07	2026	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2026	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.6E-07	2026	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	7.8E-09	2026	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.4E-08	2026	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	2.4E-09	2026	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	4.6E-07	2026	UNMIT	Grading and Shoring_Worker	Worker
PAREA3	PM25	3.9E-07	2026	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-07	2026	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	3.2E-07	2026	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	1.7E-06	2026	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	2.2E-07	2027	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	1.0E-08	2027	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	5.9E-08	2027	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	3.2E-09	2027	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	6.5E-07	2027	UNMIT	Grading and Shoring_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3	PM25	5.6E-07	2027	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	4.6E-07	2027	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.3E-07	2027	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	2.5E-06	2027	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-08	2027	UNMIT	Paving_Hauling	Hauling
PAREA3	PM25	1.6E-09	2027	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	1.1E-08	2027	UNMIT	Paving_Vendor	Vendor
PAREA3	PM25	5.9E-10	2027	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2027	UNMIT	Paving_Worker	Worker
PAREA3	PM25	3.0E-08	2027	UNMIT	Paving_Worker	Worker
HAUL	PM25	7.1E-08	2027	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	7.9E-08	2027	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	1.3E-07	2027	UNMIT	Paving_Worker	Worker
HAUL	PM25	2.2E-08	2026	UNMIT	Site Preparation_Worker	Worker
PAREA3	PM25	1.9E-08	2026	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2026	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-06	2029	UNMIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.6E-06	2029	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.3E-05	2029	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.1E-06	2030	UNMIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.7E-06	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-05	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.3E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.5E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2028	UNMIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.8E-07	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.6E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.5E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.9E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	6.0E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.8E-05	2029	UNMIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.6E-05	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.1E-07	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-07	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	5.9E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.5E-08	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.1E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2030	UNMIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.7E-07	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.9E-07	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.3E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-07	2027	UNMIT	Demolition_Hauling	Hauling
PAREA4V	PM25	2.4E-08	2027	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	3.7E-08	2027	UNMIT	Demolition_Vendor	Vendor
PAREA4V	PM25	2.0E-09	2027	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.4E-07	2027	UNMIT	Demolition_Worker	Worker
PAREA4V	PM25	1.2E-07	2027	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.1E-06	2027	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.7E-07	2027	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	5.4E-07	2027	UNMIT	Demolition_Worker	Worker
HAUL	PM25	3.4E-07	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.6E-08	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	6.6E-08	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	3.6E-09	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	5.8E-07	2027	UNMIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	5.0E-07	2027	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	7.1E-07	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	4.8E-07	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	2.2E-06	2027	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	4.2E-07	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.9E-08	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	8.0E-08	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	4.3E-09	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	7.3E-07	2028	UNMIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	6.3E-07	2028	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	8.6E-07	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	5.8E-07	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	3.0E-06	2028	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	2.8E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA4V	PM25	1.3E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	8.5E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA4V	PM25	4.5E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	5.9E-08	2030	UNMIT	Paving_Worker	Worker
PAREA4V	PM25	5.2E-08	2030	UNMIT	Paving_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	5.7E-08	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	6.1E-08	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	2.7E-07	2030	UNMIT	Paving_Worker	Worker
HAUL	PM25	4.3E-08	2027	UNMIT	Site Preparation_Worker	Worker
PAREA4V	PM25	3.7E-08	2027	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-07	2027	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-06	2030	UNMIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.5E-06	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.0E-06	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.0E-06	2031	UNMIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.7E-06	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.6E-06	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.9E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.6E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.8E-08	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.2E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	9.4E-06	2029	UNMIT	Building Construction_Worker	Worker
PAREA5	PM25	8.3E-06	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.9E-07	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.7E-07	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.1E-05	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.6E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA5	PM25	1.1E-08	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA5	PM25	5.5E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2030	UNMIT	Building Construction_Worker	Worker
PAREA5	PM25	1.1E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-07	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.8E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.1E-07	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.9E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.3E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.0E-05	2031	UNMIT	Building Construction_Worker	Worker
PAREA5	PM25	8.9E-06	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.1E-07	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.8E-07	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	9.1E-08	2028	UNMIT	Demolition_Hauling	Hauling
PAREA5	PM25	4.2E-09	2028	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	4.0E-08	2028	UNMIT	Demolition_Vendor	Vendor
PAREA5	PM25	2.2E-09	2028	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.1E-07	2028	UNMIT	Demolition_Worker	Worker
PAREA5	PM25	9.3E-08	2028	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.9E-07	2028	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.9E-07	2028	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	4.4E-07	2028	UNMIT	Demolition_Worker	Worker
HAUL	PM25	5.8E-07	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.7E-08	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.6E-08	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	5.2E-09	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.2E-07	2028	UNMIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2028	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	7.0E-07	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.5E-06	2028	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	5.7E-07	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.5E-08	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.2E-08	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	4.9E-09	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.1E-07	2029	UNMIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2029	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	6.7E-07	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.6E-06	2029	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	2.8E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA5	PM25	1.2E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	8.7E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA5	PM25	4.6E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	6.0E-08	2030	UNMIT	Paving_Worker	Worker
PAREA5	PM25	5.3E-08	2030	UNMIT	Paving_Worker	Worker
HAUL	PM25	5.6E-08	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	6.2E-08	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	2.8E-07	2030	UNMIT	Paving_Worker	Worker
HAUL	PM25	4.0E-08	2028	UNMIT	Site Preparation_Worker	Worker
PAREA5	PM25	3.5E-08	2028	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.6E-07	2028	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.1E-06	2031	UNMIT	Architectural Coating_Worker	Worker
PAREA6	PM25	9.8E-07	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.4E-06	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.6E-07	2032	UNMIT	Architectural Coating_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	5.0E-07	2032	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.9E-06	2032	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	4.9E-08	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.2E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA6	PM25	2.4E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.7E-06	2030	UNMIT	Building Construction_Worker	Worker
PAREA6	PM25	5.1E-06	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.3E-07	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.7E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-08	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.3E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.8E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA6	PM25	2.5E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.1E-06	2031	UNMIT	Building Construction_Worker	Worker
PAREA6	PM25	5.4E-06	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.0E-05	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.3E-08	2032	UNMIT	Building Construction_Hauling	Hauling
PAREA6	PM25	9.7E-10	2032	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.1E-08	2032	UNMIT	Building Construction_Vendor	Vendor
PAREA6	PM25	1.1E-09	2032	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.6E-06	2032	UNMIT	Building Construction_Worker	Worker
PAREA6	PM25	2.3E-06	2032	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2032	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.5E-07	2032	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.4E-05	2032	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.6E-07	2029	UNMIT	Demolition_Hauling	Hauling
PAREA6	PM25	7.3E-09	2029	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	1.5E-08	2029	UNMIT	Demolition_Vendor	Vendor
PAREA6	PM25	8.1E-10	2029	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	6.2E-08	2029	UNMIT	Demolition_Worker	Worker
PAREA6	PM25	5.4E-08	2029	UNMIT	Demolition_Worker	Worker
HAUL	PM25	3.3E-07	2029	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	2.7E-07	2029	UNMIT	Demolition_Worker	Worker
HAUL	PM25	2.1E-07	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	9.6E-09	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	1.7E-09	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	6.7E-07	2029	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	5.9E-07	2029	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.4E-07	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.2E-07	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.9E-06	2029	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.0E-08	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	1.3E-09	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	4.3E-09	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	2.3E-10	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	9.4E-08	2030	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	8.4E-08	2030	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.1E-08	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	4.4E-07	2030	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.0E-09	2031	UNMIT	Paving_Hauling	Hauling
PAREA6	PM25	3.5E-10	2031	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	9.8E-09	2031	UNMIT	Paving_Vendor	Vendor
PAREA6	PM25	5.2E-10	2031	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	6.9E-08	2031	UNMIT	Paving_Worker	Worker
PAREA6	PM25	6.1E-08	2031	UNMIT	Paving_Worker	Worker
HAUL	PM25	1.6E-08	2031	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	7.0E-08	2031	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	3.4E-07	2031	UNMIT	Paving_Worker	Worker
HAUL	PM25	1.8E-08	2029	UNMIT	Site Preparation_Worker	Worker
PAREA6	PM25	1.6E-08	2029	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2029	UNMIT	Site Preparation_Worker	Worker
PAREA1	PM25	1.7E-06	2025	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	2.0E-05	2026	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	2.0E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	6.1E-07	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	7.0E-07	2024	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.2E-06	2024	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	2.5E-06	2024	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.1E-07	2024	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.2E-06	2024	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.0E-07	2024	MIT	Building Construction_Welders	Welders
PAREA1	PM25	8.5E-06	2025	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.5E-05	2025	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	3.1E-05	2025	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.7E-06	2025	MIT	Building Construction_Pumps	Pumps

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	PM25	1.5E-05	2025	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2025	MIT	Building Construction_Welders	Welders
PAREA1	PM25	8.5E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.5E-05	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	3.1E-05	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.7E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.5E-05	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2026	MIT	Building Construction_Welders	Welders
PAREA1	PM25	8.5E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	3.1E-05	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.7E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2027	MIT	Building Construction_Welders	Welders
PAREA1	PM25	2.6E-07	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	4.5E-07	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	9.3E-07	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	1.1E-07	2028	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	4.5E-07	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	3.7E-08	2028	MIT	Building Construction_Welders	Welders
PAREA1	PM25	2.2E-06	2024	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	PM25	1.1E-05	2024	MIT	Demolition_Excavators	Excavators
PAREA1	PM25	1.5E-05	2024	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	1.6E-05	2024	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	2.6E-05	2024	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	6.7E-06	2024	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	1.9E-05	2024	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	4.3E-06	2024	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	7.6E-06	2024	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	9.3E-06	2024	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	9.8E-07	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	1.7E-06	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	4.3E-07	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	1.2E-06	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	2.8E-07	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	4.9E-07	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	6.0E-07	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	6.5E-06	2026	MIT	Paving_Pavers	Pavers
PAREA1	PM25	1.1E-05	2026	MIT	Paving_Paving Equipment	Paving Equipment
PAREA1	PM25	3.6E-06	2026	MIT	Paving_Rollers	Rollers
PAREA1	PM25	1.0E-05	2024	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	9.2E-06	2024	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.2E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	2.0E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	1.8E-04	2026	MIT	Building Construction_Cranes	Cranes
PAREA2	PM25	5.3E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	9.3E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	1.7E-05	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.3E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA2	PM25	9.4E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.8E-07	2026	MIT	Building Construction_Welders	Welders
PAREA2	PM25	2.9E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA2	PM25	8.7E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	2.8E-05	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	3.8E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA2	PM25	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA2	PM25	2.8E-04	2028	MIT	Building Construction_Cranes	Cranes
PAREA2	PM25	8.5E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	1.5E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	2.7E-05	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	3.7E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA2	PM25	1.5E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.2E-06	2028	MIT	Building Construction_Welders	Welders
PAREA2	PM25	3.2E-06	2025	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	PM25	1.6E-05	2025	MIT	Demolition_Excavators	Excavators
PAREA2	PM25	2.1E-05	2025	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	1.0E-05	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	1.7E-05	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	4.4E-06	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	1.1E-05	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.8E-06	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	4.3E-06	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	1.3E-05	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.4E-06	2026	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	1.2E-05	2026	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	8.0E-06	2026	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.0E-06	2026	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	9.5E-06	2026	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA2	PM25	2.4E-06	2028	MIT	Paving_Pavers	Pavers
PAREA2	PM25	4.1E-06	2028	MIT	Paving_Paving Equipment	Paving Equipment
PAREA2	PM25	1.3E-06	2028	MIT	Paving_Rollers	Rollers
PAREA2	PM25	1.7E-05	2025	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	1.5E-05	2025	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	5.2E-06	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	1.5E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	4.9E-05	2026	MIT	Building Construction_Cranes	Cranes
PAREA3	PM25	3.7E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	6.5E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	8.9E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.6E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA3	PM25	6.5E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	5.4E-07	2026	MIT	Building Construction_Welders	Welders
PAREA3	PM25	1.2E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA3	PM25	8.9E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	2.1E-05	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	3.9E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA3	PM25	1.6E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA3	PM25	8.8E-05	2028	MIT	Building Construction_Cranes	Cranes
PAREA3	PM25	6.7E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	1.2E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	1.6E-05	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	2.9E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA3	PM25	1.2E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	9.7E-07	2028	MIT	Building Construction_Welders	Welders
PAREA3	PM25	3.2E-06	2026	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	PM25	1.6E-05	2026	MIT	Demolition_Excavators	Excavators
PAREA3	PM25	2.2E-05	2026	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	7.0E-06	2026	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	1.2E-05	2026	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	3.0E-06	2026	MIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	7.6E-06	2026	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.9E-06	2026	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	4.2E-06	2026	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.0E-05	2027	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	1.8E-05	2027	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	4.5E-06	2027	MIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	1.1E-05	2027	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	2.9E-06	2027	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	6.4E-06	2027	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	2.2E-06	2027	MIT	Paving_Pavers	Pavers
PAREA3	PM25	3.8E-06	2027	MIT	Paving_Paving Equipment	Paving Equipment
PAREA3	PM25	1.2E-06	2027	MIT	Paving_Rollers	Rollers
PAREA3	PM25	4.5E-06	2026	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	4.0E-06	2026	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.7E-05	2029	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	1.9E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	9.8E-05	2028	MIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	7.4E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	1.3E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	1.4E-05	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.2E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	1.3E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.1E-06	2028	MIT	Building Construction_Welders	Welders
PAREA4V	PM25	1.2E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	8.9E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	1.5E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	1.5E-05	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.9E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	1.6E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.3E-06	2029	MIT	Building Construction_Welders	Welders
PAREA4V	PM25	9.9E-05	2030	MIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	8.1E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.5E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.2E-06	2030	MIT	Building Construction_Welders	Welders
PAREA4V	PM25	4.0E-06	2027	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	PM25	2.0E-05	2027	MIT	Demolition_Excavators	Excavators
PAREA4V	PM25	2.7E-05	2027	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	8.5E-06	2027	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	1.5E-05	2027	MIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	PM25	3.8E-06	2027	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	7.8E-06	2027	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	2.4E-06	2027	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	1.1E-05	2027	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.1E-05	2028	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	2.0E-05	2028	MIT	Grading, Shoring, Excavate_Excavators	Excavators

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	PM25	5.0E-06	2028	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	9.8E-06	2028	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.2E-06	2028	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	1.4E-05	2028	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA4V	PM25	7.8E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	PM25	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA4V	PM25	9.3E-06	2027	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	8.2E-06	2027	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	1.4E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	1.7E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	2.0E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA5	PM25	6.2E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	1.1E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	2.1E-05	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	2.7E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA5	PM25	1.1E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	9.0E-07	2029	MIT	Building Construction_Welders	Welders
PAREA5	PM25	2.7E-04	2030	MIT	Building Construction_Cranes	Cranes
PAREA5	PM25	8.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	1.5E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	3.0E-05	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	3.9E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA5	PM25	1.6E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	1.3E-06	2030	MIT	Building Construction_Welders	Welders
PAREA5	PM25	2.2E-04	2031	MIT	Building Construction_Cranes	Cranes
PAREA5	PM25	7.4E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	1.3E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	2.5E-05	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	3.2E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA5	PM25	1.3E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	1.1E-06	2031	MIT	Building Construction_Welders	Welders
PAREA5	PM25	3.2E-06	2028	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	PM25	1.6E-05	2028	MIT	Demolition_Excavators	Excavators
PAREA5	PM25	2.2E-05	2028	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	9.4E-06	2028	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	1.7E-05	2028	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	4.3E-06	2028	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	8.4E-06	2028	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	2.8E-06	2028	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	1.2E-05	2028	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	9.5E-06	2029	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	1.8E-05	2029	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	4.5E-06	2029	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	8.2E-06	2029	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	2.9E-06	2029	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	1.3E-05	2029	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA5	PM25	7.9E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA5	PM25	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA5	PM25	9.1E-06	2028	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	8.1E-06	2028	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.9E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	1.0E-05	2032	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	7.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	1.3E-05	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	3.4E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA6	PM25	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.1E-06	2030	MIT	Building Construction_Welders	Welders
PAREA6	PM25	8.7E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	1.5E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	1.5E-05	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	3.8E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA6	PM25	1.5E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.3E-06	2031	MIT	Building Construction_Welders	Welders
PAREA6	PM25	4.0E-06	2032	MIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	6.9E-06	2032	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	6.7E-06	2032	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	1.7E-06	2032	MIT	Building Construction_Pumps	Pumps
PAREA6	PM25	7.0E-06	2032	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	5.8E-07	2032	MIT	Building Construction_Welders	Welders
PAREA6	PM25	2.0E-06	2029	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	PM25	1.0E-05	2029	MIT	Demolition_Excavators	Excavators
PAREA6	PM25	1.3E-05	2029	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.1E-05	2029	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	2.1E-05	2029	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	PM25	5.6E-06	2029	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	3.4E-06	2029	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	7.4E-06	2029	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.5E-06	2030	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	3.1E-06	2030	MIT	Grading, Shoring, Excavating_Excavators	Excavators

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	8.3E-07	2030	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	5.1E-07	2030	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.1E-06	2030	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	5.5E-06	2031	MIT	Paving_Pavers	Pavers
PAREA6	PM25	9.5E-06	2031	MIT	Paving_Paving Equipment	Paving Equipment
PAREA6	PM25	3.1E-06	2031	MIT	Paving_Rollers	Rollers
PAREA6	PM25	4.5E-06	2029	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	4.0E-06	2029	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	PM25	2.2E-07	2025	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	1.8E-07	2025	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.6E-07	2025	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.5E-06	2026	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.1E-06	2026	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2026	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.3E-06	2027	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.0E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.6E-08	2028	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	5.8E-08	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.7E-07	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.1E-08	2024	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.0E-09	2024	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.4E-08	2024	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-09	2024	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.1E-06	2024	MIT	Building Construction_Worker	Worker
PAREA1	PM25	9.1E-07	2024	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2024	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-07	2024	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-06	2024	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.2E-07	2025	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.1E-08	2025	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.5E-07	2025	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-08	2025	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2025	MIT	Building Construction_Worker	Worker
PAREA1	PM25	1.1E-05	2025	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.7E-07	2025	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-06	2025	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2025	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	9.6E-09	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.2E-07	2026	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.2E-08	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2026	MIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.2E-07	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.6E-06	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.8E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	8.5E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.9E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.1E-08	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2027	MIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.8E-07	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.4E-06	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-09	2028	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	2.3E-10	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	2.9E-10	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.3E-07	2028	MIT	Building Construction_Worker	Worker
PAREA1	PM25	2.9E-07	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-08	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-06	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2024	MIT	Demolition_Hauling	Hauling
PAREA1	PM25	5.2E-09	2024	MIT	Demolition_Hauling	Hauling
HAUL	PM25	3.0E-08	2024	MIT	Demolition_Vendor	Vendor
PAREA1	PM25	1.7E-09	2024	MIT	Demolition_Vendor	Vendor
HAUL	PM25	8.8E-08	2024	MIT	Demolition_Worker	Worker
PAREA1	PM25	7.4E-08	2024	MIT	Demolition_Worker	Worker
HAUL	PM25	2.3E-07	2024	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.3E-07	2024	MIT	Demolition_Vendor	Vendor
HAUL	PM25	3.0E-07	2024	MIT	Demolition_Worker	Worker
HAUL	PM25	1.4E-06	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	7.1E-08	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.1E-07	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	1.2E-08	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	1.2E-06	2024	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	9.7E-07	2024	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.1E-06	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.6E-06	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	3.9E-06	2024	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.2E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	4.0E-09	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.1E-08	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	6.3E-10	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	7.2E-08	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	6.1E-08	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.7E-07	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.5E-08	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.5E-07	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.7E-08	2026	MIT	Paving_Hauling	Hauling
PAREA1	PM25	2.3E-09	2026	MIT	Paving_Hauling	Hauling
HAUL	PM25	2.7E-08	2026	MIT	Paving_Vendor	Vendor
PAREA1	PM25	1.5E-09	2026	MIT	Paving_Vendor	Vendor
HAUL	PM25	1.1E-07	2026	MIT	Paving_Worker	Worker
PAREA1	PM25	9.3E-08	2026	MIT	Paving_Worker	Worker
HAUL	PM25	9.9E-08	2026	MIT	Paving_Hauling	Hauling
HAUL	PM25	2.0E-07	2026	MIT	Paving_Vendor	Vendor
HAUL	PM25	4.0E-07	2026	MIT	Paving_Worker	Worker
HAUL	PM25	5.5E-08	2024	MIT	Site Preparation_Worker	Worker
PAREA1	PM25	4.6E-08	2024	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.9E-07	2024	MIT	Site Preparation_Worker	Worker
HAUL	PM25	2.4E-06	2027	MIT	Architectural Coating_Worker	Worker
PAREA2	PM25	2.1E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.3E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.8E-06	2028	MIT	Architectural Coating_Worker	Worker
PAREA2	PM25	3.3E-06	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.6E-05	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.1E-08	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.0E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2026	MIT	Building Construction_Worker	Worker
PAREA2	PM25	1.1E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.0E-07	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.6E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.7E-08	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.3E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA2	PM25	7.1E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.1E-05	2027	MIT	Building Construction_Worker	Worker
PAREA2	PM25	1.8E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	7.4E-07	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.7E-07	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.2E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.5E-08	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.2E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA2	PM25	6.3E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.9E-05	2028	MIT	Building Construction_Worker	Worker
PAREA2	PM25	1.7E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	6.6E-07	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.5E-07	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.7E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.5E-07	2025	MIT	Demolition_Hauling	Hauling
PAREA2	PM25	1.2E-08	2025	MIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2025	MIT	Demolition_Vendor	Vendor
PAREA2	PM25	6.0E-09	2025	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2025	MIT	Demolition_Worker	Worker
PAREA2	PM25	1.0E-07	2025	MIT	Demolition_Worker	Worker
HAUL	PM25	5.4E-07	2025	MIT	Demolition_Hauling	Hauling
HAUL	PM25	8.1E-07	2025	MIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2025	MIT	Demolition_Worker	Worker
HAUL	PM25	9.4E-07	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	4.6E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.4E-07	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	7.6E-09	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	7.9E-07	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	6.6E-07	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	2.0E-06	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.0E-06	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.7E-06	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.2E-07	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	2.9E-08	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.9E-08	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	5.5E-07	2026	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	4.7E-07	2026	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.3E-06	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.0E-06	2026	MIT	Grading, Shoring, Excavating_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	2.2E-08	2028	MIT	Paving_Hauling	Hauling
PAREA2	PM25	1.0E-09	2028	MIT	Paving_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	MIT	Paving_Vendor	Vendor
PAREA2	PM25	2.8E-10	2028	MIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2028	MIT	Paving_Worker	Worker
PAREA2	PM25	3.1E-08	2028	MIT	Paving_Worker	Worker
HAUL	PM25	4.5E-08	2028	MIT	Paving_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	MIT	Paving_Vendor	Vendor
HAUL	PM25	1.4E-07	2028	MIT	Paving_Worker	Worker
HAUL	PM25	8.6E-08	2025	MIT	Site Preparation_Worker	Worker
PAREA2	PM25	7.2E-08	2025	MIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-07	2025	MIT	Site Preparation_Worker	Worker
HAUL	PM25	6.2E-07	2027	MIT	Architectural Coating_Worker	Worker
PAREA3	PM25	5.3E-07	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.7E-06	2028	MIT	Architectural Coating_Worker	Worker
PAREA3	PM25	1.5E-06	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.1E-06	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.4E-08	2026	MIT	Building Construction_Hauling	Hauling
PAREA3	PM25	3.1E-09	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.1E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA3	PM25	1.7E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.6E-06	2026	MIT	Building Construction_Worker	Worker
PAREA3	PM25	4.7E-06	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.3E-07	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.0E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.4E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA3	PM25	6.5E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.7E-08	2027	MIT	Building Construction_Vendor	Vendor
PAREA3	PM25	3.6E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2027	MIT	Building Construction_Worker	Worker
PAREA3	PM25	1.1E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.9E-07	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.9E-07	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.8E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	9.7E-08	2028	MIT	Building Construction_Hauling	Hauling
PAREA3	PM25	4.4E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2028	MIT	Building Construction_Vendor	Vendor
PAREA3	PM25	2.5E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	8.9E-06	2028	MIT	Building Construction_Worker	Worker
PAREA3	PM25	7.8E-06	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	7.3E-08	2026	MIT	Demolition_Hauling	Hauling
PAREA3	PM25	3.5E-09	2026	MIT	Demolition_Hauling	Hauling
HAUL	PM25	3.3E-08	2026	MIT	Demolition_Vendor	Vendor
PAREA3	PM25	1.8E-09	2026	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2026	MIT	Demolition_Worker	Worker
PAREA3	PM25	1.0E-07	2026	MIT	Demolition_Worker	Worker
HAUL	PM25	1.5E-07	2026	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.4E-07	2026	MIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2026	MIT	Demolition_Worker	Worker
HAUL	PM25	1.6E-07	2026	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	7.8E-09	2026	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.4E-08	2026	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	2.4E-09	2026	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	4.6E-07	2026	MIT	Grading and Shoring_Worker	Worker
PAREA3	PM25	3.9E-07	2026	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-07	2026	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	3.2E-07	2026	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	1.7E-06	2026	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	2.2E-07	2027	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	1.0E-08	2027	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	5.9E-08	2027	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	3.2E-09	2027	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	6.5E-07	2027	MIT	Grading and Shoring_Worker	Worker
PAREA3	PM25	5.6E-07	2027	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	4.6E-07	2027	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.3E-07	2027	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	2.5E-06	2027	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-08	2027	MIT	Paving_Hauling	Hauling
PAREA3	PM25	1.6E-09	2027	MIT	Paving_Hauling	Hauling
HAUL	PM25	1.1E-08	2027	MIT	Paving_Vendor	Vendor
PAREA3	PM25	5.9E-10	2027	MIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2027	MIT	Paving_Worker	Worker
PAREA3	PM25	3.0E-08	2027	MIT	Paving_Worker	Worker
HAUL	PM25	7.1E-08	2027	MIT	Paving_Hauling	Hauling
HAUL	PM25	7.9E-08	2027	MIT	Paving_Vendor	Vendor
HAUL	PM25	1.3E-07	2027	MIT	Paving_Worker	Worker
HAUL	PM25	2.2E-08	2026	MIT	Site Preparation_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3	PM25	1.9E-08	2026	MIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2026	MIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-06	2029	MIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.6E-06	2029	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.3E-05	2029	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.1E-06	2030	MIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.7E-06	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-05	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.3E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.5E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2028	MIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.8E-07	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.6E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.5E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.9E-09	2029	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	MIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	6.0E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.8E-05	2029	MIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.6E-05	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.1E-07	2029	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-07	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	5.9E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.5E-08	2030	MIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.1E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2030	MIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.7E-07	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.9E-07	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.3E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-07	2027	MIT	Demolition_Hauling	Hauling
PAREA4V	PM25	2.4E-08	2027	MIT	Demolition_Hauling	Hauling
HAUL	PM25	3.7E-08	2027	MIT	Demolition_Vendor	Vendor
PAREA4V	PM25	2.0E-09	2027	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.4E-07	2027	MIT	Demolition_Worker	Worker
PAREA4V	PM25	1.2E-07	2027	MIT	Demolition_Worker	Worker
HAUL	PM25	1.1E-06	2027	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.7E-07	2027	MIT	Demolition_Vendor	Vendor
HAUL	PM25	5.4E-07	2027	MIT	Demolition_Worker	Worker
HAUL	PM25	3.4E-07	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.6E-08	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	6.6E-08	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	3.6E-09	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	5.8E-07	2027	MIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	5.0E-07	2027	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	7.1E-07	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	4.8E-07	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	2.2E-06	2027	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	4.2E-07	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.9E-08	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	8.0E-08	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	4.3E-09	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	7.3E-07	2028	MIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	6.3E-07	2028	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	8.6E-07	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	5.8E-07	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	3.0E-06	2028	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	2.8E-08	2030	MIT	Paving_Hauling	Hauling
PAREA4V	PM25	1.3E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	8.5E-09	2030	MIT	Paving_Vendor	Vendor
PAREA4V	PM25	4.5E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	5.9E-08	2030	MIT	Paving_Worker	Worker
PAREA4V	PM25	5.2E-08	2030	MIT	Paving_Worker	Worker
HAUL	PM25	5.7E-08	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	6.1E-08	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	2.7E-07	2030	MIT	Paving_Worker	Worker
HAUL	PM25	4.3E-08	2027	MIT	Site Preparation_Worker	Worker
PAREA4V	PM25	3.7E-08	2027	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-07	2027	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-06	2030	MIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.5E-06	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.0E-06	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.0E-06	2031	MIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.7E-06	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.6E-06	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.9E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.6E-09	2029	MIT	Building Construction_Hauling	Hauling

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	7.8E-08	2029	MIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.2E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	9.4E-06	2029	MIT	Building Construction_Worker	Worker
PAREA5	PM25	8.3E-06	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.9E-07	2029	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.7E-07	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.1E-05	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.6E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA5	PM25	1.1E-08	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2030	MIT	Building Construction_Vendor	Vendor
PAREA5	PM25	5.5E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2030	MIT	Building Construction_Worker	Worker
PAREA5	PM25	1.1E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-07	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.8E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.1E-07	2031	MIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.9E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-08	2031	MIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.3E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.0E-05	2031	MIT	Building Construction_Worker	Worker
PAREA5	PM25	8.9E-06	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.1E-07	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.8E-07	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	9.1E-08	2028	MIT	Demolition_Hauling	Hauling
PAREA5	PM25	4.2E-09	2028	MIT	Demolition_Hauling	Hauling
HAUL	PM25	4.0E-08	2028	MIT	Demolition_Vendor	Vendor
PAREA5	PM25	2.2E-09	2028	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.1E-07	2028	MIT	Demolition_Worker	Worker
PAREA5	PM25	9.3E-08	2028	MIT	Demolition_Worker	Worker
HAUL	PM25	1.9E-07	2028	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.9E-07	2028	MIT	Demolition_Vendor	Vendor
HAUL	PM25	4.4E-07	2028	MIT	Demolition_Worker	Worker
HAUL	PM25	5.8E-07	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.7E-08	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.6E-08	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	5.2E-09	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.2E-07	2028	MIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2028	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	7.0E-07	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.5E-06	2028	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	5.7E-07	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.5E-08	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.2E-08	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	4.9E-09	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.1E-07	2029	MIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2029	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	6.7E-07	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.6E-06	2029	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	2.8E-08	2030	MIT	Paving_Hauling	Hauling
PAREA5	PM25	1.2E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	8.7E-09	2030	MIT	Paving_Vendor	Vendor
PAREA5	PM25	4.6E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	6.0E-08	2030	MIT	Paving_Worker	Worker
PAREA5	PM25	5.3E-08	2030	MIT	Paving_Worker	Worker
HAUL	PM25	5.6E-08	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	6.2E-08	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	2.8E-07	2030	MIT	Paving_Worker	Worker
HAUL	PM25	4.0E-08	2028	MIT	Site Preparation_Worker	Worker
PAREA5	PM25	3.5E-08	2028	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.6E-07	2028	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.1E-06	2031	MIT	Architectural Coating_Worker	Worker
PAREA6	PM25	9.8E-07	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.4E-06	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.6E-07	2032	MIT	Architectural Coating_Worker	Worker
PAREA6	PM25	5.0E-07	2032	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.9E-06	2032	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	4.9E-08	2030	MIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.2E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2030	MIT	Building Construction_Vendor	Vendor
PAREA6	PM25	2.4E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.7E-06	2030	MIT	Building Construction_Worker	Worker
PAREA6	PM25	5.1E-06	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.3E-07	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.7E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-08	2031	MIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.3E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.8E-08	2031	MIT	Building Construction_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	2.5E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.1E-06	2031	MIT	Building Construction_Worker	Worker
PAREA6	PM25	5.4E-06	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.0E-05	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.3E-08	2032	MIT	Building Construction_Hauling	Hauling
PAREA6	PM25	9.7E-10	2032	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.1E-08	2032	MIT	Building Construction_Vendor	Vendor
PAREA6	PM25	1.1E-09	2032	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.6E-06	2032	MIT	Building Construction_Worker	Worker
PAREA6	PM25	2.3E-06	2032	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2032	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.5E-07	2032	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.4E-05	2032	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.6E-07	2029	MIT	Demolition_Hauling	Hauling
PAREA6	PM25	7.3E-09	2029	MIT	Demolition_Hauling	Hauling
HAUL	PM25	1.5E-08	2029	MIT	Demolition_Vendor	Vendor
PAREA6	PM25	8.1E-10	2029	MIT	Demolition_Vendor	Vendor
HAUL	PM25	6.2E-08	2029	MIT	Demolition_Worker	Worker
PAREA6	PM25	5.4E-08	2029	MIT	Demolition_Worker	Worker
HAUL	PM25	3.3E-07	2029	MIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	MIT	Demolition_Vendor	Vendor
HAUL	PM25	2.7E-07	2029	MIT	Demolition_Worker	Worker
HAUL	PM25	2.1E-07	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	9.6E-09	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	1.7E-09	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	6.7E-07	2029	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	5.9E-07	2029	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.4E-07	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.2E-07	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.9E-06	2029	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.0E-08	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	1.3E-09	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	4.3E-09	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	2.3E-10	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	9.4E-08	2030	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	8.4E-08	2030	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.1E-08	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	4.4E-07	2030	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.0E-09	2031	MIT	Paving_Hauling	Hauling
PAREA6	PM25	3.5E-10	2031	MIT	Paving_Hauling	Hauling
HAUL	PM25	9.8E-09	2031	MIT	Paving_Vendor	Vendor
PAREA6	PM25	5.2E-10	2031	MIT	Paving_Vendor	Vendor
HAUL	PM25	6.9E-08	2031	MIT	Paving_Worker	Worker
PAREA6	PM25	6.1E-08	2031	MIT	Paving_Worker	Worker
HAUL	PM25	1.6E-08	2031	MIT	Paving_Hauling	Hauling
HAUL	PM25	7.0E-08	2031	MIT	Paving_Vendor	Vendor
HAUL	PM25	3.4E-07	2031	MIT	Paving_Worker	Worker
HAUL	PM25	1.8E-08	2029	MIT	Site Preparation_Worker	Worker
PAREA6	PM25	1.6E-08	2029	MIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2029	MIT	Site Preparation_Worker	Worker
HAUL	PM25	4.6E-06	2024	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	9.3E-07	2024	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	4.9E-05	2024	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.2E-06	2025	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.0E-05	2024	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2025	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2026	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2027	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.3E-06	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	5.0E-06	2026	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	3.8E-06	2025	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2026	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2027	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.3E-06	2028	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2025	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	1.5E-06	2025	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.6E-05	2025	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.5E-04	2026	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2027	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.0E-04	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.7E-06	2028	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	4.6E-05	2027	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.7E-05	2028	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.1E-06	2026	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2026	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	1.4E-05	2026	UNMIT	Grading and Shoring_Road Dust	Grading and Shoring
HAUL	PM25	2.2E-05	2027	UNMIT	Grading and Shoring_Road Dust	Grading and Shoring

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	1.0E-04	2026	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.5E-04	2027	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.9E-04	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.3E-06	2027	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	1.2E-05	2027	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	3.5E-05	2028	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2027	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.2E-07	2027	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.0E-05	2028	UNMIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.4E-04	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2029	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.8E-04	2030	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	6.5E-05	2029	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.1E-05	2030	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	8.0E-06	2028	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.1E-07	2028	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.3E-05	2028	UNMIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	3.4E-05	2029	UNMIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	2.2E-04	2029	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-04	2030	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.6E-04	2031	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	4.0E-05	2030	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.8E-05	2031	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.0E-06	2029	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2029	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.2E-05	2029	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.3E-06	2030	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	1.4E-04	2030	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.5E-04	2031	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.0E-05	2032	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-06	2031	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	2.7E-05	2031	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.5E-05	2032	UNMIT	Architectural Coating_Road Dust	Architectural Coating
PAREA1FD	PM25	6.7E-05	2024	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA2FD	PM25	9.0E-04	2025	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA3FD	PM25	5.7E-04	2026	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA4VF	PM25	8.1E-04	2027	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA5FD	PM25	4.2E-04	2028	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA6FD	PM25	8.2E-04	2029	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA1FD	PM25	2.4E-04	2024	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.5E-05	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	2.2E-04	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.6E-04	2026	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	7.5E-05	2026	UNMIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.1E-04	2027	UNMIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	8.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.1E-04	2028	UNMIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	9.4E-05	2028	UNMIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.9E-05	2029	UNMIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	5.8E-05	2029	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	8.7E-06	2030	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	3.0E-07	2024	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA1FD	PM25	1.4E-05	2024	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	9.2E-07	2025	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.0E-06	2025	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA2FD	PM25	6.0E-06	2025	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.4E-06	2026	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	2.5E-06	2026	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA3FD	PM25	2.8E-06	2026	UNMIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	4.1E-06	2027	UNMIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	3.6E-06	2027	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA4VF	PM25	5.5E-06	2027	UNMIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	7.3E-06	2028	UNMIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	1.9E-06	2028	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA5FD	PM25	9.4E-06	2028	UNMIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.8E-06	2029	UNMIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	3.6E-06	2029	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA6FD	PM25	9.1E-06	2029	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	1.4E-06	2030	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	7.3E-04	2024	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA1FD	PM25	5.1E-04	2024	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA1FD	PM25	2.1E-04	2024	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.4E-05	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	0.0010	2025	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA2FD	PM25	8.2E-04	2025	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA2FD	PM25	1.4E-04	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.0E-04	2026	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	0.0011	2026	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA3FD	PM25	2.2E-04	2026	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3FD	PM25	9.6E-05	2026	UNMIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.4E-04	2027	UNMIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	0.0013	2027	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA4VF	PM25	4.6E-04	2027	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA4VF	PM25	1.2E-04	2027	UNMIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.6E-04	2028	UNMIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	0.0011	2028	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA5FD	PM25	4.5E-04	2028	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA5FD	PM25	1.4E-04	2028	UNMIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	1.4E-04	2029	UNMIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	6.5E-04	2029	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA6FD	PM25	2.2E-04	2029	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA6FD	PM25	1.7E-04	2029	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	2.5E-05	2030	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
HAUL	PM25	4.6E-06	2024	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	9.3E-07	2024	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	4.9E-05	2024	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.2E-06	2025	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.0E-05	2024	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2025	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2026	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2027	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.3E-06	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	5.0E-06	2026	MIT	Paving_Road Dust	Paving
HAUL	PM25	3.8E-06	2025	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2026	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2027	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.3E-06	2028	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2025	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	1.5E-06	2025	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.6E-05	2025	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.6E-05	2026	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.5E-04	2026	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2027	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.0E-04	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.7E-06	2028	MIT	Paving_Road Dust	Paving
HAUL	PM25	4.6E-05	2027	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.7E-05	2028	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.1E-06	2026	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2026	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	1.4E-05	2026	MIT	Grading and Shoring_Road Dust	Grading and Shoring
HAUL	PM25	2.2E-05	2027	MIT	Grading and Shoring_Road Dust	Grading and Shoring
HAUL	PM25	1.0E-04	2026	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.5E-04	2027	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.9E-04	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.3E-06	2027	MIT	Paving_Road Dust	Paving
HAUL	PM25	1.2E-05	2027	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	3.5E-05	2028	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2027	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.2E-07	2027	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.3E-05	2027	MIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.0E-05	2028	MIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.4E-04	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2029	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.8E-04	2030	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	MIT	Paving_Road Dust	Paving
HAUL	PM25	6.5E-05	2029	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.1E-05	2030	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	8.0E-06	2028	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.1E-07	2028	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.3E-05	2028	MIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	3.4E-05	2029	MIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	2.2E-04	2029	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-04	2030	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.6E-04	2031	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	MIT	Paving_Road Dust	Paving
HAUL	PM25	4.0E-05	2030	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.8E-05	2031	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.0E-06	2029	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2029	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.2E-05	2029	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.3E-06	2030	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	1.4E-04	2030	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.5E-04	2031	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.0E-05	2032	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-06	2031	MIT	Paving_Road Dust	Paving
HAUL	PM25	2.7E-05	2031	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.5E-05	2032	MIT	Architectural Coating_Road Dust	Architectural Coating
PAREA1FD	PM25	6.7E-05	2024	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA2FD	PM25	9.0E-04	2025	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA3FD	PM25	5.7E-04	2026	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA4VF	PM25	8.1E-04	2027	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA5FD	PM25	4.2E-04	2028	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA6FD	PM25	8.2E-04	2029	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA1FD	PM25	2.4E-04	2024	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.5E-05	2025	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	2.2E-04	2025	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.6E-04	2026	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	7.5E-05	2026	MIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.1E-04	2027	MIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	8.3E-05	2027	MIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.1E-04	2028	MIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	9.4E-05	2028	MIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.9E-05	2029	MIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	5.8E-05	2029	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	8.7E-06	2030	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	3.0E-07	2024	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA1FD	PM25	1.4E-05	2024	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	9.2E-07	2025	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.0E-06	2025	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA2FD	PM25	6.0E-06	2025	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.4E-06	2026	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	2.5E-06	2026	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA3FD	PM25	2.8E-06	2026	MIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	4.1E-06	2027	MIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	3.6E-06	2027	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA4VF	PM25	5.5E-06	2027	MIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	7.3E-06	2028	MIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	1.9E-06	2028	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA5FD	PM25	9.4E-06	2028	MIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.8E-06	2029	MIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	3.6E-06	2029	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA6FD	PM25	9.1E-06	2029	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	1.4E-06	2030	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	7.3E-04	2024	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA1FD	PM25	5.1E-04	2024	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA1FD	PM25	2.1E-04	2024	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.4E-05	2025	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	0.0010	2025	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA2FD	PM25	8.2E-04	2025	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA2FD	PM25	1.4E-04	2025	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.0E-04	2026	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	0.0011	2026	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA3FD	PM25	2.2E-04	2026	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA3FD	PM25	9.6E-05	2026	MIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.4E-04	2027	MIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	0.0013	2027	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA4VF	PM25	4.6E-04	2027	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA4VF	PM25	1.2E-04	2027	MIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.6E-04	2028	MIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	0.0011	2028	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA5FD	PM25	4.5E-04	2028	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA5FD	PM25	1.4E-04	2028	MIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	1.4E-04	2029	MIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	6.5E-04	2029	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA6FD	PM25	2.2E-04	2029	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA6FD	PM25	1.7E-04	2029	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	2.5E-05	2030	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA1	DPM	2.0E-05	2025	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	2.0E-04	2026	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	1.6E-04	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	4.0E-06	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	1.1E-05	2024	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.3E-05	2024	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	1.9E-06	2024	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.5E-06	2024	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.2E-05	2024	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.3E-06	2024	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	1.2E-04	2025	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.4E-04	2025	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	2.3E-05	2025	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-05	2025	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.2E-04	2025	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.4E-05	2025	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	9.5E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.2E-04	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	2.1E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.1E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	9.5E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-05	2026	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	7.9E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	9.8E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	2.0E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	2.6E-05	2027	UNMIT	Building Construction_Pumps	Pumps

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	DPM	8.2E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	9.8E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	2.0E-06	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	2.4E-06	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	5.6E-07	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	6.4E-07	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	2.2E-06	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	2.4E-07	2028	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	2.6E-05	2024	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	DPM	7.5E-05	2024	UNMIT	Demolition_Excavators	Excavators
PAREA1	DPM	3.8E-04	2024	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	1.7E-05	2024	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	1.7E-04	2024	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	6.5E-05	2024	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	1.5E-05	2024	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	1.1E-04	2024	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	6.8E-05	2024	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	9.1E-05	2024	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	9.6E-06	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	3.5E-06	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	9.0E-07	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	5.5E-06	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	3.6E-06	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	4.6E-06	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	4.8E-05	2026	UNMIT	Paving_Pavers	Pavers
PAREA1	DPM	8.5E-05	2026	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA1	DPM	4.2E-05	2026	UNMIT	Paving_Rollers	Rollers
PAREA1	DPM	2.7E-04	2024	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	9.0E-05	2024	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	9.8E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	1.3E-04	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	2.3E-04	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA2	DPM	6.0E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	7.4E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	1.2E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.0E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA2	DPM	6.0E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	7.4E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA2	DPM	3.4E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA2	DPM	8.0E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	1.0E-04	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	1.8E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.7E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA2	DPM	8.3E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.0E-05	2027	UNMIT	Building Construction_Welders	Welders
PAREA2	DPM	3.1E-04	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA2	DPM	6.7E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	7.9E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	1.6E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.1E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA2	DPM	7.2E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	7.9E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA2	DPM	3.2E-05	2025	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	DPM	9.2E-05	2025	UNMIT	Demolition_Excavators	Excavators
PAREA2	DPM	4.2E-04	2025	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.1E-05	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	9.8E-05	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	3.6E-05	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	8.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	5.7E-05	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	3.2E-05	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	1.0E-04	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	8.1E-06	2026	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	6.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	2.3E-05	2026	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	5.5E-06	2026	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	4.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	2.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	6.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.4E-05	2028	UNMIT	Paving_Pavers	Pavers
PAREA2	DPM	2.9E-05	2028	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA2	DPM	1.2E-05	2028	UNMIT	Paving_Rollers	Rollers
PAREA2	DPM	3.3E-04	2025	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.1E-04	2025	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	4.2E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	1.0E-04	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	6.4E-05	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA3	DPM	4.2E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	5.1E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	6.2E-06	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.4E-05	2026	UNMIT	Building Construction_Pumps	Pumps

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3	DPM	4.2E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	5.2E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA3	DPM	1.4E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA3	DPM	8.2E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	1.0E-04	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	1.4E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	2.7E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA3	DPM	8.5E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.0E-05	2027	UNMIT	Building Construction_Welders	Welders
PAREA3	DPM	9.7E-05	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA3	DPM	5.3E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	6.2E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	9.7E-06	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.7E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA3	DPM	5.6E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	6.2E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA3	DPM	2.7E-05	2026	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	DPM	8.0E-05	2026	UNMIT	Demolition_Excavators	Excavators
PAREA3	DPM	4.9E-04	2026	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	7.7E-06	2026	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	5.7E-05	2026	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	2.1E-05	2026	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	5.2E-06	2026	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	4.4E-05	2026	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	2.7E-05	2026	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.1E-05	2027	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	7.9E-05	2027	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	2.8E-05	2027	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	7.4E-06	2027	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	6.0E-05	2027	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	3.5E-05	2027	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.5E-05	2027	UNMIT	Paving_Pavers	Pavers
PAREA3	DPM	2.6E-05	2027	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA3	DPM	1.3E-05	2027	UNMIT	Paving_Rollers	Rollers
PAREA3	DPM	1.0E-04	2026	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	2.5E-05	2026	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	9.4E-05	2029	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	8.8E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	1.1E-04	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	5.8E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	6.9E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	1.1E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	1.8E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	6.3E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	6.9E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.3E-04	2029	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	6.2E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	6.9E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	1.1E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	1.8E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	6.8E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	6.9E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.1E-04	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	5.2E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	5.4E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	9.3E-06	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	1.4E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	5.8E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	5.4E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA4V	DPM	2.9E-05	2027	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	DPM	9.1E-05	2027	UNMIT	Demolition_Excavators	Excavators
PAREA4V	DPM	5.5E-04	2027	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	9.3E-06	2027	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	6.6E-05	2027	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	2.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	6.3E-06	2027	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	5.0E-05	2027	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	5.7E-05	2027	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.2E-05	2028	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	7.9E-05	2028	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	2.9E-05	2028	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	7.7E-06	2028	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	6.5E-05	2028	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	6.7E-05	2028	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	2.4E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA4V	DPM	5.2E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	DPM	2.1E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA4V	DPM	1.9E-04	2027	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	4.5E-05	2027	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	6.7E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	6.9E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	2.2E-04	2029	UNMIT	Building Construction_Cranes	Cranes

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA5	DPM	4.3E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	4.8E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.5E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	1.3E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA5	DPM	4.7E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	4.8E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA5	DPM	2.9E-04	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA5	DPM	5.7E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	5.9E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	2.0E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	1.6E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA5	DPM	6.3E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	5.9E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA5	DPM	2.4E-04	2031	UNMIT	Building Construction_Cranes	Cranes
PAREA5	DPM	4.2E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	4.2E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.6E-05	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	1.1E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA5	DPM	4.8E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	4.2E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA5	DPM	1.9E-05	2028	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	DPM	6.6E-05	2028	UNMIT	Demolition_Excavators	Excavators
PAREA5	DPM	4.3E-04	2028	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.0E-05	2028	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	6.7E-05	2028	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	2.5E-05	2028	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	6.6E-06	2028	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	5.5E-05	2028	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	5.8E-05	2028	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.0E-05	2029	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	6.7E-05	2029	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	2.4E-05	2029	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	5.9E-06	2029	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	5.8E-05	2029	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	5.5E-05	2029	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	2.5E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA5	DPM	5.3E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA5	DPM	2.1E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA5	DPM	1.8E-04	2028	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	3.9E-05	2028	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	7.5E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	3.5E-05	2032	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	5.0E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	5.2E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	9.0E-06	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	1.4E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA6	DPM	5.6E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	5.2E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA6	DPM	5.0E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	5.0E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	9.3E-06	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	1.3E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA6	DPM	5.6E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	4.9E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA6	DPM	2.1E-05	2032	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	2.0E-05	2032	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	4.0E-06	2032	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	5.2E-06	2032	UNMIT	Building Construction_Pumps	Pumps
PAREA6	DPM	2.4E-05	2032	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.9E-06	2032	UNMIT	Building Construction_Welders	Welders
PAREA6	DPM	9.7E-06	2029	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	DPM	3.8E-05	2029	UNMIT	Demolition_Excavators	Excavators
PAREA6	DPM	2.7E-04	2029	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.2E-05	2029	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	7.9E-05	2029	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	4.0E-06	2029	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	6.8E-05	2029	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	3.2E-05	2029	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.7E-06	2030	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	1.1E-05	2030	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	5.6E-07	2030	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	7.5E-06	2030	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	4.4E-06	2030	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	2.7E-05	2031	UNMIT	Paving_Pavers	Pavers
PAREA6	DPM	5.7E-05	2031	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA6	DPM	2.4E-05	2031	UNMIT	Paving_Rollers	Rollers
PAREA6	DPM	9.0E-05	2029	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.7E-05	2029	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	DPM	2.2E-08	2024	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-09	2024	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.5E-08	2024	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-09	2024	UNMIT	Building Construction_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	2.3E-07	2025	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-08	2025	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.6E-07	2025	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-08	2025	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.1E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.0E-08	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.3E-07	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.2E-08	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.9E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	8.9E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.0E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.1E-08	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-09	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	2.4E-10	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	3.0E-10	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.1E-07	2024	UNMIT	Demolition_Hauling	Hauling
PAREA1	DPM	5.4E-09	2024	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	3.2E-08	2024	UNMIT	Demolition_Vendor	Vendor
PAREA1	DPM	1.7E-09	2024	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	1.5E-06	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	7.5E-08	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	2.2E-07	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	1.2E-08	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.5E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	4.1E-09	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.2E-08	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	6.5E-10	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	5.0E-08	2026	UNMIT	Paving_Hauling	Hauling
PAREA1	DPM	2.4E-09	2026	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	2.8E-08	2026	UNMIT	Paving_Vendor	Vendor
PAREA1	DPM	1.5E-09	2026	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	2.5E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.2E-08	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	9.4E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.7E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.7E-08	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.4E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA2	DPM	7.5E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.4E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.5E-08	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA2	DPM	6.6E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2025	UNMIT	Demolition_Hauling	Hauling
PAREA2	DPM	1.3E-08	2025	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	1.1E-07	2025	UNMIT	Demolition_Vendor	Vendor
PAREA2	DPM	6.3E-09	2025	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	9.8E-07	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	4.8E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.5E-07	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	8.0E-09	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	6.4E-07	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	3.1E-08	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	9.3E-08	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	2.3E-08	2028	UNMIT	Paving_Hauling	Hauling
PAREA2	DPM	1.1E-09	2028	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	UNMIT	Paving_Vendor	Vendor
PAREA2	DPM	3.0E-10	2028	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	6.7E-08	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA3	DPM	3.2E-09	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	3.3E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA3	DPM	1.8E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.5E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA3	DPM	6.8E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	7.0E-08	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA3	DPM	3.8E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.0E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA3	DPM	4.6E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA3	DPM	2.6E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	7.7E-08	2026	UNMIT	Demolition_Hauling	Hauling
PAREA3	DPM	3.6E-09	2026	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	3.4E-08	2026	UNMIT	Demolition_Vendor	Vendor
PAREA3	DPM	1.9E-09	2026	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	1.7E-07	2026	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	8.1E-09	2026	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	DPM	4.6E-08	2026	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	2.5E-09	2026	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	2.3E-07	2027	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	1.1E-08	2027	UNMIT	Grading and Shoring_Hauling	Hauling

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	6.2E-08	2027	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	3.4E-09	2027	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	3.6E-08	2027	UNMIT	Paving_Hauling	Hauling
PAREA3	DPM	1.7E-09	2027	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	1.1E-08	2027	UNMIT	Paving_Vendor	Vendor
PAREA3	DPM	6.1E-10	2027	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	1.4E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.6E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.8E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.6E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	7.2E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	6.3E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.4E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.1E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.0E-07	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.3E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-07	2027	UNMIT	Demolition_Hauling	Hauling
PAREA4V	DPM	2.5E-08	2027	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	3.8E-08	2027	UNMIT	Demolition_Vendor	Vendor
PAREA4V	DPM	2.1E-09	2027	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	3.6E-07	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	1.7E-08	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	6.9E-08	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	3.7E-09	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	4.4E-07	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	2.0E-08	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	8.4E-08	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	4.5E-09	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	3.0E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA4V	DPM	1.3E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	8.9E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA4V	DPM	4.7E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	2.0E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.0E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.2E-08	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.4E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA5	DPM	1.2E-08	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA5	DPM	5.8E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.2E-07	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.4E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.5E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.5E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	9.5E-08	2028	UNMIT	Demolition_Hauling	Hauling
PAREA5	DPM	4.3E-09	2028	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	4.2E-08	2028	UNMIT	Demolition_Vendor	Vendor
PAREA5	DPM	2.3E-09	2028	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	6.1E-07	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.8E-08	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	1.0E-07	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.4E-09	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	5.9E-07	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.7E-08	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	9.6E-08	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.2E-09	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	2.9E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA5	DPM	1.3E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	9.1E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA5	DPM	4.8E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	5.1E-08	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.3E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.4E-08	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.4E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.0E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.4E-08	2032	UNMIT	Building Construction_Hauling	Hauling
PAREA6	DPM	1.0E-09	2032	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.1E-08	2032	UNMIT	Building Construction_Vendor	Vendor
PAREA6	DPM	1.1E-09	2032	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.7E-07	2029	UNMIT	Demolition_Hauling	Hauling
PAREA6	DPM	7.6E-09	2029	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	1.6E-08	2029	UNMIT	Demolition_Vendor	Vendor
PAREA6	DPM	8.4E-10	2029	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	2.2E-07	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.0E-08	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	3.2E-08	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	1.7E-09	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	3.1E-08	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.4E-09	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	4.5E-09	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	2.4E-10	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.3E-09	2031	UNMIT	Paving_Hauling	Hauling
PAREA6	DPM	3.6E-10	2031	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	1.0E-08	2031	UNMIT	Paving_Vendor	Vendor
PAREA6	DPM	5.4E-10	2031	UNMIT	Paving_Vendor	Vendor
PAREA1	DPM	1.7E-06	2025	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	2.0E-05	2026	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	2.0E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	6.1E-07	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	7.0E-07	2024	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.2E-06	2024	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	3.5E-07	2024	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.1E-07	2024	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.2E-06	2024	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.0E-07	2024	MIT	Building Construction_Welders	Welders
PAREA1	DPM	8.5E-06	2025	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.5E-05	2025	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	4.3E-06	2025	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-06	2025	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.5E-05	2025	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-06	2025	MIT	Building Construction_Welders	Welders
PAREA1	DPM	8.5E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.5E-05	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	4.3E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.5E-05	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-06	2026	MIT	Building Construction_Welders	Welders
PAREA1	DPM	8.5E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	4.3E-06	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-06	2027	MIT	Building Construction_Welders	Welders
PAREA1	DPM	2.6E-07	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	4.5E-07	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	1.3E-07	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	1.1E-07	2028	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	4.5E-07	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	3.7E-08	2028	MIT	Building Construction_Welders	Welders
PAREA1	DPM	2.2E-06	2024	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	DPM	1.1E-05	2024	MIT	Demolition_Excavators	Excavators
PAREA1	DPM	1.5E-05	2024	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	1.7E-05	2024	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	2.6E-05	2024	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	6.7E-06	2024	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	2.7E-06	2024	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	4.3E-06	2024	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	7.6E-06	2024	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	9.3E-06	2024	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.1E-06	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	1.7E-06	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	4.3E-07	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	1.7E-07	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	2.8E-07	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	4.9E-07	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	6.0E-07	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	6.5E-06	2026	MIT	Paving_Pavers	Pavers
PAREA1	DPM	1.1E-05	2026	MIT	Paving_Paving Equipment	Paving Equipment
PAREA1	DPM	3.6E-06	2026	MIT	Paving_Rollers	Rollers
PAREA1	DPM	1.0E-05	2024	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	9.2E-06	2024	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.2E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	2.0E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	2.0E-04	2026	MIT	Building Construction_Cranes	Cranes
PAREA2	DPM	5.3E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	9.3E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	2.4E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.3E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA2	DPM	9.4E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	7.8E-07	2026	MIT	Building Construction_Welders	Welders
PAREA2	DPM	3.2E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA2	DPM	8.7E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	3.9E-06	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	3.8E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA2	DPM	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA2	DPM	3.1E-04	2028	MIT	Building Construction_Cranes	Cranes
PAREA2	DPM	8.5E-06	2028	MIT	Building Construction_Forklifts	Forklifts

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA2	DPM	1.5E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	3.8E-06	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	3.7E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA2	DPM	1.5E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.2E-06	2028	MIT	Building Construction_Welders	Welders
PAREA2	DPM	3.2E-06	2025	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	DPM	1.6E-05	2025	MIT	Demolition_Excavators	Excavators
PAREA2	DPM	2.1E-05	2025	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.1E-05	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	1.7E-05	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	4.4E-06	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	1.5E-06	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.8E-06	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	4.3E-06	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	1.3E-05	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	8.1E-06	2026	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	1.2E-05	2026	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	1.1E-06	2026	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.0E-06	2026	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	9.5E-06	2026	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	2.4E-06	2028	MIT	Paving_Pavers	Pavers
PAREA2	DPM	4.1E-06	2028	MIT	Paving_Paving Equipment	Paving Equipment
PAREA2	DPM	1.3E-06	2028	MIT	Paving_Rollers	Rollers
PAREA2	DPM	1.7E-05	2025	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.5E-05	2025	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	5.2E-06	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	1.5E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	5.5E-05	2026	MIT	Building Construction_Cranes	Cranes
PAREA3	DPM	3.7E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	6.5E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	1.2E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.6E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA3	DPM	6.5E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	5.4E-07	2026	MIT	Building Construction_Welders	Welders
PAREA3	DPM	1.3E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA3	DPM	8.9E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	2.9E-06	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	3.9E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA3	DPM	1.6E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA3	DPM	9.7E-05	2028	MIT	Building Construction_Cranes	Cranes
PAREA3	DPM	6.7E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	1.2E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	2.2E-06	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	2.9E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA3	DPM	1.2E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	9.7E-07	2028	MIT	Building Construction_Welders	Welders
PAREA3	DPM	3.2E-06	2026	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	DPM	1.6E-05	2026	MIT	Demolition_Excavators	Excavators
PAREA3	DPM	2.2E-05	2026	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	7.7E-06	2026	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	1.2E-05	2026	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	3.0E-06	2026	MIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	1.0E-06	2026	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.9E-06	2026	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	4.2E-06	2026	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.1E-05	2027	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	1.8E-05	2027	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	4.5E-06	2027	MIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	1.6E-06	2027	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	2.9E-06	2027	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	6.4E-06	2027	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	2.2E-06	2027	MIT	Paving_Pavers	Pavers
PAREA3	DPM	3.8E-06	2027	MIT	Paving_Paving Equipment	Paving Equipment
PAREA3	DPM	1.2E-06	2027	MIT	Paving_Rollers	Rollers
PAREA3	DPM	4.5E-06	2026	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	4.0E-06	2026	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.7E-05	2029	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	1.9E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	1.1E-04	2028	MIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	7.4E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	1.3E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	1.3E-06	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.2E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	1.3E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.1E-06	2028	MIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.3E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	8.9E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	1.5E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	DPM	1.7E-06	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.9E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	1.6E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.3E-06	2029	MIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.1E-04	2030	MIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	8.1E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	2.3E-06	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.5E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.2E-06	2030	MIT	Building Construction_Welders	Welders
PAREA4V	DPM	4.0E-06	2027	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	DPM	2.0E-05	2027	MIT	Demolition_Excavators	Excavators
PAREA4V	DPM	2.7E-05	2027	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	9.3E-06	2027	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	1.5E-05	2027	MIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	3.8E-06	2027	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	2.6E-06	2027	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	2.4E-06	2027	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	1.1E-05	2027	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.2E-05	2028	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	2.0E-05	2028	MIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	5.0E-06	2028	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	2.4E-06	2028	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.2E-06	2028	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	1.4E-05	2028	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA4V	DPM	7.8E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	DPM	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA4V	DPM	9.3E-06	2027	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	8.2E-06	2027	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.4E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	1.7E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	2.2E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA5	DPM	6.2E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	1.1E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.4E-06	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	2.7E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA5	DPM	1.1E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	9.0E-07	2029	MIT	Building Construction_Welders	Welders
PAREA5	DPM	2.9E-04	2030	MIT	Building Construction_Cranes	Cranes
PAREA5	DPM	8.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	1.5E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.4E-06	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	3.9E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA5	DPM	1.6E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.3E-06	2030	MIT	Building Construction_Welders	Welders
PAREA5	DPM	2.4E-04	2031	MIT	Building Construction_Cranes	Cranes
PAREA5	DPM	7.4E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	1.3E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	3.6E-06	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	3.2E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA5	DPM	1.3E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.1E-06	2031	MIT	Building Construction_Welders	Welders
PAREA5	DPM	3.2E-06	2028	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	DPM	1.6E-05	2028	MIT	Demolition_Excavators	Excavators
PAREA5	DPM	2.2E-05	2028	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.0E-05	2028	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	1.7E-05	2028	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	4.3E-06	2028	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	5.2E-06	2028	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	2.8E-06	2028	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.2E-05	2028	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.0E-05	2029	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	1.8E-05	2029	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	4.5E-06	2029	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	4.3E-06	2029	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	2.9E-06	2029	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.3E-05	2029	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA5	DPM	7.9E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA5	DPM	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA5	DPM	9.1E-06	2028	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	8.1E-06	2028	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.9E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	1.0E-05	2032	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	7.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	9.6E-07	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	3.4E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA6	DPM	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.1E-06	2030	MIT	Building Construction_Welders	Welders

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	DPM	8.7E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	1.5E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	1.4E-07	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	3.8E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA6	DPM	1.5E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.3E-06	2031	MIT	Building Construction_Welders	Welders
PAREA6	DPM	4.0E-06	2032	MIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	6.9E-06	2032	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	2.3E-06	2032	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	1.7E-06	2032	MIT	Building Construction_Pumps	Pumps
PAREA6	DPM	7.0E-06	2032	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	5.8E-07	2032	MIT	Building Construction_Welders	Welders
PAREA6	DPM	2.0E-06	2029	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	DPM	1.0E-05	2029	MIT	Demolition_Excavators	Excavators
PAREA6	DPM	1.3E-05	2029	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.2E-05	2029	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	2.1E-05	2029	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	2.5E-06	2029	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	3.4E-06	2029	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	7.4E-06	2029	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.7E-06	2030	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	3.1E-06	2030	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	1.2E-06	2030	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	5.1E-07	2030	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.1E-06	2030	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	5.5E-06	2031	MIT	Paving_Pavers	Pavers
PAREA6	DPM	9.5E-06	2031	MIT	Paving_Paving Equipment	Paving Equipment
PAREA6	DPM	3.1E-06	2031	MIT	Paving_Rollers	Rollers
PAREA6	DPM	4.5E-06	2029	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	4.0E-06	2029	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	DPM	2.2E-08	2024	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-09	2024	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.5E-08	2024	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-09	2024	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.3E-07	2025	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-08	2025	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.6E-07	2025	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-08	2025	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.1E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.0E-08	2026	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.3E-07	2026	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.2E-08	2026	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.9E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	8.9E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.0E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.1E-08	2027	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-09	2028	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	2.4E-10	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	3.0E-10	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.1E-07	2024	MIT	Demolition_Hauling	Hauling
PAREA1	DPM	5.4E-09	2024	MIT	Demolition_Hauling	Hauling
HAUL	DPM	3.2E-08	2024	MIT	Demolition_Vendor	Vendor
PAREA1	DPM	1.7E-09	2024	MIT	Demolition_Vendor	Vendor
HAUL	DPM	1.5E-06	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	7.5E-08	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	2.2E-07	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	1.2E-08	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.5E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	4.1E-09	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.2E-08	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	6.5E-10	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	5.0E-08	2026	MIT	Paving_Hauling	Hauling
PAREA1	DPM	2.4E-09	2026	MIT	Paving_Hauling	Hauling
HAUL	DPM	2.8E-08	2026	MIT	Paving_Vendor	Vendor
PAREA1	DPM	1.5E-09	2026	MIT	Paving_Vendor	Vendor
HAUL	DPM	2.5E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.2E-08	2026	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	9.4E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.7E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.7E-08	2027	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.4E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA2	DPM	7.5E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.4E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.5E-08	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA2	DPM	6.6E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2025	MIT	Demolition_Hauling	Hauling
PAREA2	DPM	1.3E-08	2025	MIT	Demolition_Hauling	Hauling
HAUL	DPM	1.1E-07	2025	MIT	Demolition_Vendor	Vendor
PAREA2	DPM	6.3E-09	2025	MIT	Demolition_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	9.8E-07	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	4.8E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.5E-07	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	8.0E-09	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	6.4E-07	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	3.1E-08	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	9.3E-08	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	2.3E-08	2028	MIT	Paving_Hauling	Hauling
PAREA2	DPM	1.1E-09	2028	MIT	Paving_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	MIT	Paving_Vendor	Vendor
PAREA2	DPM	3.0E-10	2028	MIT	Paving_Vendor	Vendor
HAUL	DPM	6.7E-08	2026	MIT	Building Construction_Hauling	Hauling
PAREA3	DPM	3.2E-09	2026	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	3.3E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA3	DPM	1.8E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.5E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA3	DPM	6.8E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	7.0E-08	2027	MIT	Building Construction_Vendor	Vendor
PAREA3	DPM	3.8E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.0E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA3	DPM	4.6E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2028	MIT	Building Construction_Vendor	Vendor
PAREA3	DPM	2.6E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	7.7E-08	2026	MIT	Demolition_Hauling	Hauling
PAREA3	DPM	3.6E-09	2026	MIT	Demolition_Hauling	Hauling
HAUL	DPM	3.4E-08	2026	MIT	Demolition_Vendor	Vendor
PAREA3	DPM	1.9E-09	2026	MIT	Demolition_Vendor	Vendor
HAUL	DPM	1.7E-07	2026	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	8.1E-09	2026	MIT	Grading and Shoring_Hauling	Hauling
HAUL	DPM	4.6E-08	2026	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	2.5E-09	2026	MIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	2.3E-07	2027	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	1.1E-08	2027	MIT	Grading and Shoring_Hauling	Hauling
HAUL	DPM	6.2E-08	2027	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	3.4E-09	2027	MIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	3.6E-08	2027	MIT	Paving_Hauling	Hauling
PAREA3	DPM	1.7E-09	2027	MIT	Paving_Hauling	Hauling
HAUL	DPM	1.1E-08	2027	MIT	Paving_Vendor	Vendor
PAREA3	DPM	6.1E-10	2027	MIT	Paving_Vendor	Vendor
HAUL	DPM	1.4E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.6E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.8E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.6E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	7.2E-09	2029	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2029	MIT	Building Construction_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	DPM	6.3E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.4E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.1E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.0E-07	2030	MIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.3E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-07	2027	MIT	Demolition_Hauling	Hauling
PAREA4V	DPM	2.5E-08	2027	MIT	Demolition_Hauling	Hauling
HAUL	DPM	3.8E-08	2027	MIT	Demolition_Vendor	Vendor
PAREA4V	DPM	2.1E-09	2027	MIT	Demolition_Vendor	Vendor
HAUL	DPM	3.6E-07	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	1.7E-08	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	6.9E-08	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	3.7E-09	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	4.4E-07	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	2.0E-08	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	8.4E-08	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	4.5E-09	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	3.0E-08	2030	MIT	Paving_Hauling	Hauling
PAREA4V	DPM	1.3E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	DPM	8.9E-09	2030	MIT	Paving_Vendor	Vendor
PAREA4V	DPM	4.7E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	DPM	2.0E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.0E-09	2029	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.2E-08	2029	MIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.4E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA5	DPM	1.2E-08	2030	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2030	MIT	Building Construction_Vendor	Vendor
PAREA5	DPM	5.8E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.2E-07	2031	MIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.4E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.5E-08	2031	MIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.5E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	9.5E-08	2028	MIT	Demolition_Hauling	Hauling
PAREA5	DPM	4.3E-09	2028	MIT	Demolition_Hauling	Hauling
HAUL	DPM	4.2E-08	2028	MIT	Demolition_Vendor	Vendor
PAREA5	DPM	2.3E-09	2028	MIT	Demolition_Vendor	Vendor
HAUL	DPM	6.1E-07	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.8E-08	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	1.0E-07	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.4E-09	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	5.9E-07	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.7E-08	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	9.6E-08	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.2E-09	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	2.9E-08	2030	MIT	Paving_Hauling	Hauling
PAREA5	DPM	1.3E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	DPM	9.1E-09	2030	MIT	Paving_Vendor	Vendor
PAREA5	DPM	4.8E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	DPM	5.1E-08	2030	MIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.3E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2030	MIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.4E-08	2031	MIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.4E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.0E-08	2031	MIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.4E-08	2032	MIT	Building Construction_Hauling	Hauling
PAREA6	DPM	1.0E-09	2032	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.1E-08	2032	MIT	Building Construction_Vendor	Vendor
PAREA6	DPM	1.1E-09	2032	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.7E-07	2029	MIT	Demolition_Hauling	Hauling
PAREA6	DPM	7.6E-09	2029	MIT	Demolition_Hauling	Hauling
HAUL	DPM	1.6E-08	2029	MIT	Demolition_Vendor	Vendor
PAREA6	DPM	8.4E-10	2029	MIT	Demolition_Vendor	Vendor
HAUL	DPM	2.2E-07	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.0E-08	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	3.2E-08	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	1.7E-09	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	3.1E-08	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.4E-09	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	4.5E-09	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	2.4E-10	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.3E-09	2031	MIT	Paving_Hauling	Hauling
PAREA6	DPM	3.6E-10	2031	MIT	Paving_Hauling	Hauling
HAUL	DPM	1.0E-08	2031	MIT	Paving_Vendor	Vendor
PAREA6	DPM	5.4E-10	2031	MIT	Paving_Vendor	Vendor

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
NW1	DPM	1.1E-04	2028	UNMIT
NW2	DPM	1.1E-04	2028	UNMIT
NW3	DPM	1.1E-04	2028	UNMIT
W1	DPM	2.4E-06	2028	UNMIT
W3	DPM	2.0E-07	2028	UNMIT
W4	DPM	2.0E-07	2028	UNMIT
S3	DPM	3.2E-05	2028	UNMIT
E1	DPM	2.4E-06	2028	UNMIT
NW1	PM25	1.1E-04	2028	UNMIT
NW2	PM25	1.1E-04	2028	UNMIT
NW3	PM25	1.1E-04	2028	UNMIT
W1	PM25	2.4E-06	2028	UNMIT
W3	PM25	2.0E-07	2028	UNMIT
W4	PM25	2.0E-07	2028	UNMIT
S3	PM25	3.2E-05	2028	UNMIT
E1	PM25	2.4E-06	2028	UNMIT
NW1	DPM	1.1E-05	2028	MIT
NW2	DPM	1.1E-05	2028	MIT
NW3	DPM	1.1E-05	2028	MIT
W1	DPM	2.4E-07	2028	MIT
W3	DPM	2.0E-07	2028	MIT
W4	DPM	2.0E-07	2028	MIT
S3	DPM	3.2E-05	2028	MIT
E1	DPM	2.4E-07	2028	MIT
NW1	PM25	1.1E-05	2028	MIT
NW2	PM25	1.1E-05	2028	MIT
NW3	PM25	1.1E-05	2028	MIT
W1	PM25	2.4E-07	2028	MIT
W3	PM25	2.0E-07	2028	MIT
W4	PM25	2.0E-07	2028	MIT
S3	PM25	3.2E-05	2028	MIT
E1	PM25	2.4E-07	2028	MIT
NW1	DPM	1.1E-04	2029	UNMIT
NW2	DPM	1.1E-04	2029	UNMIT
NW3	DPM	1.1E-04	2029	UNMIT
W1	DPM	1.8E-05	2029	UNMIT
W3	DPM	8.0E-06	2029	UNMIT
W4	DPM	8.0E-06	2029	UNMIT
S3	DPM	3.2E-05	2029	UNMIT
E1	DPM	1.8E-05	2029	UNMIT
NW1	PM25	1.1E-04	2029	UNMIT
NW2	PM25	1.1E-04	2029	UNMIT
NW3	PM25	1.1E-04	2029	UNMIT
W1	PM25	1.8E-05	2029	UNMIT
W3	PM25	8.0E-06	2029	UNMIT
W4	PM25	8.0E-06	2029	UNMIT
S3	PM25	3.2E-05	2029	UNMIT
E1	PM25	1.8E-05	2029	UNMIT
NW1	DPM	1.1E-05	2029	MIT
NW2	DPM	1.1E-05	2029	MIT
NW3	DPM	1.1E-05	2029	MIT
W1	DPM	1.8E-06	2029	MIT
W3	DPM	8.0E-06	2029	MIT
W4	DPM	8.0E-06	2029	MIT
S3	DPM	3.2E-05	2029	MIT
E1	DPM	1.8E-06	2029	MIT
NW1	PM25	1.1E-05	2029	MIT
NW2	PM25	1.1E-05	2029	MIT
NW3	PM25	1.1E-05	2029	MIT
W1	PM25	1.8E-06	2029	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	8.0E-06	2029	MIT
W4	PM25	8.0E-06	2029	MIT
S3	PM25	3.2E-05	2029	MIT
E1	PM25	1.8E-06	2029	MIT
NW1	DPM	1.1E-04	2030	UNMIT
NW2	DPM	1.1E-04	2030	UNMIT
NW3	DPM	1.1E-04	2030	UNMIT
W1	DPM	4.9E-05	2030	UNMIT
W3	DPM	8.0E-06	2030	UNMIT
W4	DPM	8.0E-06	2030	UNMIT
S3	DPM	3.2E-05	2030	UNMIT
E1	DPM	4.9E-05	2030	UNMIT
E3	DPM	4.9E-05	2030	UNMIT
E4	DPM	4.9E-05	2030	UNMIT
NW1	PM25	1.1E-04	2030	UNMIT
NW2	PM25	1.1E-04	2030	UNMIT
NW3	PM25	1.1E-04	2030	UNMIT
W1	PM25	4.9E-05	2030	UNMIT
W3	PM25	8.0E-06	2030	UNMIT
W4	PM25	8.0E-06	2030	UNMIT
S3	PM25	3.2E-05	2030	UNMIT
E1	PM25	4.9E-05	2030	UNMIT
E3	PM25	4.9E-05	2030	UNMIT
E4	PM25	4.9E-05	2030	UNMIT
NW1	DPM	1.1E-05	2030	MIT
NW2	DPM	1.1E-05	2030	MIT
NW3	DPM	1.1E-05	2030	MIT
W1	DPM	4.9E-06	2030	MIT
W3	DPM	8.0E-06	2030	MIT
W4	DPM	8.0E-06	2030	MIT
S3	DPM	3.2E-05	2030	MIT
E1	DPM	4.9E-06	2030	MIT
E3	DPM	4.9E-06	2030	MIT
E4	DPM	4.9E-06	2030	MIT
NW1	PM25	1.1E-05	2030	MIT
NW2	PM25	1.1E-05	2030	MIT
NW3	PM25	1.1E-05	2030	MIT
W1	PM25	4.9E-06	2030	MIT
W3	PM25	8.0E-06	2030	MIT
W4	PM25	8.0E-06	2030	MIT
S3	PM25	3.2E-05	2030	MIT
E1	PM25	4.9E-06	2030	MIT
E3	PM25	4.9E-06	2030	MIT
E4	PM25	4.9E-06	2030	MIT
NW1	DPM	1.1E-04	2031	UNMIT
NW2	DPM	1.1E-04	2031	UNMIT
NW3	DPM	1.1E-04	2031	UNMIT
W1	DPM	9.2E-05	2031	UNMIT
W3	DPM	1.3E-05	2031	UNMIT
W4	DPM	1.3E-05	2031	UNMIT
S1	DPM	9.2E-05	2031	UNMIT
S2	DPM	1.3E-05	2031	UNMIT
S3	DPM	3.2E-05	2031	UNMIT
E1	DPM	9.2E-05	2031	UNMIT
E3	DPM	9.2E-05	2031	UNMIT
E4	DPM	9.2E-05	2031	UNMIT
NW1	PM25	1.1E-04	2031	UNMIT
NW2	PM25	1.1E-04	2031	UNMIT
NW3	PM25	1.1E-04	2031	UNMIT
W1	PM25	9.2E-05	2031	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	1.3E-05	2031	UNMIT
W4	PM25	1.3E-05	2031	UNMIT
S1	PM25	9.2E-05	2031	UNMIT
S2	PM25	1.3E-05	2031	UNMIT
S3	PM25	3.2E-05	2031	UNMIT
E1	PM25	9.2E-05	2031	UNMIT
E3	PM25	9.2E-05	2031	UNMIT
E4	PM25	9.2E-05	2031	UNMIT
NW1	DPM	1.1E-05	2031	MIT
NW2	DPM	1.1E-05	2031	MIT
NW3	DPM	1.1E-05	2031	MIT
W1	DPM	9.2E-06	2031	MIT
W3	DPM	1.3E-05	2031	MIT
W4	DPM	1.3E-05	2031	MIT
S1	DPM	9.2E-06	2031	MIT
S2	DPM	1.3E-05	2031	MIT
S3	DPM	3.2E-05	2031	MIT
E1	DPM	9.2E-06	2031	MIT
E3	DPM	9.2E-06	2031	MIT
E4	DPM	9.2E-06	2031	MIT
NW1	PM25	1.1E-05	2031	MIT
NW2	PM25	1.1E-05	2031	MIT
NW3	PM25	1.1E-05	2031	MIT
W1	PM25	9.2E-06	2031	MIT
W3	PM25	1.3E-05	2031	MIT
W4	PM25	1.3E-05	2031	MIT
S1	PM25	9.2E-06	2031	MIT
S2	PM25	1.3E-05	2031	MIT
S3	PM25	3.2E-05	2031	MIT
E1	PM25	9.2E-06	2031	MIT
E3	PM25	9.2E-06	2031	MIT
E4	PM25	9.2E-06	2031	MIT
NW1	DPM	1.1E-04	2032	UNMIT
NW2	DPM	1.1E-04	2032	UNMIT
NW3	DPM	1.1E-04	2032	UNMIT
W1	DPM	1.5E-04	2032	UNMIT
W3	DPM	2.8E-05	2032	UNMIT
W4	DPM	2.8E-05	2032	UNMIT
S1	DPM	1.5E-04	2032	UNMIT
S2	DPM	2.8E-05	2032	UNMIT
S3	DPM	1.8E-04	2032	UNMIT
E1	DPM	1.5E-04	2032	UNMIT
E3	DPM	1.5E-04	2032	UNMIT
E4	DPM	1.5E-04	2032	UNMIT
NW1	PM25	1.1E-04	2032	UNMIT
NW2	PM25	1.1E-04	2032	UNMIT
NW3	PM25	1.1E-04	2032	UNMIT
W1	PM25	1.5E-04	2032	UNMIT
W3	PM25	2.8E-05	2032	UNMIT
W4	PM25	2.8E-05	2032	UNMIT
S1	PM25	1.5E-04	2032	UNMIT
S2	PM25	2.8E-05	2032	UNMIT
S3	PM25	1.8E-04	2032	UNMIT
E1	PM25	1.5E-04	2032	UNMIT
E3	PM25	1.5E-04	2032	UNMIT
E4	PM25	1.5E-04	2032	UNMIT
NW1	DPM	1.1E-05	2032	MIT
NW2	DPM	1.1E-05	2032	MIT
NW3	DPM	1.1E-05	2032	MIT
W1	DPM	1.5E-05	2032	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	2.8E-05	2032	MIT
W4	DPM	2.8E-05	2032	MIT
S1	DPM	1.5E-05	2032	MIT
S2	DPM	2.8E-05	2032	MIT
S3	DPM	4.3E-05	2032	MIT
E1	DPM	1.5E-05	2032	MIT
E3	DPM	1.5E-05	2032	MIT
E4	DPM	1.5E-05	2032	MIT
NW1	PM25	1.1E-05	2032	MIT
NW2	PM25	1.1E-05	2032	MIT
NW3	PM25	1.1E-05	2032	MIT
W1	PM25	1.5E-05	2032	MIT
W3	PM25	2.8E-05	2032	MIT
W4	PM25	2.8E-05	2032	MIT
S1	PM25	1.5E-05	2032	MIT
S2	PM25	2.8E-05	2032	MIT
S3	PM25	4.3E-05	2032	MIT
E1	PM25	1.5E-05	2032	MIT
E3	PM25	1.5E-05	2032	MIT
E4	PM25	1.5E-05	2032	MIT
NW1	DPM	1.1E-04	2033	UNMIT
NW2	DPM	1.1E-04	2033	UNMIT
NW3	DPM	1.1E-04	2033	UNMIT
W1	DPM	1.6E-04	2033	UNMIT
W3	DPM	3.2E-05	2033	UNMIT
W4	DPM	3.2E-05	2033	UNMIT
S1	DPM	1.6E-04	2033	UNMIT
S2	DPM	3.2E-05	2033	UNMIT
S3	DPM	1.9E-04	2033	UNMIT
E1	DPM	1.6E-04	2033	UNMIT
E3	DPM	1.6E-04	2033	UNMIT
E4	DPM	1.6E-04	2033	UNMIT
NW1	PM25	1.1E-04	2033	UNMIT
NW2	PM25	1.1E-04	2033	UNMIT
NW3	PM25	1.1E-04	2033	UNMIT
W1	PM25	1.6E-04	2033	UNMIT
W3	PM25	3.2E-05	2033	UNMIT
W4	PM25	3.2E-05	2033	UNMIT
S1	PM25	1.6E-04	2033	UNMIT
S2	PM25	3.2E-05	2033	UNMIT
S3	PM25	1.9E-04	2033	UNMIT
E1	PM25	1.6E-04	2033	UNMIT
E3	PM25	1.6E-04	2033	UNMIT
E4	PM25	1.6E-04	2033	UNMIT
NW1	DPM	1.1E-05	2033	MIT
NW2	DPM	1.1E-05	2033	MIT
NW3	DPM	1.1E-05	2033	MIT
W1	DPM	1.6E-05	2033	MIT
W3	DPM	3.2E-05	2033	MIT
W4	DPM	3.2E-05	2033	MIT
S1	DPM	1.6E-05	2033	MIT
S2	DPM	3.2E-05	2033	MIT
S3	DPM	4.8E-05	2033	MIT
E1	DPM	1.6E-05	2033	MIT
E3	DPM	1.6E-05	2033	MIT
E4	DPM	1.6E-05	2033	MIT
NW1	PM25	1.1E-05	2033	MIT
NW2	PM25	1.1E-05	2033	MIT
NW3	PM25	1.1E-05	2033	MIT
W1	PM25	1.6E-05	2033	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2033	MIT
W4	PM25	3.2E-05	2033	MIT
S1	PM25	1.6E-05	2033	MIT
S2	PM25	3.2E-05	2033	MIT
S3	PM25	4.8E-05	2033	MIT
E1	PM25	1.6E-05	2033	MIT
E3	PM25	1.6E-05	2033	MIT
E4	PM25	1.6E-05	2033	MIT
NW1	DPM	1.1E-04	2034	UNMIT
NW2	DPM	1.1E-04	2034	UNMIT
NW3	DPM	1.1E-04	2034	UNMIT
W1	DPM	1.6E-04	2034	UNMIT
W3	DPM	3.2E-05	2034	UNMIT
W4	DPM	3.2E-05	2034	UNMIT
S1	DPM	1.6E-04	2034	UNMIT
S2	DPM	3.2E-05	2034	UNMIT
S3	DPM	1.9E-04	2034	UNMIT
E1	DPM	1.6E-04	2034	UNMIT
E3	DPM	1.6E-04	2034	UNMIT
E4	DPM	1.6E-04	2034	UNMIT
NW1	PM25	1.1E-04	2034	UNMIT
NW2	PM25	1.1E-04	2034	UNMIT
NW3	PM25	1.1E-04	2034	UNMIT
W1	PM25	1.6E-04	2034	UNMIT
W3	PM25	3.2E-05	2034	UNMIT
W4	PM25	3.2E-05	2034	UNMIT
S1	PM25	1.6E-04	2034	UNMIT
S2	PM25	3.2E-05	2034	UNMIT
S3	PM25	1.9E-04	2034	UNMIT
E1	PM25	1.6E-04	2034	UNMIT
E3	PM25	1.6E-04	2034	UNMIT
E4	PM25	1.6E-04	2034	UNMIT
NW1	DPM	1.1E-05	2034	MIT
NW2	DPM	1.1E-05	2034	MIT
NW3	DPM	1.1E-05	2034	MIT
W1	DPM	1.6E-05	2034	MIT
W3	DPM	3.2E-05	2034	MIT
W4	DPM	3.2E-05	2034	MIT
S1	DPM	1.6E-05	2034	MIT
S2	DPM	3.2E-05	2034	MIT
S3	DPM	4.8E-05	2034	MIT
E1	DPM	1.6E-05	2034	MIT
E3	DPM	1.6E-05	2034	MIT
E4	DPM	1.6E-05	2034	MIT
NW1	PM25	1.1E-05	2034	MIT
NW2	PM25	1.1E-05	2034	MIT
NW3	PM25	1.1E-05	2034	MIT
W1	PM25	1.6E-05	2034	MIT
W3	PM25	3.2E-05	2034	MIT
W4	PM25	3.2E-05	2034	MIT
S1	PM25	1.6E-05	2034	MIT
S2	PM25	3.2E-05	2034	MIT
S3	PM25	4.8E-05	2034	MIT
E1	PM25	1.6E-05	2034	MIT
E3	PM25	1.6E-05	2034	MIT
E4	PM25	1.6E-05	2034	MIT
NW1	DPM	1.1E-04	2035	UNMIT
NW2	DPM	1.1E-04	2035	UNMIT
NW3	DPM	1.1E-04	2035	UNMIT
W1	DPM	1.6E-04	2035	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2035	UNMIT
W4	DPM	3.2E-05	2035	UNMIT
S1	DPM	1.6E-04	2035	UNMIT
S2	DPM	3.2E-05	2035	UNMIT
S3	DPM	1.9E-04	2035	UNMIT
E1	DPM	1.6E-04	2035	UNMIT
E3	DPM	1.6E-04	2035	UNMIT
E4	DPM	1.6E-04	2035	UNMIT
NW1	PM25	1.1E-04	2035	UNMIT
NW2	PM25	1.1E-04	2035	UNMIT
NW3	PM25	1.1E-04	2035	UNMIT
W1	PM25	1.6E-04	2035	UNMIT
W3	PM25	3.2E-05	2035	UNMIT
W4	PM25	3.2E-05	2035	UNMIT
S1	PM25	1.6E-04	2035	UNMIT
S2	PM25	3.2E-05	2035	UNMIT
S3	PM25	1.9E-04	2035	UNMIT
E1	PM25	1.6E-04	2035	UNMIT
E3	PM25	1.6E-04	2035	UNMIT
E4	PM25	1.6E-04	2035	UNMIT
NW1	DPM	1.1E-05	2035	MIT
NW2	DPM	1.1E-05	2035	MIT
NW3	DPM	1.1E-05	2035	MIT
W1	DPM	1.6E-05	2035	MIT
W3	DPM	3.2E-05	2035	MIT
W4	DPM	3.2E-05	2035	MIT
S1	DPM	1.6E-05	2035	MIT
S2	DPM	3.2E-05	2035	MIT
S3	DPM	4.8E-05	2035	MIT
E1	DPM	1.6E-05	2035	MIT
E3	DPM	1.6E-05	2035	MIT
E4	DPM	1.6E-05	2035	MIT
NW1	PM25	1.1E-05	2035	MIT
NW2	PM25	1.1E-05	2035	MIT
NW3	PM25	1.1E-05	2035	MIT
W1	PM25	1.6E-05	2035	MIT
W3	PM25	3.2E-05	2035	MIT
W4	PM25	3.2E-05	2035	MIT
S1	PM25	1.6E-05	2035	MIT
S2	PM25	3.2E-05	2035	MIT
S3	PM25	4.8E-05	2035	MIT
E1	PM25	1.6E-05	2035	MIT
E3	PM25	1.6E-05	2035	MIT
E4	PM25	1.6E-05	2035	MIT
NW1	DPM	1.1E-04	2036	UNMIT
NW2	DPM	1.1E-04	2036	UNMIT
NW3	DPM	1.1E-04	2036	UNMIT
W1	DPM	1.6E-04	2036	UNMIT
W3	DPM	3.2E-05	2036	UNMIT
W4	DPM	3.2E-05	2036	UNMIT
S1	DPM	1.6E-04	2036	UNMIT
S2	DPM	3.2E-05	2036	UNMIT
S3	DPM	1.9E-04	2036	UNMIT
E1	DPM	1.6E-04	2036	UNMIT
E3	DPM	1.6E-04	2036	UNMIT
E4	DPM	1.6E-04	2036	UNMIT
NW1	PM25	1.1E-04	2036	UNMIT
NW2	PM25	1.1E-04	2036	UNMIT
NW3	PM25	1.1E-04	2036	UNMIT
W1	PM25	1.6E-04	2036	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2036	UNMIT
W4	PM25	3.2E-05	2036	UNMIT
S1	PM25	1.6E-04	2036	UNMIT
S2	PM25	3.2E-05	2036	UNMIT
S3	PM25	1.9E-04	2036	UNMIT
E1	PM25	1.6E-04	2036	UNMIT
E3	PM25	1.6E-04	2036	UNMIT
E4	PM25	1.6E-04	2036	UNMIT
NW1	DPM	1.1E-05	2036	MIT
NW2	DPM	1.1E-05	2036	MIT
NW3	DPM	1.1E-05	2036	MIT
W1	DPM	1.6E-05	2036	MIT
W3	DPM	3.2E-05	2036	MIT
W4	DPM	3.2E-05	2036	MIT
S1	DPM	1.6E-05	2036	MIT
S2	DPM	3.2E-05	2036	MIT
S3	DPM	4.8E-05	2036	MIT
E1	DPM	1.6E-05	2036	MIT
E3	DPM	1.6E-05	2036	MIT
E4	DPM	1.6E-05	2036	MIT
NW1	PM25	1.1E-05	2036	MIT
NW2	PM25	1.1E-05	2036	MIT
NW3	PM25	1.1E-05	2036	MIT
W1	PM25	1.6E-05	2036	MIT
W3	PM25	3.2E-05	2036	MIT
W4	PM25	3.2E-05	2036	MIT
S1	PM25	1.6E-05	2036	MIT
S2	PM25	3.2E-05	2036	MIT
S3	PM25	4.8E-05	2036	MIT
E1	PM25	1.6E-05	2036	MIT
E3	PM25	1.6E-05	2036	MIT
E4	PM25	1.6E-05	2036	MIT
NW1	DPM	1.1E-04	2037	UNMIT
NW2	DPM	1.1E-04	2037	UNMIT
NW3	DPM	1.1E-04	2037	UNMIT
W1	DPM	1.6E-04	2037	UNMIT
W3	DPM	3.2E-05	2037	UNMIT
W4	DPM	3.2E-05	2037	UNMIT
S1	DPM	1.6E-04	2037	UNMIT
S2	DPM	3.2E-05	2037	UNMIT
S3	DPM	1.9E-04	2037	UNMIT
E1	DPM	1.6E-04	2037	UNMIT
E3	DPM	1.6E-04	2037	UNMIT
E4	DPM	1.6E-04	2037	UNMIT
NW1	PM25	1.1E-04	2037	UNMIT
NW2	PM25	1.1E-04	2037	UNMIT
NW3	PM25	1.1E-04	2037	UNMIT
W1	PM25	1.6E-04	2037	UNMIT
W3	PM25	3.2E-05	2037	UNMIT
W4	PM25	3.2E-05	2037	UNMIT
S1	PM25	1.6E-04	2037	UNMIT
S2	PM25	3.2E-05	2037	UNMIT
S3	PM25	1.9E-04	2037	UNMIT
E1	PM25	1.6E-04	2037	UNMIT
E3	PM25	1.6E-04	2037	UNMIT
E4	PM25	1.6E-04	2037	UNMIT
NW1	DPM	1.1E-05	2037	MIT
NW2	DPM	1.1E-05	2037	MIT
NW3	DPM	1.1E-05	2037	MIT
W1	DPM	1.6E-05	2037	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2037	MIT
W4	DPM	3.2E-05	2037	MIT
S1	DPM	1.6E-05	2037	MIT
S2	DPM	3.2E-05	2037	MIT
S3	DPM	4.8E-05	2037	MIT
E1	DPM	1.6E-05	2037	MIT
E3	DPM	1.6E-05	2037	MIT
E4	DPM	1.6E-05	2037	MIT
NW1	PM25	1.1E-05	2037	MIT
NW2	PM25	1.1E-05	2037	MIT
NW3	PM25	1.1E-05	2037	MIT
W1	PM25	1.6E-05	2037	MIT
W3	PM25	3.2E-05	2037	MIT
W4	PM25	3.2E-05	2037	MIT
S1	PM25	1.6E-05	2037	MIT
S2	PM25	3.2E-05	2037	MIT
S3	PM25	4.8E-05	2037	MIT
E1	PM25	1.6E-05	2037	MIT
E3	PM25	1.6E-05	2037	MIT
E4	PM25	1.6E-05	2037	MIT
NW1	DPM	1.1E-04	2038	UNMIT
NW2	DPM	1.1E-04	2038	UNMIT
NW3	DPM	1.1E-04	2038	UNMIT
W1	DPM	1.6E-04	2038	UNMIT
W3	DPM	3.2E-05	2038	UNMIT
W4	DPM	3.2E-05	2038	UNMIT
S1	DPM	1.6E-04	2038	UNMIT
S2	DPM	3.2E-05	2038	UNMIT
S3	DPM	1.9E-04	2038	UNMIT
E1	DPM	1.6E-04	2038	UNMIT
E3	DPM	1.6E-04	2038	UNMIT
E4	DPM	1.6E-04	2038	UNMIT
NW1	PM25	1.1E-04	2038	UNMIT
NW2	PM25	1.1E-04	2038	UNMIT
NW3	PM25	1.1E-04	2038	UNMIT
W1	PM25	1.6E-04	2038	UNMIT
W3	PM25	3.2E-05	2038	UNMIT
W4	PM25	3.2E-05	2038	UNMIT
S1	PM25	1.6E-04	2038	UNMIT
S2	PM25	3.2E-05	2038	UNMIT
S3	PM25	1.9E-04	2038	UNMIT
E1	PM25	1.6E-04	2038	UNMIT
E3	PM25	1.6E-04	2038	UNMIT
E4	PM25	1.6E-04	2038	UNMIT
NW1	DPM	1.1E-05	2038	MIT
NW2	DPM	1.1E-05	2038	MIT
NW3	DPM	1.1E-05	2038	MIT
W1	DPM	1.6E-05	2038	MIT
W3	DPM	3.2E-05	2038	MIT
W4	DPM	3.2E-05	2038	MIT
S1	DPM	1.6E-05	2038	MIT
S2	DPM	3.2E-05	2038	MIT
S3	DPM	4.8E-05	2038	MIT
E1	DPM	1.6E-05	2038	MIT
E3	DPM	1.6E-05	2038	MIT
E4	DPM	1.6E-05	2038	MIT
NW1	PM25	1.1E-05	2038	MIT
NW2	PM25	1.1E-05	2038	MIT
NW3	PM25	1.1E-05	2038	MIT
W1	PM25	1.6E-05	2038	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2038	MIT
W4	PM25	3.2E-05	2038	MIT
S1	PM25	1.6E-05	2038	MIT
S2	PM25	3.2E-05	2038	MIT
S3	PM25	4.8E-05	2038	MIT
E1	PM25	1.6E-05	2038	MIT
E3	PM25	1.6E-05	2038	MIT
E4	PM25	1.6E-05	2038	MIT
NW1	DPM	1.1E-04	2039	UNMIT
NW2	DPM	1.1E-04	2039	UNMIT
NW3	DPM	1.1E-04	2039	UNMIT
W1	DPM	1.6E-04	2039	UNMIT
W3	DPM	3.2E-05	2039	UNMIT
W4	DPM	3.2E-05	2039	UNMIT
S1	DPM	1.6E-04	2039	UNMIT
S2	DPM	3.2E-05	2039	UNMIT
S3	DPM	1.9E-04	2039	UNMIT
E1	DPM	1.6E-04	2039	UNMIT
E3	DPM	1.6E-04	2039	UNMIT
E4	DPM	1.6E-04	2039	UNMIT
NW1	PM25	1.1E-04	2039	UNMIT
NW2	PM25	1.1E-04	2039	UNMIT
NW3	PM25	1.1E-04	2039	UNMIT
W1	PM25	1.6E-04	2039	UNMIT
W3	PM25	3.2E-05	2039	UNMIT
W4	PM25	3.2E-05	2039	UNMIT
S1	PM25	1.6E-04	2039	UNMIT
S2	PM25	3.2E-05	2039	UNMIT
S3	PM25	1.9E-04	2039	UNMIT
E1	PM25	1.6E-04	2039	UNMIT
E3	PM25	1.6E-04	2039	UNMIT
E4	PM25	1.6E-04	2039	UNMIT
NW1	DPM	1.1E-05	2039	MIT
NW2	DPM	1.1E-05	2039	MIT
NW3	DPM	1.1E-05	2039	MIT
W1	DPM	1.6E-05	2039	MIT
W3	DPM	3.2E-05	2039	MIT
W4	DPM	3.2E-05	2039	MIT
S1	DPM	1.6E-05	2039	MIT
S2	DPM	3.2E-05	2039	MIT
S3	DPM	4.8E-05	2039	MIT
E1	DPM	1.6E-05	2039	MIT
E3	DPM	1.6E-05	2039	MIT
E4	DPM	1.6E-05	2039	MIT
NW1	PM25	1.1E-05	2039	MIT
NW2	PM25	1.1E-05	2039	MIT
NW3	PM25	1.1E-05	2039	MIT
W1	PM25	1.6E-05	2039	MIT
W3	PM25	3.2E-05	2039	MIT
W4	PM25	3.2E-05	2039	MIT
S1	PM25	1.6E-05	2039	MIT
S2	PM25	3.2E-05	2039	MIT
S3	PM25	4.8E-05	2039	MIT
E1	PM25	1.6E-05	2039	MIT
E3	PM25	1.6E-05	2039	MIT
E4	PM25	1.6E-05	2039	MIT
NW1	DPM	1.1E-04	2040	UNMIT
NW2	DPM	1.1E-04	2040	UNMIT
NW3	DPM	1.1E-04	2040	UNMIT
W1	DPM	1.6E-04	2040	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2040	UNMIT
W4	DPM	3.2E-05	2040	UNMIT
S1	DPM	1.6E-04	2040	UNMIT
S2	DPM	3.2E-05	2040	UNMIT
S3	DPM	1.9E-04	2040	UNMIT
E1	DPM	1.6E-04	2040	UNMIT
E3	DPM	1.6E-04	2040	UNMIT
E4	DPM	1.6E-04	2040	UNMIT
NW1	PM25	1.1E-04	2040	UNMIT
NW2	PM25	1.1E-04	2040	UNMIT
NW3	PM25	1.1E-04	2040	UNMIT
W1	PM25	1.6E-04	2040	UNMIT
W3	PM25	3.2E-05	2040	UNMIT
W4	PM25	3.2E-05	2040	UNMIT
S1	PM25	1.6E-04	2040	UNMIT
S2	PM25	3.2E-05	2040	UNMIT
S3	PM25	1.9E-04	2040	UNMIT
E1	PM25	1.6E-04	2040	UNMIT
E3	PM25	1.6E-04	2040	UNMIT
E4	PM25	1.6E-04	2040	UNMIT
NW1	DPM	1.1E-05	2040	MIT
NW2	DPM	1.1E-05	2040	MIT
NW3	DPM	1.1E-05	2040	MIT
W1	DPM	1.6E-05	2040	MIT
W3	DPM	3.2E-05	2040	MIT
W4	DPM	3.2E-05	2040	MIT
S1	DPM	1.6E-05	2040	MIT
S2	DPM	3.2E-05	2040	MIT
S3	DPM	4.8E-05	2040	MIT
E1	DPM	1.6E-05	2040	MIT
E3	DPM	1.6E-05	2040	MIT
E4	DPM	1.6E-05	2040	MIT
NW1	PM25	1.1E-05	2040	MIT
NW2	PM25	1.1E-05	2040	MIT
NW3	PM25	1.1E-05	2040	MIT
W1	PM25	1.6E-05	2040	MIT
W3	PM25	3.2E-05	2040	MIT
W4	PM25	3.2E-05	2040	MIT
S1	PM25	1.6E-05	2040	MIT
S2	PM25	3.2E-05	2040	MIT
S3	PM25	4.8E-05	2040	MIT
E1	PM25	1.6E-05	2040	MIT
E3	PM25	1.6E-05	2040	MIT
E4	PM25	1.6E-05	2040	MIT
NW1	DPM	1.1E-04	2041	UNMIT
NW2	DPM	1.1E-04	2041	UNMIT
NW3	DPM	1.1E-04	2041	UNMIT
W1	DPM	1.6E-04	2041	UNMIT
W3	DPM	3.2E-05	2041	UNMIT
W4	DPM	3.2E-05	2041	UNMIT
S1	DPM	1.6E-04	2041	UNMIT
S2	DPM	3.2E-05	2041	UNMIT
S3	DPM	1.9E-04	2041	UNMIT
E1	DPM	1.6E-04	2041	UNMIT
E3	DPM	1.6E-04	2041	UNMIT
E4	DPM	1.6E-04	2041	UNMIT
NW1	PM25	1.1E-04	2041	UNMIT
NW2	PM25	1.1E-04	2041	UNMIT
NW3	PM25	1.1E-04	2041	UNMIT
W1	PM25	1.6E-04	2041	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2041	UNMIT
W4	PM25	3.2E-05	2041	UNMIT
S1	PM25	1.6E-04	2041	UNMIT
S2	PM25	3.2E-05	2041	UNMIT
S3	PM25	1.9E-04	2041	UNMIT
E1	PM25	1.6E-04	2041	UNMIT
E3	PM25	1.6E-04	2041	UNMIT
E4	PM25	1.6E-04	2041	UNMIT
NW1	DPM	1.1E-05	2041	MIT
NW2	DPM	1.1E-05	2041	MIT
NW3	DPM	1.1E-05	2041	MIT
W1	DPM	1.6E-05	2041	MIT
W3	DPM	3.2E-05	2041	MIT
W4	DPM	3.2E-05	2041	MIT
S1	DPM	1.6E-05	2041	MIT
S2	DPM	3.2E-05	2041	MIT
S3	DPM	4.8E-05	2041	MIT
E1	DPM	1.6E-05	2041	MIT
E3	DPM	1.6E-05	2041	MIT
E4	DPM	1.6E-05	2041	MIT
NW1	PM25	1.1E-05	2041	MIT
NW2	PM25	1.1E-05	2041	MIT
NW3	PM25	1.1E-05	2041	MIT
W1	PM25	1.6E-05	2041	MIT
W3	PM25	3.2E-05	2041	MIT
W4	PM25	3.2E-05	2041	MIT
S1	PM25	1.6E-05	2041	MIT
S2	PM25	3.2E-05	2041	MIT
S3	PM25	4.8E-05	2041	MIT
E1	PM25	1.6E-05	2041	MIT
E3	PM25	1.6E-05	2041	MIT
E4	PM25	1.6E-05	2041	MIT
NW1	DPM	1.1E-04	2042	UNMIT
NW2	DPM	1.1E-04	2042	UNMIT
NW3	DPM	1.1E-04	2042	UNMIT
W1	DPM	1.6E-04	2042	UNMIT
W3	DPM	3.2E-05	2042	UNMIT
W4	DPM	3.2E-05	2042	UNMIT
S1	DPM	1.6E-04	2042	UNMIT
S2	DPM	3.2E-05	2042	UNMIT
S3	DPM	1.9E-04	2042	UNMIT
E1	DPM	1.6E-04	2042	UNMIT
E3	DPM	1.6E-04	2042	UNMIT
E4	DPM	1.6E-04	2042	UNMIT
NW1	PM25	1.1E-04	2042	UNMIT
NW2	PM25	1.1E-04	2042	UNMIT
NW3	PM25	1.1E-04	2042	UNMIT
W1	PM25	1.6E-04	2042	UNMIT
W3	PM25	3.2E-05	2042	UNMIT
W4	PM25	3.2E-05	2042	UNMIT
S1	PM25	1.6E-04	2042	UNMIT
S2	PM25	3.2E-05	2042	UNMIT
S3	PM25	1.9E-04	2042	UNMIT
E1	PM25	1.6E-04	2042	UNMIT
E3	PM25	1.6E-04	2042	UNMIT
E4	PM25	1.6E-04	2042	UNMIT
NW1	DPM	1.1E-05	2042	MIT
NW2	DPM	1.1E-05	2042	MIT
NW3	DPM	1.1E-05	2042	MIT
W1	DPM	1.6E-05	2042	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2042	MIT
W4	DPM	3.2E-05	2042	MIT
S1	DPM	1.6E-05	2042	MIT
S2	DPM	3.2E-05	2042	MIT
S3	DPM	4.8E-05	2042	MIT
E1	DPM	1.6E-05	2042	MIT
E3	DPM	1.6E-05	2042	MIT
E4	DPM	1.6E-05	2042	MIT
NW1	PM25	1.1E-05	2042	MIT
NW2	PM25	1.1E-05	2042	MIT
NW3	PM25	1.1E-05	2042	MIT
W1	PM25	1.6E-05	2042	MIT
W3	PM25	3.2E-05	2042	MIT
W4	PM25	3.2E-05	2042	MIT
S1	PM25	1.6E-05	2042	MIT
S2	PM25	3.2E-05	2042	MIT
S3	PM25	4.8E-05	2042	MIT
E1	PM25	1.6E-05	2042	MIT
E3	PM25	1.6E-05	2042	MIT
E4	PM25	1.6E-05	2042	MIT
NW1	DPM	1.1E-04	2043	UNMIT
NW2	DPM	1.1E-04	2043	UNMIT
NW3	DPM	1.1E-04	2043	UNMIT
W1	DPM	1.6E-04	2043	UNMIT
W3	DPM	3.2E-05	2043	UNMIT
W4	DPM	3.2E-05	2043	UNMIT
S1	DPM	1.6E-04	2043	UNMIT
S2	DPM	3.2E-05	2043	UNMIT
S3	DPM	1.9E-04	2043	UNMIT
E1	DPM	1.6E-04	2043	UNMIT
E3	DPM	1.6E-04	2043	UNMIT
E4	DPM	1.6E-04	2043	UNMIT
NW1	PM25	1.1E-04	2043	UNMIT
NW2	PM25	1.1E-04	2043	UNMIT
NW3	PM25	1.1E-04	2043	UNMIT
W1	PM25	1.6E-04	2043	UNMIT
W3	PM25	3.2E-05	2043	UNMIT
W4	PM25	3.2E-05	2043	UNMIT
S1	PM25	1.6E-04	2043	UNMIT
S2	PM25	3.2E-05	2043	UNMIT
S3	PM25	1.9E-04	2043	UNMIT
E1	PM25	1.6E-04	2043	UNMIT
E3	PM25	1.6E-04	2043	UNMIT
E4	PM25	1.6E-04	2043	UNMIT
NW1	DPM	1.1E-05	2043	MIT
NW2	DPM	1.1E-05	2043	MIT
NW3	DPM	1.1E-05	2043	MIT
W1	DPM	1.6E-05	2043	MIT
W3	DPM	3.2E-05	2043	MIT
W4	DPM	3.2E-05	2043	MIT
S1	DPM	1.6E-05	2043	MIT
S2	DPM	3.2E-05	2043	MIT
S3	DPM	4.8E-05	2043	MIT
E1	DPM	1.6E-05	2043	MIT
E3	DPM	1.6E-05	2043	MIT
E4	DPM	1.6E-05	2043	MIT
NW1	PM25	1.1E-05	2043	MIT
NW2	PM25	1.1E-05	2043	MIT
NW3	PM25	1.1E-05	2043	MIT
W1	PM25	1.6E-05	2043	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2043	MIT
W4	PM25	3.2E-05	2043	MIT
S1	PM25	1.6E-05	2043	MIT
S2	PM25	3.2E-05	2043	MIT
S3	PM25	4.8E-05	2043	MIT
E1	PM25	1.6E-05	2043	MIT
E3	PM25	1.6E-05	2043	MIT
E4	PM25	1.6E-05	2043	MIT
NW1	DPM	1.1E-04	2044	UNMIT
NW2	DPM	1.1E-04	2044	UNMIT
NW3	DPM	1.1E-04	2044	UNMIT
W1	DPM	1.6E-04	2044	UNMIT
W3	DPM	3.2E-05	2044	UNMIT
W4	DPM	3.2E-05	2044	UNMIT
S1	DPM	1.6E-04	2044	UNMIT
S2	DPM	3.2E-05	2044	UNMIT
S3	DPM	1.9E-04	2044	UNMIT
E1	DPM	1.6E-04	2044	UNMIT
E3	DPM	1.6E-04	2044	UNMIT
E4	DPM	1.6E-04	2044	UNMIT
NW1	PM25	1.1E-04	2044	UNMIT
NW2	PM25	1.1E-04	2044	UNMIT
NW3	PM25	1.1E-04	2044	UNMIT
W1	PM25	1.6E-04	2044	UNMIT
W3	PM25	3.2E-05	2044	UNMIT
W4	PM25	3.2E-05	2044	UNMIT
S1	PM25	1.6E-04	2044	UNMIT
S2	PM25	3.2E-05	2044	UNMIT
S3	PM25	1.9E-04	2044	UNMIT
E1	PM25	1.6E-04	2044	UNMIT
E3	PM25	1.6E-04	2044	UNMIT
E4	PM25	1.6E-04	2044	UNMIT
NW1	DPM	1.1E-05	2044	MIT
NW2	DPM	1.1E-05	2044	MIT
NW3	DPM	1.1E-05	2044	MIT
W1	DPM	1.6E-05	2044	MIT
W3	DPM	3.2E-05	2044	MIT
W4	DPM	3.2E-05	2044	MIT
S1	DPM	1.6E-05	2044	MIT
S2	DPM	3.2E-05	2044	MIT
S3	DPM	4.8E-05	2044	MIT
E1	DPM	1.6E-05	2044	MIT
E3	DPM	1.6E-05	2044	MIT
E4	DPM	1.6E-05	2044	MIT
NW1	PM25	1.1E-05	2044	MIT
NW2	PM25	1.1E-05	2044	MIT
NW3	PM25	1.1E-05	2044	MIT
W1	PM25	1.6E-05	2044	MIT
W3	PM25	3.2E-05	2044	MIT
W4	PM25	3.2E-05	2044	MIT
S1	PM25	1.6E-05	2044	MIT
S2	PM25	3.2E-05	2044	MIT
S3	PM25	4.8E-05	2044	MIT
E1	PM25	1.6E-05	2044	MIT
E3	PM25	1.6E-05	2044	MIT
E4	PM25	1.6E-05	2044	MIT
NW1	DPM	1.1E-04	2045	UNMIT
NW2	DPM	1.1E-04	2045	UNMIT
NW3	DPM	1.1E-04	2045	UNMIT
W1	DPM	1.6E-04	2045	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2045	UNMIT
W4	DPM	3.2E-05	2045	UNMIT
S1	DPM	1.6E-04	2045	UNMIT
S2	DPM	3.2E-05	2045	UNMIT
S3	DPM	1.9E-04	2045	UNMIT
E1	DPM	1.6E-04	2045	UNMIT
E3	DPM	1.6E-04	2045	UNMIT
E4	DPM	1.6E-04	2045	UNMIT
NW1	PM25	1.1E-04	2045	UNMIT
NW2	PM25	1.1E-04	2045	UNMIT
NW3	PM25	1.1E-04	2045	UNMIT
W1	PM25	1.6E-04	2045	UNMIT
W3	PM25	3.2E-05	2045	UNMIT
W4	PM25	3.2E-05	2045	UNMIT
S1	PM25	1.6E-04	2045	UNMIT
S2	PM25	3.2E-05	2045	UNMIT
S3	PM25	1.9E-04	2045	UNMIT
E1	PM25	1.6E-04	2045	UNMIT
E3	PM25	1.6E-04	2045	UNMIT
E4	PM25	1.6E-04	2045	UNMIT
NW1	DPM	1.1E-05	2045	MIT
NW2	DPM	1.1E-05	2045	MIT
NW3	DPM	1.1E-05	2045	MIT
W1	DPM	1.6E-05	2045	MIT
W3	DPM	3.2E-05	2045	MIT
W4	DPM	3.2E-05	2045	MIT
S1	DPM	1.6E-05	2045	MIT
S2	DPM	3.2E-05	2045	MIT
S3	DPM	4.8E-05	2045	MIT
E1	DPM	1.6E-05	2045	MIT
E3	DPM	1.6E-05	2045	MIT
E4	DPM	1.6E-05	2045	MIT
NW1	PM25	1.1E-05	2045	MIT
NW2	PM25	1.1E-05	2045	MIT
NW3	PM25	1.1E-05	2045	MIT
W1	PM25	1.6E-05	2045	MIT
W3	PM25	3.2E-05	2045	MIT
W4	PM25	3.2E-05	2045	MIT
S1	PM25	1.6E-05	2045	MIT
S2	PM25	3.2E-05	2045	MIT
S3	PM25	4.8E-05	2045	MIT
E1	PM25	1.6E-05	2045	MIT
E3	PM25	1.6E-05	2045	MIT
E4	PM25	1.6E-05	2045	MIT
NW1	DPM	1.1E-04	2046	UNMIT
NW2	DPM	1.1E-04	2046	UNMIT
NW3	DPM	1.1E-04	2046	UNMIT
W1	DPM	1.6E-04	2046	UNMIT
W3	DPM	3.2E-05	2046	UNMIT
W4	DPM	3.2E-05	2046	UNMIT
S1	DPM	1.6E-04	2046	UNMIT
S2	DPM	3.2E-05	2046	UNMIT
S3	DPM	1.9E-04	2046	UNMIT
E1	DPM	1.6E-04	2046	UNMIT
E3	DPM	1.6E-04	2046	UNMIT
E4	DPM	1.6E-04	2046	UNMIT
NW1	PM25	1.1E-04	2046	UNMIT
NW2	PM25	1.1E-04	2046	UNMIT
NW3	PM25	1.1E-04	2046	UNMIT
W1	PM25	1.6E-04	2046	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2046	UNMIT
W4	PM25	3.2E-05	2046	UNMIT
S1	PM25	1.6E-04	2046	UNMIT
S2	PM25	3.2E-05	2046	UNMIT
S3	PM25	1.9E-04	2046	UNMIT
E1	PM25	1.6E-04	2046	UNMIT
E3	PM25	1.6E-04	2046	UNMIT
E4	PM25	1.6E-04	2046	UNMIT
NW1	DPM	1.1E-05	2046	MIT
NW2	DPM	1.1E-05	2046	MIT
NW3	DPM	1.1E-05	2046	MIT
W1	DPM	1.6E-05	2046	MIT
W3	DPM	3.2E-05	2046	MIT
W4	DPM	3.2E-05	2046	MIT
S1	DPM	1.6E-05	2046	MIT
S2	DPM	3.2E-05	2046	MIT
S3	DPM	4.8E-05	2046	MIT
E1	DPM	1.6E-05	2046	MIT
E3	DPM	1.6E-05	2046	MIT
E4	DPM	1.6E-05	2046	MIT
NW1	PM25	1.1E-05	2046	MIT
NW2	PM25	1.1E-05	2046	MIT
NW3	PM25	1.1E-05	2046	MIT
W1	PM25	1.6E-05	2046	MIT
W3	PM25	3.2E-05	2046	MIT
W4	PM25	3.2E-05	2046	MIT
S1	PM25	1.6E-05	2046	MIT
S2	PM25	3.2E-05	2046	MIT
S3	PM25	4.8E-05	2046	MIT
E1	PM25	1.6E-05	2046	MIT
E3	PM25	1.6E-05	2046	MIT
E4	PM25	1.6E-05	2046	MIT
NW1	DPM	1.1E-04	2047	UNMIT
NW2	DPM	1.1E-04	2047	UNMIT
NW3	DPM	1.1E-04	2047	UNMIT
W1	DPM	1.6E-04	2047	UNMIT
W3	DPM	3.2E-05	2047	UNMIT
W4	DPM	3.2E-05	2047	UNMIT
S1	DPM	1.6E-04	2047	UNMIT
S2	DPM	3.2E-05	2047	UNMIT
S3	DPM	1.9E-04	2047	UNMIT
E1	DPM	1.6E-04	2047	UNMIT
E3	DPM	1.6E-04	2047	UNMIT
E4	DPM	1.6E-04	2047	UNMIT
NW1	PM25	1.1E-04	2047	UNMIT
NW2	PM25	1.1E-04	2047	UNMIT
NW3	PM25	1.1E-04	2047	UNMIT
W1	PM25	1.6E-04	2047	UNMIT
W3	PM25	3.2E-05	2047	UNMIT
W4	PM25	3.2E-05	2047	UNMIT
S1	PM25	1.6E-04	2047	UNMIT
S2	PM25	3.2E-05	2047	UNMIT
S3	PM25	1.9E-04	2047	UNMIT
E1	PM25	1.6E-04	2047	UNMIT
E3	PM25	1.6E-04	2047	UNMIT
E4	PM25	1.6E-04	2047	UNMIT
NW1	DPM	1.1E-05	2047	MIT
NW2	DPM	1.1E-05	2047	MIT
NW3	DPM	1.1E-05	2047	MIT
W1	DPM	1.6E-05	2047	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2047	MIT
W4	DPM	3.2E-05	2047	MIT
S1	DPM	1.6E-05	2047	MIT
S2	DPM	3.2E-05	2047	MIT
S3	DPM	4.8E-05	2047	MIT
E1	DPM	1.6E-05	2047	MIT
E3	DPM	1.6E-05	2047	MIT
E4	DPM	1.6E-05	2047	MIT
NW1	PM25	1.1E-05	2047	MIT
NW2	PM25	1.1E-05	2047	MIT
NW3	PM25	1.1E-05	2047	MIT
W1	PM25	1.6E-05	2047	MIT
W3	PM25	3.2E-05	2047	MIT
W4	PM25	3.2E-05	2047	MIT
S1	PM25	1.6E-05	2047	MIT
S2	PM25	3.2E-05	2047	MIT
S3	PM25	4.8E-05	2047	MIT
E1	PM25	1.6E-05	2047	MIT
E3	PM25	1.6E-05	2047	MIT
E4	PM25	1.6E-05	2047	MIT
NW1	DPM	1.1E-04	2048	UNMIT
NW2	DPM	1.1E-04	2048	UNMIT
NW3	DPM	1.1E-04	2048	UNMIT
W1	DPM	1.6E-04	2048	UNMIT
W3	DPM	3.2E-05	2048	UNMIT
W4	DPM	3.2E-05	2048	UNMIT
S1	DPM	1.6E-04	2048	UNMIT
S2	DPM	3.2E-05	2048	UNMIT
S3	DPM	1.9E-04	2048	UNMIT
E1	DPM	1.6E-04	2048	UNMIT
E3	DPM	1.6E-04	2048	UNMIT
E4	DPM	1.6E-04	2048	UNMIT
NW1	PM25	1.1E-04	2048	UNMIT
NW2	PM25	1.1E-04	2048	UNMIT
NW3	PM25	1.1E-04	2048	UNMIT
W1	PM25	1.6E-04	2048	UNMIT
W3	PM25	3.2E-05	2048	UNMIT
W4	PM25	3.2E-05	2048	UNMIT
S1	PM25	1.6E-04	2048	UNMIT
S2	PM25	3.2E-05	2048	UNMIT
S3	PM25	1.9E-04	2048	UNMIT
E1	PM25	1.6E-04	2048	UNMIT
E3	PM25	1.6E-04	2048	UNMIT
E4	PM25	1.6E-04	2048	UNMIT
NW1	DPM	1.1E-05	2048	MIT
NW2	DPM	1.1E-05	2048	MIT
NW3	DPM	1.1E-05	2048	MIT
W1	DPM	1.6E-05	2048	MIT
W3	DPM	3.2E-05	2048	MIT
W4	DPM	3.2E-05	2048	MIT
S1	DPM	1.6E-05	2048	MIT
S2	DPM	3.2E-05	2048	MIT
S3	DPM	4.8E-05	2048	MIT
E1	DPM	1.6E-05	2048	MIT
E3	DPM	1.6E-05	2048	MIT
E4	DPM	1.6E-05	2048	MIT
NW1	PM25	1.1E-05	2048	MIT
NW2	PM25	1.1E-05	2048	MIT
NW3	PM25	1.1E-05	2048	MIT
W1	PM25	1.6E-05	2048	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2048	MIT
W4	PM25	3.2E-05	2048	MIT
S1	PM25	1.6E-05	2048	MIT
S2	PM25	3.2E-05	2048	MIT
S3	PM25	4.8E-05	2048	MIT
E1	PM25	1.6E-05	2048	MIT
E3	PM25	1.6E-05	2048	MIT
E4	PM25	1.6E-05	2048	MIT
NW1	DPM	1.1E-04	2049	UNMIT
NW2	DPM	1.1E-04	2049	UNMIT
NW3	DPM	1.1E-04	2049	UNMIT
W1	DPM	1.6E-04	2049	UNMIT
W3	DPM	3.2E-05	2049	UNMIT
W4	DPM	3.2E-05	2049	UNMIT
S1	DPM	1.6E-04	2049	UNMIT
S2	DPM	3.2E-05	2049	UNMIT
S3	DPM	1.9E-04	2049	UNMIT
E1	DPM	1.6E-04	2049	UNMIT
E3	DPM	1.6E-04	2049	UNMIT
E4	DPM	1.6E-04	2049	UNMIT
NW1	PM25	1.1E-04	2049	UNMIT
NW2	PM25	1.1E-04	2049	UNMIT
NW3	PM25	1.1E-04	2049	UNMIT
W1	PM25	1.6E-04	2049	UNMIT
W3	PM25	3.2E-05	2049	UNMIT
W4	PM25	3.2E-05	2049	UNMIT
S1	PM25	1.6E-04	2049	UNMIT
S2	PM25	3.2E-05	2049	UNMIT
S3	PM25	1.9E-04	2049	UNMIT
E1	PM25	1.6E-04	2049	UNMIT
E3	PM25	1.6E-04	2049	UNMIT
E4	PM25	1.6E-04	2049	UNMIT
NW1	DPM	1.1E-05	2049	MIT
NW2	DPM	1.1E-05	2049	MIT
NW3	DPM	1.1E-05	2049	MIT
W1	DPM	1.6E-05	2049	MIT
W3	DPM	3.2E-05	2049	MIT
W4	DPM	3.2E-05	2049	MIT
S1	DPM	1.6E-05	2049	MIT
S2	DPM	3.2E-05	2049	MIT
S3	DPM	4.8E-05	2049	MIT
E1	DPM	1.6E-05	2049	MIT
E3	DPM	1.6E-05	2049	MIT
E4	DPM	1.6E-05	2049	MIT
NW1	PM25	1.1E-05	2049	MIT
NW2	PM25	1.1E-05	2049	MIT
NW3	PM25	1.1E-05	2049	MIT
W1	PM25	1.6E-05	2049	MIT
W3	PM25	3.2E-05	2049	MIT
W4	PM25	3.2E-05	2049	MIT
S1	PM25	1.6E-05	2049	MIT
S2	PM25	3.2E-05	2049	MIT
S3	PM25	4.8E-05	2049	MIT
E1	PM25	1.6E-05	2049	MIT
E3	PM25	1.6E-05	2049	MIT
E4	PM25	1.6E-05	2049	MIT
NW1	DPM	1.1E-04	2050	UNMIT
NW2	DPM	1.1E-04	2050	UNMIT
NW3	DPM	1.1E-04	2050	UNMIT
W1	DPM	1.6E-04	2050	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2050	UNMIT
W4	DPM	3.2E-05	2050	UNMIT
S1	DPM	1.6E-04	2050	UNMIT
S2	DPM	3.2E-05	2050	UNMIT
S3	DPM	1.9E-04	2050	UNMIT
E1	DPM	1.6E-04	2050	UNMIT
E3	DPM	1.6E-04	2050	UNMIT
E4	DPM	1.6E-04	2050	UNMIT
NW1	PM25	1.1E-04	2050	UNMIT
NW2	PM25	1.1E-04	2050	UNMIT
NW3	PM25	1.1E-04	2050	UNMIT
W1	PM25	1.6E-04	2050	UNMIT
W3	PM25	3.2E-05	2050	UNMIT
W4	PM25	3.2E-05	2050	UNMIT
S1	PM25	1.6E-04	2050	UNMIT
S2	PM25	3.2E-05	2050	UNMIT
S3	PM25	1.9E-04	2050	UNMIT
E1	PM25	1.6E-04	2050	UNMIT
E3	PM25	1.6E-04	2050	UNMIT
E4	PM25	1.6E-04	2050	UNMIT
NW1	DPM	1.1E-05	2050	MIT
NW2	DPM	1.1E-05	2050	MIT
NW3	DPM	1.1E-05	2050	MIT
W1	DPM	1.6E-05	2050	MIT
W3	DPM	3.2E-05	2050	MIT
W4	DPM	3.2E-05	2050	MIT
S1	DPM	1.6E-05	2050	MIT
S2	DPM	3.2E-05	2050	MIT
S3	DPM	4.8E-05	2050	MIT
E1	DPM	1.6E-05	2050	MIT
E3	DPM	1.6E-05	2050	MIT
E4	DPM	1.6E-05	2050	MIT
NW1	PM25	1.1E-05	2050	MIT
NW2	PM25	1.1E-05	2050	MIT
NW3	PM25	1.1E-05	2050	MIT
W1	PM25	1.6E-05	2050	MIT
W3	PM25	3.2E-05	2050	MIT
W4	PM25	3.2E-05	2050	MIT
S1	PM25	1.6E-05	2050	MIT
S2	PM25	3.2E-05	2050	MIT
S3	PM25	4.8E-05	2050	MIT
E1	PM25	1.6E-05	2050	MIT
E3	PM25	1.6E-05	2050	MIT
E4	PM25	1.6E-05	2050	MIT
NW1	DPM	1.1E-04	2051	UNMIT
NW2	DPM	1.1E-04	2051	UNMIT
NW3	DPM	1.1E-04	2051	UNMIT
W1	DPM	1.6E-04	2051	UNMIT
W3	DPM	3.2E-05	2051	UNMIT
W4	DPM	3.2E-05	2051	UNMIT
S1	DPM	1.6E-04	2051	UNMIT
S2	DPM	3.2E-05	2051	UNMIT
S3	DPM	1.9E-04	2051	UNMIT
E1	DPM	1.6E-04	2051	UNMIT
E3	DPM	1.6E-04	2051	UNMIT
E4	DPM	1.6E-04	2051	UNMIT
NW1	PM25	1.1E-04	2051	UNMIT
NW2	PM25	1.1E-04	2051	UNMIT
NW3	PM25	1.1E-04	2051	UNMIT
W1	PM25	1.6E-04	2051	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2051	UNMIT
W4	PM25	3.2E-05	2051	UNMIT
S1	PM25	1.6E-04	2051	UNMIT
S2	PM25	3.2E-05	2051	UNMIT
S3	PM25	1.9E-04	2051	UNMIT
E1	PM25	1.6E-04	2051	UNMIT
E3	PM25	1.6E-04	2051	UNMIT
E4	PM25	1.6E-04	2051	UNMIT
NW1	DPM	1.1E-05	2051	MIT
NW2	DPM	1.1E-05	2051	MIT
NW3	DPM	1.1E-05	2051	MIT
W1	DPM	1.6E-05	2051	MIT
W3	DPM	3.2E-05	2051	MIT
W4	DPM	3.2E-05	2051	MIT
S1	DPM	1.6E-05	2051	MIT
S2	DPM	3.2E-05	2051	MIT
S3	DPM	4.8E-05	2051	MIT
E1	DPM	1.6E-05	2051	MIT
E3	DPM	1.6E-05	2051	MIT
E4	DPM	1.6E-05	2051	MIT
NW1	PM25	1.1E-05	2051	MIT
NW2	PM25	1.1E-05	2051	MIT
NW3	PM25	1.1E-05	2051	MIT
W1	PM25	1.6E-05	2051	MIT
W3	PM25	3.2E-05	2051	MIT
W4	PM25	3.2E-05	2051	MIT
S1	PM25	1.6E-05	2051	MIT
S2	PM25	3.2E-05	2051	MIT
S3	PM25	4.8E-05	2051	MIT
E1	PM25	1.6E-05	2051	MIT
E3	PM25	1.6E-05	2051	MIT
E4	PM25	1.6E-05	2051	MIT
NW1	DPM	1.1E-04	2052	UNMIT
NW2	DPM	1.1E-04	2052	UNMIT
NW3	DPM	1.1E-04	2052	UNMIT
W1	DPM	1.6E-04	2052	UNMIT
W3	DPM	3.2E-05	2052	UNMIT
W4	DPM	3.2E-05	2052	UNMIT
S1	DPM	1.6E-04	2052	UNMIT
S2	DPM	3.2E-05	2052	UNMIT
S3	DPM	1.9E-04	2052	UNMIT
E1	DPM	1.6E-04	2052	UNMIT
E3	DPM	1.6E-04	2052	UNMIT
E4	DPM	1.6E-04	2052	UNMIT
NW1	PM25	1.1E-04	2052	UNMIT
NW2	PM25	1.1E-04	2052	UNMIT
NW3	PM25	1.1E-04	2052	UNMIT
W1	PM25	1.6E-04	2052	UNMIT
W3	PM25	3.2E-05	2052	UNMIT
W4	PM25	3.2E-05	2052	UNMIT
S1	PM25	1.6E-04	2052	UNMIT
S2	PM25	3.2E-05	2052	UNMIT
S3	PM25	1.9E-04	2052	UNMIT
E1	PM25	1.6E-04	2052	UNMIT
E3	PM25	1.6E-04	2052	UNMIT
E4	PM25	1.6E-04	2052	UNMIT
NW1	DPM	1.1E-05	2052	MIT
NW2	DPM	1.1E-05	2052	MIT
NW3	DPM	1.1E-05	2052	MIT
W1	DPM	1.6E-05	2052	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2052	MIT
W4	DPM	3.2E-05	2052	MIT
S1	DPM	1.6E-05	2052	MIT
S2	DPM	3.2E-05	2052	MIT
S3	DPM	4.8E-05	2052	MIT
E1	DPM	1.6E-05	2052	MIT
E3	DPM	1.6E-05	2052	MIT
E4	DPM	1.6E-05	2052	MIT
NW1	PM25	1.1E-05	2052	MIT
NW2	PM25	1.1E-05	2052	MIT
NW3	PM25	1.1E-05	2052	MIT
W1	PM25	1.6E-05	2052	MIT
W3	PM25	3.2E-05	2052	MIT
W4	PM25	3.2E-05	2052	MIT
S1	PM25	1.6E-05	2052	MIT
S2	PM25	3.2E-05	2052	MIT
S3	PM25	4.8E-05	2052	MIT
E1	PM25	1.6E-05	2052	MIT
E3	PM25	1.6E-05	2052	MIT
E4	PM25	1.6E-05	2052	MIT
NW1	DPM	1.1E-04	2053	UNMIT
NW2	DPM	1.1E-04	2053	UNMIT
NW3	DPM	1.1E-04	2053	UNMIT
W1	DPM	1.6E-04	2053	UNMIT
W3	DPM	3.2E-05	2053	UNMIT
W4	DPM	3.2E-05	2053	UNMIT
S1	DPM	1.6E-04	2053	UNMIT
S2	DPM	3.2E-05	2053	UNMIT
S3	DPM	1.9E-04	2053	UNMIT
E1	DPM	1.6E-04	2053	UNMIT
E3	DPM	1.6E-04	2053	UNMIT
E4	DPM	1.6E-04	2053	UNMIT
NW1	PM25	1.1E-04	2053	UNMIT
NW2	PM25	1.1E-04	2053	UNMIT
NW3	PM25	1.1E-04	2053	UNMIT
W1	PM25	1.6E-04	2053	UNMIT
W3	PM25	3.2E-05	2053	UNMIT
W4	PM25	3.2E-05	2053	UNMIT
S1	PM25	1.6E-04	2053	UNMIT
S2	PM25	3.2E-05	2053	UNMIT
S3	PM25	1.9E-04	2053	UNMIT
E1	PM25	1.6E-04	2053	UNMIT
E3	PM25	1.6E-04	2053	UNMIT
E4	PM25	1.6E-04	2053	UNMIT
NW1	DPM	1.1E-05	2053	MIT
NW2	DPM	1.1E-05	2053	MIT
NW3	DPM	1.1E-05	2053	MIT
W1	DPM	1.6E-05	2053	MIT
W3	DPM	3.2E-05	2053	MIT
W4	DPM	3.2E-05	2053	MIT
S1	DPM	1.6E-05	2053	MIT
S2	DPM	3.2E-05	2053	MIT
S3	DPM	4.8E-05	2053	MIT
E1	DPM	1.6E-05	2053	MIT
E3	DPM	1.6E-05	2053	MIT
E4	DPM	1.6E-05	2053	MIT
NW1	PM25	1.1E-05	2053	MIT
NW2	PM25	1.1E-05	2053	MIT
NW3	PM25	1.1E-05	2053	MIT
W1	PM25	1.6E-05	2053	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2053	MIT
W4	PM25	3.2E-05	2053	MIT
S1	PM25	1.6E-05	2053	MIT
S2	PM25	3.2E-05	2053	MIT
S3	PM25	4.8E-05	2053	MIT
E1	PM25	1.6E-05	2053	MIT
E3	PM25	1.6E-05	2053	MIT
E4	PM25	1.6E-05	2053	MIT
NW1	DPM	1.1E-04	2054	UNMIT
NW2	DPM	1.1E-04	2054	UNMIT
NW3	DPM	1.1E-04	2054	UNMIT
W1	DPM	1.6E-04	2054	UNMIT
W3	DPM	3.2E-05	2054	UNMIT
W4	DPM	3.2E-05	2054	UNMIT
S1	DPM	1.6E-04	2054	UNMIT
S2	DPM	3.2E-05	2054	UNMIT
S3	DPM	1.9E-04	2054	UNMIT
E1	DPM	1.6E-04	2054	UNMIT
E3	DPM	1.6E-04	2054	UNMIT
E4	DPM	1.6E-04	2054	UNMIT
NW1	PM25	1.1E-04	2054	UNMIT
NW2	PM25	1.1E-04	2054	UNMIT
NW3	PM25	1.1E-04	2054	UNMIT
W1	PM25	1.6E-04	2054	UNMIT
W3	PM25	3.2E-05	2054	UNMIT
W4	PM25	3.2E-05	2054	UNMIT
S1	PM25	1.6E-04	2054	UNMIT
S2	PM25	3.2E-05	2054	UNMIT
S3	PM25	1.9E-04	2054	UNMIT
E1	PM25	1.6E-04	2054	UNMIT
E3	PM25	1.6E-04	2054	UNMIT
E4	PM25	1.6E-04	2054	UNMIT
NW1	DPM	1.1E-05	2054	MIT
NW2	DPM	1.1E-05	2054	MIT
NW3	DPM	1.1E-05	2054	MIT
W1	DPM	1.6E-05	2054	MIT
W3	DPM	3.2E-05	2054	MIT
W4	DPM	3.2E-05	2054	MIT
S1	DPM	1.6E-05	2054	MIT
S2	DPM	3.2E-05	2054	MIT
S3	DPM	4.8E-05	2054	MIT
E1	DPM	1.6E-05	2054	MIT
E3	DPM	1.6E-05	2054	MIT
E4	DPM	1.6E-05	2054	MIT
NW1	PM25	1.1E-05	2054	MIT
NW2	PM25	1.1E-05	2054	MIT
NW3	PM25	1.1E-05	2054	MIT
W1	PM25	1.6E-05	2054	MIT
W3	PM25	3.2E-05	2054	MIT
W4	PM25	3.2E-05	2054	MIT
S1	PM25	1.6E-05	2054	MIT
S2	PM25	3.2E-05	2054	MIT
S3	PM25	4.8E-05	2054	MIT
E1	PM25	1.6E-05	2054	MIT
E3	PM25	1.6E-05	2054	MIT
E4	PM25	1.6E-05	2054	MIT
NW1	DPM	1.1E-04	2055	UNMIT
NW2	DPM	1.1E-04	2055	UNMIT
NW3	DPM	1.1E-04	2055	UNMIT
W1	DPM	1.6E-04	2055	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2055	UNMIT
W4	DPM	3.2E-05	2055	UNMIT
S1	DPM	1.6E-04	2055	UNMIT
S2	DPM	3.2E-05	2055	UNMIT
S3	DPM	1.9E-04	2055	UNMIT
E1	DPM	1.6E-04	2055	UNMIT
E3	DPM	1.6E-04	2055	UNMIT
E4	DPM	1.6E-04	2055	UNMIT
NW1	PM25	1.1E-04	2055	UNMIT
NW2	PM25	1.1E-04	2055	UNMIT
NW3	PM25	1.1E-04	2055	UNMIT
W1	PM25	1.6E-04	2055	UNMIT
W3	PM25	3.2E-05	2055	UNMIT
W4	PM25	3.2E-05	2055	UNMIT
S1	PM25	1.6E-04	2055	UNMIT
S2	PM25	3.2E-05	2055	UNMIT
S3	PM25	1.9E-04	2055	UNMIT
E1	PM25	1.6E-04	2055	UNMIT
E3	PM25	1.6E-04	2055	UNMIT
E4	PM25	1.6E-04	2055	UNMIT
NW1	DPM	1.1E-05	2055	MIT
NW2	DPM	1.1E-05	2055	MIT
NW3	DPM	1.1E-05	2055	MIT
W1	DPM	1.6E-05	2055	MIT
W3	DPM	3.2E-05	2055	MIT
W4	DPM	3.2E-05	2055	MIT
S1	DPM	1.6E-05	2055	MIT
S2	DPM	3.2E-05	2055	MIT
S3	DPM	4.8E-05	2055	MIT
E1	DPM	1.6E-05	2055	MIT
E3	DPM	1.6E-05	2055	MIT
E4	DPM	1.6E-05	2055	MIT
NW1	PM25	1.1E-05	2055	MIT
NW2	PM25	1.1E-05	2055	MIT
NW3	PM25	1.1E-05	2055	MIT
W1	PM25	1.6E-05	2055	MIT
W3	PM25	3.2E-05	2055	MIT
W4	PM25	3.2E-05	2055	MIT
S1	PM25	1.6E-05	2055	MIT
S2	PM25	3.2E-05	2055	MIT
S3	PM25	4.8E-05	2055	MIT
E1	PM25	1.6E-05	2055	MIT
E3	PM25	1.6E-05	2055	MIT
E4	PM25	1.6E-05	2055	MIT
NW1	DPM	1.1E-04	2056	UNMIT
NW2	DPM	1.1E-04	2056	UNMIT
NW3	DPM	1.1E-04	2056	UNMIT
W1	DPM	1.6E-04	2056	UNMIT
W3	DPM	3.2E-05	2056	UNMIT
W4	DPM	3.2E-05	2056	UNMIT
S1	DPM	1.6E-04	2056	UNMIT
S2	DPM	3.2E-05	2056	UNMIT
S3	DPM	1.9E-04	2056	UNMIT
E1	DPM	1.6E-04	2056	UNMIT
E3	DPM	1.6E-04	2056	UNMIT
E4	DPM	1.6E-04	2056	UNMIT
NW1	PM25	1.1E-04	2056	UNMIT
NW2	PM25	1.1E-04	2056	UNMIT
NW3	PM25	1.1E-04	2056	UNMIT
W1	PM25	1.6E-04	2056	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2056	UNMIT
W4	PM25	3.2E-05	2056	UNMIT
S1	PM25	1.6E-04	2056	UNMIT
S2	PM25	3.2E-05	2056	UNMIT
S3	PM25	1.9E-04	2056	UNMIT
E1	PM25	1.6E-04	2056	UNMIT
E3	PM25	1.6E-04	2056	UNMIT
E4	PM25	1.6E-04	2056	UNMIT
NW1	DPM	1.1E-05	2056	MIT
NW2	DPM	1.1E-05	2056	MIT
NW3	DPM	1.1E-05	2056	MIT
W1	DPM	1.6E-05	2056	MIT
W3	DPM	3.2E-05	2056	MIT
W4	DPM	3.2E-05	2056	MIT
S1	DPM	1.6E-05	2056	MIT
S2	DPM	3.2E-05	2056	MIT
S3	DPM	4.8E-05	2056	MIT
E1	DPM	1.6E-05	2056	MIT
E3	DPM	1.6E-05	2056	MIT
E4	DPM	1.6E-05	2056	MIT
NW1	PM25	1.1E-05	2056	MIT
NW2	PM25	1.1E-05	2056	MIT
NW3	PM25	1.1E-05	2056	MIT
W1	PM25	1.6E-05	2056	MIT
W3	PM25	3.2E-05	2056	MIT
W4	PM25	3.2E-05	2056	MIT
S1	PM25	1.6E-05	2056	MIT
S2	PM25	3.2E-05	2056	MIT
S3	PM25	4.8E-05	2056	MIT
E1	PM25	1.6E-05	2056	MIT
E3	PM25	1.6E-05	2056	MIT
E4	PM25	1.6E-05	2056	MIT
NW1	DPM	1.1E-04	2057	UNMIT
NW2	DPM	1.1E-04	2057	UNMIT
NW3	DPM	1.1E-04	2057	UNMIT
W1	DPM	1.6E-04	2057	UNMIT
W3	DPM	3.2E-05	2057	UNMIT
W4	DPM	3.2E-05	2057	UNMIT
S1	DPM	1.6E-04	2057	UNMIT
S2	DPM	3.2E-05	2057	UNMIT
S3	DPM	1.9E-04	2057	UNMIT
E1	DPM	1.6E-04	2057	UNMIT
E3	DPM	1.6E-04	2057	UNMIT
E4	DPM	1.6E-04	2057	UNMIT
NW1	PM25	1.1E-04	2057	UNMIT
NW2	PM25	1.1E-04	2057	UNMIT
NW3	PM25	1.1E-04	2057	UNMIT
W1	PM25	1.6E-04	2057	UNMIT
W3	PM25	3.2E-05	2057	UNMIT
W4	PM25	3.2E-05	2057	UNMIT
S1	PM25	1.6E-04	2057	UNMIT
S2	PM25	3.2E-05	2057	UNMIT
S3	PM25	1.9E-04	2057	UNMIT
E1	PM25	1.6E-04	2057	UNMIT
E3	PM25	1.6E-04	2057	UNMIT
E4	PM25	1.6E-04	2057	UNMIT
NW1	DPM	1.1E-05	2057	MIT
NW2	DPM	1.1E-05	2057	MIT
NW3	DPM	1.1E-05	2057	MIT
W1	DPM	1.6E-05	2057	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2057	MIT
W4	DPM	3.2E-05	2057	MIT
S1	DPM	1.6E-05	2057	MIT
S2	DPM	3.2E-05	2057	MIT
S3	DPM	4.8E-05	2057	MIT
E1	DPM	1.6E-05	2057	MIT
E3	DPM	1.6E-05	2057	MIT
E4	DPM	1.6E-05	2057	MIT
NW1	PM25	1.1E-05	2057	MIT
NW2	PM25	1.1E-05	2057	MIT
NW3	PM25	1.1E-05	2057	MIT
W1	PM25	1.6E-05	2057	MIT
W3	PM25	3.2E-05	2057	MIT
W4	PM25	3.2E-05	2057	MIT
S1	PM25	1.6E-05	2057	MIT
S2	PM25	3.2E-05	2057	MIT
S3	PM25	4.8E-05	2057	MIT
E1	PM25	1.6E-05	2057	MIT
E3	PM25	1.6E-05	2057	MIT
E4	PM25	1.6E-05	2057	MIT
NW1	DPM	1.1E-04	2058	UNMIT
NW2	DPM	1.1E-04	2058	UNMIT
NW3	DPM	1.1E-04	2058	UNMIT
W1	DPM	1.6E-04	2058	UNMIT
W3	DPM	3.2E-05	2058	UNMIT
W4	DPM	3.2E-05	2058	UNMIT
S1	DPM	1.6E-04	2058	UNMIT
S2	DPM	3.2E-05	2058	UNMIT
S3	DPM	1.9E-04	2058	UNMIT
E1	DPM	1.6E-04	2058	UNMIT
E3	DPM	1.6E-04	2058	UNMIT
E4	DPM	1.6E-04	2058	UNMIT
NW1	PM25	1.1E-04	2058	UNMIT
NW2	PM25	1.1E-04	2058	UNMIT
NW3	PM25	1.1E-04	2058	UNMIT
W1	PM25	1.6E-04	2058	UNMIT
W3	PM25	3.2E-05	2058	UNMIT
W4	PM25	3.2E-05	2058	UNMIT
S1	PM25	1.6E-04	2058	UNMIT
S2	PM25	3.2E-05	2058	UNMIT
S3	PM25	1.9E-04	2058	UNMIT
E1	PM25	1.6E-04	2058	UNMIT
E3	PM25	1.6E-04	2058	UNMIT
E4	PM25	1.6E-04	2058	UNMIT
NW1	DPM	1.1E-05	2058	MIT
NW2	DPM	1.1E-05	2058	MIT
NW3	DPM	1.1E-05	2058	MIT
W1	DPM	1.6E-05	2058	MIT
W3	DPM	3.2E-05	2058	MIT
W4	DPM	3.2E-05	2058	MIT
S1	DPM	1.6E-05	2058	MIT
S2	DPM	3.2E-05	2058	MIT
S3	DPM	4.8E-05	2058	MIT
E1	DPM	1.6E-05	2058	MIT
E3	DPM	1.6E-05	2058	MIT
E4	DPM	1.6E-05	2058	MIT
NW1	PM25	1.1E-05	2058	MIT
NW2	PM25	1.1E-05	2058	MIT
NW3	PM25	1.1E-05	2058	MIT
W1	PM25	1.6E-05	2058	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2058	MIT
W4	PM25	3.2E-05	2058	MIT
S1	PM25	1.6E-05	2058	MIT
S2	PM25	3.2E-05	2058	MIT
S3	PM25	4.8E-05	2058	MIT
E1	PM25	1.6E-05	2058	MIT
E3	PM25	1.6E-05	2058	MIT
E4	PM25	1.6E-05	2058	MIT
NW1	DPM	1.1E-04	2059	UNMIT
NW2	DPM	1.1E-04	2059	UNMIT
NW3	DPM	1.1E-04	2059	UNMIT
W1	DPM	1.6E-04	2059	UNMIT
W3	DPM	3.2E-05	2059	UNMIT
W4	DPM	3.2E-05	2059	UNMIT
S1	DPM	1.6E-04	2059	UNMIT
S2	DPM	3.2E-05	2059	UNMIT
S3	DPM	1.9E-04	2059	UNMIT
E1	DPM	1.6E-04	2059	UNMIT
E3	DPM	1.6E-04	2059	UNMIT
E4	DPM	1.6E-04	2059	UNMIT
NW1	PM25	1.1E-04	2059	UNMIT
NW2	PM25	1.1E-04	2059	UNMIT
NW3	PM25	1.1E-04	2059	UNMIT
W1	PM25	1.6E-04	2059	UNMIT
W3	PM25	3.2E-05	2059	UNMIT
W4	PM25	3.2E-05	2059	UNMIT
S1	PM25	1.6E-04	2059	UNMIT
S2	PM25	3.2E-05	2059	UNMIT
S3	PM25	1.9E-04	2059	UNMIT
E1	PM25	1.6E-04	2059	UNMIT
E3	PM25	1.6E-04	2059	UNMIT
E4	PM25	1.6E-04	2059	UNMIT
NW1	DPM	1.1E-05	2059	MIT
NW2	DPM	1.1E-05	2059	MIT
NW3	DPM	1.1E-05	2059	MIT
W1	DPM	1.6E-05	2059	MIT
W3	DPM	3.2E-05	2059	MIT
W4	DPM	3.2E-05	2059	MIT
S1	DPM	1.6E-05	2059	MIT
S2	DPM	3.2E-05	2059	MIT
S3	DPM	4.8E-05	2059	MIT
E1	DPM	1.6E-05	2059	MIT
E3	DPM	1.6E-05	2059	MIT
E4	DPM	1.6E-05	2059	MIT
NW1	PM25	1.1E-05	2059	MIT
NW2	PM25	1.1E-05	2059	MIT
NW3	PM25	1.1E-05	2059	MIT
W1	PM25	1.6E-05	2059	MIT
W3	PM25	3.2E-05	2059	MIT
W4	PM25	3.2E-05	2059	MIT
S1	PM25	1.6E-05	2059	MIT
S2	PM25	3.2E-05	2059	MIT
S3	PM25	4.8E-05	2059	MIT
E1	PM25	1.6E-05	2059	MIT
E3	PM25	1.6E-05	2059	MIT
E4	PM25	1.6E-05	2059	MIT
NW1	DPM	1.1E-04	2060	UNMIT
NW2	DPM	1.1E-04	2060	UNMIT
NW3	DPM	1.1E-04	2060	UNMIT
W1	DPM	1.6E-04	2060	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2060	UNMIT
W4	DPM	3.2E-05	2060	UNMIT
S1	DPM	1.6E-04	2060	UNMIT
S2	DPM	3.2E-05	2060	UNMIT
S3	DPM	1.9E-04	2060	UNMIT
E1	DPM	1.6E-04	2060	UNMIT
E3	DPM	1.6E-04	2060	UNMIT
E4	DPM	1.6E-04	2060	UNMIT
NW1	PM25	1.1E-04	2060	UNMIT
NW2	PM25	1.1E-04	2060	UNMIT
NW3	PM25	1.1E-04	2060	UNMIT
W1	PM25	1.6E-04	2060	UNMIT
W3	PM25	3.2E-05	2060	UNMIT
W4	PM25	3.2E-05	2060	UNMIT
S1	PM25	1.6E-04	2060	UNMIT
S2	PM25	3.2E-05	2060	UNMIT
S3	PM25	1.9E-04	2060	UNMIT
E1	PM25	1.6E-04	2060	UNMIT
E3	PM25	1.6E-04	2060	UNMIT
E4	PM25	1.6E-04	2060	UNMIT
NW1	DPM	1.1E-05	2060	MIT
NW2	DPM	1.1E-05	2060	MIT
NW3	DPM	1.1E-05	2060	MIT
W1	DPM	1.6E-05	2060	MIT
W3	DPM	3.2E-05	2060	MIT
W4	DPM	3.2E-05	2060	MIT
S1	DPM	1.6E-05	2060	MIT
S2	DPM	3.2E-05	2060	MIT
S3	DPM	4.8E-05	2060	MIT
E1	DPM	1.6E-05	2060	MIT
E3	DPM	1.6E-05	2060	MIT
E4	DPM	1.6E-05	2060	MIT
NW1	PM25	1.1E-05	2060	MIT
NW2	PM25	1.1E-05	2060	MIT
NW3	PM25	1.1E-05	2060	MIT
W1	PM25	1.6E-05	2060	MIT
W3	PM25	3.2E-05	2060	MIT
W4	PM25	3.2E-05	2060	MIT
S1	PM25	1.6E-05	2060	MIT
S2	PM25	3.2E-05	2060	MIT
S3	PM25	4.8E-05	2060	MIT
E1	PM25	1.6E-05	2060	MIT
E3	PM25	1.6E-05	2060	MIT
E4	PM25	1.6E-05	2060	MIT
NW1	DPM	1.1E-04	2061	UNMIT
NW2	DPM	1.1E-04	2061	UNMIT
NW3	DPM	1.1E-04	2061	UNMIT
W1	DPM	1.6E-04	2061	UNMIT
W3	DPM	3.2E-05	2061	UNMIT
W4	DPM	3.2E-05	2061	UNMIT
S1	DPM	1.6E-04	2061	UNMIT
S2	DPM	3.2E-05	2061	UNMIT
S3	DPM	1.9E-04	2061	UNMIT
E1	DPM	1.6E-04	2061	UNMIT
E3	DPM	1.6E-04	2061	UNMIT
E4	DPM	1.6E-04	2061	UNMIT
NW1	PM25	1.1E-04	2061	UNMIT
NW2	PM25	1.1E-04	2061	UNMIT
NW3	PM25	1.1E-04	2061	UNMIT
W1	PM25	1.6E-04	2061	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2061	UNMIT
W4	PM25	3.2E-05	2061	UNMIT
S1	PM25	1.6E-04	2061	UNMIT
S2	PM25	3.2E-05	2061	UNMIT
S3	PM25	1.9E-04	2061	UNMIT
E1	PM25	1.6E-04	2061	UNMIT
E3	PM25	1.6E-04	2061	UNMIT
E4	PM25	1.6E-04	2061	UNMIT
NW1	DPM	1.1E-05	2061	MIT
NW2	DPM	1.1E-05	2061	MIT
NW3	DPM	1.1E-05	2061	MIT
W1	DPM	1.6E-05	2061	MIT
W3	DPM	3.2E-05	2061	MIT
W4	DPM	3.2E-05	2061	MIT
S1	DPM	1.6E-05	2061	MIT
S2	DPM	3.2E-05	2061	MIT
S3	DPM	4.8E-05	2061	MIT
E1	DPM	1.6E-05	2061	MIT
E3	DPM	1.6E-05	2061	MIT
E4	DPM	1.6E-05	2061	MIT
NW1	PM25	1.1E-05	2061	MIT
NW2	PM25	1.1E-05	2061	MIT
NW3	PM25	1.1E-05	2061	MIT
W1	PM25	1.6E-05	2061	MIT
W3	PM25	3.2E-05	2061	MIT
W4	PM25	3.2E-05	2061	MIT
S1	PM25	1.6E-05	2061	MIT
S2	PM25	3.2E-05	2061	MIT
S3	PM25	4.8E-05	2061	MIT
E1	PM25	1.6E-05	2061	MIT
E3	PM25	1.6E-05	2061	MIT
E4	PM25	1.6E-05	2061	MIT
NW1	DPM	1.1E-04	2062	UNMIT
NW2	DPM	1.1E-04	2062	UNMIT
NW3	DPM	1.1E-04	2062	UNMIT
W1	DPM	1.6E-04	2062	UNMIT
W3	DPM	3.2E-05	2062	UNMIT
W4	DPM	3.2E-05	2062	UNMIT
S1	DPM	1.6E-04	2062	UNMIT
S2	DPM	3.2E-05	2062	UNMIT
S3	DPM	1.9E-04	2062	UNMIT
E1	DPM	1.6E-04	2062	UNMIT
E3	DPM	1.6E-04	2062	UNMIT
E4	DPM	1.6E-04	2062	UNMIT
NW1	PM25	1.1E-04	2062	UNMIT
NW2	PM25	1.1E-04	2062	UNMIT
NW3	PM25	1.1E-04	2062	UNMIT
W1	PM25	1.6E-04	2062	UNMIT
W3	PM25	3.2E-05	2062	UNMIT
W4	PM25	3.2E-05	2062	UNMIT
S1	PM25	1.6E-04	2062	UNMIT
S2	PM25	3.2E-05	2062	UNMIT
S3	PM25	1.9E-04	2062	UNMIT
E1	PM25	1.6E-04	2062	UNMIT
E3	PM25	1.6E-04	2062	UNMIT
E4	PM25	1.6E-04	2062	UNMIT
NW1	DPM	1.1E-05	2062	MIT
NW2	DPM	1.1E-05	2062	MIT
NW3	DPM	1.1E-05	2062	MIT
W1	DPM	1.6E-05	2062	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2062	MIT
W4	DPM	3.2E-05	2062	MIT
S1	DPM	1.6E-05	2062	MIT
S2	DPM	3.2E-05	2062	MIT
S3	DPM	4.8E-05	2062	MIT
E1	DPM	1.6E-05	2062	MIT
E3	DPM	1.6E-05	2062	MIT
E4	DPM	1.6E-05	2062	MIT
NW1	PM25	1.1E-05	2062	MIT
NW2	PM25	1.1E-05	2062	MIT
NW3	PM25	1.1E-05	2062	MIT
W1	PM25	1.6E-05	2062	MIT
W3	PM25	3.2E-05	2062	MIT
W4	PM25	3.2E-05	2062	MIT
S1	PM25	1.6E-05	2062	MIT
S2	PM25	3.2E-05	2062	MIT
S3	PM25	4.8E-05	2062	MIT
E1	PM25	1.6E-05	2062	MIT
E3	PM25	1.6E-05	2062	MIT
E4	PM25	1.6E-05	2062	MIT

APPENDIX D
TRANSPORTATION DATA

Table 1
Trips, VMT and Traffic Volumes
Stonestone Redevelopment
San Francisco, CA

Instructions
Please provide information on trip rates and distances travelled by land use and time period.

2/14/2023: Kittelson has updated ONLY HIGHLIGHTED CELLS. Assume the other quantities and rates are unchanged. Roadway Volumes TBD

Land Use	Fleet Type / Land Use		Unit	Land Use Amounts used for Trips and VMT	Daily Project Trip Rates		Daily Project Vehicle Miles Traveled		If known, please provide:	
					Weekday	Weekend	Weekday	Weekend	Percent Passenger Vehicles	Percent Trucks
					Trips		Miles			
Existing Conditions	Retail	Shopping Center	per 1,000 s.f.		Not estimated	Not estimated			not estimated	not estimated
Proposed Project	Residential	Mid-rise Apartments	per d.u.	3491	1.52	Not estimated	12.5	not estimated	not estimated	not estimated
	Retail	Retail Stores	per 1,000 s.f.	160	37.23	Not estimated	7.6	not estimated	not estimated	not estimated
	Commercial	Office, Medical, & R&D Space	per 1,000 s.f.	96	10.01	Not estimated	10.2	not estimated	not estimated	not estimated
	Recreational	Parks, Plazas, and Open Space	per acre		-	Not estimated	not estimated	not estimated	not estimated	not estimated
	Hotel		per room	0	-	Not estimated	not estimated	not estimated	not estimated	not estimated
	Institutional (incl. childcare)		per 1,000 s.f.	53	33.02	Not estimated	not estimated	not estimated	not estimated	not estimated
	Instutional (excl. childcare)		per 1,000 s.f.	38	37.24	Not estimated	Not estimated	Not estimated	Not estimated	Not estimated
	Childcare		per 1,000 s.f.	15	22.33	Not estimated	not estimated	not estimated	not estimated	not estimated
	Religious Institution		per 1,000 s.f.	0	-	Not estimated	not estimated	not estimated	not estimated	not estimated

Instructions
Please provide segment limits for each link location with net new traffic volumes for the project. If available, please provide the fleet make-up of the traffic. If this is not analyzed previously, we will use default information. Please add additional link locations and rows

Roadway	Segment Limits[1]		Traffic Volumes (Vehicles/day)	Percent Passenger Vehicles, if known	Percent Trucks, if known	Vehicles, Weekday PM Peak Hour
Eucalyptus	Middlefield	25th	0			0
Eucalyptus	25th	19th	0			0
Eucalyptus	19th	Junipero Serra Blvd	2300			226
19th	Sloat	Eucalyptus	2789			274
19th	Eucalyptus	Buckingham	2256			222
19th	Buckingham	Holloway	1967			188
19th	Holloway	Junipero Serra Blvd	1967			188
Holloway	Font	19th	0			0
Holloway	19th	Junipero Serra Blvd	0			0
Winston	LMB	Buckingham	2900			290
Winston	Buckingham	19th	2478			247
Winston	19th	Junipero Serra Blvd	2245			233
Buckingham	Winston	19th	4011			395
Lake Merced Blvd	Sunset	Winston	1256			126
20th	Ocean	Eucalyptus	411			43
Lake Merced	Winston	Font	1656			164
Sunset	Lake Merced	Sloat	1267			126
Lake Merced	Sunset	Skyline	0			0
Lake Merced	Font	Higuera	1656			164
Junipero Serra Blvd	19th	Font	2811			276
19th	Santiago	Taraval	2400			238
19th	Ulloa	Taraval	2400			238
19th	Vicente	Ulloa	2400			238
19th	Wawona	Vicente	2400			238
19th	Sloat	Wawona	2411			238
Sloat	19th	Junipero Serra Blvd	0			0
Portola	15th	Sloat	1388			139
Junipero Serra Blvd	Eucalyptus	Sloat	1388			139
Ocean	19th	Aptos	3100			311
Ocean	Aptos	Westgate	3100			311

Notes
[1] Segment limits are the cross streets on each link. Please add additional rows to include all necessary segment limits.

Instructions
Please provide any information on diurnal patterns of net new traffic. If unknown, we can use default information.

Diurnal Patterns	
Weekday	1164
Weekend	802

Kittelson notes in red.
Total external vehicle trips in weekday p.m. peak hour
Total external vehicle trips in Sunday p.m. peak hour
The following ratio is ONLY applicable for the peak patterns, and we have not estimated the weekend peak in relation to is daily. We advise you may use assumptions for diurnal patterns if you need them on a daily basis.

RAMBOLL

ATTACHMENT D

Revised Variant Transportation Analysis Memorandum

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

Technical Memorandum

January 8, 2024

Project# 22126.013

To: Florentina Craciun, AICP, Senior Environmental Planner
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

From: Kittelson & Associates, Inc.

CC: Kei Zushi, Wade Wietgrefe, San Francisco Planning Department

RE: Stonestown Galleria Revised Variant Impact Analysis Memorandum

INTRODUCTION

Kittelson & Associates, Inc. (Kittelson) prepared this memorandum to evaluate whether updates to the project variant ("revised variant") of the Stonestown Development Project ("proposed project," Case No. 2021-012028ENV) would result in any new or exacerbated transportation-related impacts than were previously identified in Draft Environmental Impact Report (DEIR) (dated December 14, 2022).

Background

The proposed project is located on an approximately 27-acre site in the Lakeshore area in southwest San Francisco. The project sponsor proposes to redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use community.

Overall, the proposed project would include up to 2,930 residential units, up to 160,000 square feet of new retail sales and service use space; up to 200,000 square feet of non-retail sales and service use; up to 100,000 square feet of hotel use; approximately 53,000 square feet of institutional uses; approximately 4,250 parking spaces; approximately 6 acres of open space; and infrastructure changes including street realignment, new sidewalks, and new bike lanes and paths. The project includes one variant ("draft EIR variant"), which would redevelop the 0.8-acre Authentic Church parcel adjacent to the project site and would include approximately 150 additional residential units; 10,000 additional square feet of institutional use; and 200 additional vehicle parking spaces.

REVISED VARIANT DESCRIPTION

The land use program of the revised variant is presented in **Table 1.** The revised variant would be a modification of the draft EIR variant and would:

- Convert the 111 residential units on Parcel E5 to senior units and add 90 senior units to total 201 senior units. The senior units were assumed to provide 1 bedroom per unit (compared to an average of 1.5 bedrooms per unit for the prior unit mix).

- Convert a total of 104,000 square feet of office land use on Parcel E1, S1, and S2 to 100 residential units.
- Convert the hotel on Parcel E3 to 96 residential units.
- Relocate 76 residential units (12,732 sf) from Parcel W3, W4, E1, and E5 to Parcel NW2 and 84 parking spaces from Parcel W3, W4, E1, and E5 to Parcel NW1. Similar to the draft EIR variant, Parcel NW1 and NW2, including the relocated units and parking spaces would be constructed during construction phase 1.The revised variant would include an additional 130,000 square feet of residential space that adds 125 residential units by converting a residential mid-rise building to a tower.
- The revised variant would also add 411 parking spaces and the additional spaces would follow the same by-parcel distribution as the draft EIR variant (presented on p. 2-20 in the DEIR).

The dwelling units, except senior units, would assume the same bedroom-per-unit distribution as the proposed project or draft EIR variant (20% studios, 40% one-bedrooms, 30% two-bedrooms, and 10% three-bedrooms).[1] Project elements not presented, including change in travel lanes, intersection signalization, and bicycle facilities, are unchanged from the draft EIR variant.

Table 1 Land Use Comparison

Project Characteristics	Existing	Represented in DEIR		Proposed Change Revised Variant
		Project	Draft EIR Variant	
Proposed Land Use Program	**Area (Approximate Square Feet)**			
Residential Use	0	Up to 3,100,000	Up to 3,200,000	Up to 3,534,000
Retail Sales and Services Use[1]	760,000 sf mall 13,300 sf vacant theater 15,000 sf commercial building	Up to 160,000 710,000 sf of the existing mall retained 13,300 sf vacant theater, 50,000 CitySports building, and 15,000 sf commercial building to be demolished 81,700 sf net new		
Non-Retail Sales and Service Use[2] (Office)	0	Up to 200,000 net new		Up to 96,000 net new
Hotel	0	Up to 100,000 (up to 200 rooms)		0
Institutional Use[3]	30,000 sf, 30-foot-tall church	Up to 53,000 net new	Up to 63,000 30,000 sf church demolished 33,000 sf net new	Up to 63,000
Proposed Dwelling Units		**Number**	**Number**	**Number**
Studio	0	586	616	658
1-bedroom	0	1,172	1,232	1,517 (including 201 senior units)
2-bedroom	0	879	924	987
3-bedroom	0	293	308	329
Total Dwelling Units	**0**	**2,930**	**3,080**	**3,491**
Total Bedrooms	**0**	**4,395**	**4,620**	**5,136**
Parking	3,400	4,250	4,450	4,861

Source: Brookfield Properties Development, 2023

[1] For example, the number of studio units (658 units) is 20 percent of the number of total non-senior dwelling units [(3,491 total dwelling units – 201 senior units) x 0.2 = 658 studio units].

Note: SF –Square Feet; DU- Dwelling Unit;
1 "Retail Sales and Service Use" is a use category that includes, but not limited to: the sale or provision of personal items such as tobacco and magazines; self-service laundromats and dry cleaning; household goods and service; florists and plant stores; apparel and accessories; antiques, art galleries, art supplies, and framing service; home furnishings, furniture, and appliances; books, stationery, greeting cards, office supplies, copying service, music, and sporting goods; and toys, gifts, and photographic goods and services (planning code section 102).
2 "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (planning code section 102).
3 "Institutional Use" includes childcare facility, community facility, private community facility, hospital, job training, medical cannabis dispensary, religious institution, residential care facility, social service or philanthropic facility, post-secondary educational institution, public facility, school, and trade school (planning code section 102).

Roadway Network Clarifications and Changes

Section 2.B of the Responses to Comments provides refinements and clarifications for roadway features—including street configurations— to the proposed project and revised variant. The changes or clarifications include the following (*italicized* items represent clarification from the draft EIR variant, and <u>underlined</u> items represent changes to the project description):

- **20th** Avenue**:** *The privately owned portion of 20th Avenue between Eucalyptus and Winston Drives would be straightened as presented in the DEIR but would have two to four lanes (predominantly one lane in each direction), rather than the two lanes listed in the DEIR.* <u>The street would range between 25 and 44 feet in width</u>. *Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (two lanes in each direction). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one southbound lane and two northbound lanes). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only.*
- **Street A:** *The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned and a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3. The westbound approach at 20th Street along Street A would be a right-turn only lane.* <u>Street A would be approximately 22 feet wide instead of 20 feet as presented in the DEIR.</u>
- **Street B:** *A new street with two lanes (one lane in each direction) would extend east from 20th Avenue between Blocks E3 and E4, but would not connect to 19th Avenue. Street B would provide vehicular and pedestrian access to Blocks E3 and E4 and would be approximately 22 feet wide, instead of 26 feet as described in the DEIR.*
- **Buckingham Way:** *Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to three lanes along the frontage of Block E5 near the intersection with 20th Avenue, instead of two lanes as described in the DEIR. West of Block E5, Buckingham Way would remain three travel lanes Along Block E5. Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left turn lane and one dedicated right turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right lane and one dedicated left turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left lane and one dedicated right turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet.*
- **Winston Drive:** *Winston Drive between Block S3 and 20th Avenue would have the same changes described in the DEIR and the same lane configuration,* <u>except that the separated westbound right-turn lane would be retained to separate right-turning vehicles from buses stopping westbound along Winston Drive.</u>

These changes apply to the project, draft EIR variant, revised variant, and alternatives contemplated in the DEIR. The design changes would not change the approach, analysis, and findings described in the draft EIR for the variant (or for the project or alternatives).

Trip Generation

Kittelson estimated daily and weekday p.m. peak hour travel demand with person trip rates from the 2019 Transportation Impact Analysis Guidelines ("TIA Guidelines") and the accompanying computational workbook ("SF Workbook"). Senior units were assumed to have the same trip generation rate as one-bedroom units (4.5 trips per bedroom).

Trips were split into travel modes (auto, taxi/TNC, walking, bicycling, and transit) based on mode shares presented in the TIA Guidelines and SF Workbook. **Table 2** and **Table 3** provide revised variant trip generation in comparison with proposed project and with the draft EIR variant, respectively. As shown, the travel demand for the revised variant would result in fewer daily person-trips than for the draft EIR variant and more daily person-trips than for the proposed project. During weekday PM peak hour, the revised variant would generate fewer external vehicles trips than both the proposed project and draft EIR variant.

Table 2 Trip Characteristics by Land Use, Revised Variant Compared to Proposed Project

Land Use Program	Square Footage			Daily Person-Trips			Weekday PM Peak Hour External Vehicle Trips		
	Proposed Project	Revised Variant	*Change (% Change)*	Proposed Project	Revised Variant	*Change (% Change)*	Proposed Project	Revised Variant	*Change (% Change)*
Residential	3,100,000; 4,395 bedrooms	3,534,000; 5,136 bedrooms	*434,000 (14%); 516 bedrooms (12%)*	19,778	23,112	*3,334 (17%)*	383	442	*59 (15%)*
Office	200,000	96,000	*-104,000 (-52%)*	3,140	1,508	*-1,632 (-52%)*	169	83	*-86 (-51%)*
Retail	160,000	160,000	*0 (0%)*	24,000	24,000	*0 (0%)*	480	481	*-1 (-<1%)*
Hotel	100,000; 200 rooms	0	*-100,000 (-100%); -200 rooms (-100%)*	1,680	0	*-1,680 (-100%)*	25	0	*-25 (-100%)*
Institutional [1]	38,000	38,000	*0 (0%)*	5,700	5,700	*0 (0%)*	114	114	*0 (0%)*
Childcare	15,000	15,000	*0 (0%)*	714	714	*0 (0%)*	27	30	*3 (11%)*
Religious Institution	0	10,000	*10,000 (N/A)*	0	76	*76 (N/A)*	0	2	*2 (N/A)*
Total	**3,613,000**	**3,853,000**	***240,000 (7%)***	**55,012**	**55,110**	***98 (+<1%)***	**1,198**	**1,152**	***-46 (-4%)***

Note: N/A = Not Applicable
1 "Institutional Use" includes childcare facility, community facility, private community facility, hospital, job training, medical cannabis dispensary, religious institution, residential care facility, social service or philanthropic facility, post-secondary educational institution, public facility, school, and trade school (planning code section 102).

Table 3 Trip Characteristics by Land Use, Revised Variant Compared to Draft EIR Variant

Land Use Program	Square Footage			Daily Person-Trips			Weekday PM Peak Hour External Vehicle Trips		
	Draft EIR Variant	Revised Variant	*Change (% Change)*	Draft EIR Variant	Revised Variant	*Change (% Change)*	Draft EIR Variant	Revised Variant	*Change (% Change)*
Residential	3,200,000; 4,620 bedrooms	3,534,000; 5,136 bedrooms	*334,000 (10%); 516 bedrooms (11%)*	20,790	23,112	*2,322 (11%)*	405	442	*37 (9%)*
Office	200,000	96,000	*-104,000 (-52%)*	3,140	1,508	*-1,632 (-52%)*	170	83	*-87 (-51%)*
Retail	160,000	160,000	*0 (0%)*	24,000	24,000	*0 (0%)*	482	481	*-1 (-<1%)*
Hotel	100,000; 200 rooms	0	*-100,000 (-100%); -200 rooms (-100%)*	1,680	0	*-1,680 (-100%)*	25	0	*-25 (-100%)*
Institutional [1]	38,000	38,000	*0 (0%)*	5,700	5,700	*0 (0%)*	114	114	*0 (N/A)*
Childcare	15,000	15,000	*0 (0%)*	714	714	*0 (0%)*	28	30	*2 (7%)*
Religious Institution	10,000	10,000	*0 (0%)*	76	76	*0 (0%)*	2	2	*0 (0%)*
Total	**3,723,000**	**3,853,000**	***130,000 (3%)***	**56,100**	**55,110**	***-990 (-2%)***	**1,221**	**1,152**	***-69 (-6%)***

Note: N/A = Not Applicable
1 "Institutional Use" includes childcare facility, community facility, private community facility, hospital, job training, medical cannabis dispensary, religious institution, residential care facility, social service or philanthropic facility, post-secondary educational institution, public facility, school, and trade school (planning code section 102).

Table 4 and **Table 5** compare trip generation by mode of the revised variant with the proposed project and the draft EIR variant, respectively. The revised variant would generate fewer auto and taxi/TNC trips than the proposed project and the draft EIR variant both on a daily basis and during weekday PM peak hour.

Table 4 Trip Generation by Mode, Revised Variant Compared to Proposed Project

Mode	Daily			Weekday PM Peak Hour		
	Proposed Project	Revised Variant	Change (% Change)	Proposed Project	Revised Variant	Change (% Change)
Auto	27,404	26,611	-793 (-3%)	2,480	2,422	-58 (-2%)
Taxi/TNC	1,323	1,284	-39 (-3%)	119	117	-2 (-2%)
Transit	8,793	9,350	557 (6%)	805	855	50 (6%)
Bicycle	1,138	1,233	95 (8%)	106	115	9 (8%)
Walk	16,354	16,632	278 (2%)	1,488	1,526	38 (3%)
Total Trips	**55,012**	**55,110**	**98 (0%)**	**4,998**	**5,035**	**37 (1%)**
Total Vehicle Trips	**17,811**	**16,998**	**-813 (-5%)**	**1,524**	**1,462**	**-62 (-4%)**
Internal Vehicle Trip Reduction Percentage	17%	16%	N/A	21%	21%	N/A
External Vehicle Trips	**14,865**	**14,204**	**-661 (-4%)**	**1,198**	**1,152**	**-46 (-4%)**

Note: N/A = Not Applicable

Table 5 Trip Generation by Mode, Revised Variant Compared to Draft EIR Variant

Mode	Daily			Weekday PM Peak Hour		
	Draft EIR Variant	Revised Variant	Change (% Change)	Draft EIR Variant	Revised Variant	Change (% Change)
Auto	27,838	26,611	-1,227 (-4%)	2,518	2,422	-96 (-4%)
Taxi/TNC	1,360	1,284	-76 (-6%)	122	117	-5 (-4%)
Transit	8,997	9,350	353 (4%)	823	855	32 (4%)
Bicycle	1,183	1,233	50 (4%)	110	115	5 (5%)
Walk	16,722	16,632	-90 (-1%)	1,520	1,526	6 (0%)
Total Trips	**56,100**	**55,110**	**-990 (-2%)**	**5,093**	**5,035**	**-58 (-1%)**
Total Vehicle Trips	**18,110**	**16,998**	**-1,112 (-6%)**	**1,550**	**1,462**	**-88 (-6%)**
Internal Vehicle Trip Reduction Percentage	16%	16%	N/A	21%	21%	N/A
External Vehicle Trips	**15,147**	**14,204**	**-943 (-6%)**	**1,221**	**1,152**	**-69 (-6%)**

Note: N/A = Not Applicable

Internal Trip Capture and External Trips. Because the project would be a mixed-use development, a portion of the generated trips would both begin and end within the development without using the external transportation network. Kittelson used the same trip internalization assumptions to analyze the revised variant as it did with the project and draft EIR variant. See Appendix D.1 of the DEIR for the details of the internalization. The result showed that the revised variant would generate 1,152 external vehicle trips during the weekday p.m. peak period, which would be four percent lower than the proposed project and six percent lower than the draft EIR variant (see **Table 6**, which provides vehicle trip estimates for each scenario). The reduction is attributable to a few factors:

- On a per square footage basis, land uses generate different amounts of daily and p.m. peak period trips. For example, approximately 1,000 square feet of hotel, office, and residential uses generates 16.8, 15.7, and 6.8 person trips per day, respectively, according to the TIA Guidelines. Therefore, the

residential land uses proposed under the revised variant would generate fewer trips on a per square foot basis than the hotel and office land uses proposed under the draft EIR variant and replaced by residential land uses with the revised variant. **Table 3** shows that over three times the change in residential square footage compared to office (334,000 added compared to 104,000 removed) results in about just 40 percent more trip change (2,322 daily person trips added compared to 1,632 removed).

- Residential land use in the project site vicinity has a lower automobile mode split than office and hotel use. The mode split was obtained directly from the TIA Guidelines, which is calculated based on the project site's transportation analysis zone (TAZ, 918), neighborhood (Sunset district), and place type (3, urban low density).
    - In this geography, percentage of person trips traveling by automobile is as follows:
        - Residential: 39%
        - Office: 84%
        - Hotel: 54%

The revised variant would generate 55,110 daily person trips and 5,035 person trips during the weekday p.m. peak hour, which would be higher than the proposed project but lower than the draft EIR variant. The comparison is presented in **Table 6.** A step-by-step approach for trip generation, mode split, and internal trip capture are detailed in Appendix D.1, Travel Demand Memorandum.

In/Out Splits. This study assumed the same in/out split for the revised variant as for the draft EIR variant. Theoretically, the in/out split would change, given the change in the land use program, specifically, the conversion from office and hotel to residential land use. These changes would result in some minor differences. During the weekday p.m. peak period, 75 percent of residential trips would be inbound while 17 percent of office trips and 58 percent of hotel trips would be inbound. Applying these in/out percentages to the trip changes shown in **Table 3**, the net change in trips by direction would be four additional inbound trips and 72 fewer outbound trips—a negligible increase in the inbound direction and a 6 percent decrease in the outbound direction. Given a lack of any substantial increase in inbound or outbound trips, revising the inbound/outbound splits would not result in any new impact determinations compared to the conclusions reached in the DEIR.

Table 6 Vehicle Trip Estimates

Trip Total	Represented in DEIR				Proposed Change	
	Project		Draft EIR Variant		Revised Variant	
	Daily	P.M. Peak	Daily	P.M. Peak	Daily	P.M. Peak
Total Person Trips	55,012	4,998	56,100	5,093	55,110	5,035
Total Vehicle Trips[1]	17,811	1,524	18,110	1,550	16,998	1,462
Internal Vehicle Trip Reduction Percentage	17%	21%	16%	21%	16%	21%
External Vehicle Trips	14,865	1,198	15,147	1,221	14,204	1,152
Revised Variant Raw Change (Percent Change) from Project	N/A	N/A	N/A	N/A	-661 (-4%)	-46 (-4%)
Revised Variant Raw Change (Percent Change) from Variant	N/A	N/A	N/A	N/A	-943 (-6%)	-69 (-6%)

Source: Kittelson & Associates, Inc. 2022. SF Workbook, 2018. ITE, 11th edition 2021. NCHRP 8-51 Internal Trip Capture Estimation Tool
Notes:
1. Vehicle trips include auto and taxi/TNC.

Trip Distribution by Parcel and construction phase. External vehicle trips are assigned to each parcel according to the proportional share of parking spaces located on the parcel. As 84 parking spaces from Parcel W3, W4, E1, and E5 would be relocated to Parcel NW1 and would be constructed in phase 1 under the revised variant (instead of phases 2 and 3 in the draft EIR variant), construction phase 1 would have a higher distribution of PM peak hour external vehicle trips compared to the draft EIR variant.

The total external vehicle trips are provided on a per-parcel and per-construction phase basis in **Table 7** and **Table 8** and. In the last row of **Table 8**, the total is incremented by taxi/TNC trip estimate to account for a driver's extra trip (leaving the site after a drop-off event or arriving at the site before a pick-up event).

Table 7 Weekday P.M. Peak Hour External Vehicle Trip Distribution by Construction Phase (Auto)

Construction Phase	PM Peak Hour External Vehicle Trips		
	In	Out	Total
1	64	21	85
1B	105	130	235
2	98	55	153
3	99	84	183
4	125	92	217
5	103	76	179
6	53	47	100
Total	**647**	**505**	**1,152**

Note: Taxi/TNC extra trips are not included in this table.

Table 8 Weekday P.M. Peak Hour External Vehicle Trip Distribution by Parcel (Auto and Taxi/TNC)

Construction Phase	Parcel	Residential		Office		Retail		Hotel		Institutional		Childcare		Religious Institution		Total	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
3	**E1**	26	9	2	12	39	43	0	0	9	10	2	3	0	0	78	77
4	**E2**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	**E3**	30	10	1	5	17	18	0	0	4	4	1	1	0	0	53	38
4	**E4**	38	12	2	7	24	27	0	0	6	6	2	2	0	0	72	54
3	**E5**	21	7	0	0	0	0	0	0	0	0	0	0	0	0	21	7
4	**E6**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	**E7**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	**W1**	16	5	0	0	0	0	0	0	0	0	0	0	0	0	16	5
1B	**W2**	0	0	5	23	76	82	0	0	18	19	5	5	1	1	105	130
2	**W3**	32	11	1	5	19	20	0	0	5	5	1	1	0	0	58	42
2	**W4**	24	8	0	0	0	0	0	0	0	0	0	0	0	0	24	8
5	**S1**	13	4	0	0	0	0	0	0	0	0	0	0	0	0	13	4
5	**S2**	45	15	2	10	33	36	0	0	8	9	2	2	0	0	90	72
6	**S3**	23	8	1	7	23	24	0	0	5	6	1	2	0	0	53	47
1	**NW1**	57	19	0	0	0	0	0	0	0	0	0	0	0	0	57	19
1	**NW2**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**NW3**	7	2	0	0	0	0	0	0	0	0	0	0	0	0	7	2
	Total	**332**	**110**	**14**	**69**	**231**	**250**	**0**	**0**	**55**	**59**	**14**	**16**	**1**	**1**	**647**	**505**
	Taxi/TNC extra trip	26	9	0	1	7	7	0	0	1	2	1	1	0	0	35	20
	Total (for Assignment)	**358**	**119**	**14**	**70**	**238**	**257**	**0**	**0**	**56**	**61**	**15**	**17**	**1**	**1**	**682**	**525**

Note: Total may not sum due to rounding. Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event) will be used for trip assignment.

TRANSPORTATION-RELATED IMPACTS

Baseline

The DEIR analyzed the potential environmental effects of implementing the proposed project or draft EIR variant under a baseline scenario as discussed under section 3.B.1, p.3.B-49 of the DEIR.

Construction

Project and Draft EIR Variant

Project construction would require coordination and review with San Francisco Public Works and the San Francisco Municipal Transportation Agency in accordance with city regulations to avoid transportation-related construction impacts. However, some portions of proposed project or draft EIR variant are located on private right-of-way and would not be subject to city requirements. Thus, construction activities within the private right-of-way could potentially cause substantial interference with emergency access or conflicts with people walking, bicycling, or driving or public transit operations to result in a significant impact. Implementation of Mitigation Measure M-TR-1: Construction Coordination Plan would be required to reduce the impact to less than significant.

Revised Variant

The revised variant would have similar construction activities and phasing as the proposed project or draft EIR variant, but:

- 76 residential units (12,732 sf) and 84 parking spaces would be relocated to NW parcels and would be constructed in phase 1 (instead of phases 2 and 3 in the draft EIR variant). Therefore, the excavation duration of phase 1 would be 24% longer while excavation duration of phase 2 and phase 3 would be shorter. The overall construction duration of those phases would not change.
- The sixth and final construction phase would be three months longer than the proposed project or draft EIR variant (39 months instead of 36).

Even with the extended excavation in the first phase and the longer sixth phase, the construction duration, intensity, and number of worker and truck trips accessing the project site would not change significantly to affect the conclusion in the DEIR.

Therefore, the construction impact would remain less than significant with Mitigation Measure M-TR-1.

Transit Delay

Project

Transit delay is associated with the project-generated peak hour vehicle traffic, as traffic congestion associated with increases in traffic would slow transit vehicles. Additionally, transit vehicles at bus stops would need to wait longer to pull out and reenter the traffic flow. As discussed under Impact TR-4, p. 3B-65

of the DEIR, the proposed project would not result in a significant impact with respect to transit delay under existing plus project conditions.

Draft EIR Variant

The draft EIR variant, which would contribute more vehicle trips during the weekday PM peak hour than the proposed project, would significantly delay the 57 Parkmerced inbound route and result in significant and unavoidable impacts with implementation of Mitigation Measures M-TR-4a: Reduce Project Vehicle Trips and M-TR-4b: Transit Travel Time Reduction Measure.

Revised Variant

The revised variant would result in approximately four percent fewer p.m. peak vehicle trips than the proposed project (six percent fewer than the Draft EIR variant). That trip reduction would result in approximately four percent lower contribution to all vehicle movements through project study intersections compared to the proposed project (with the reduction evenly distributed).

In addition, the revised variant would also relocate 84 parking spaces from Parcel W3, W4, E1, and E5 to Parcel NW1. The parking relocation would reduce the significant and unavoidable transit delay impact to the 57 Parkmerced inbound line identified under the draft EIR variant. The location of vehicle parking governs the onsite origin and destination of vehicle trips and the associated routes drivers take to and from the project site. As presented under Section 3.B.4 and in Appendix D.2, Transit Delay Analysis Memorandum, project vehicle trips traveling northbound along 20th Avenue would increase the traffic demand at already-congested intersections. Relocating parking away and thus encouraging travel routes that could avoid these intersections and roadways could help reduce additional demand and redistribute vehicle trip routes away from locations where they would contribute most to the transit delay identified. As shown in **Table 9**, the revised variant would result in a reduced additional delay from 4.8 minutes to 2.8 minutes to the 57 Parkmerced inbound line compared to the draft EIR variant. The level of additional delay of all transit lines analyzed would be below than the significant delay threshold, which is 4.0 minutes for the Muni line.

Therefore, the revised variant would result in less-than-significant project-level transit delay impacts.

Table 9 Project-Level Transit Delay Analysis, Revised Variant Compared to Proposed Project and Draft EIR Variant

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)		
					Existing plus Project	**Draft EIR Variant**	**Revised Variant**
28 19th Avenue	IB	10	5	4.0	0.5	0.6	0.5
	OB	10	5	4.0	2.1	2.1	1.3
28R 19th Avenue Rapid	IB	10	5	4.0	0.5	0.5	0.5
	OB	10	5	4.0	1.2	1.2	0.4
57 Parkmerced	IB	20	10	4.0	3.9	**4.8**	2.8
	OB	20	10	4.0	2.5	3.0	1.2
58 Lake Merced	IB	30	15	4.0	1.1	1.4	1.0
	OB	30	15	4.0	0.4	0.5	0.4
28 + 28R Combined	NB	5	2.5	2.5	0.5	0.6	0.5
	SB	5	2.5	2.5	2.1	2.1	1.3
122 SamTrans	NB	20	10	4	1.3	1.5	1.0
	SB	20	10	4	0.8	0.8	0.8

ABBREVIATIONS:

IB = inbound; OB = outbound; NB = northbound; SB = southbound; WB = westbound; EB = eastbound

Note: **Bold text** indicates additional delay above the identified significance threshold.

Loading Demand

Project and Draft EIR Variant

Due to the absence of localized loading supply information, estimated demand cannot be compared with proposed loading supply for each parcel. Unmet demand could result in secondary effects to public transit buses or to people walking, biking, or driving, such as blocking, creating queues, and/or conflicts at sidewalks, crosswalks, Muni routes, and bike facilities. Therefore, it was conservatively assumed the proposed project or draft EIR variant would have significant loading impacts. Mitigation Measure M-TR-6: Develop a Loading and Operations Plan (DLOP) would be required to reduce the associated secondary effects to less than significant.

Revised Variant

As with the proposed project or draft EIR variant, localized loading supply information is not available, a loading deficit could occur, and the revised variant would have significant loading impacts. Mitigation Measure M-TR-6 would be required to reduce the potential significant impacts of both freight and commercial loading and passenger loading.

The impact would be less than significant with mitigation.

Cumulative Impact

The DEIR assessed whether the proposed project or draft EIR variant, in conjunction with overall citywide growth and other cumulative projects, would significantly affect the transportation network.

Construction

Project and Draft EIR Variant

Some portions of the proposed project or draft EIR variant are within public right-of-way and would be subject to city regulations to avoid transportation-related construction impacts. However, the portions that are located in private right-of-way would not be subject to those regulations. Thus, construction activities within the private right-of-way could potentially cause interference with emergency access or substantial conflicts with people walking, bicycling, or driving or public transit operations to result in a significant impact. Therefore, implementation of Mitigation Measure M-TR-1 would be required to reduce the cumulative construction impact to less than significant with mitigation.

Revised Variant

The revised variant would have similar construction activities and phasing as the proposed project or draft EIR variant, but:

- 76 residential units (12,732 sf) and 84 parking spaces would be relocated to NW parcels and would be constructed in phase 1 (instead of phases 2 and 3 in the draft EIR variant). Therefore, the excavation duration of phase 1 would be 24% longer while excavation duration of phase 2 and phase 3 would be shorter. The overall construction duration of those phases would not change.
- The sixth and final construction phase would be three months longer than the proposed project or draft EIR variant (39 months instead of 36).

Even with the extended excavation in the first phase and the longer sixth phase, the construction duration, intensity, and number of worker and truck trips accessing the project site would not change significantly.

Therefore, the construction impact would remain less than significant with Mitigation Measure M-TR-1.

Transit Delay

Project and Draft EIR Variant

As discussed under Impact C-TR-4, p. 3B-78 of the DEIR, the project or draft EIR variant, in combination with cumulative projects, would result in a substantial cumulative delay of both Muni and regional transit service:

- Muni 57 Parkmerced (inbound and outbound)
- Muni 28 19th Avenue and 28R 19th Avenue Rapid combined (southbound)
- SamTrans Route 122 (northbound)

The project or draft EIR variant would both contribute considerably to the substantial delay. The impact would be significant and unavoidable with the implementation of Mitigation Measures- M-TR-4a, M-TR-4b, and M-C-TR-3: Signal Coordination and Transit Signal Priority along 19th Avenue.

Revised Variant

As discussed above, the revised variant would generate four percent fewer external peak hour vehicle trips than the proposed project and the relocation of parking spaces would redistribute vehicle trips away from the congested intersections along northbound 20th Avenue. However, this reduction would not reduce the substantial cumulative transit delay to the Muni and regional transit service identified in the DEIR. The revised variant would still contribute considerably to the substantial delay. The revised variant would also be subject to Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3, but those measures would not reduce the cumulative transit delay impacts to less-than-significant levels for the same reasons as described in the DEIR.

Loading Demand

Project and Draft EIR Variant

Due to the absence of localized loading supply information, a loading deficit may occur in cumulative conditions. Therefore, the analysis conservatively assumed the proposed project or draft EIR variant, in combination with cumulative projects, would have significant loading impacts, such as blocking bus routes and/or bicycle facilities. Implementation of Mitigation Measure M-TR-6 would be required to reduce the impact to less than significant with mitigation.

Revised Variant

As with the proposed project or draft EIR variant, localized loading supply information is not available, a loading deficit may occur in cumulative conditions, and a significant cumulative loading impact may occur. Mitigation Measure M-TR-6 would be required to reduce the impacts of potential loading deficit.

The cumulative impact would be less than significant with mitigation.

Other Impact Categories

The DEIR evaluated the proposed project and variant in baseline and in cumulative conditions with respect to the following other transportation-related impact categories and found less-than-significant impacts. For these categories, the revised variant would represent the same transportation- and circulation-related features and would have the same impact determination:

- **Potentially Hazardous Conditions for People Walking, Bicycling, Driving, or Public Transit Operations:**
  - The proposed site access and roadway features are the same for the revised variant as analyzed in the DEIR, except that at Winston Drive/20th Avenue intersection, the existing separated westbound right-turn lane would be retained. As a result, the geometric conditions will match the existing conditions on this east leg (westbound approach) to the intersection, and will allow for buses to load in the separated lane and the main (through) lane along the north side of Winston Drive. This lane configuration is not expected to create potentially hazardous conditions for people walking or bicycling for the following reasons:
    - The retained channelized right-turn lane would separate right-turning vehicles from buses stopping westbound along Winston Drive, which would minimize the westbound queue length at Winston Drive/20th Avenue. The DEIR identified the 95th percentile westbound queue length during the weekday p.m. peak hour would

be close to the queue storage capacity. With the channelized right turn and fewer peak hour external vehicle trips, the revised variant is not expected to cause additional spillover into the Winston Drive/19th Avenue intersection.
        - The proposed project or revised variant would not introduce design features that would block sightlines or increase vehicle speeds.
        - Drivers turning right at the intersection would need to wait until there is a sufficient gap in the flow of people walking to clear their vehicles.
    - The land use changes specific to the revised variant and other refinements and clarifications described in the Roadway Network Clarifications and Changes section do not affect the analysis described in the DEIR and therefore do not represent any distinctions that would affect this conclusion from the DEIR.
- **Accessibility of People Walking or Bicycling to and from the Project Site, and Adjoining Areas, and Emergency Access:**
    - As the revised variant would provide the same project access and roadway features as for the proposed project or draft EIR variant, the impact on walking and bicycling accessibility and emergency access would be the same as concluded in the DEIR.
- **Vehicle Miles Traveled and Induced Automobile Travel:**
    - The revised variant would provide more building area and parking spaces compared to the draft EIR variant, but would not have a significant impact on VMT and induced automobile travel because:
        - The project site is in TAZ 918 where existing VMT is more than 15 percent below regional average for residential, office, and retail land uses. As the revised variant does not add any new types of land uses, the revised variant would also screen out from further VMT analysis.
        - The revised variant would provide 130,000 more square feet of building area than the Draft EIR variant, which results in approximately 3,853,000 new square footage and 4,613,000 total square footage. The floor area ratio of 2.59, which is greater than the 0.75 threshold.
        - The revised variant would add 411 parking spaces on top of the 1,050 net new spaces provided in the draft EIR variant (1,461 net new parking spaces and 4,861 total). With 3,794,700 net new square footage[2] (4,613,000 total square footage), the marginal contribution rate would be 0.4 parking spaces per 1,000 square feet. In total, the revised variant would have 1.1 parking spaces per 1,000 square feet, which is 3.1 or 74% lower than the existing parking ratio of 4.2 parking spaces per 1,000 square feet, which would not substantially induce additional VMT.
    - Additionally, same with the draft EIR variant, the revised variant would also include roadway features that qualify as Active Transportation, Rightsizing, and Transit Projects and Other Minor Transportation Projects and would fit within the general types of projects that would not substantially induce automobile travel.
    - For the reasons described above, the impact on VMT and induced automobile travel would be the same as concluded in the DEIR and would be less than significant.

Conclusion

The revised variant would result in a change in the land use program. The revised variant land use program changes would generate fewer vehicle trips than the proposed project or draft EIR variant daily and during the weekday p.m. peak hour. The transportation network changes for the revised variant are similar to those under the proposed project or draft EIR variant, with no change on the impact analysis and findings.

[2] Net new square footage is calculated by subtracting demolished area from new building area.

As a result:

- Project-level transit delay impact would remain less than significant as with the proposed project.
- Cumulative transit delay impacts would remain significant and unavoidable with mitigation.
- Project-level and cumulative transportation-related construction impacts would remain less than significant with mitigation, as with the proposed project or draft EIR variant.
- Project-level and cumulative freight and commercial loading and passenger demand impacts would remain less than significant with mitigation as with the proposed project or draft EIR variant.

The remaining transportation-related impact categories would remain less than significant.

ATTACHMENT H

Revised Variant Shadow Memorandum

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January 16, 2024

Stonestown Development Revised Variant Memorandum

I. Introduction and Overview

This memorandum describes the results of a supplemental shadow analysis conducted by Fastcast to determine the shadow effects of changes to the Stonestown Development Project. The changes consist of design revisions to the draft EIR variant on Blocks NW2 and NW3 of the proposed Sonestown Development Project and are referred to herein as the "revised variant." This memorandum addresses only potential shadow impacts on Rolph Nicol Jr. Playground, which is the only open space protected under Section 295 of the San Francisco Planning Code that would be affected differently by shadow from the revised variant than by shadow from the proposed project or draft EIR variant, each of which would cast the same shadows on this open space. This memorandum is presented as a comparison to the shadow analysis documented in the published Sonestown Shadow Report dated October 2022 and amended in April 2023. The scope of this analysis was approved by the San Francisco Planning Department.

II. Revised Variant

The project changes and the subject of this comparison analysis are limited to the proposed building massing identified as NW2 and NW3 located at the northwest block of the project site as shown in Figure 1.

Figure 1. Revised Variant Massing at NW2-NW3

III. Shadow Results of Revised Variant vs Draft EIR Variant

The results of the quantified shadow comparison on Rolph Nicol Jr. Playground between the draft EIR variant and the revised variant are provided in Table 1.[1]

ROLPH NICOL JR. PLAYGROUND ANNUAL SHADOW LOADS / SQUARE FOOT HOURS (sfh)			
Existing / Current Shadow	Draft EIR Variant	Revised Variant	Difference between Draft EIR Variant & Revised Variant
1.24%	9.87%	11.05%	1.18%
5,930,716 sfh	47,347,221 sfh	53,029,802 sfh	5,682,582 sfh

Rolph Nicol Jr. Playground Annual Shadow Load with Draft EIR Variant (sfh)	11.11% (53,277,936 sfh)
Rolph Nicol Jr. Playground Annual Shadow Load with Revised Variant (sfh)	12.29% (58,960,518 sfh)

Range in existing shadow area coverage throughout the year	Between 0% - 23%
Time of year / time of day most affected by existing shadow	Summer / Early Morning (before 8:00 AM)

DRAFT EIR VARIANT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	Year-round
Date(s) with most sfh net new shadow	December 20 & December 21
Season / Time of day most affected by net new shadow	Fall / Early Morning (before 8:00 AM)
Area of largest net new shadow (date and time)	95,566 sf (December 20 & December 21 @ 8:19 AM)
Percentage of Rolph Nicol Jr. Playground covered by largest shadow	74.11%
Range in shadow coverage throughout the year (area range)	Between 0% - 74% (0 - 95,566 sf)
Average shadow size across affected dates (percent coverage)	18,959 sf (14.70%)
Date(s) with the longest duration of net new shadow (duration)	October 25 & February 15 (8 hr 38 min +/- 7 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 8 hr 38 min (+/- 7 min)
Average daily net new shadow duration across affected dates	7 hr 32 min

REVISED VARIANT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	Year-round
Date(s) with most sfh net new shadow	December 20 & December 21
Season / Time of day most affected by net new shadow	Fall / Early Morning (before 8:00 AM)
Area of largest net new shadow (date and time)	111,104 sf (Dec 13/Dec 28 @ 8:15 AM)
Percentage of Rolph Nicol Jr. Playground covered by largest shadow	86.16%
Range in shadow coverage throughout the year (area range)	Between 0% - 86% (0 - 111,104 sf)
Average shadow size across affected dates (percent coverage)	21,383 sf (16.58%)
Date(s) with the longest duration of net new shadow (duration)	Oct 25/Feb 15 (8 hr 38 min +/- 7 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 8 hr 38 min (+/- 7 min)
Average daily net new shadow duration across affected dates	7 hr 32 min

[1] The proposed project would have the same shadow effect on Rolph Nicol Jr. Playground as the draft EIR variant. Accordingly, the proposed project is not discussed further here.

IV. Draft EIR Variant and Revised Variant Comparison

The draft EIR variant would result in net new shadow falling on the park, adding approximately 47,347,221 net new annual sfh of shadow and increasing the sfh of shadow by 9.87% above current levels, resulting in annual total shadow of 11.11% of TAAS. The revised variant would add approximately 53,029,802 net new annual sfh of shadow increasing the sfh of shadow by 11.05% above current levels, resulting in annual total shadow of 12.29% of TAAS. The revised variant represents an increase of 5,682,582 sfh or 1.18% in TAAS shadow annually.

Net new shadow from the draft EIR variant and the revised variant would occur year-round during the morning hours and recede as the sun rises to midday. The days of maximum net new shadow on the park due to the draft EIR variant would occur on and around the winter solstice at 8:00 AM, when the draft EIR variant would shade approximately 74%% of the park, with new shadow falling on the majority of the wooded area in the western half of the park, most of the grassy field, the northeastern edge along the Eucalyptus Drive entry point, and the eastern edge of the children's play area. The days of maximum shadow from the revised variant would occur on December 13/December 28 at or near 8:15 AM and shade approximately 86% of the park in the same area as the draft EIR variant. Shadows from the revised variant would extend slightly longer than the draft EIR variant shadow, extending northwest across the park covering approximately 12% more area during maximum potential impact.

Both the draft EIR variant and the revised variant shadows during the days of maximum shadow are present throughout most of the daylight hours with the greatest shadow coverage occurring during the early morning hours.

In terms of the differences in shadow between the draft EIR variant and revised variant, the revised variant would cast a maximum of 207 square feet more shadow on Rolph Nicol Jr. Playground than would the draft EIR variant at any given time. This added shadow, covering 0.16 percent of the park, would fall only near the southwest corner of the park, in one of the park's most densely forested areas. The revised variant would add no additional shadow beyond that from the draft EIR variant after 12:00 noon.

On the spring/fall equinoxes, the revised variant would add as much as 10 percent more shadow to the park, covering about 12,850 square feet, at any given time, compared to the draft EIR variant. This would occur at 8:00 a.m. The most substantial increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9:00 a.m., and nearly all of this added shadow would fall on the grove of trees along the park's southern edge. A small amount of added shadow would also fall on the southern portion of the pathway leading from the park to the project site. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 3 percent of the park area. The revised variant would not generate any additional shadow on the children's play area on the spring/fall equinoxes, compared to the draft EIR variant. That is, as with the draft EIR variant, shadow (cast by the building on Block NW3, not NW2) would leave the children's play area by 9:00 a.m. Also as with the draft EIR variant, the revised variant would cast very little shadow on the park's grassy area.

On the winter solstice, the revised variant would add as much as 12 percent more shadow to the park, covering about 15,500 square feet, at any given time, compared to the draft EIR variant. This would occur at 8:19 a.m. The largest increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9:00 a.m. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 4 percent of the park area. Added shadow from the revised variant, compared to the draft EIR variant, would fall primarily on the grassy area in the center of the park. Between about 9:45 and 11:15 a.m. on the winter solstice, the revised variant would cast new shadow on the children's play area when it would not be shaded by the draft EIR variant. For a few minutes, this new shadow would fully cover the play area, but in general, the revised variant would shade only part of the play area at any given time.

On an annual basis, the greatest increase in shadow cast by the revised variant, compared to the draft EIR variant, would occur in February and October. The greatest instantaneous increment would occur on October 18, at 8:30 a.m., when the revised variant would shade nearly 20 percent more of the park (about 25,235 square feet) than would the draft EIR variant. (Conditions on February 22 would be similar.) This added shadow would fall primarily on the grassy area in the center of the park and the trees along the park's southern edge. The revised variant would cast no additional shadow on the children's play area on this date, compared to the draft EIR variant.

Exhibit A depicts the shadow projections for both the Draft EIR variant and the alternative variant on the maximum shadow coverage day of October 18th from 8:23 AM to 12:00 Noon. Also includes annual hourly shadow projections for the alternative variant.

Exhibit B summarizes in detail the annual shadow calculation results and compares the Draft EIR totals with the alternative variant results.

Exhibit C Annual hourly shadow projections for the alternative variant.

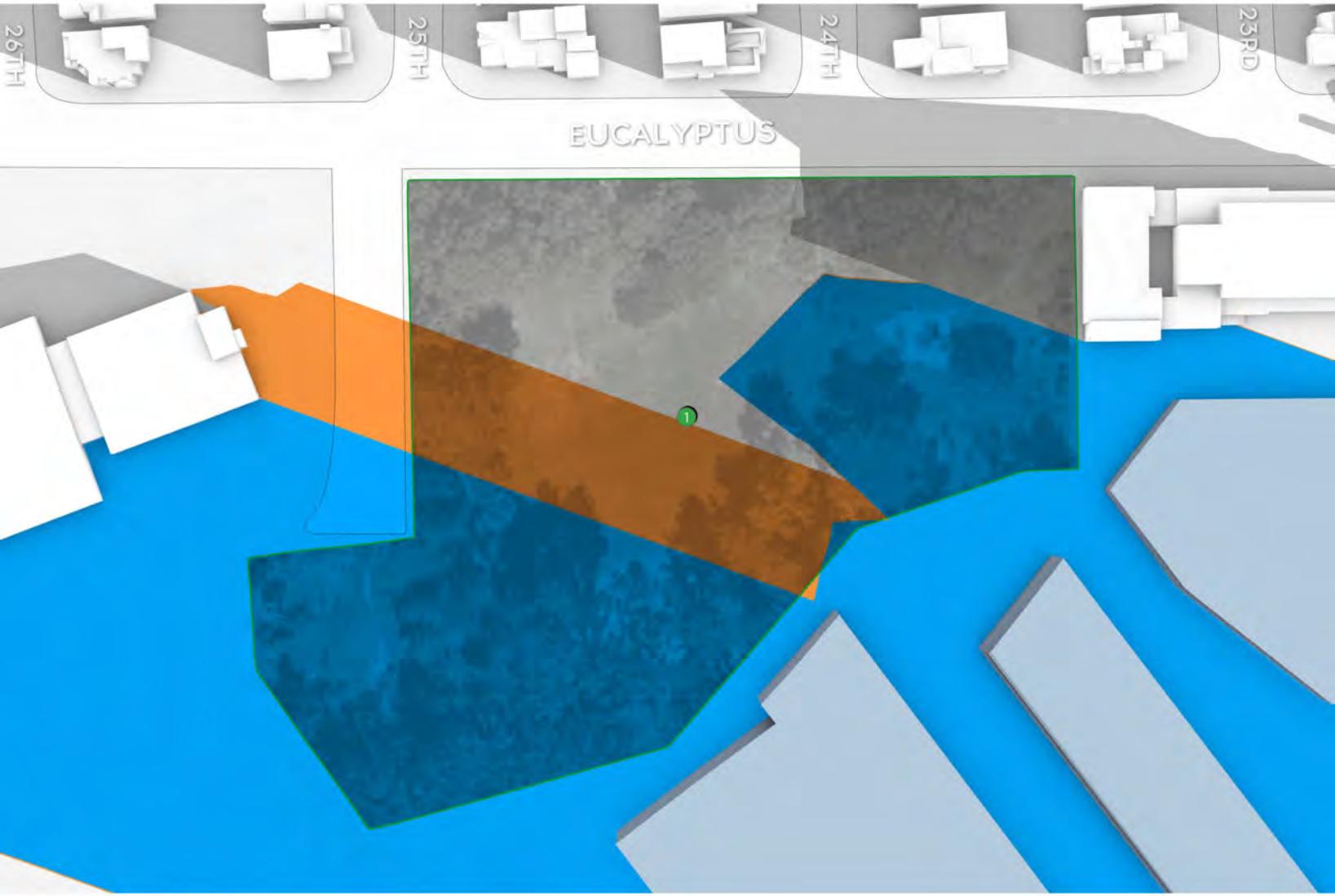
FASTCAST

EXHIBIT A:

SHADOW PROJECTIONS - MAXIMUM COVERAGE
INCREASE OF REVISED VARIANT (OCTOBER 18TH)

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

8:23 AM

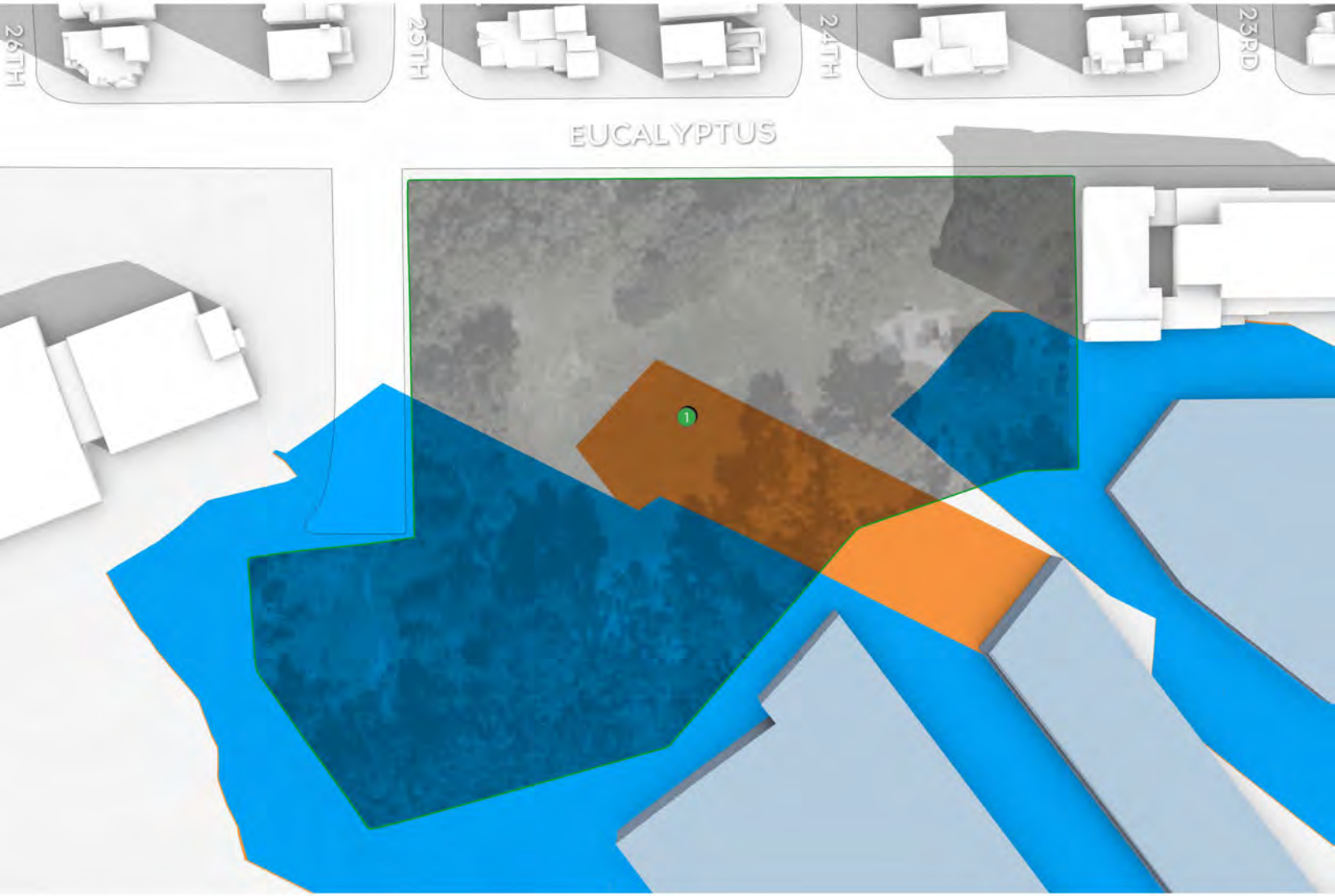
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
8:22 AM	11,065 sf	8.58%	61,073 sf	47.36%	84,709 sf	65.69%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

9:00 AM

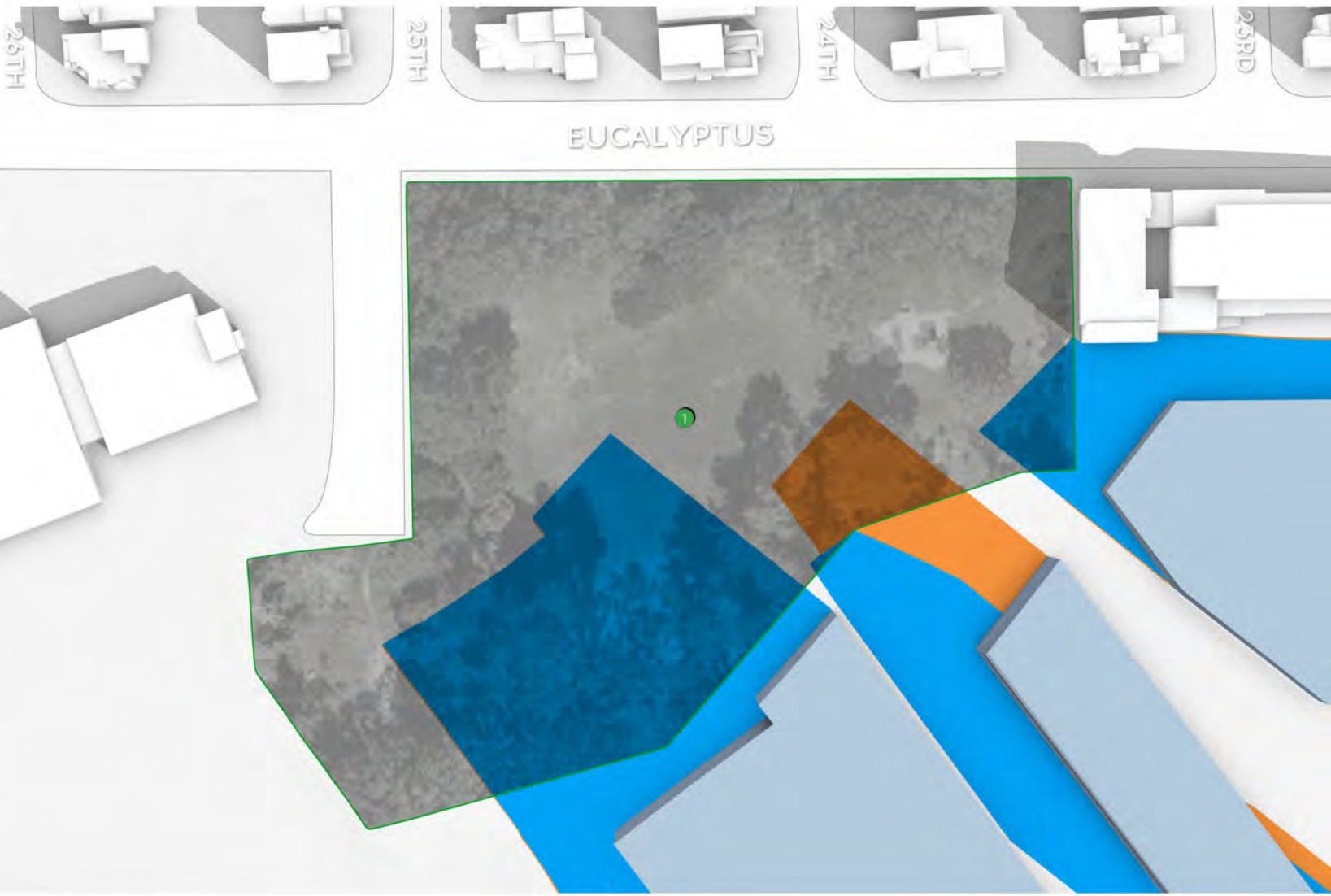
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
9:00 AM	6,157 sf	4.78%	55,055 sf	42.70%	68,942 sf	53.47%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

10:00 AM

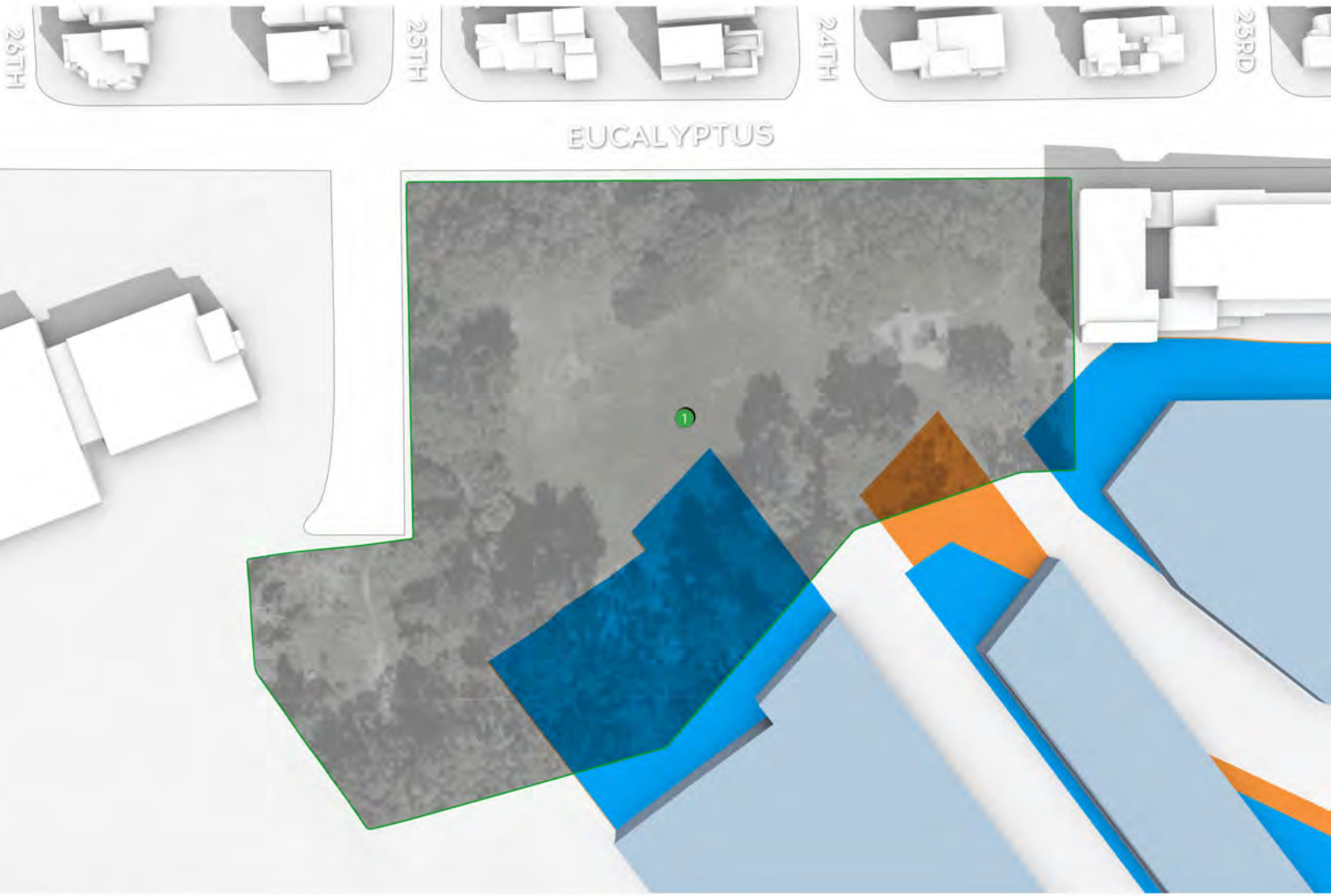
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
10:00 AM	3,044 sf	2.36%	36,078 sf	27.98%	41,238 sf	31.98%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

11:00 AM

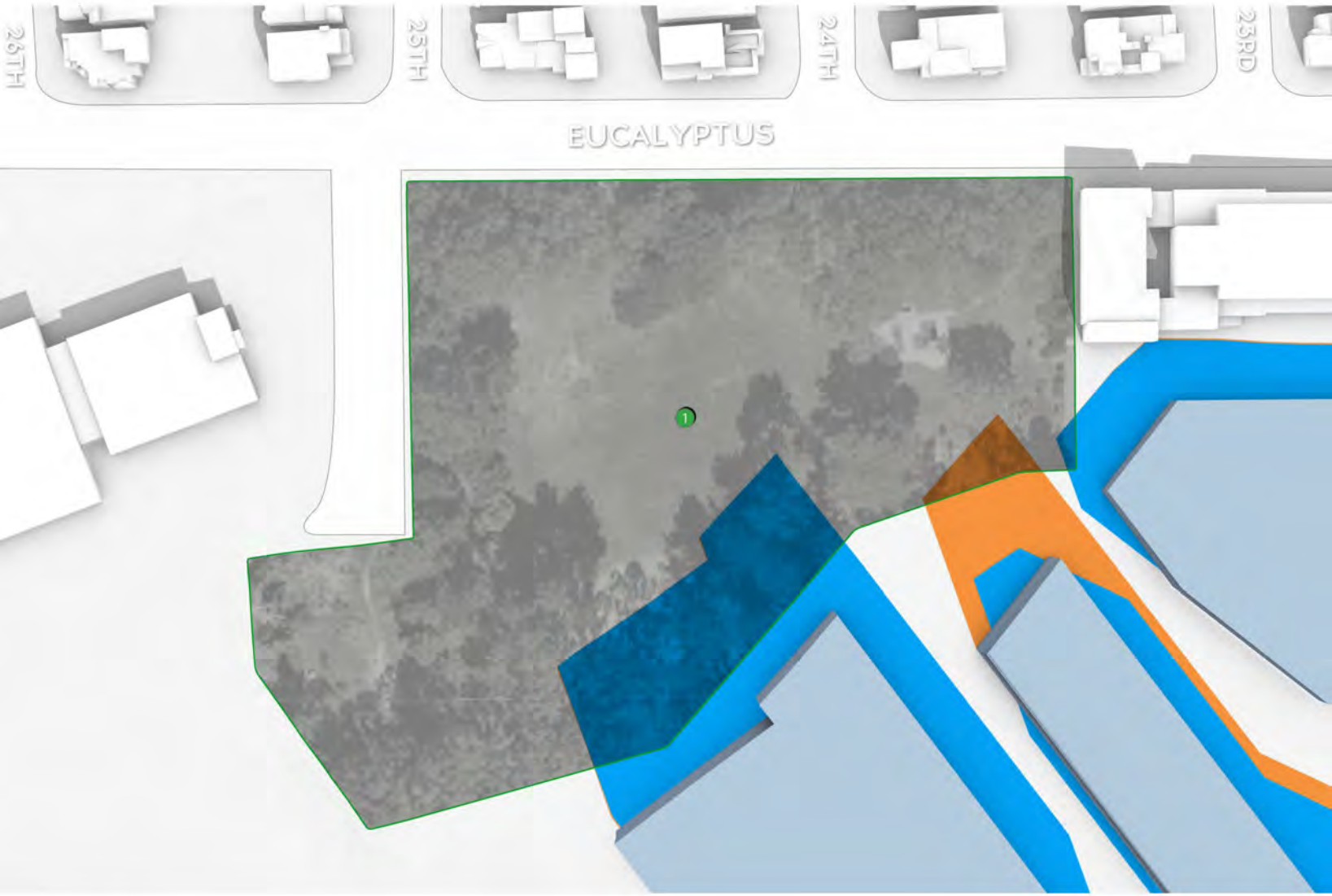
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
11:00 AM	1,481 sf	1.15%	21,995 sf	17.06%	24,289 sf	18.84%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
12:00 PM	422 sf	0.33%	15,950 sf	12.37%	17,360 sf	13.46%	

FASTCAST

EXHIBIT B:

ANNUAL SHADOW CALCULATION OF DRAFT EIR VARIANT AND REVISED VARIANT

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

June 21

Summer solstice
Analysis hours: 6:46 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:46 AM	29,224 sf	22.66%	9,670 sf	7.50%	9,865 sf	7.65%	
7:00 AM	17,186 sf	13.33%	10,029 sf	7.78%	10,236 sf	7.94%	
7:15 AM	12,029 sf	9.33%	11,478 sf	8.90%	11,628 sf	9.02%	
7:30 AM	9,264 sf	7.18%	13,027 sf	10.10%	13,145 sf	10.19%	
7:45 AM	7,399 sf	5.74%	14,043 sf	10.89%	14,134 sf	10.96%	
8:00 AM	6,206 sf	4.81%	14,005 sf	10.86%	14,076 sf	10.92%	
8:15 AM	5,253 sf	4.07%	13,255 sf	10.28%	13,356 sf	10.36%	
8:30 AM	4,485 sf	3.48%	12,465 sf	9.67%	12,505 sf	9.70%	
8:45 AM	3,858 sf	2.99%	11,675 sf	9.05%	11,704 sf	9.08%	
9:00 AM	3,345 sf	2.59%	10,855 sf	8.42%	10,874 sf	8.43%	
9:15 AM	2,907 sf	2.25%	10,043 sf	7.79%	10,059 sf	7.80%	
9:30 AM	2,529 sf	1.96%	9,231 sf	7.16%	9,244 sf	7.17%	
9:45 AM	2,219 sf	1.72%	8,522 sf	6.61%	8,531 sf	6.62%	
10:00 AM	1,947 sf	1.51%	7,792 sf	6.04%	7,799 sf	6.05%	
10:15 AM	1,700 sf	1.32%	7,140 sf	5.54%	7,145 sf	5.54%	
10:30 AM	1,468 sf	1.14%	6,453 sf	5.00%	6,457 sf	5.01%	
10:45 AM	1,249 sf	0.97%	5,835 sf	4.53%	5,838 sf	4.53%	
11:00 AM	1,045 sf	0.81%	5,161 sf	4.00%	5,162 sf	4.00%	
11:15 AM	851 sf	0.66%	4,572 sf	3.55%	4,573 sf	3.55%	
11:30 AM	668 sf	0.52%	3,911 sf	3.03%	3,912 sf	3.03%	
11:45 AM	487 sf	0.38%	3,351 sf	2.60%	3,350 sf	2.60%	
12:00 PM	316 sf	0.25%	2,697 sf	2.09%	2,697 sf	2.09%	
12:15 PM	149 sf	0.12%	2,151 sf	1.67%	2,151 sf	1.67%	
12:30 PM	32 sf	0.02%	1,497 sf	1.16%	1,499 sf	1.16%	
12:45 PM	0 sf	0.00%	1,007 sf	0.78%	1,007 sf	0.78%	
1:00 PM	0 sf	0.00%	451 sf	0.35%	451 sf	0.35%	
1:15 PM	0 sf	0.00%	95 sf	0.07%	95 sf	0.07%	
1:30 PM	0 sf	0.00%	5 sf	0.00%	5 sf	0.00%	
1:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

June 28

Mirror date: June 14
Analysis hours: 6:48 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:48 AM	29,018 sf	22.50%	9,965 sf	7.73%	10,180 sf	7.90%	
7:00 AM	18,212 sf	14.12%	10,207 sf	7.92%	10,427 sf	8.09%	
7:15 AM	12,521 sf	9.71%	11,449 sf	8.88%	11,606 sf	9.00%	
7:30 AM	9,563 sf	7.42%	13,015 sf	10.09%	13,140 sf	10.19%	
7:45 AM	7,585 sf	5.88%	14,151 sf	10.97%	14,244 sf	11.05%	
8:00 AM	6,342 sf	4.92%	14,279 sf	11.07%	14,351 sf	11.13%	
8:15 AM	5,359 sf	4.16%	13,488 sf	10.46%	13,598 sf	10.55%	
8:30 AM	4,576 sf	3.55%	12,710 sf	9.86%	12,765 sf	9.90%	
8:45 AM	3,931 sf	3.05%	11,904 sf	9.23%	11,934 sf	9.26%	
9:00 AM	3,396 sf	2.63%	11,055 sf	8.57%	11,076 sf	8.59%	
9:15 AM	2,957 sf	2.29%	10,253 sf	7.95%	10,270 sf	7.96%	
9:30 AM	2,572 sf	1.99%	9,431 sf	7.31%	9,444 sf	7.32%	
9:45 AM	2,257 sf	1.75%	8,694 sf	6.74%	8,703 sf	6.75%	
10:00 AM	1,978 sf	1.53%	7,951 sf	6.17%	7,959 sf	6.17%	
10:15 AM	1,728 sf	1.34%	7,292 sf	5.66%	7,297 sf	5.66%	
10:30 AM	1,495 sf	1.16%	6,592 sf	5.11%	6,596 sf	5.12%	
10:45 AM	1,275 sf	0.99%	5,967 sf	4.63%	5,970 sf	4.63%	
11:00 AM	1,069 sf	0.83%	5,290 sf	4.10%	5,291 sf	4.10%	
11:15 AM	873 sf	0.68%	4,692 sf	3.64%	4,693 sf	3.64%	
11:30 AM	687 sf	0.53%	4,025 sf	3.12%	4,026 sf	3.12%	
11:45 AM	507 sf	0.39%	3,459 sf	2.68%	3,459 sf	2.68%	
12:00 PM	337 sf	0.26%	2,806 sf	2.18%	2,806 sf	2.18%	
12:15 PM	165 sf	0.13%	2,253 sf	1.75%	2,253 sf	1.75%	
12:30 PM	42 sf	0.03%	1,587 sf	1.23%	1,586 sf	1.23%	
12:45 PM	0 sf	0.00%	1,096 sf	0.85%	1,098 sf	0.85%	
1:00 PM	0 sf	0.00%	524 sf	0.41%	525 sf	0.41%	
1:15 PM	0 sf	0.00%	131 sf	0.10%	131 sf	0.10%	
1:30 PM	0 sf	0.00%	11 sf	0.01%	11 sf	0.01%	
1:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 5

Mirror date: June 7
Analysis hours: 6:52 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:52 AM	27,966 sf	21.69%	10,856 sf	8.42%	11,116 sf	8.62%	
7:00 AM	19,708 sf	15.28%	10,909 sf	8.46%	11,138 sf	8.64%	
7:15 AM	13,277 sf	10.30%	11,752 sf	9.11%	11,919 sf	9.24%	
7:30 AM	10,015 sf	7.77%	13,310 sf	10.32%	13,443 sf	10.43%	
7:45 AM	7,851 sf	6.09%	14,572 sf	11.30%	14,671 sf	11.38%	
8:00 AM	6,535 sf	5.07%	14,815 sf	11.49%	14,891 sf	11.55%	
8:15 AM	5,504 sf	4.27%	14,074 sf	10.91%	14,220 sf	11.03%	
8:30 AM	4,695 sf	3.64%	13,277 sf	10.30%	13,374 sf	10.37%	
8:45 AM	4,022 sf	3.12%	12,433 sf	9.64%	12,465 sf	9.67%	
9:00 AM	3,481 sf	2.70%	11,571 sf	8.97%	11,594 sf	8.99%	
9:15 AM	3,017 sf	2.34%	10,732 sf	8.32%	10,748 sf	8.34%	
9:30 AM	2,630 sf	2.04%	9,856 sf	7.64%	9,868 sf	7.65%	
9:45 AM	2,305 sf	1.79%	9,083 sf	7.04%	9,092 sf	7.05%	
10:00 AM	2,024 sf	1.57%	8,302 sf	6.44%	8,310 sf	6.44%	
10:15 AM	1,768 sf	1.37%	7,612 sf	5.90%	7,617 sf	5.91%	
10:30 AM	1,527 sf	1.18%	6,887 sf	5.34%	6,891 sf	5.34%	
10:45 AM	1,307 sf	1.01%	6,245 sf	4.84%	6,248 sf	4.85%	
11:00 AM	1,097 sf	0.85%	5,547 sf	4.30%	5,549 sf	4.30%	
11:15 AM	898 sf	0.70%	4,935 sf	3.83%	4,936 sf	3.83%	
11:30 AM	712 sf	0.55%	4,250 sf	3.30%	4,252 sf	3.30%	
11:45 AM	529 sf	0.41%	3,670 sf	2.85%	3,670 sf	2.85%	
12:00 PM	355 sf	0.28%	3,002 sf	2.33%	3,002 sf	2.33%	
12:15 PM	184 sf	0.14%	2,440 sf	1.89%	2,440 sf	1.89%	
12:30 PM	51 sf	0.04%	1,767 sf	1.37%	1,767 sf	1.37%	
12:45 PM	0 sf	0.00%	1,246 sf	0.97%	1,248 sf	0.97%	
1:00 PM	0 sf	0.00%	661 sf	0.51%	661 sf	0.51%	
1:15 PM	0 sf	0.00%	226 sf	0.18%	226 sf	0.18%	
1:30 PM	0 sf	0.00%	27 sf	0.02%	27 sf	0.02%	
1:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 12

Mirror date: May 31
Analysis hours: 6:56 AM-7:33 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:56 AM	26,388 sf	20.46%	12,461 sf	9.66%	12,739 sf	9.88%	
7:00 AM	22,476 sf	17.43%	12,402 sf	9.62%	12,642 sf	9.80%	
7:15 AM	14,359 sf	11.14%	12,647 sf	9.81%	12,728 sf	9.87%	
7:30 AM	10,646 sf	8.26%	13,939 sf	10.81%	14,084 sf	10.92%	
7:45 AM	8,248 sf	6.40%	15,264 sf	11.84%	15,373 sf	11.92%	
8:00 AM	6,775 sf	5.25%	15,648 sf	12.14%	15,751 sf	12.22%	
8:15 AM	5,689 sf	4.41%	15,014 sf	11.64%	15,238 sf	11.82%	
8:30 AM	4,829 sf	3.75%	14,141 sf	10.97%	14,313 sf	11.10%	
8:45 AM	4,141 sf	3.21%	13,275 sf	10.30%	13,311 sf	10.32%	
9:00 AM	3,568 sf	2.77%	12,355 sf	9.58%	12,380 sf	9.60%	
9:15 AM	3,095 sf	2.40%	11,476 sf	8.90%	11,495 sf	8.91%	
9:30 AM	2,695 sf	2.09%	10,543 sf	8.18%	10,557 sf	8.19%	
9:45 AM	2,372 sf	1.84%	9,689 sf	7.51%	9,699 sf	7.52%	
10:00 AM	2,083 sf	1.62%	8,846 sf	6.86%	8,855 sf	6.87%	
10:15 AM	1,818 sf	1.41%	8,110 sf	6.29%	8,118 sf	6.30%	
10:30 AM	1,570 sf	1.22%	7,339 sf	5.69%	7,344 sf	5.70%	
10:45 AM	1,347 sf	1.04%	6,671 sf	5.17%	6,675 sf	5.18%	
11:00 AM	1,133 sf	0.88%	5,936 sf	4.60%	5,938 sf	4.61%	
11:15 AM	929 sf	0.72%	5,300 sf	4.11%	5,301 sf	4.11%	
11:30 AM	735 sf	0.57%	4,590 sf	3.56%	4,591 sf	3.56%	
11:45 AM	552 sf	0.43%	3,987 sf	3.09%	3,988 sf	3.09%	
12:00 PM	377 sf	0.29%	3,294 sf	2.55%	3,294 sf	2.55%	
12:15 PM	200 sf	0.15%	2,717 sf	2.11%	2,718 sf	2.11%	
12:30 PM	62 sf	0.05%	2,030 sf	1.57%	2,031 sf	1.57%	
12:45 PM	0 sf	0.00%	1,484 sf	1.15%	1,487 sf	1.15%	
1:00 PM	0 sf	0.00%	854 sf	0.66%	854 sf	0.66%	
1:15 PM	0 sf	0.00%	387 sf	0.30%	387 sf	0.30%	
1:30 PM	0 sf	0.00%	63 sf	0.05%	63 sf	0.05%	
1:45 PM	0 sf	0.00%	5 sf	0.00%	5 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:33 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 19

Mirror date: May 24
Analysis hours: 7:01 AM-7:30 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:01 AM	24,679 sf	19.14%	14,776 sf	11.46%	14,977 sf	11.62%	
7:16 AM	15,290 sf	11.86%	14,396 sf	11.16%	14,396 sf	11.16%	
7:30 AM	11,449 sf	8.88%	14,949 sf	11.59%	15,105 sf	11.71%	
7:45 AM	8,781 sf	6.81%	16,203 sf	12.57%	16,331 sf	12.67%	
8:00 AM	7,081 sf	5.49%	16,853 sf	13.07%	17,115 sf	13.27%	
8:15 AM	5,899 sf	4.57%	16,308 sf	12.65%	16,685 sf	12.94%	
8:30 AM	5,000 sf	3.88%	15,380 sf	11.93%	15,683 sf	12.16%	
8:45 AM	4,274 sf	3.31%	14,420 sf	11.18%	14,559 sf	11.29%	
9:00 AM	3,672 sf	2.85%	13,414 sf	10.40%	13,442 sf	10.42%	
9:15 AM	3,181 sf	2.47%	12,485 sf	9.68%	12,505 sf	9.70%	
9:30 AM	2,780 sf	2.16%	11,495 sf	8.91%	11,511 sf	8.93%	
9:45 AM	2,448 sf	1.90%	10,514 sf	8.15%	10,526 sf	8.16%	
10:00 AM	2,144 sf	1.66%	9,578 sf	7.43%	9,586 sf	7.43%	
10:15 AM	1,874 sf	1.45%	8,770 sf	6.80%	8,778 sf	6.81%	
10:30 AM	1,620 sf	1.26%	7,942 sf	6.16%	7,948 sf	6.16%	
10:45 AM	1,389 sf	1.08%	7,224 sf	5.60%	7,227 sf	5.61%	
11:00 AM	1,166 sf	0.90%	6,457 sf	5.01%	6,460 sf	5.01%	
11:15 AM	959 sf	0.74%	5,777 sf	4.48%	5,778 sf	4.48%	
11:30 AM	765 sf	0.59%	5,030 sf	3.90%	5,031 sf	3.90%	
11:45 AM	574 sf	0.45%	4,398 sf	3.41%	4,398 sf	3.41%	
12:00 PM	395 sf	0.31%	3,681 sf	2.86%	3,682 sf	2.86%	
12:15 PM	218 sf	0.17%	3,076 sf	2.39%	3,076 sf	2.39%	
12:30 PM	73 sf	0.06%	2,366 sf	1.83%	2,364 sf	1.83%	
12:45 PM	0 sf	0.00%	1,794 sf	1.39%	1,796 sf	1.39%	
1:00 PM	0 sf	0.00%	1,121 sf	0.87%	1,121 sf	0.87%	
1:15 PM	0 sf	0.00%	607 sf	0.47%	607 sf	0.47%	
1:30 PM	0 sf	0.00%	126 sf	0.10%	126 sf	0.10%	
1:45 PM	0 sf	0.00%	29 sf	0.02%	29 sf	0.02%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 26

Mirror date: May 17
Analysis hours: 7:07 AM-7:25 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:07 AM	23,119 sf	17.93%	17,638 sf	13.68%	17,720 sf	13.74%	
7:15 AM	17,903 sf	13.88%	16,927 sf	13.13%	16,902 sf	13.11%	
7:30 AM	12,409 sf	9.62%	16,569 sf	12.85%	16,661 sf	12.92%	
7:45 AM	9,438 sf	7.32%	17,500 sf	13.57%	17,684 sf	13.71%	
8:00 AM	7,433 sf	5.76%	18,361 sf	14.24%	18,914 sf	14.67%	
8:15 AM	6,150 sf	4.77%	18,005 sf	13.96%	18,642 sf	14.46%	
8:30 AM	5,193 sf	4.03%	16,963 sf	13.16%	17,492 sf	13.57%	
8:45 AM	4,424 sf	3.43%	15,893 sf	12.33%	16,214 sf	12.57%	
9:00 AM	3,800 sf	2.95%	14,791 sf	11.47%	14,869 sf	11.53%	
9:15 AM	3,280 sf	2.54%	13,762 sf	10.67%	13,784 sf	10.69%	
9:30 AM	2,882 sf	2.24%	12,698 sf	9.85%	12,715 sf	9.86%	
9:45 AM	2,534 sf	1.97%	11,564 sf	8.97%	11,577 sf	8.98%	
10:00 AM	2,219 sf	1.72%	10,519 sf	8.16%	10,530 sf	8.17%	
10:15 AM	1,935 sf	1.50%	9,609 sf	7.45%	9,617 sf	7.46%	
10:30 AM	1,673 sf	1.30%	8,703 sf	6.75%	8,708 sf	6.75%	
10:45 AM	1,432 sf	1.11%	7,918 sf	6.14%	7,922 sf	6.14%	
11:00 AM	1,204 sf	0.93%	7,097 sf	5.50%	7,100 sf	5.51%	
11:15 AM	989 sf	0.77%	6,367 sf	4.94%	6,370 sf	4.94%	
11:30 AM	790 sf	0.61%	5,577 sf	4.32%	5,578 sf	4.33%	
11:45 AM	598 sf	0.46%	4,904 sf	3.80%	4,905 sf	3.80%	
12:00 PM	415 sf	0.32%	4,154 sf	3.22%	4,154 sf	3.22%	
12:15 PM	231 sf	0.18%	3,518 sf	2.73%	3,519 sf	2.73%	
12:30 PM	80 sf	0.06%	2,794 sf	2.17%	2,795 sf	2.17%	
12:45 PM	2 sf	0.00%	2,196 sf	1.70%	2,196 sf	1.70%	
1:00 PM	0 sf	0.00%	1,476 sf	1.14%	1,475 sf	1.14%	
1:15 PM	0 sf	0.00%	905 sf	0.70%	906 sf	0.70%	
1:30 PM	0 sf	0.00%	280 sf	0.22%	280 sf	0.22%	
1:45 PM	0 sf	0.00%	86 sf	0.07%	86 sf	0.07%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:25 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 2

Mirror date: May 10
Analysis hours: 7:12 AM-7:18 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:12 AM	21,795 sf	16.90%	20,788 sf	16.12%	20,734 sf	16.08%	
7:15 AM	20,231 sf	15.69%	20,393 sf	15.82%	20,305 sf	15.75%	
7:30 AM	13,665 sf	10.60%	19,029 sf	14.76%	18,989 sf	14.73%	
7:45 AM	10,184 sf	7.90%	19,219 sf	14.91%	19,944 sf	15.47%	
8:00 AM	7,878 sf	6.11%	20,140 sf	15.62%	21,169 sf	16.42%	
8:15 AM	6,417 sf	4.98%	20,029 sf	15.53%	21,081 sf	16.35%	
8:30 AM	5,391 sf	4.18%	18,838 sf	14.61%	19,722 sf	15.29%	
8:45 AM	4,582 sf	3.55%	17,670 sf	13.70%	18,266 sf	14.17%	
9:00 AM	3,926 sf	3.05%	16,466 sf	12.77%	16,788 sf	13.02%	
9:15 AM	3,416 sf	2.65%	15,309 sf	11.87%	15,333 sf	11.89%	
9:30 AM	2,998 sf	2.33%	14,133 sf	10.96%	14,151 sf	10.97%	
9:45 AM	2,628 sf	2.04%	12,820 sf	9.94%	12,835 sf	9.95%	
10:00 AM	2,300 sf	1.78%	11,636 sf	9.02%	11,646 sf	9.03%	
10:15 AM	1,998 sf	1.55%	10,607 sf	8.23%	10,616 sf	8.23%	
10:30 AM	1,725 sf	1.34%	9,599 sf	7.44%	9,605 sf	7.45%	
10:45 AM	1,476 sf	1.14%	8,731 sf	6.77%	8,735 sf	6.77%	
11:00 AM	1,240 sf	0.96%	7,829 sf	6.07%	7,832 sf	6.07%	
11:15 AM	1,020 sf	0.79%	7,042 sf	5.46%	7,044 sf	5.46%	
11:30 AM	816 sf	0.63%	6,199 sf	4.81%	6,199 sf	4.81%	
11:45 AM	617 sf	0.48%	5,483 sf	4.25%	5,483 sf	4.25%	
12:00 PM	430 sf	0.33%	4,692 sf	3.64%	4,691 sf	3.64%	
12:15 PM	243 sf	0.19%	4,021 sf	3.12%	4,020 sf	3.12%	
12:30 PM	86 sf	0.07%	3,282 sf	2.54%	3,289 sf	2.55%	
12:45 PM	3 sf	0.00%	2,658 sf	2.06%	2,661 sf	2.06%	
1:00 PM	0 sf	0.00%	1,903 sf	1.48%	1,903 sf	1.48%	
1:15 PM	0 sf	0.00%	1,276 sf	0.99%	1,277 sf	0.99%	
1:30 PM	0 sf	0.00%	579 sf	0.45%	579 sf	0.45%	
1:45 PM	0 sf	0.00%	188 sf	0.15%	188 sf	0.15%	
2:00 PM	0 sf	0.00%	31 sf	0.02%	31 sf	0.02%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:18 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 9

Mirror date: May 3
Analysis hours: 7:19 AM-7:10 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:19 AM	20,839 sf	16.16%	24,324 sf	18.86%	24,127 sf	18.71%	
7:30 AM	15,308 sf	11.87%	22,224 sf	17.24%	22,753 sf	17.65%	
7:45 AM	11,083 sf	8.60%	21,642 sf	16.78%	23,020 sf	17.85%	
8:00 AM	8,488 sf	6.58%	22,143 sf	17.17%	23,904 sf	18.54%	
8:15 AM	6,723 sf	5.21%	22,266 sf	17.27%	23,942 sf	18.57%	
8:30 AM	5,612 sf	4.35%	21,123 sf	16.38%	22,543 sf	17.48%	
8:45 AM	4,745 sf	3.68%	19,778 sf	15.34%	20,798 sf	16.13%	
9:00 AM	4,098 sf	3.18%	18,418 sf	14.28%	19,065 sf	14.79%	
9:15 AM	3,571 sf	2.77%	17,129 sf	13.28%	17,418 sf	13.51%	
9:30 AM	3,125 sf	2.42%	15,832 sf	12.28%	15,851 sf	12.29%	
9:45 AM	2,730 sf	2.12%	14,296 sf	11.09%	14,312 sf	11.10%	
10:00 AM	2,381 sf	1.85%	12,927 sf	10.03%	12,938 sf	10.03%	
10:15 AM	2,068 sf	1.60%	11,764 sf	9.12%	11,772 sf	9.13%	
10:30 AM	1,781 sf	1.38%	10,636 sf	8.25%	10,642 sf	8.25%	
10:45 AM	1,520 sf	1.18%	9,670 sf	7.50%	9,673 sf	7.50%	
11:00 AM	1,278 sf	0.99%	8,671 sf	6.72%	8,672 sf	6.73%	
11:15 AM	1,051 sf	0.82%	7,816 sf	6.06%	7,814 sf	6.06%	
11:30 AM	837 sf	0.65%	6,912 sf	5.36%	6,909 sf	5.36%	
11:45 AM	632 sf	0.49%	6,147 sf	4.77%	6,141 sf	4.76%	
12:00 PM	440 sf	0.34%	5,297 sf	4.11%	5,291 sf	4.10%	
12:15 PM	252 sf	0.20%	4,581 sf	3.55%	4,587 sf	3.56%	
12:30 PM	89 sf	0.07%	3,834 sf	2.97%	3,839 sf	2.98%	
12:45 PM	3 sf	0.00%	3,185 sf	2.47%	3,189 sf	2.47%	
1:00 PM	0 sf	0.00%	2,399 sf	1.86%	2,401 sf	1.86%	
1:15 PM	0 sf	0.00%	1,721 sf	1.33%	1,722 sf	1.34%	
1:30 PM	0 sf	0.00%	948 sf	0.74%	948 sf	0.73%	
1:45 PM	0 sf	0.00%	376 sf	0.29%	376 sf	0.29%	
2:00 PM	0 sf	0.00%	110 sf	0.09%	110 sf	0.09%	
2:15 PM	0 sf	0.00%	12 sf	0.01%	12 sf	0.01%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:10 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 16

Mirror date: April 26
Analysis hours: 7:25 AM-7:02 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:25 AM	19,717 sf	15.29%	27,846 sf	21.60%	28,879 sf	22.40%	
7:30 AM	17,391 sf	13.49%	26,602 sf	20.63%	27,697 sf	21.48%	
7:45 AM	12,214 sf	9.47%	24,623 sf	19.10%	27,054 sf	20.98%	
8:00 AM	9,153 sf	7.10%	24,524 sf	19.02%	27,163 sf	21.07%	
8:15 AM	7,088 sf	5.50%	24,830 sf	19.26%	27,321 sf	21.19%	
8:30 AM	5,856 sf	4.54%	23,825 sf	18.48%	25,957 sf	20.13%	
8:45 AM	4,978 sf	3.86%	22,219 sf	17.23%	23,808 sf	18.46%	
9:00 AM	4,310 sf	3.34%	20,654 sf	16.02%	21,752 sf	16.87%	
9:15 AM	3,750 sf	2.91%	19,238 sf	14.92%	19,917 sf	15.45%	
9:30 AM	3,259 sf	2.53%	17,787 sf	13.79%	18,022 sf	13.98%	
9:45 AM	2,840 sf	2.20%	15,994 sf	12.40%	16,016 sf	12.42%	
10:00 AM	2,468 sf	1.91%	14,399 sf	11.17%	14,411 sf	11.18%	
10:15 AM	2,141 sf	1.66%	13,085 sf	10.15%	13,092 sf	10.15%	
10:30 AM	1,840 sf	1.43%	11,813 sf	9.16%	11,815 sf	9.16%	
10:45 AM	1,563 sf	1.21%	10,736 sf	8.33%	10,732 sf	8.32%	
11:00 AM	1,310 sf	1.02%	9,635 sf	7.47%	9,627 sf	7.47%	
11:15 AM	1,070 sf	0.83%	8,683 sf	6.73%	8,671 sf	6.72%	
11:30 AM	854 sf	0.66%	7,710 sf	5.98%	7,695 sf	5.97%	
11:45 AM	646 sf	0.50%	6,872 sf	5.33%	6,856 sf	5.32%	
12:00 PM	451 sf	0.35%	5,981 sf	4.64%	5,965 sf	4.63%	
12:15 PM	257 sf	0.20%	5,241 sf	4.06%	5,238 sf	4.06%	
12:30 PM	90 sf	0.07%	4,455 sf	3.45%	4,458 sf	3.46%	
12:45 PM	2 sf	0.00%	3,766 sf	2.92%	3,772 sf	2.93%	
1:00 PM	0 sf	0.00%	2,951 sf	2.29%	2,951 sf	2.29%	
1:15 PM	0 sf	0.00%	2,237 sf	1.73%	2,238 sf	1.74%	
1:30 PM	0 sf	0.00%	1,397 sf	1.08%	1,397 sf	1.08%	
1:45 PM	0 sf	0.00%	729 sf	0.57%	729 sf	0.57%	
2:00 PM	0 sf	0.00%	249 sf	0.19%	249 sf	0.19%	
2:15 PM	0 sf	0.00%	77 sf	0.06%	77 sf	0.06%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:02 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 23

Mirror date: April 19
Analysis hours: 7:31 AM-6:52 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:31 AM	19,062 sf	14.78%	31,533 sf	24.45%	34,112 sf	26.45%	
7:45 AM	13,549 sf	10.51%	28,090 sf	21.78%	32,173 sf	24.95%	
8:00 AM	9,937 sf	7.71%	27,405 sf	21.25%	31,219 sf	24.21%	
8:15 AM	7,581 sf	5.88%	27,612 sf	21.41%	31,135 sf	24.15%	
8:30 AM	6,173 sf	4.79%	26,857 sf	20.83%	29,855 sf	23.15%	
8:45 AM	5,273 sf	4.09%	24,979 sf	19.37%	27,288 sf	21.16%	
9:00 AM	4,543 sf	3.52%	23,214 sf	18.00%	24,881 sf	19.30%	
9:15 AM	3,929 sf	3.05%	21,601 sf	16.75%	22,765 sf	17.66%	
9:30 AM	3,403 sf	2.64%	19,964 sf	15.48%	20,650 sf	16.01%	
9:45 AM	2,949 sf	2.29%	17,889 sf	13.87%	18,120 sf	14.05%	
10:00 AM	2,546 sf	1.97%	16,046 sf	12.44%	16,112 sf	12.50%	
10:15 AM	2,190 sf	1.70%	14,537 sf	11.27%	14,567 sf	11.30%	
10:30 AM	1,876 sf	1.45%	13,107 sf	10.16%	13,107 sf	10.16%	
10:45 AM	1,588 sf	1.23%	11,894 sf	9.22%	11,876 sf	9.21%	
11:00 AM	1,328 sf	1.03%	10,671 sf	8.28%	10,645 sf	8.26%	
11:15 AM	1,088 sf	0.84%	9,623 sf	7.46%	9,590 sf	7.44%	
11:30 AM	863 sf	0.67%	8,553 sf	6.63%	8,519 sf	6.61%	
11:45 AM	650 sf	0.50%	7,648 sf	5.93%	7,610 sf	5.90%	
12:00 PM	451 sf	0.35%	6,688 sf	5.19%	6,657 sf	5.16%	
12:15 PM	256 sf	0.20%	5,953 sf	4.62%	5,949 sf	4.61%	
12:30 PM	85 sf	0.07%	5,131 sf	3.98%	5,140 sf	3.99%	
12:45 PM	1 sf	0.00%	4,404 sf	3.42%	4,407 sf	3.42%	
1:00 PM	0 sf	0.00%	3,551 sf	2.75%	3,553 sf	2.76%	
1:15 PM	0 sf	0.00%	2,794 sf	2.17%	2,794 sf	2.17%	
1:30 PM	0 sf	0.00%	1,903 sf	1.48%	1,903 sf	1.48%	
1:45 PM	0 sf	0.00%	1,145 sf	0.89%	1,146 sf	0.89%	
2:00 PM	0 sf	0.00%	432 sf	0.34%	432 sf	0.34%	
2:15 PM	0 sf	0.00%	187 sf	0.15%	188 sf	0.15%	
2:30 PM	0 sf	0.00%	24 sf	0.02%	24 sf	0.02%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:52 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 30

Mirror date: April 12
Analysis hours: 7:37 AM-6:42 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:37 AM	18,343 sf	14.23%	35,264 sf	27.35%	39,132 sf	30.35%	
7:45 AM	15,166 sf	11.76%	32,156 sf	24.94%	38,255 sf	29.67%	
8:00 AM	10,824 sf	8.39%	30,661 sf	23.78%	36,058 sf	27.96%	
8:15 AM	8,275 sf	6.42%	30,543 sf	23.69%	35,399 sf	27.45%	
8:30 AM	6,628 sf	5.14%	29,993 sf	23.26%	34,105 sf	26.45%	
8:45 AM	5,604 sf	4.35%	28,127 sf	21.81%	31,332 sf	24.30%	
9:00 AM	4,791 sf	3.72%	26,053 sf	20.21%	28,452 sf	22.07%	
9:15 AM	4,104 sf	3.18%	24,244 sf	18.80%	26,027 sf	20.18%	
9:30 AM	3,521 sf	2.73%	22,390 sf	17.36%	23,645 sf	18.34%	
9:45 AM	3,027 sf	2.35%	20,011 sf	15.52%	20,774 sf	16.11%	
10:00 AM	2,602 sf	2.02%	17,869 sf	13.86%	18,125 sf	14.06%	
10:15 AM	2,235 sf	1.73%	16,150 sf	12.52%	16,294 sf	12.64%	
10:30 AM	1,910 sf	1.48%	14,523 sf	11.26%	14,587 sf	11.31%	
10:45 AM	1,614 sf	1.25%	13,165 sf	10.21%	13,177 sf	10.22%	
11:00 AM	1,347 sf	1.04%	11,798 sf	9.15%	11,771 sf	9.13%	
11:15 AM	1,099 sf	0.85%	10,647 sf	8.26%	10,596 sf	8.22%	
11:30 AM	870 sf	0.67%	9,486 sf	7.36%	9,422 sf	7.31%	
11:45 AM	652 sf	0.51%	8,491 sf	6.58%	8,421 sf	6.53%	
12:00 PM	450 sf	0.35%	7,501 sf	5.82%	7,460 sf	5.79%	
12:15 PM	251 sf	0.19%	6,732 sf	5.22%	6,711 sf	5.20%	
12:30 PM	77 sf	0.06%	5,863 sf	4.55%	5,856 sf	4.54%	
12:45 PM	0 sf	0.00%	5,105 sf	3.96%	5,108 sf	3.96%	
1:00 PM	0 sf	0.00%	4,218 sf	3.27%	4,218 sf	3.27%	
1:15 PM	0 sf	0.00%	3,417 sf	2.65%	3,417 sf	2.65%	
1:30 PM	0 sf	0.00%	2,480 sf	1.92%	2,481 sf	1.92%	
1:45 PM	0 sf	0.00%	1,643 sf	1.27%	1,643 sf	1.27%	
2:00 PM	0 sf	0.00%	758 sf	0.59%	758 sf	0.59%	
2:15 PM	0 sf	0.00%	345 sf	0.27%	345 sf	0.27%	
2:30 PM	0 sf	0.00%	91 sf	0.07%	91 sf	0.07%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:42 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 6

Mirror date: April 5
Analysis hours: 7:44 AM-6:31 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:44 AM	17,652 sf	13.69%	38,174 sf	29.61%	45,000 sf	34.90%	
8:00 AM	12,132 sf	9.41%	34,436 sf	26.71%	42,032 sf	32.60%	
8:15 AM	9,200 sf	7.13%	33,771 sf	26.19%	40,275 sf	31.23%	
8:30 AM	7,155 sf	5.55%	33,364 sf	25.88%	38,909 sf	30.17%	
8:45 AM	5,907 sf	4.58%	31,584 sf	24.49%	36,002 sf	27.92%	
9:00 AM	4,978 sf	3.86%	29,232 sf	22.67%	32,625 sf	25.30%	
9:15 AM	4,231 sf	3.28%	27,143 sf	21.05%	29,741 sf	23.06%	
9:30 AM	3,615 sf	2.80%	25,031 sf	19.41%	26,993 sf	20.93%	
9:45 AM	3,098 sf	2.40%	22,366 sf	17.35%	23,733 sf	18.41%	
10:00 AM	2,660 sf	2.06%	19,891 sf	15.43%	20,681 sf	16.04%	
10:15 AM	2,279 sf	1.77%	17,918 sf	13.90%	18,276 sf	14.17%	
10:30 AM	1,940 sf	1.50%	16,073 sf	12.46%	16,291 sf	12.63%	
10:45 AM	1,638 sf	1.27%	14,536 sf	11.27%	14,657 sf	11.37%	
11:00 AM	1,364 sf	1.06%	13,015 sf	10.09%	13,048 sf	10.12%	
11:15 AM	1,110 sf	0.86%	11,744 sf	9.11%	11,724 sf	9.09%	
11:30 AM	876 sf	0.68%	10,480 sf	8.13%	10,416 sf	8.08%	
11:45 AM	656 sf	0.51%	9,392 sf	7.28%	9,307 sf	7.22%	
12:00 PM	446 sf	0.35%	8,421 sf	6.53%	8,349 sf	6.47%	
12:15 PM	244 sf	0.19%	7,598 sf	5.89%	7,560 sf	5.86%	
12:30 PM	70 sf	0.05%	6,669 sf	5.17%	6,650 sf	5.16%	
12:45 PM	0 sf	0.00%	5,866 sf	4.55%	5,867 sf	4.55%	
1:00 PM	0 sf	0.00%	4,940 sf	3.83%	4,940 sf	3.83%	
1:15 PM	0 sf	0.00%	4,104 sf	3.18%	4,104 sf	3.18%	
1:30 PM	0 sf	0.00%	3,122 sf	2.42%	3,124 sf	2.42%	
1:45 PM	0 sf	0.00%	2,227 sf	1.73%	2,227 sf	1.73%	
2:00 PM	0 sf	0.00%	1,243 sf	0.96%	1,243 sf	0.96%	
2:15 PM	0 sf	0.00%	567 sf	0.44%	567 sf	0.44%	
2:30 PM	0 sf	0.00%	208 sf	0.16%	208 sf	0.16%	
2:45 PM	0 sf	0.00%	15 sf	0.01%	15 sf	0.01%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:31 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 13

Mirror date: March 29
Analysis hours: 7:50 AM-6:21 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:50 AM	17,541 sf	13.60%	42,089 sf	32.64%	51,680 sf	40.08%	
8:00 AM	13,821 sf	10.72%	38,940 sf	30.20%	50,148 sf	38.89%	
8:15 AM	10,069 sf	7.81%	37,391 sf	29.00%	45,961 sf	35.64%	
8:30 AM	7,680 sf	5.96%	36,955 sf	28.66%	44,325 sf	34.38%	
8:45 AM	6,133 sf	4.76%	35,352 sf	27.42%	41,291 sf	32.02%	
9:00 AM	5,142 sf	3.99%	32,653 sf	25.32%	37,299 sf	28.93%	
9:15 AM	4,360 sf	3.38%	30,304 sf	23.50%	33,922 sf	26.31%	
9:30 AM	3,707 sf	2.88%	27,900 sf	21.64%	30,664 sf	23.78%	
9:45 AM	3,171 sf	2.46%	24,924 sf	19.33%	27,002 sf	20.94%	
10:00 AM	2,715 sf	2.11%	22,061 sf	17.11%	23,450 sf	18.19%	
10:15 AM	2,319 sf	1.80%	19,827 sf	15.38%	20,689 sf	16.05%	
10:30 AM	1,972 sf	1.53%	17,757 sf	13.77%	18,238 sf	14.14%	
10:45 AM	1,660 sf	1.29%	16,004 sf	12.41%	16,318 sf	12.66%	
11:00 AM	1,381 sf	1.07%	14,341 sf	11.12%	14,511 sf	11.25%	
11:15 AM	1,121 sf	0.87%	12,923 sf	10.02%	12,994 sf	10.08%	
11:30 AM	880 sf	0.68%	11,534 sf	8.94%	11,521 sf	8.94%	
11:45 AM	653 sf	0.51%	10,443 sf	8.10%	10,412 sf	8.07%	
12:00 PM	440 sf	0.34%	9,423 sf	7.31%	9,375 sf	7.27%	
12:15 PM	235 sf	0.18%	8,547 sf	6.63%	8,514 sf	6.60%	
12:30 PM	60 sf	0.05%	7,563 sf	5.87%	7,542 sf	5.85%	
12:45 PM	0 sf	0.00%	6,698 sf	5.19%	6,695 sf	5.19%	
1:00 PM	0 sf	0.00%	5,726 sf	4.44%	5,733 sf	4.45%	
1:15 PM	0 sf	0.00%	4,855 sf	3.77%	4,864 sf	3.77%	
1:30 PM	0 sf	0.00%	3,834 sf	2.97%	3,841 sf	2.98%	
1:45 PM	0 sf	0.00%	2,906 sf	2.25%	2,914 sf	2.26%	
2:00 PM	0 sf	0.00%	1,826 sf	1.42%	1,826 sf	1.42%	
2:15 PM	0 sf	0.00%	963 sf	0.75%	962 sf	0.75%	
2:30 PM	0 sf	0.00%	412 sf	0.32%	412 sf	0.32%	
2:45 PM	0 sf	0.00%	102 sf	0.08%	103 sf	0.08%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	1 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:21 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 20

Fall equinox (Spring equinox on March 22 similar)
Analysis hours: 7:57 AM-6:09 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:57 AM	16,634 sf	12.90%	46,307 sf	35.91%	58,513 sf	45.38%	
8:00 AM	15,344 sf	11.90%	44,895 sf	34.82%	57,749 sf	44.79%	
8:15 AM	10,893 sf	8.45%	41,414 sf	32.12%	52,734 sf	40.90%	
8:30 AM	8,180 sf	6.34%	40,311 sf	31.26%	49,828 sf	38.64%	
8:45 AM	6,384 sf	4.95%	39,480 sf	30.62%	47,302 sf	36.68%	
9:00 AM	5,299 sf	4.11%	36,277 sf	28.13%	42,444 sf	32.92%	
9:15 AM	4,483 sf	3.48%	33,671 sf	26.11%	38,521 sf	29.87%	
9:30 AM	3,807 sf	2.95%	30,968 sf	24.02%	34,690 sf	26.90%	
9:45 AM	3,246 sf	2.52%	27,693 sf	21.48%	30,540 sf	23.68%	
10:00 AM	2,769 sf	2.15%	24,391 sf	18.92%	26,450 sf	20.51%	
10:15 AM	2,361 sf	1.83%	21,842 sf	16.94%	23,296 sf	18.07%	
10:30 AM	2,003 sf	1.55%	19,528 sf	15.14%	20,475 sf	15.88%	
10:45 AM	1,685 sf	1.31%	17,561 sf	13.62%	18,196 sf	14.11%	
11:00 AM	1,395 sf	1.08%	15,718 sf	12.19%	16,122 sf	12.50%	
11:15 AM	1,128 sf	0.87%	14,164 sf	10.98%	14,412 sf	11.18%	
11:30 AM	881 sf	0.68%	12,647 sf	9.81%	12,764 sf	9.90%	
11:45 AM	650 sf	0.50%	11,605 sf	9.00%	11,688 sf	9.06%	
12:00 PM	435 sf	0.34%	10,521 sf	8.16%	10,570 sf	8.20%	
12:15 PM	225 sf	0.17%	9,577 sf	7.43%	9,622 sf	7.46%	
12:30 PM	48 sf	0.04%	8,532 sf	6.62%	8,571 sf	6.65%	
12:45 PM	0 sf	0.00%	7,613 sf	5.90%	7,663 sf	5.94%	
1:00 PM	0 sf	0.00%	6,580 sf	5.10%	6,644 sf	5.15%	
1:15 PM	0 sf	0.00%	5,671 sf	4.40%	5,741 sf	4.45%	
1:30 PM	0 sf	0.00%	4,624 sf	3.59%	4,684 sf	3.63%	
1:45 PM	0 sf	0.00%	3,670 sf	2.85%	3,719 sf	2.88%	
2:00 PM	0 sf	0.00%	2,553 sf	1.98%	2,561 sf	1.99%	
2:15 PM	0 sf	0.00%	1,556 sf	1.21%	1,556 sf	1.21%	
2:30 PM	0 sf	0.00%	737 sf	0.57%	740 sf	0.57%	
2:45 PM	0 sf	0.00%	303 sf	0.23%	303 sf	0.24%	
3:00 PM	0 sf	0.00%	40 sf	0.03%	41 sf	0.03%	
3:15 PM	0 sf	0.00%	14 sf	0.01%	14 sf	0.01%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:09 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 27

Mirror date: March 15
Analysis hours: 8:03 AM-5:58 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:03 AM	14,999 sf	11.63%	50,339 sf	39.04%	65,361 sf	50.69%	
8:15 AM	11,571 sf	8.97%	45,964 sf	35.65%	61,518 sf	47.71%	
8:30 AM	8,707 sf	6.75%	43,945 sf	34.08%	56,095 sf	43.50%	
8:45 AM	6,710 sf	5.20%	43,257 sf	33.55%	53,367 sf	41.39%	
9:00 AM	5,494 sf	4.26%	40,603 sf	31.49%	48,670 sf	37.75%	
9:15 AM	4,609 sf	3.57%	37,300 sf	28.93%	43,620 sf	33.83%	
9:30 AM	3,905 sf	3.03%	34,228 sf	26.54%	39,019 sf	30.26%	
9:45 AM	3,319 sf	2.57%	30,644 sf	23.77%	34,346 sf	26.64%	
10:00 AM	2,830 sf	2.20%	26,952 sf	20.90%	29,748 sf	23.07%	
10:15 AM	2,402 sf	1.86%	23,979 sf	18.60%	26,083 sf	20.23%	
10:30 AM	2,032 sf	1.58%	21,354 sf	16.56%	22,869 sf	17.74%	
10:45 AM	1,706 sf	1.32%	19,196 sf	14.89%	20,300 sf	15.74%	
11:00 AM	1,409 sf	1.09%	17,146 sf	13.30%	17,908 sf	13.89%	
11:15 AM	1,136 sf	0.88%	15,455 sf	11.99%	15,985 sf	12.40%	
11:30 AM	886 sf	0.69%	13,974 sf	10.84%	14,369 sf	11.14%	
11:45 AM	649 sf	0.50%	12,884 sf	9.99%	13,175 sf	10.22%	
12:00 PM	426 sf	0.33%	11,703 sf	9.08%	11,933 sf	9.25%	
12:15 PM	213 sf	0.17%	10,698 sf	8.30%	10,901 sf	8.45%	
12:30 PM	39 sf	0.03%	9,589 sf	7.44%	9,773 sf	7.58%	
12:45 PM	0 sf	0.00%	8,586 sf	6.66%	8,784 sf	6.81%	
1:00 PM	0 sf	0.00%	7,480 sf	5.80%	7,670 sf	5.95%	
1:15 PM	0 sf	0.00%	6,554 sf	5.08%	6,741 sf	5.23%	
1:30 PM	0 sf	0.00%	5,497 sf	4.26%	5,662 sf	4.39%	
1:45 PM	0 sf	0.00%	4,524 sf	3.51%	4,633 sf	3.59%	
2:00 PM	0 sf	0.00%	3,383 sf	2.62%	3,407 sf	2.64%	
2:15 PM	0 sf	0.00%	2,328 sf	1.81%	2,327 sf	1.80%	
2:30 PM	0 sf	0.00%	1,222 sf	0.95%	1,224 sf	0.95%	
2:45 PM	0 sf	0.00%	639 sf	0.50%	643 sf	0.50%	
3:00 PM	0 sf	0.00%	160 sf	0.12%	160 sf	0.12%	
3:15 PM	0 sf	0.00%	101 sf	0.08%	101 sf	0.08%	
3:30 PM	0 sf	0.00%	48 sf	0.04%	48 sf	0.04%	
3:45 PM	0 sf	0.00%	11 sf	0.01%	11 sf	0.01%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:58 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 4

Mirror date: March 8
Analysis hours: 8:09 AM-5:47 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:09 AM	13,399 sf	10.39%	54,268 sf	42.09%	72,181 sf	55.98%	
8:15 AM	12,003 sf	9.31%	51,790 sf	40.16%	70,814 sf	54.92%	
8:30 AM	9,044 sf	7.01%	47,972 sf	37.20%	63,225 sf	49.03%	
8:45 AM	7,037 sf	5.46%	46,889 sf	36.36%	59,724 sf	46.32%	
9:00 AM	5,640 sf	4.37%	45,003 sf	34.90%	55,125 sf	42.75%	
9:15 AM	4,744 sf	3.68%	41,498 sf	32.18%	49,285 sf	38.22%	
9:30 AM	4,015 sf	3.11%	37,937 sf	29.42%	43,879 sf	34.03%	
9:45 AM	3,404 sf	2.64%	33,815 sf	26.22%	38,473 sf	29.84%	
10:00 AM	2,891 sf	2.24%	29,647 sf	22.99%	33,223 sf	25.77%	
10:15 AM	2,455 sf	1.90%	26,307 sf	20.40%	29,108 sf	22.57%	
10:30 AM	2,070 sf	1.61%	23,352 sf	18.11%	25,484 sf	19.76%	
10:45 AM	1,732 sf	1.34%	20,921 sf	16.22%	22,573 sf	17.51%	
11:00 AM	1,429 sf	1.11%	18,703 sf	14.50%	19,945 sf	15.47%	
11:15 AM	1,148 sf	0.89%	16,825 sf	13.05%	17,785 sf	13.79%	
11:30 AM	889 sf	0.69%	15,438 sf	11.97%	16,198 sf	12.56%	
11:45 AM	650 sf	0.50%	14,271 sf	11.07%	14,891 sf	11.55%	
12:00 PM	422 sf	0.33%	13,018 sf	10.10%	13,518 sf	10.48%	
12:15 PM	205 sf	0.16%	11,921 sf	9.25%	12,379 sf	9.60%	
12:30 PM	29 sf	0.02%	10,737 sf	8.33%	11,159 sf	8.65%	
12:45 PM	0 sf	0.00%	9,761 sf	7.57%	10,180 sf	7.90%	
1:00 PM	0 sf	0.00%	8,695 sf	6.74%	9,090 sf	7.05%	
1:15 PM	0 sf	0.00%	7,661 sf	5.94%	8,038 sf	6.23%	
1:30 PM	0 sf	0.00%	6,485 sf	5.03%	6,794 sf	5.27%	
1:45 PM	0 sf	0.00%	5,489 sf	4.26%	5,682 sf	4.41%	
2:00 PM	0 sf	0.00%	4,325 sf	3.35%	4,388 sf	3.40%	
2:15 PM	0 sf	0.00%	3,249 sf	2.52%	3,254 sf	2.52%	
2:30 PM	0 sf	0.00%	2,016 sf	1.56%	2,015 sf	1.56%	
2:45 PM	0 sf	0.00%	1,162 sf	0.90%	1,164 sf	0.90%	
3:00 PM	0 sf	0.00%	506 sf	0.39%	506 sf	0.39%	
3:15 PM	0 sf	0.00%	289 sf	0.22%	289 sf	0.22%	
3:30 PM	0 sf	0.00%	211 sf	0.16%	211 sf	0.16%	
3:45 PM	0 sf	0.00%	144 sf	0.11%	144 sf	0.11%	
4:00 PM	0 sf	0.00%	61 sf	0.05%	61 sf	0.05%	
4:15 PM	0 sf	0.00%	44 sf	0.03%	44 sf	0.03%	
4:30 PM	0 sf	0.00%	49 sf	0.04%	49 sf	0.04%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:47 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 11

Mirror date: March 1
Analysis hours: 8:16 AM-5:37 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:16 AM	12,201 sf	9.46%	57,806 sf	44.83%	78,627 sf	60.98%	
8:30 AM	9,452 sf	7.33%	52,395 sf	40.63%	72,091 sf	55.91%	
8:45 AM	7,385 sf	5.73%	50,454 sf	39.13%	66,390 sf	51.49%	
9:00 AM	5,842 sf	4.53%	49,860 sf	38.67%	61,846 sf	47.96%	
9:15 AM	4,884 sf	3.79%	46,614 sf	36.15%	55,839 sf	43.30%	
9:30 AM	4,132 sf	3.20%	42,174 sf	32.71%	49,190 sf	38.15%	
9:45 AM	3,499 sf	2.71%	37,542 sf	29.12%	43,037 sf	33.38%	
10:00 AM	2,962 sf	2.30%	32,613 sf	25.29%	37,046 sf	28.73%	
10:15 AM	2,508 sf	1.95%	28,805 sf	22.34%	32,332 sf	25.07%	
10:30 AM	2,112 sf	1.64%	25,477 sf	19.76%	28,249 sf	21.91%	
10:45 AM	1,766 sf	1.37%	22,773 sf	17.66%	24,997 sf	19.39%	
11:00 AM	1,451 sf	1.13%	20,308 sf	15.75%	22,052 sf	17.10%	
11:15 AM	1,165 sf	0.90%	18,532 sf	14.37%	20,012 sf	15.52%	
11:30 AM	899 sf	0.70%	17,048 sf	13.22%	18,291 sf	14.19%	
11:45 AM	652 sf	0.51%	15,782 sf	12.24%	16,845 sf	13.06%	
12:00 PM	420 sf	0.33%	14,434 sf	11.19%	15,321 sf	11.88%	
12:15 PM	200 sf	0.16%	13,261 sf	10.28%	14,099 sf	10.93%	
12:30 PM	22 sf	0.02%	12,010 sf	9.31%	12,768 sf	9.90%	
12:45 PM	0 sf	0.00%	10,925 sf	8.47%	11,662 sf	9.04%	
1:00 PM	0 sf	0.00%	9,742 sf	7.56%	10,433 sf	8.09%	
1:15 PM	0 sf	0.00%	8,739 sf	6.78%	9,365 sf	7.26%	
1:30 PM	0 sf	0.00%	7,597 sf	5.89%	8,082 sf	6.27%	
1:45 PM	0 sf	0.00%	6,573 sf	5.10%	6,864 sf	5.32%	
2:00 PM	0 sf	0.00%	5,380 sf	4.17%	5,502 sf	4.27%	
2:15 PM	0 sf	0.00%	4,305 sf	3.34%	4,333 sf	3.36%	
2:30 PM	0 sf	0.00%	3,038 sf	2.36%	3,039 sf	2.36%	
2:45 PM	0 sf	0.00%	1,951 sf	1.51%	1,954 sf	1.52%	
3:00 PM	0 sf	0.00%	1,067 sf	0.83%	1,067 sf	0.83%	
3:15 PM	0 sf	0.00%	600 sf	0.47%	600 sf	0.47%	
3:30 PM	0 sf	0.00%	508 sf	0.39%	508 sf	0.39%	
3:45 PM	0 sf	0.00%	439 sf	0.34%	439 sf	0.34%	
4:00 PM	0 sf	0.00%	360 sf	0.28%	360 sf	0.28%	
4:15 PM	0 sf	0.00%	390 sf	0.30%	390 sf	0.30%	
4:30 PM	0 sf	0.00%	155 sf	0.12%	155 sf	0.12%	
4:45 PM	0 sf	0.00%	9 sf	0.01%	9 sf	0.01%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:37 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 18

Mirror date: February 22
Analysis hours: 8:22 AM-5:27 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:22 AM	11,065 sf	8.58%	61,073 sf	47.36%	84,709 sf	65.69%	
8:30 AM	9,842 sf	7.63%	57,440 sf	44.55%	82,676 sf	64.12%	
8:45 AM	7,726 sf	5.99%	55,251 sf	42.85%	73,622 sf	57.10%	
9:00 AM	6,157 sf	4.78%	55,055 sf	42.70%	68,942 sf	53.47%	
9:15 AM	5,027 sf	3.90%	52,154 sf	40.45%	62,679 sf	48.61%	
9:30 AM	4,250 sf	3.30%	47,212 sf	36.61%	55,202 sf	42.81%	
9:45 AM	3,602 sf	2.79%	41,677 sf	32.32%	47,905 sf	37.15%	
10:00 AM	3,044 sf	2.36%	36,078 sf	27.98%	41,238 sf	31.98%	
10:15 AM	2,570 sf	1.99%	31,474 sf	24.41%	35,758 sf	27.73%	
10:30 AM	2,163 sf	1.68%	27,750 sf	21.52%	31,192 sf	24.19%	
10:45 AM	1,804 sf	1.40%	24,735 sf	19.18%	27,542 sf	21.36%	
11:00 AM	1,481 sf	1.15%	21,995 sf	17.06%	24,289 sf	18.84%	
11:15 AM	1,186 sf	0.92%	20,399 sf	15.82%	22,450 sf	17.41%	
11:30 AM	914 sf	0.71%	18,801 sf	14.58%	20,559 sf	15.94%	
11:45 AM	661 sf	0.51%	17,412 sf	13.50%	18,984 sf	14.72%	
12:00 PM	422 sf	0.33%	15,950 sf	12.37%	17,360 sf	13.46%	
12:15 PM	197 sf	0.15%	14,723 sf	11.42%	16,053 sf	12.45%	
12:30 PM	19 sf	0.01%	13,370 sf	10.37%	14,591 sf	11.32%	
12:45 PM	0 sf	0.00%	12,233 sf	9.49%	13,423 sf	10.41%	
1:00 PM	0 sf	0.00%	11,014 sf	8.54%	12,082 sf	9.37%	
1:15 PM	0 sf	0.00%	9,988 sf	7.75%	10,899 sf	8.45%	
1:30 PM	0 sf	0.00%	8,818 sf	6.84%	9,498 sf	7.37%	
1:45 PM	0 sf	0.00%	7,784 sf	6.04%	8,218 sf	6.37%	
2:00 PM	0 sf	0.00%	6,583 sf	5.11%	6,804 sf	5.28%	
2:15 PM	0 sf	0.00%	5,485 sf	4.25%	5,561 sf	4.31%	
2:30 PM	0 sf	0.00%	4,210 sf	3.26%	4,217 sf	3.27%	
2:45 PM	0 sf	0.00%	3,022 sf	2.34%	3,022 sf	2.34%	
3:00 PM	0 sf	0.00%	1,923 sf	1.49%	1,923 sf	1.49%	
3:15 PM	0 sf	0.00%	1,101 sf	0.85%	1,101 sf	0.85%	
3:30 PM	0 sf	0.00%	944 sf	0.73%	944 sf	0.73%	
3:45 PM	0 sf	0.00%	951 sf	0.74%	950 sf	0.74%	
4:00 PM	0 sf	0.00%	984 sf	0.76%	984 sf	0.76%	
4:15 PM	0 sf	0.00%	748 sf	0.58%	748 sf	0.58%	
4:30 PM	0 sf	0.00%	304 sf	0.24%	304 sf	0.24%	
4:45 PM	0 sf	0.00%	74 sf	0.06%	74 sf	0.06%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:27 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 25

Mirror date: February 15
Analysis hours: 7:30 AM-4:18 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:30 AM	10,059 sf	7.80%	65,983 sf	51.17%	90,692 sf	70.33%	
7:45 AM	8,031 sf	6.23%	60,860 sf	47.20%	82,483 sf	63.97%	
8:00 AM	6,438 sf	4.99%	60,001 sf	46.53%	75,700 sf	58.71%	
8:15 AM	5,219 sf	4.05%	58,322 sf	45.23%	70,075 sf	54.35%	
8:30 AM	4,371 sf	3.39%	52,713 sf	40.88%	61,575 sf	47.75%	
8:45 AM	3,712 sf	2.88%	46,522 sf	36.08%	53,485 sf	41.48%	
9:00 AM	3,137 sf	2.43%	40,010 sf	31.03%	45,793 sf	35.51%	
9:15 AM	2,646 sf	2.05%	34,553 sf	26.80%	39,457 sf	30.60%	
9:30 AM	2,222 sf	1.72%	30,160 sf	23.39%	34,272 sf	26.58%	
9:45 AM	1,849 sf	1.43%	26,827 sf	20.81%	30,214 sf	23.43%	
10:00 AM	1,516 sf	1.18%	24,150 sf	18.73%	27,067 sf	20.99%	
10:15 AM	1,213 sf	0.94%	22,414 sf	17.38%	25,051 sf	19.43%	
10:30 AM	935 sf	0.73%	20,664 sf	16.03%	23,016 sf	17.85%	
10:45 AM	677 sf	0.53%	19,173 sf	14.87%	21,325 sf	16.54%	
11:00 AM	429 sf	0.33%	17,605 sf	13.65%	19,569 sf	15.18%	
11:15 AM	199 sf	0.15%	16,301 sf	12.64%	18,203 sf	14.12%	
11:30 AM	18 sf	0.01%	14,871 sf	11.53%	16,670 sf	12.93%	
11:45 AM	0 sf	0.00%	13,662 sf	10.60%	15,393 sf	11.94%	
12:00 PM	0 sf	0.00%	12,402 sf	9.62%	13,925 sf	10.80%	
12:15 PM	0 sf	0.00%	11,354 sf	8.81%	12,635 sf	9.80%	
12:30 PM	0 sf	0.00%	10,166 sf	7.88%	11,103 sf	8.61%	
12:45 PM	0 sf	0.00%	9,119 sf	7.07%	9,736 sf	7.55%	
1:00 PM	0 sf	0.00%	7,899 sf	6.13%	8,241 sf	6.39%	
1:15 PM	0 sf	0.00%	6,818 sf	5.29%	6,972 sf	5.41%	
1:30 PM	0 sf	0.00%	5,529 sf	4.29%	5,563 sf	4.31%	
1:45 PM	0 sf	0.00%	4,348 sf	3.37%	4,348 sf	3.37%	
2:00 PM	0 sf	0.00%	3,048 sf	2.36%	3,048 sf	2.36%	
2:15 PM	0 sf	0.00%	2,048 sf	1.59%	2,048 sf	1.59%	
2:30 PM	0 sf	0.00%	1,585 sf	1.23%	1,585 sf	1.23%	
2:45 PM	0 sf	0.00%	1,740 sf	1.35%	1,740 sf	1.35%	
3:00 PM	0 sf	0.00%	1,665 sf	1.29%	1,665 sf	1.29%	
3:15 PM	0 sf	0.00%	1,048 sf	0.81%	1,048 sf	0.81%	
3:30 PM	0 sf	0.00%	499 sf	0.39%	499 sf	0.39%	
3:45 PM	0 sf	0.00%	187 sf	0.15%	187 sf	0.15%	
4:00 PM	0 sf	0.00%	21 sf	0.02%	21 sf	0.02%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:18 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 1

Mirror date: February 8
Analysis hours: 7:36 AM-4:10 PM (PST)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:36 AM	9,194 sf	7.13%	71,980 sf	55.82%	96,510 sf	74.85%	
7:45 AM	8,205 sf	6.36%	68,110 sf	52.82%	92,796 sf	71.97%	
8:00 AM	6,686 sf	5.19%	65,426 sf	50.74%	82,760 sf	64.18%	
8:15 AM	5,458 sf	4.23%	64,317 sf	49.88%	77,267 sf	59.92%	
8:30 AM	4,513 sf	3.50%	58,794 sf	45.60%	68,437 sf	53.07%	
8:45 AM	3,821 sf	2.96%	51,737 sf	40.12%	59,295 sf	45.98%	
9:00 AM	3,242 sf	2.51%	44,635 sf	34.62%	50,895 sf	39.47%	
9:15 AM	2,730 sf	2.12%	38,252 sf	29.67%	43,573 sf	33.79%	
9:30 AM	2,288 sf	1.77%	32,946 sf	25.55%	37,530 sf	29.11%	
9:45 AM	1,906 sf	1.48%	29,038 sf	22.52%	33,016 sf	25.60%	
10:00 AM	1,561 sf	1.21%	26,481 sf	20.54%	30,045 sf	23.30%	
10:15 AM	1,251 sf	0.97%	24,572 sf	19.06%	27,848 sf	21.60%	
10:30 AM	967 sf	0.75%	22,668 sf	17.58%	25,635 sf	19.88%	
10:45 AM	699 sf	0.54%	21,047 sf	16.32%	23,802 sf	18.46%	
11:00 AM	445 sf	0.35%	19,362 sf	15.02%	21,916 sf	17.00%	
11:15 AM	211 sf	0.16%	17,981 sf	13.94%	20,480 sf	15.88%	
11:30 AM	20 sf	0.02%	16,470 sf	12.77%	18,849 sf	14.62%	
11:45 AM	0 sf	0.00%	15,227 sf	11.81%	17,499 sf	13.57%	
12:00 PM	0 sf	0.00%	13,882 sf	10.77%	15,880 sf	12.32%	
12:15 PM	0 sf	0.00%	12,819 sf	9.94%	14,501 sf	11.25%	
12:30 PM	0 sf	0.00%	11,597 sf	8.99%	12,844 sf	9.96%	
12:45 PM	0 sf	0.00%	10,562 sf	8.19%	11,420 sf	8.86%	
1:00 PM	0 sf	0.00%	9,339 sf	7.24%	9,854 sf	7.64%	
1:15 PM	0 sf	0.00%	8,278 sf	6.42%	8,549 sf	6.63%	
1:30 PM	0 sf	0.00%	6,999 sf	5.43%	7,085 sf	5.49%	
1:45 PM	0 sf	0.00%	5,846 sf	4.53%	5,849 sf	4.54%	
2:00 PM	0 sf	0.00%	4,458 sf	3.46%	4,457 sf	3.46%	
2:15 PM	0 sf	0.00%	3,329 sf	2.58%	3,328 sf	2.58%	
2:30 PM	0 sf	0.00%	2,505 sf	1.94%	2,504 sf	1.94%	
2:45 PM	0 sf	0.00%	2,634 sf	2.04%	2,634 sf	2.04%	
3:00 PM	0 sf	0.00%	2,183 sf	1.69%	2,182 sf	1.69%	
3:15 PM	0 sf	0.00%	1,383 sf	1.07%	1,383 sf	1.07%	
3:30 PM	0 sf	0.00%	747 sf	0.58%	747 sf	0.58%	
3:45 PM	0 sf	0.00%	339 sf	0.26%	339 sf	0.26%	
4:00 PM	0 sf	0.00%	97 sf	0.08%	97 sf	0.08%	
4:10 PM	0 sf	0.00%	16 sf	0.01%	16 sf	0.01%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 8

Mirror date: February 1
Analysis hours: 7:43 AM-4:03 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:43 AM	8,404 sf	6.52%	77,827 sf	60.36%	101,467 sf	78.69%	
7:45 AM	8,313 sf	6.45%	77,175 sf	59.85%	101,102 sf	78.41%	
8:00 AM	6,911 sf	5.36%	71,377 sf	55.35%	91,123 sf	70.67%	
8:15 AM	5,696 sf	4.42%	69,832 sf	54.16%	84,006 sf	65.15%	
8:30 AM	4,704 sf	3.65%	65,739 sf	50.98%	76,121 sf	59.03%	
8:45 AM	3,942 sf	3.06%	57,482 sf	44.58%	65,383 sf	50.71%	
9:00 AM	3,355 sf	2.60%	49,625 sf	38.49%	56,238 sf	43.61%	
9:15 AM	2,829 sf	2.19%	42,659 sf	33.08%	48,227 sf	37.40%	
9:30 AM	2,371 sf	1.84%	36,332 sf	28.18%	41,122 sf	31.89%	
9:45 AM	1,974 sf	1.53%	31,794 sf	24.66%	36,071 sf	27.97%	
10:00 AM	1,618 sf	1.25%	28,964 sf	22.46%	33,176 sf	25.73%	
10:15 AM	1,297 sf	1.01%	26,861 sf	20.83%	30,798 sf	23.89%	
10:30 AM	1,005 sf	0.78%	24,774 sf	19.21%	28,370 sf	22.00%	
10:45 AM	728 sf	0.56%	23,031 sf	17.86%	26,417 sf	20.49%	
11:00 AM	470 sf	0.36%	21,227 sf	16.46%	24,406 sf	18.93%	
11:15 AM	230 sf	0.18%	19,744 sf	15.31%	22,864 sf	17.73%	
11:30 AM	27 sf	0.02%	18,151 sf	14.08%	21,127 sf	16.38%	
11:45 AM	0 sf	0.00%	16,861 sf	13.08%	19,682 sf	15.26%	
12:00 PM	0 sf	0.00%	15,489 sf	12.01%	17,969 sf	13.94%	
12:15 PM	0 sf	0.00%	14,365 sf	11.14%	16,459 sf	12.76%	
12:30 PM	0 sf	0.00%	13,119 sf	10.17%	14,707 sf	11.41%	
12:45 PM	0 sf	0.00%	12,092 sf	9.38%	13,207 sf	10.24%	
1:00 PM	0 sf	0.00%	10,881 sf	8.44%	11,591 sf	8.99%	
1:15 PM	0 sf	0.00%	9,830 sf	7.62%	10,235 sf	7.94%	
1:30 PM	0 sf	0.00%	8,574 sf	6.65%	8,732 sf	6.77%	
1:45 PM	0 sf	0.00%	7,476 sf	5.80%	7,493 sf	5.81%	
2:00 PM	0 sf	0.00%	6,138 sf	4.76%	6,137 sf	4.76%	
2:15 PM	0 sf	0.00%	4,985 sf	3.87%	4,984 sf	3.87%	
2:30 PM	0 sf	0.00%	3,765 sf	2.92%	3,765 sf	2.92%	
2:45 PM	0 sf	0.00%	3,440 sf	2.67%	3,440 sf	2.67%	
3:00 PM	0 sf	0.00%	2,604 sf	2.02%	2,604 sf	2.02%	
3:15 PM	0 sf	0.00%	1,743 sf	1.35%	1,743 sf	1.35%	
3:30 PM	0 sf	0.00%	1,035 sf	0.80%	1,035 sf	0.80%	
3:45 PM	0 sf	0.00%	534 sf	0.41%	534 sf	0.41%	
4:00 PM	0 sf	0.00%	213 sf	0.17%	213 sf	0.17%	
4:03 PM	0 sf	0.00%	166 sf	0.13%	166 sf	0.13%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 15

Mirror date: January 25
Analysis hours: 7:51 AM-3:57 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:51 AM	7,667 sf	5.95%	83,322 sf	64.62%	105,365 sf	81.71%	
8:00 AM	7,084 sf	5.49%	78,683 sf	61.02%	99,930 sf	77.50%	
8:15 AM	5,909 sf	4.58%	75,211 sf	58.33%	90,681 sf	70.33%	
8:30 AM	4,904 sf	3.80%	71,816 sf	55.70%	82,958 sf	64.34%	
8:45 AM	4,098 sf	3.18%	63,967 sf	49.61%	72,154 sf	55.96%	
9:00 AM	3,465 sf	2.69%	54,910 sf	42.58%	61,648 sf	47.81%	
9:15 AM	2,935 sf	2.28%	47,310 sf	36.69%	53,020 sf	41.12%	
9:30 AM	2,460 sf	1.91%	40,167 sf	31.15%	45,050 sf	34.94%	
9:45 AM	2,050 sf	1.59%	35,170 sf	27.28%	39,630 sf	30.73%	
10:00 AM	1,685 sf	1.31%	31,964 sf	24.79%	36,425 sf	28.25%	
10:15 AM	1,354 sf	1.05%	29,365 sf	22.77%	33,829 sf	26.24%	
10:30 AM	1,052 sf	0.82%	26,909 sf	20.87%	31,148 sf	24.16%	
10:45 AM	770 sf	0.60%	25,056 sf	19.43%	29,086 sf	22.56%	
11:00 AM	505 sf	0.39%	23,140 sf	17.95%	26,961 sf	20.91%	
11:15 AM	258 sf	0.20%	21,541 sf	16.71%	25,284 sf	19.61%	
11:30 AM	43 sf	0.03%	19,880 sf	15.42%	23,442 sf	18.18%	
11:45 AM	0 sf	0.00%	18,518 sf	14.36%	21,885 sf	16.97%	
12:00 PM	0 sf	0.00%	17,079 sf	13.25%	20,056 sf	15.55%	
12:15 PM	0 sf	0.00%	15,945 sf	12.37%	18,476 sf	14.33%	
12:30 PM	0 sf	0.00%	14,659 sf	11.37%	16,591 sf	12.87%	
12:45 PM	0 sf	0.00%	13,632 sf	10.57%	15,025 sf	11.65%	
1:00 PM	0 sf	0.00%	12,425 sf	9.64%	13,346 sf	10.35%	
1:15 PM	0 sf	0.00%	11,427 sf	8.86%	11,979 sf	9.29%	
1:30 PM	0 sf	0.00%	10,218 sf	7.92%	10,459 sf	8.11%	
1:45 PM	0 sf	0.00%	9,169 sf	7.11%	9,213 sf	7.14%	
2:00 PM	0 sf	0.00%	7,927 sf	6.15%	7,927 sf	6.15%	
2:15 PM	0 sf	0.00%	6,965 sf	5.40%	6,965 sf	5.40%	
2:30 PM	0 sf	0.00%	5,498 sf	4.26%	5,498 sf	4.26%	
2:45 PM	0 sf	0.00%	4,151 sf	3.22%	4,151 sf	3.22%	
3:00 PM	0 sf	0.00%	3,036 sf	2.35%	3,036 sf	2.35%	
3:15 PM	0 sf	0.00%	2,118 sf	1.64%	2,118 sf	1.64%	
3:30 PM	0 sf	0.00%	1,348 sf	1.05%	1,347 sf	1.04%	
3:45 PM	0 sf	0.00%	768 sf	0.60%	768 sf	0.60%	
3:57 PM	0 sf	0.00%	408 sf	0.32%	408 sf	0.32%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 22

Mirror date: January 18
Analysis hours: 7:57 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:57 AM	7,081 sf	5.49%	87,681 sf	68.00%	108,082 sf	83.82%	
8:00 AM	6,977 sf	5.41%	86,692 sf	67.23%	107,138 sf	83.09%	
8:15 AM	6,109 sf	4.74%	80,641 sf	62.54%	97,619 sf	75.71%	
8:30 AM	5,108 sf	3.96%	77,039 sf	59.75%	88,952 sf	68.98%	
8:45 AM	4,279 sf	3.32%	70,887 sf	54.98%	79,378 sf	61.56%	
9:00 AM	3,587 sf	2.78%	60,289 sf	46.76%	67,114 sf	52.05%	
9:15 AM	3,048 sf	2.36%	52,038 sf	40.36%	57,783 sf	44.81%	
9:30 AM	2,568 sf	1.99%	44,382 sf	34.42%	49,262 sf	38.20%	
9:45 AM	2,139 sf	1.66%	38,788 sf	30.08%	43,346 sf	33.62%	
10:00 AM	1,761 sf	1.37%	34,996 sf	27.14%	39,637 sf	30.74%	
10:15 AM	1,419 sf	1.10%	32,135 sf	24.92%	36,827 sf	28.56%	
10:30 AM	1,110 sf	0.86%	29,316 sf	22.74%	33,983 sf	26.36%	
10:45 AM	819 sf	0.64%	27,102 sf	21.02%	31,724 sf	24.60%	
11:00 AM	550 sf	0.43%	24,994 sf	19.38%	29,420 sf	22.82%	
11:15 AM	297 sf	0.23%	23,323 sf	18.09%	27,650 sf	21.44%	
11:30 AM	69 sf	0.05%	21,583 sf	16.74%	25,697 sf	19.93%	
11:45 AM	0 sf	0.00%	20,155 sf	15.63%	24,033 sf	18.64%	
12:00 PM	0 sf	0.00%	18,643 sf	14.46%	22,095 sf	17.14%	
12:15 PM	0 sf	0.00%	17,517 sf	13.58%	20,464 sf	15.87%	
12:30 PM	0 sf	0.00%	16,165 sf	12.54%	18,453 sf	14.31%	
12:45 PM	0 sf	0.00%	15,153 sf	11.75%	16,839 sf	13.06%	
1:00 PM	0 sf	0.00%	13,928 sf	10.80%	15,060 sf	11.68%	
1:15 PM	0 sf	0.00%	12,978 sf	10.06%	13,688 sf	10.62%	
1:30 PM	0 sf	0.00%	11,805 sf	9.16%	12,145 sf	9.42%	
1:45 PM	0 sf	0.00%	10,853 sf	8.42%	10,939 sf	8.48%	
2:00 PM	0 sf	0.00%	9,750 sf	7.56%	9,750 sf	7.56%	
2:15 PM	0 sf	0.00%	8,904 sf	6.91%	8,904 sf	6.91%	
2:30 PM	0 sf	0.00%	7,332 sf	5.69%	7,332 sf	5.69%	
2:45 PM	0 sf	0.00%	5,148 sf	3.99%	5,148 sf	3.99%	
3:00 PM	0 sf	0.00%	3,565 sf	2.76%	3,565 sf	2.76%	
3:15 PM	0 sf	0.00%	2,505 sf	1.94%	2,505 sf	1.94%	
3:30 PM	0 sf	0.00%	1,674 sf	1.30%	1,674 sf	1.30%	
3:45 PM	0 sf	0.00%	1,035 sf	0.80%	1,035 sf	0.80%	
3:54 PM	0 sf	0.00%	719 sf	0.56%	719 sf	0.56%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 29

Mirror date: January 11
Analysis hours: 8:04 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:04 AM	6,645 sf	5.15%	91,299 sf	70.80%	110,028 sf	85.33%	
8:15 AM	6,170 sf	4.79%	86,479 sf	67.07%	103,304 sf	80.12%	
8:30 AM	5,322 sf	4.13%	81,687 sf	63.35%	94,421 sf	73.23%	
8:45 AM	4,464 sf	3.46%	76,307 sf	59.18%	85,213 sf	66.09%	
9:00 AM	3,756 sf	2.91%	66,305 sf	51.42%	73,294 sf	56.84%	
9:15 AM	3,169 sf	2.46%	56,805 sf	44.05%	62,535 sf	48.50%	
9:30 AM	2,676 sf	2.08%	48,342 sf	37.49%	53,193 sf	41.25%	
9:45 AM	2,235 sf	1.73%	42,341 sf	32.84%	46,931 sf	36.40%	
10:00 AM	1,842 sf	1.43%	38,027 sf	29.49%	42,768 sf	33.17%	
10:15 AM	1,496 sf	1.16%	34,820 sf	27.00%	39,674 sf	30.77%	
10:30 AM	1,176 sf	0.91%	31,768 sf	24.64%	36,676 sf	28.44%	
10:45 AM	880 sf	0.68%	29,277 sf	22.71%	34,207 sf	26.53%	
11:00 AM	601 sf	0.47%	26,808 sf	20.79%	31,718 sf	24.60%	
11:15 AM	343 sf	0.27%	24,992 sf	19.38%	29,824 sf	23.13%	
11:30 AM	106 sf	0.08%	23,155 sf	17.96%	27,737 sf	21.51%	
11:45 AM	0 sf	0.00%	21,771 sf	16.88%	26,126 sf	20.26%	
12:00 PM	0 sf	0.00%	20,331 sf	15.77%	24,304 sf	18.85%	
12:15 PM	0 sf	0.00%	19,048 sf	14.77%	22,431 sf	17.40%	
12:30 PM	0 sf	0.00%	17,626 sf	13.67%	20,274 sf	15.72%	
12:45 PM	0 sf	0.00%	16,538 sf	12.83%	18,520 sf	14.36%	
1:00 PM	0 sf	0.00%	15,336 sf	11.89%	16,700 sf	12.95%	
1:15 PM	0 sf	0.00%	14,395 sf	11.16%	15,273 sf	11.84%	
1:30 PM	0 sf	0.00%	13,274 sf	10.29%	13,727 sf	10.65%	
1:45 PM	0 sf	0.00%	12,411 sf	9.62%	12,551 sf	9.73%	
2:00 PM	0 sf	0.00%	11,418 sf	8.86%	11,427 sf	8.86%	
2:15 PM	0 sf	0.00%	10,616 sf	8.23%	10,616 sf	8.23%	
2:30 PM	0 sf	0.00%	9,006 sf	6.98%	9,005 sf	6.98%	
2:45 PM	0 sf	0.00%	6,638 sf	5.15%	6,638 sf	5.15%	
3:00 PM	0 sf	0.00%	4,288 sf	3.33%	4,288 sf	3.33%	
3:15 PM	0 sf	0.00%	2,888 sf	2.24%	2,888 sf	2.24%	
3:30 PM	0 sf	0.00%	2,002 sf	1.55%	2,002 sf	1.55%	
3:45 PM	0 sf	0.00%	1,303 sf	1.01%	1,303 sf	1.01%	
3:51 PM	0 sf	0.00%	1,036 sf	0.80%	1,037 sf	0.80%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

December 6

Mirror date: January 4
Analysis hours: 8:10 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:10 AM	6,354 sf	4.93%	93,729 sf	72.69%	110,708 sf	85.86%	
8:15 AM	6,148 sf	4.77%	91,859 sf	71.24%	107,760 sf	83.57%	
8:30 AM	5,505 sf	4.27%	85,666 sf	66.44%	99,424 sf	77.11%	
8:45 AM	4,666 sf	3.62%	80,803 sf	62.66%	90,297 sf	70.03%	
9:00 AM	3,922 sf	3.04%	71,726 sf	55.63%	78,921 sf	61.21%	
9:15 AM	3,300 sf	2.56%	61,369 sf	47.59%	67,195 sf	52.11%	
9:30 AM	2,793 sf	2.17%	52,339 sf	40.59%	57,214 sf	44.37%	
9:45 AM	2,339 sf	1.81%	45,586 sf	35.35%	50,136 sf	38.88%	
10:00 AM	1,938 sf	1.50%	40,827 sf	31.66%	45,613 sf	35.37%	
10:15 AM	1,575 sf	1.22%	37,307 sf	28.93%	42,211 sf	32.74%	
10:30 AM	1,249 sf	0.97%	33,912 sf	26.30%	38,944 sf	30.20%	
10:45 AM	946 sf	0.73%	31,265 sf	24.25%	36,374 sf	28.21%	
11:00 AM	660 sf	0.51%	28,568 sf	22.16%	33,717 sf	26.15%	
11:15 AM	398 sf	0.31%	26,549 sf	20.59%	31,705 sf	24.59%	
11:30 AM	153 sf	0.12%	24,562 sf	19.05%	29,542 sf	22.91%	
11:45 AM	0 sf	0.00%	22,975 sf	17.82%	27,690 sf	21.47%	
12:00 PM	0 sf	0.00%	21,319 sf	16.53%	25,579 sf	19.84%	
12:15 PM	0 sf	0.00%	20,128 sf	15.61%	23,802 sf	18.46%	
12:30 PM	0 sf	0.00%	18,818 sf	14.59%	21,787 sf	16.90%	
12:45 PM	0 sf	0.00%	17,749 sf	13.76%	20,013 sf	15.52%	
1:00 PM	0 sf	0.00%	16,516 sf	12.81%	18,113 sf	14.05%	
1:15 PM	0 sf	0.00%	15,592 sf	12.09%	16,644 sf	12.91%	
1:30 PM	0 sf	0.00%	14,487 sf	11.24%	15,062 sf	11.68%	
1:45 PM	0 sf	0.00%	13,702 sf	10.63%	13,914 sf	10.79%	
2:00 PM	0 sf	0.00%	12,806 sf	9.93%	12,829 sf	9.95%	
2:15 PM	0 sf	0.00%	12,033 sf	9.33%	12,033 sf	9.33%	
2:30 PM	0 sf	0.00%	10,406 sf	8.07%	10,405 sf	8.07%	
2:45 PM	0 sf	0.00%	8,090 sf	6.27%	8,090 sf	6.27%	
3:00 PM	0 sf	0.00%	5,120 sf	3.97%	5,120 sf	3.97%	
3:15 PM	0 sf	0.00%	3,456 sf	2.68%	3,456 sf	2.68%	
3:30 PM	0 sf	0.00%	2,317 sf	1.80%	2,317 sf	1.80%	
3:45 PM	0 sf	0.00%	1,569 sf	1.22%	1,568 sf	1.22%	
3:51 PM	0 sf	0.00%	1,305 sf	1.01%	1,305 sf	1.01%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

December 13

Mirror date: December 28
Analysis hours: 8:15 AM-3:52 PM (PST)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:15 AM	6,175 sf	4.79%	95,211 sf	73.84%	111,104 sf	86.16%	
8:30 AM	5,599 sf	4.34%	89,270 sf	69.23%	103,201 sf	80.04%	
8:45 AM	4,866 sf	3.77%	84,139 sf	65.25%	94,449 sf	73.25%	
9:00 AM	4,095 sf	3.18%	75,674 sf	58.69%	83,151 sf	64.49%	
9:15 AM	3,452 sf	2.68%	65,525 sf	50.82%	71,532 sf	55.48%	
9:30 AM	2,910 sf	2.26%	55,685 sf	43.19%	60,626 sf	47.02%	
9:45 AM	2,447 sf	1.90%	48,294 sf	37.45%	52,799 sf	40.95%	
10:00 AM	2,033 sf	1.58%	43,221 sf	33.52%	47,995 sf	37.22%	
10:15 AM	1,664 sf	1.29%	39,357 sf	30.52%	44,307 sf	34.36%	
10:30 AM	1,327 sf	1.03%	35,654 sf	27.65%	40,734 sf	31.59%	
10:45 AM	1,018 sf	0.79%	32,877 sf	25.50%	38,086 sf	29.54%	
11:00 AM	726 sf	0.56%	30,051 sf	23.31%	35,318 sf	27.39%	
11:15 AM	457 sf	0.35%	27,886 sf	21.63%	33,185 sf	25.74%	
11:30 AM	206 sf	0.16%	25,682 sf	19.92%	30,893 sf	23.96%	
11:45 AM	10 sf	0.01%	24,068 sf	18.67%	29,037 sf	22.52%	
12:00 PM	0 sf	0.00%	22,307 sf	17.30%	26,857 sf	20.83%	
12:15 PM	0 sf	0.00%	21,104 sf	16.37%	25,086 sf	19.45%	
12:30 PM	0 sf	0.00%	19,693 sf	15.27%	22,945 sf	17.79%	
12:45 PM	0 sf	0.00%	18,642 sf	14.46%	21,167 sf	16.42%	
1:00 PM	0 sf	0.00%	17,383 sf	13.48%	19,197 sf	14.89%	
1:15 PM	0 sf	0.00%	16,466 sf	12.77%	17,694 sf	13.72%	
1:30 PM	0 sf	0.00%	15,373 sf	11.92%	16,080 sf	12.47%	
1:45 PM	0 sf	0.00%	14,614 sf	11.33%	14,910 sf	11.56%	
2:00 PM	0 sf	0.00%	13,711 sf	10.63%	13,758 sf	10.67%	
2:15 PM	0 sf	0.00%	13,054 sf	10.12%	13,054 sf	10.12%	
2:30 PM	0 sf	0.00%	11,508 sf	8.92%	11,507 sf	8.92%	
2:45 PM	0 sf	0.00%	9,330 sf	7.24%	9,330 sf	7.24%	
3:00 PM	0 sf	0.00%	5,919 sf	4.59%	5,918 sf	4.59%	
3:15 PM	0 sf	0.00%	4,073 sf	3.16%	4,073 sf	3.16%	
3:30 PM	0 sf	0.00%	2,610 sf	2.02%	2,609 sf	2.02%	
3:45 PM	0 sf	0.00%	1,820 sf	1.41%	1,820 sf	1.41%	
3:52 PM	0 sf	0.00%	1,485 sf	1.15%	1,485 sf	1.15%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

December 20

Winter solstice (December 21 similar)
Analysis hours: 8:19 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:19 AM	6,109 sf	4.74%	95,566 sf	74.11%	111,053 sf	86.13%	
8:30 AM	5,700 sf	4.42%	91,511 sf	70.97%	105,253 sf	81.63%	
8:45 AM	5,056 sf	3.92%	86,047 sf	66.73%	97,210 sf	75.39%	
9:00 AM	4,270 sf	3.31%	78,712 sf	61.04%	86,575 sf	67.14%	
9:15 AM	3,597 sf	2.79%	68,913 sf	53.44%	75,175 sf	58.30%	
9:30 AM	3,029 sf	2.35%	58,290 sf	45.21%	63,414 sf	49.18%	
9:45 AM	2,554 sf	1.98%	50,148 sf	38.89%	54,587 sf	42.33%	
10:00 AM	2,128 sf	1.65%	44,870 sf	34.80%	49,574 sf	38.45%	
10:15 AM	1,747 sf	1.36%	40,734 sf	31.59%	45,670 sf	35.42%	
10:30 AM	1,405 sf	1.09%	36,854 sf	28.58%	41,928 sf	32.52%	
10:45 AM	1,089 sf	0.84%	33,934 sf	26.32%	39,151 sf	30.36%	
11:00 AM	794 sf	0.62%	31,030 sf	24.06%	36,330 sf	28.17%	
11:15 AM	517 sf	0.40%	28,743 sf	22.29%	34,094 sf	26.44%	
11:30 AM	263 sf	0.20%	26,441 sf	20.51%	31,732 sf	24.61%	
11:45 AM	42 sf	0.03%	24,743 sf	19.19%	29,850 sf	23.15%	
12:00 PM	0 sf	0.00%	22,928 sf	17.78%	27,628 sf	21.43%	
12:15 PM	0 sf	0.00%	21,666 sf	16.80%	25,841 sf	20.04%	
12:30 PM	0 sf	0.00%	20,218 sf	15.68%	23,694 sf	18.38%	
12:45 PM	0 sf	0.00%	19,162 sf	14.86%	21,895 sf	16.98%	
1:00 PM	0 sf	0.00%	17,887 sf	13.87%	19,883 sf	15.42%	
1:15 PM	0 sf	0.00%	16,953 sf	13.15%	18,338 sf	14.22%	
1:30 PM	0 sf	0.00%	15,861 sf	12.30%	16,690 sf	12.94%	
1:45 PM	0 sf	0.00%	15,090 sf	11.70%	15,476 sf	12.00%	
2:00 PM	0 sf	0.00%	14,218 sf	11.03%	14,305 sf	11.09%	
2:15 PM	0 sf	0.00%	13,590 sf	10.54%	13,590 sf	10.54%	
2:30 PM	0 sf	0.00%	12,184 sf	9.45%	12,184 sf	9.45%	
2:45 PM	0 sf	0.00%	10,193 sf	7.90%	10,192 sf	7.90%	
3:00 PM	0 sf	0.00%	6,829 sf	5.30%	6,829 sf	5.30%	
3:15 PM	0 sf	0.00%	4,578 sf	3.55%	4,578 sf	3.55%	
3:30 PM	0 sf	0.00%	2,857 sf	2.22%	2,857 sf	2.22%	
3:45 PM	0 sf	0.00%	2,023 sf	1.57%	2,023 sf	1.57%	
3:54 PM	0 sf	0.00%	1,557 sf	1.21%	1,557 sf	1.21%	

FASTCAST

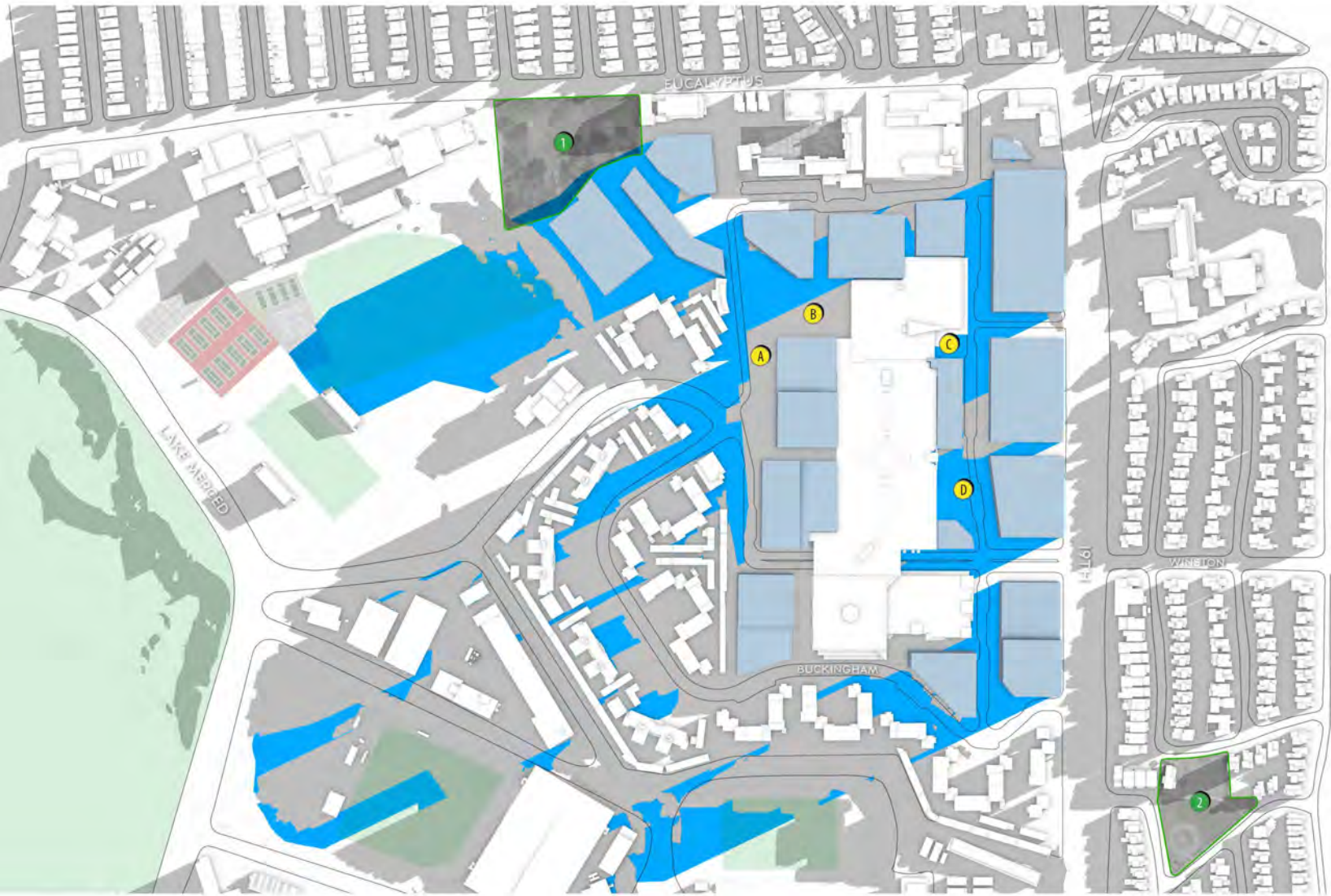
EXHIBIT C:

ANNUAL HOURLY SHADOW PROJECTIONS - ALTERNATIVE VARIANT

C1.1

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

6:47 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.2

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

7:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

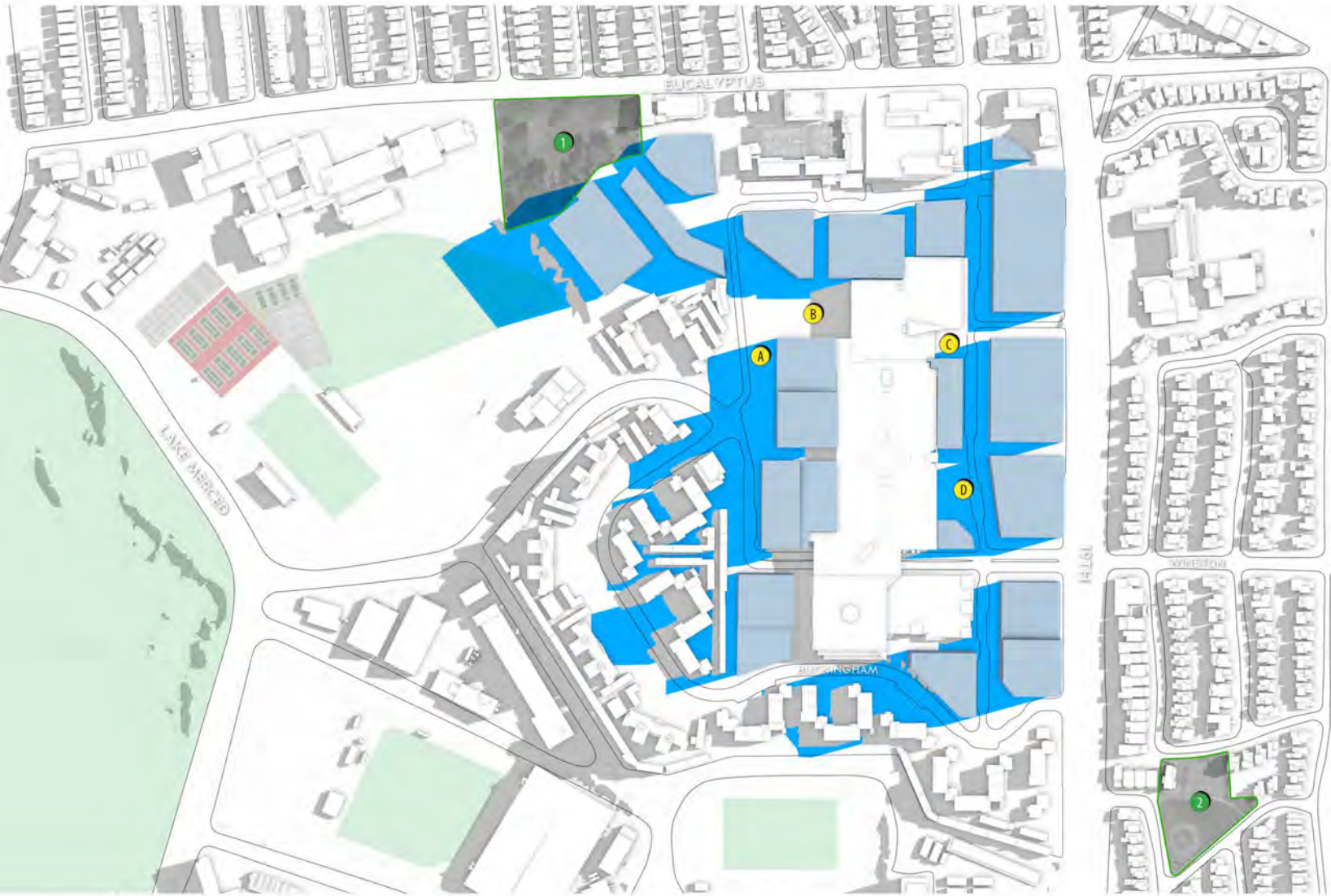
Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.3

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

8:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.4

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

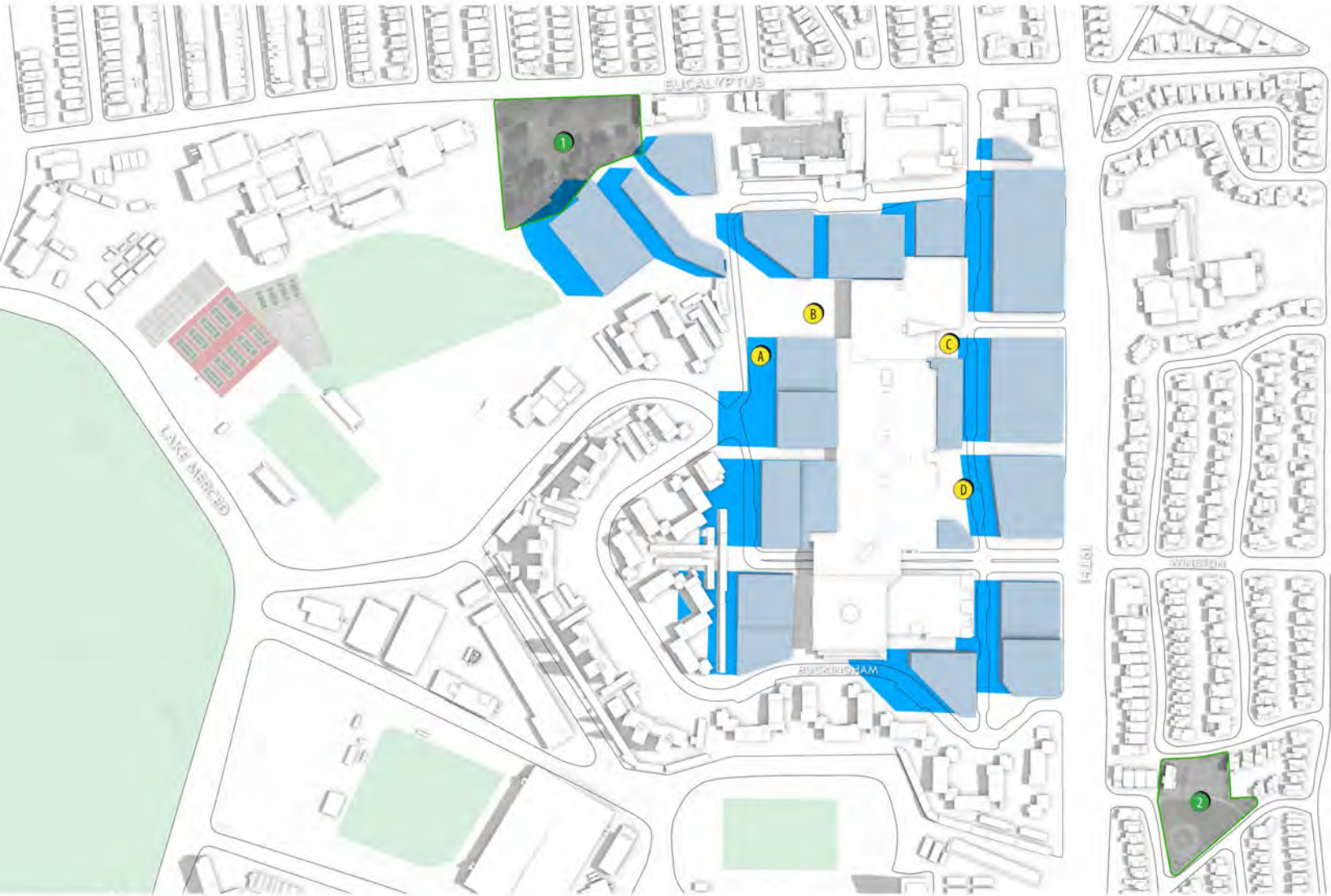
Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.5

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.6

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.7

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.8

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

1:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

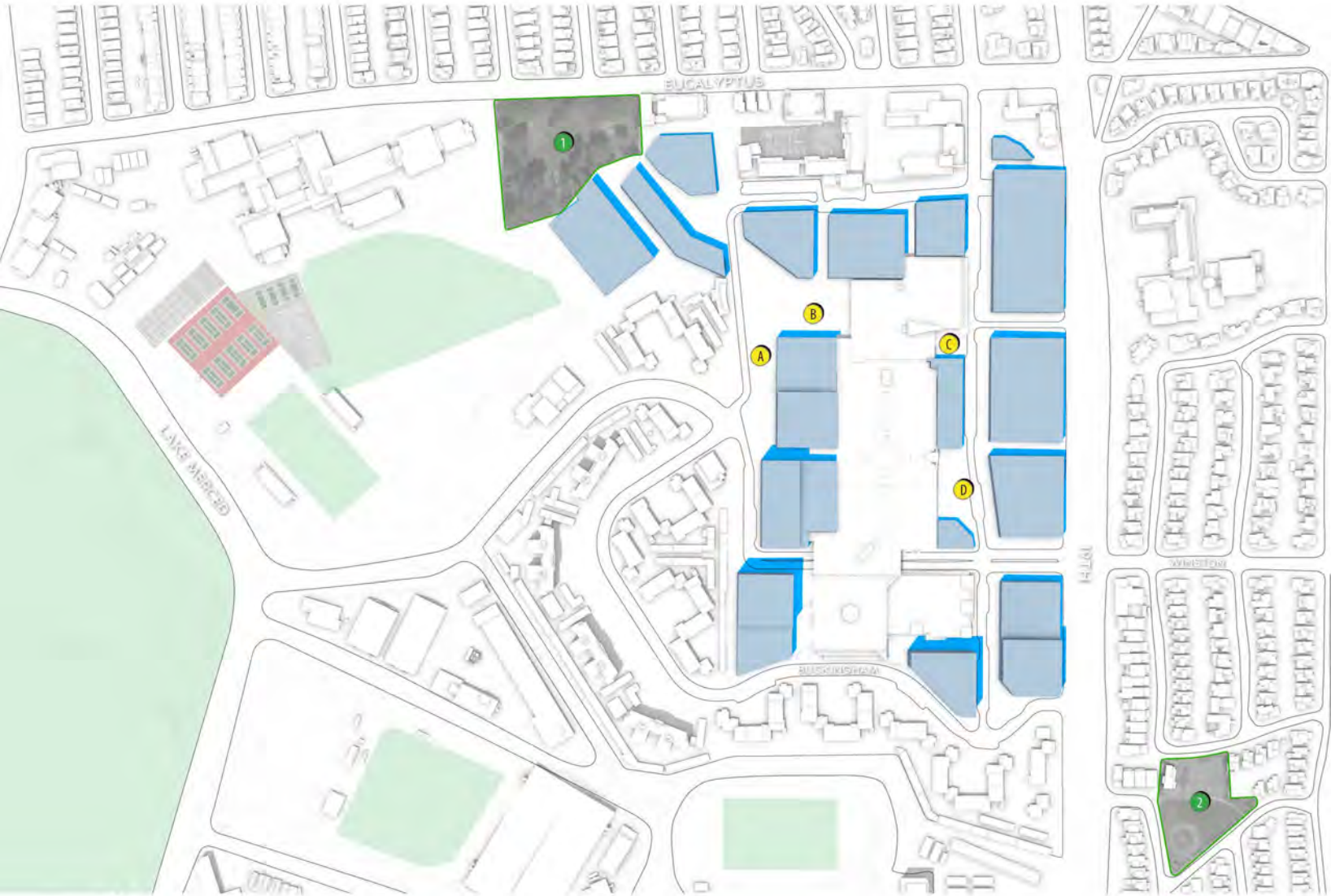
Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.9

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

2:00 PM

LEGEND

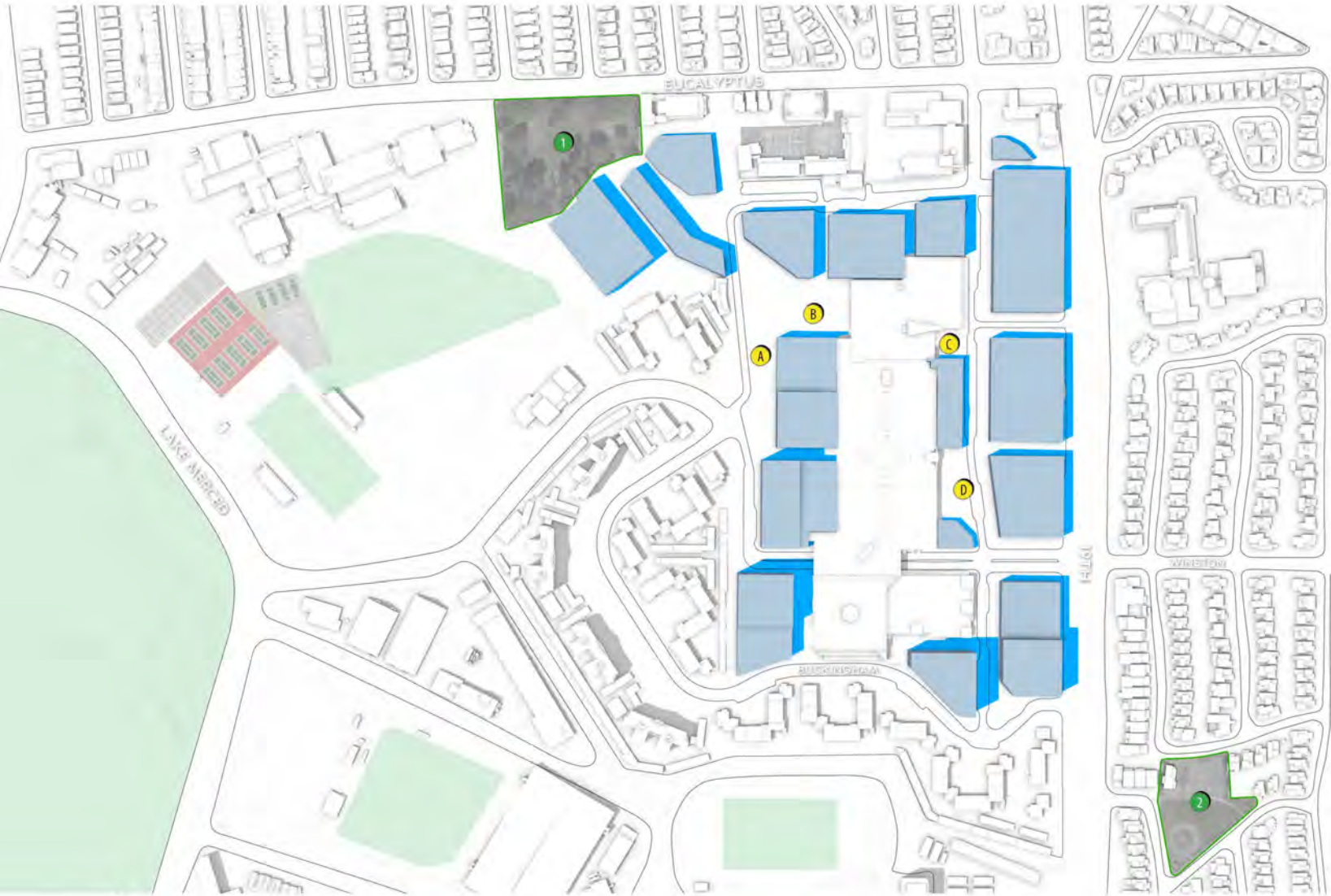
- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.10 STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

3:00 PM

LEGEND

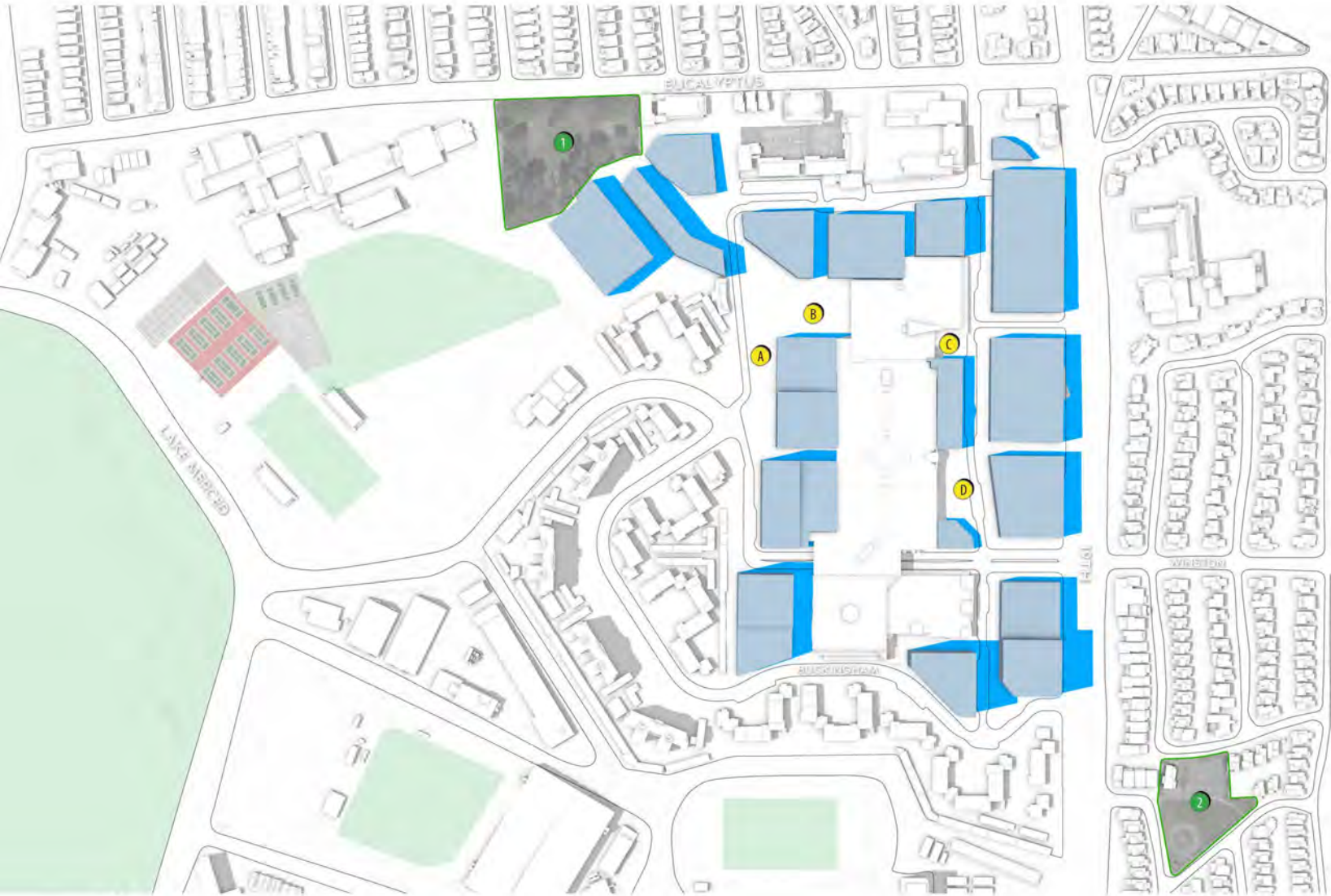
- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.11 STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

4:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

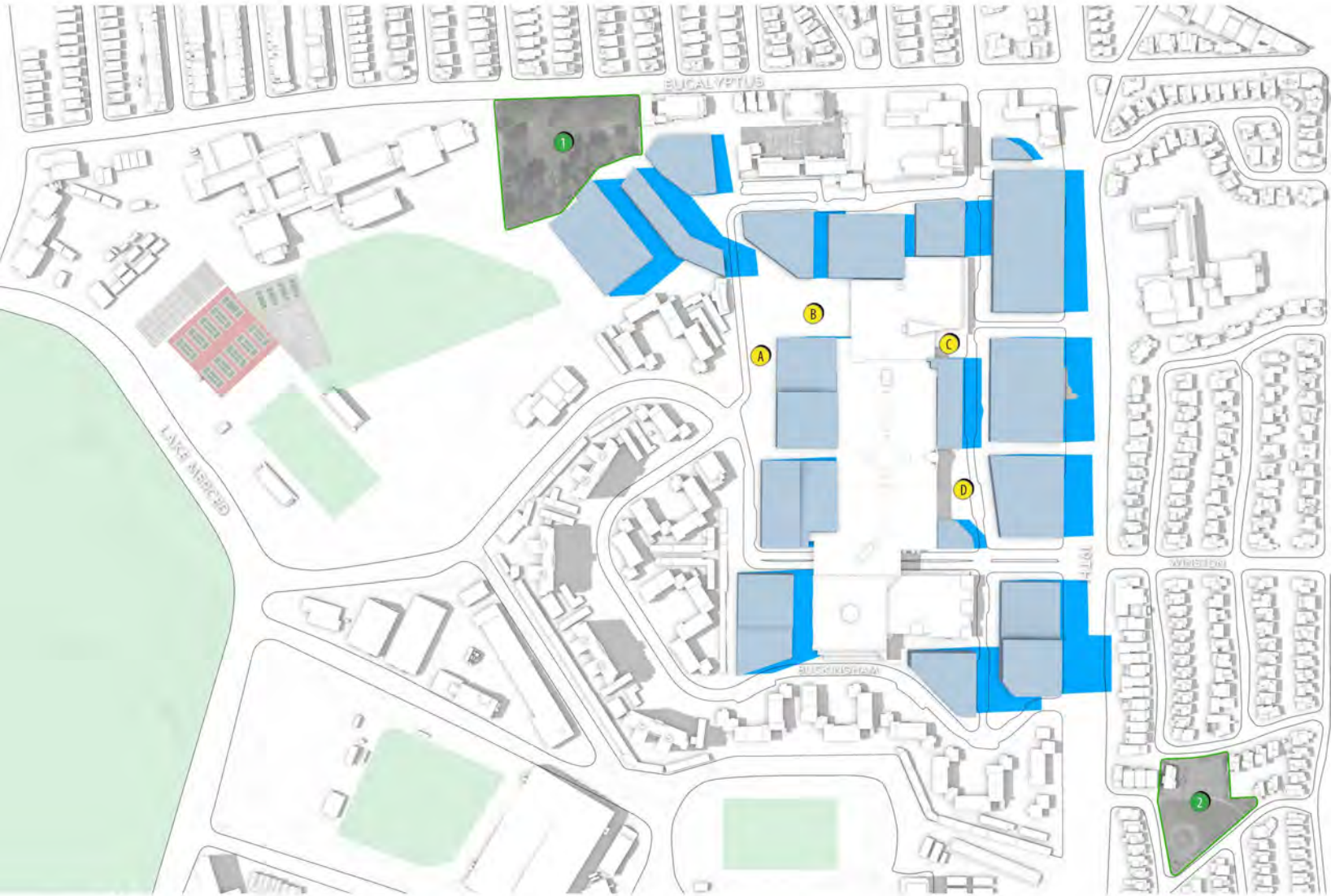
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.12 STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

5:00 PM

LEGEND

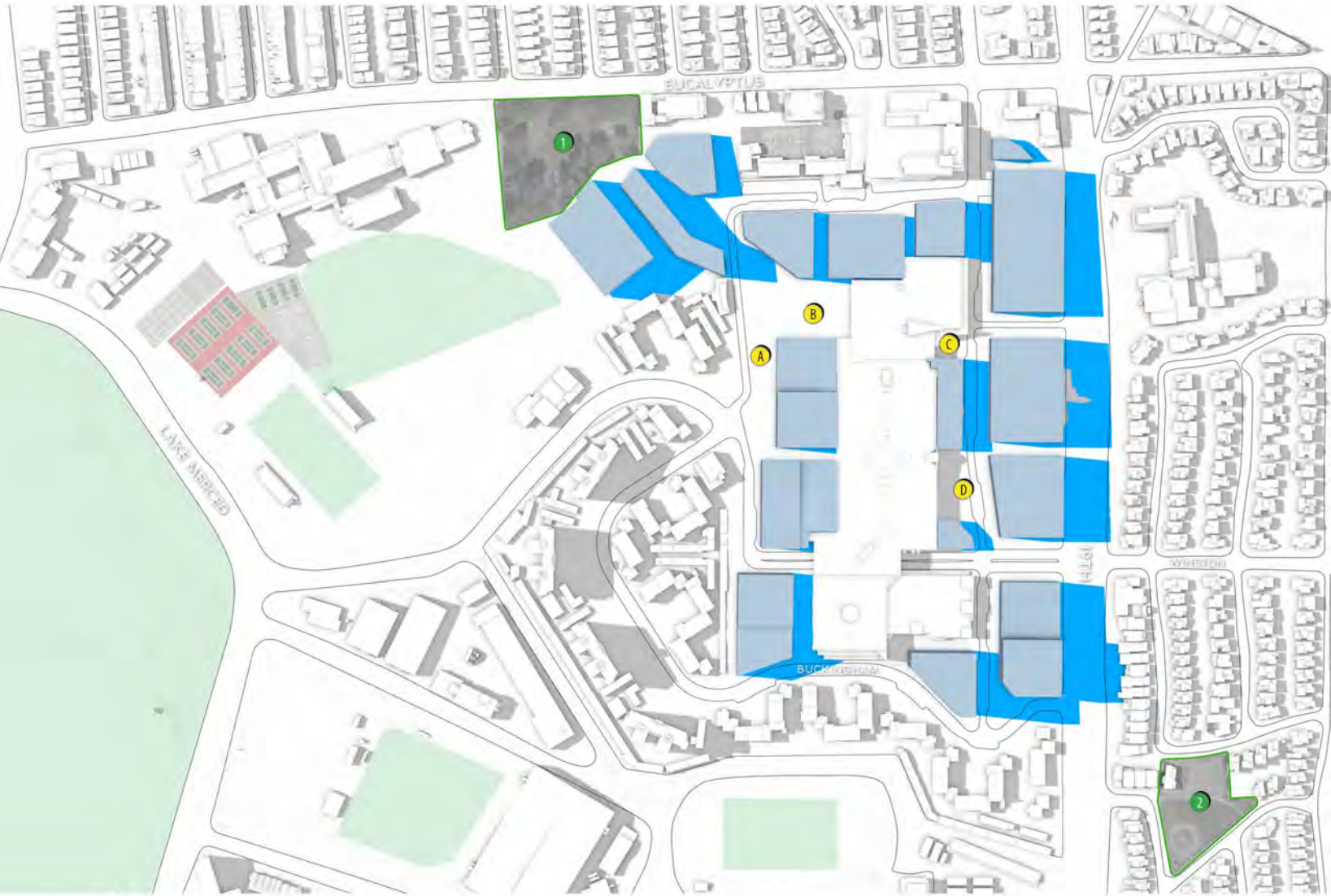
- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.13 STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

6:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

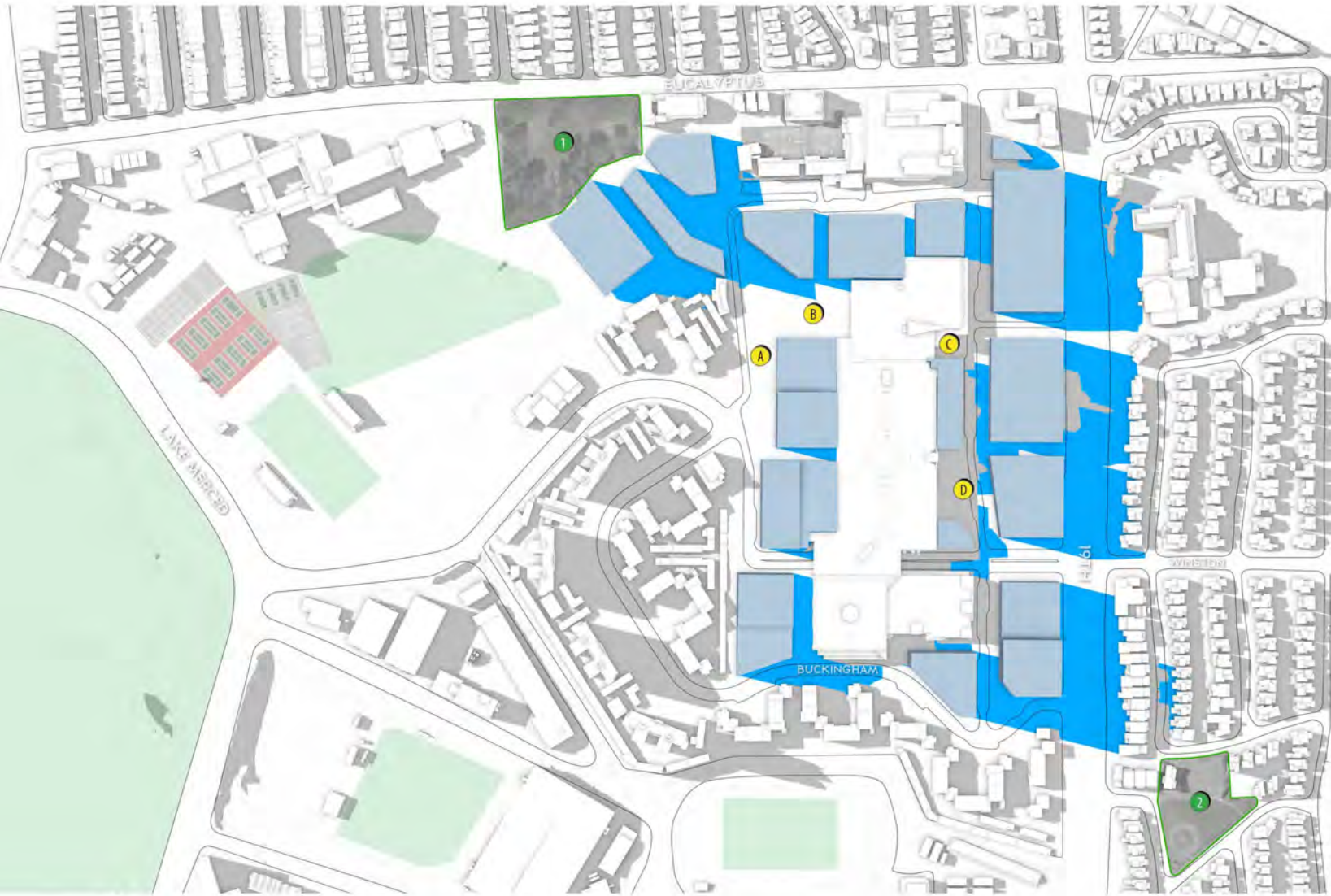
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.14 STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

7:00 PM

LEGEND

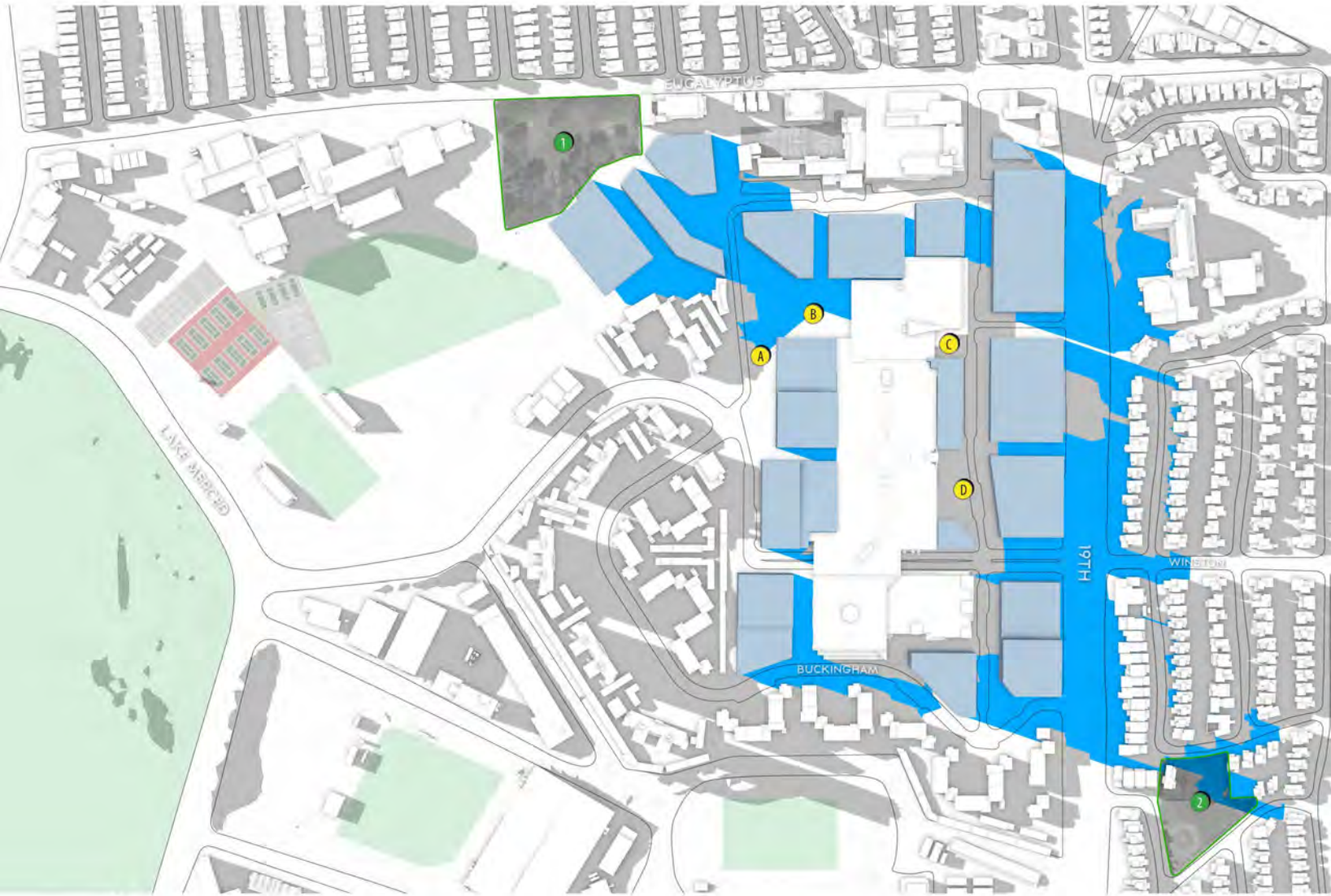
- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.15 STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

7:36 PM

LEGEND

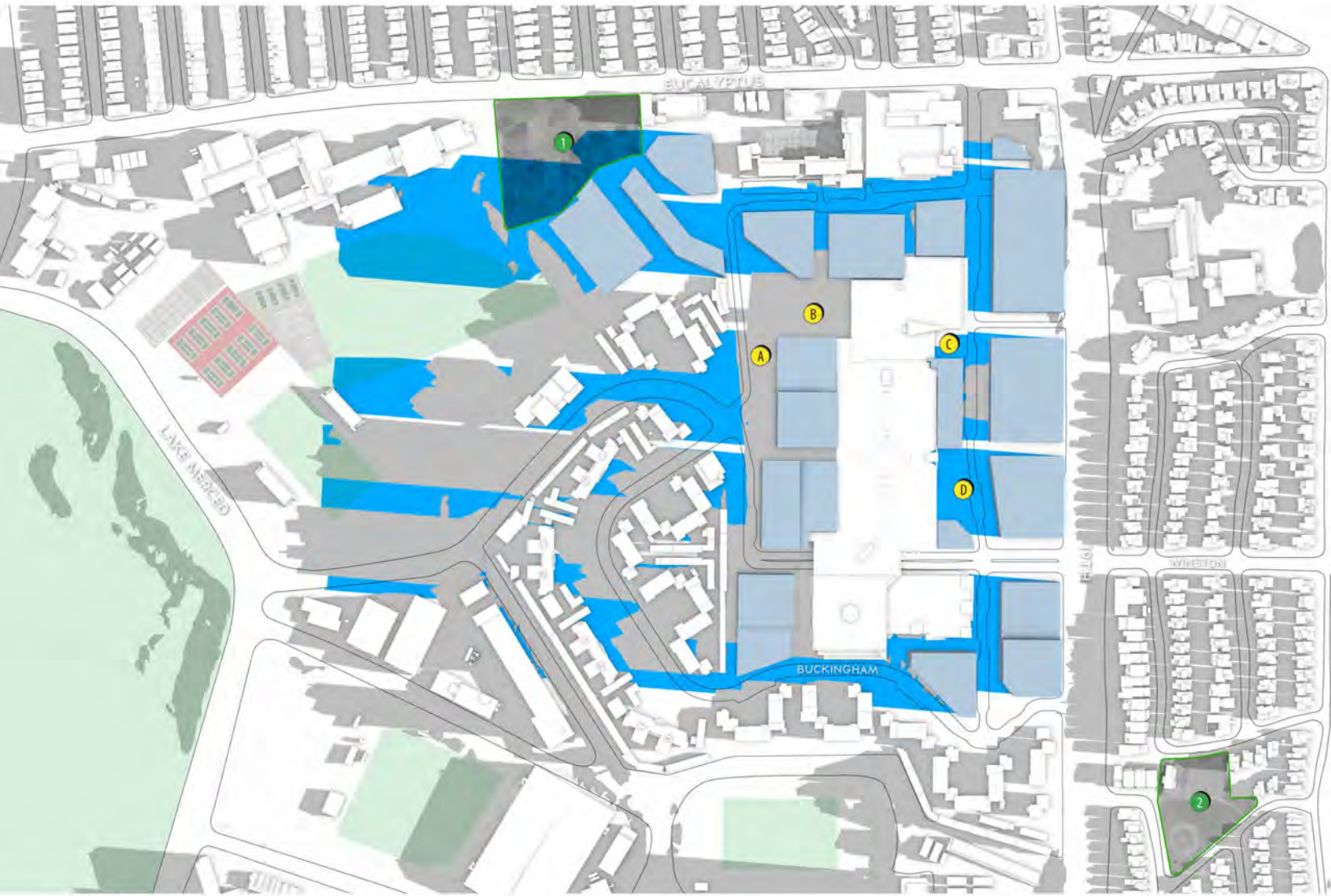
- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.16 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

7:57 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

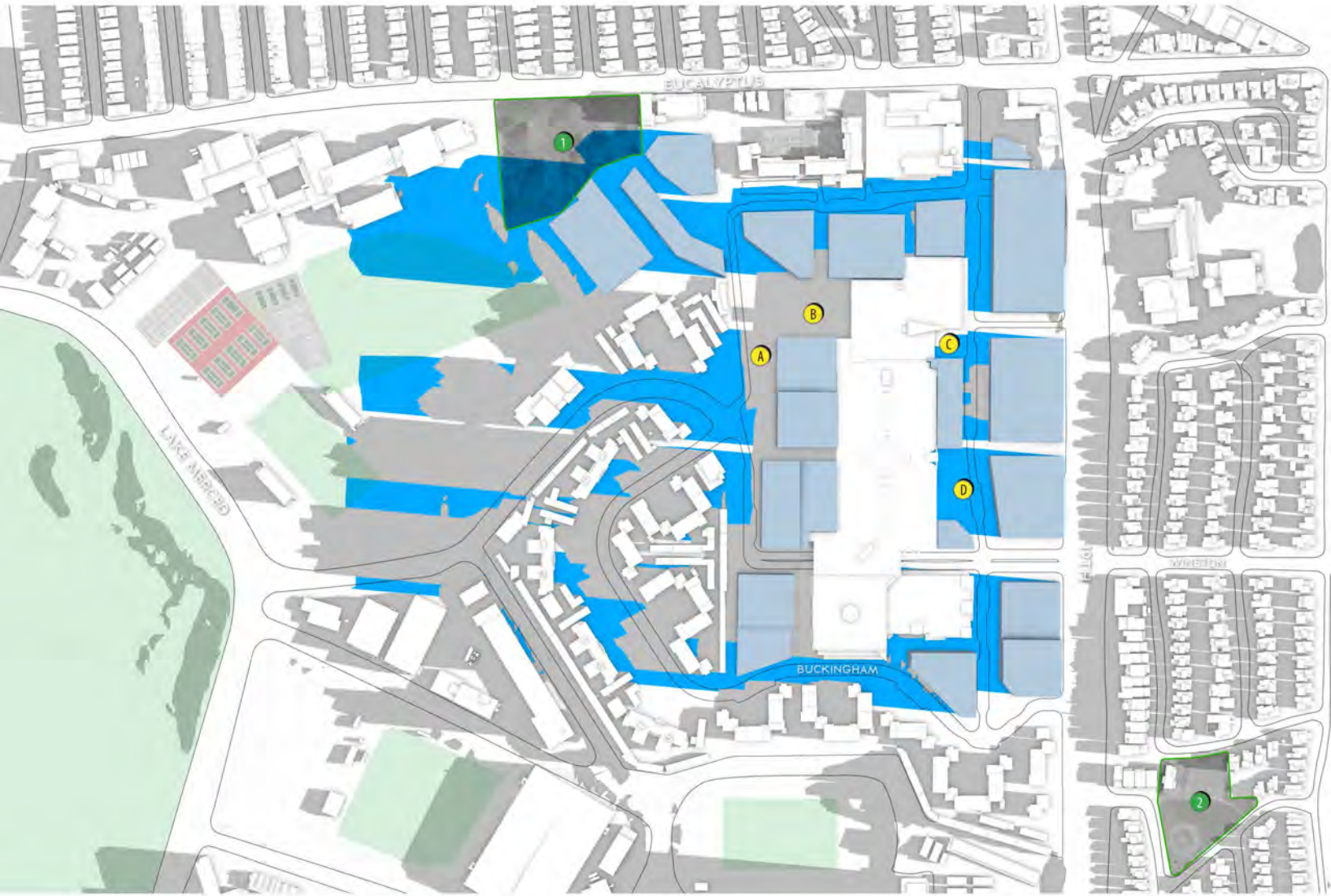
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

A
B
C
D

C1.17 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

8:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

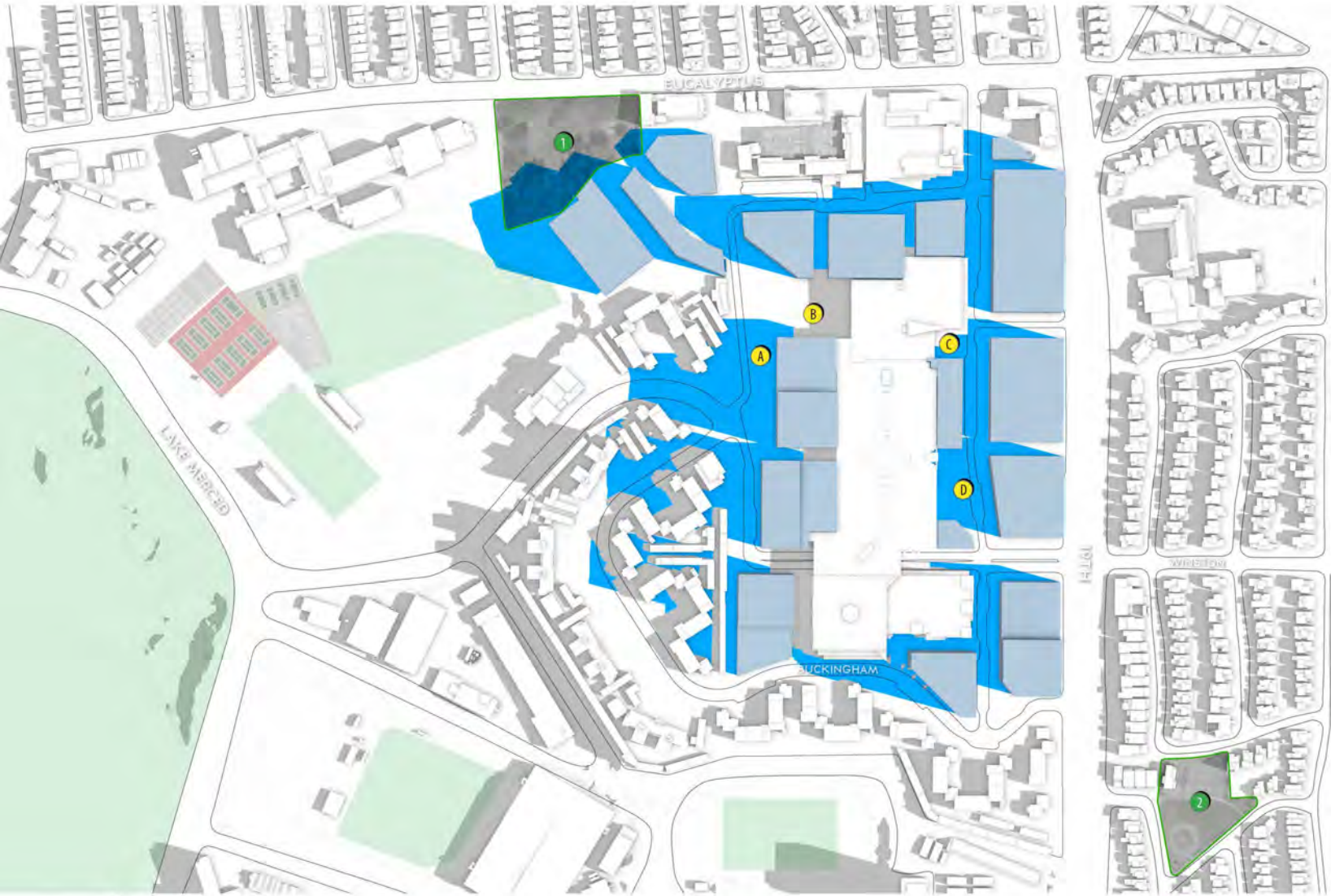
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.18 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.19 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

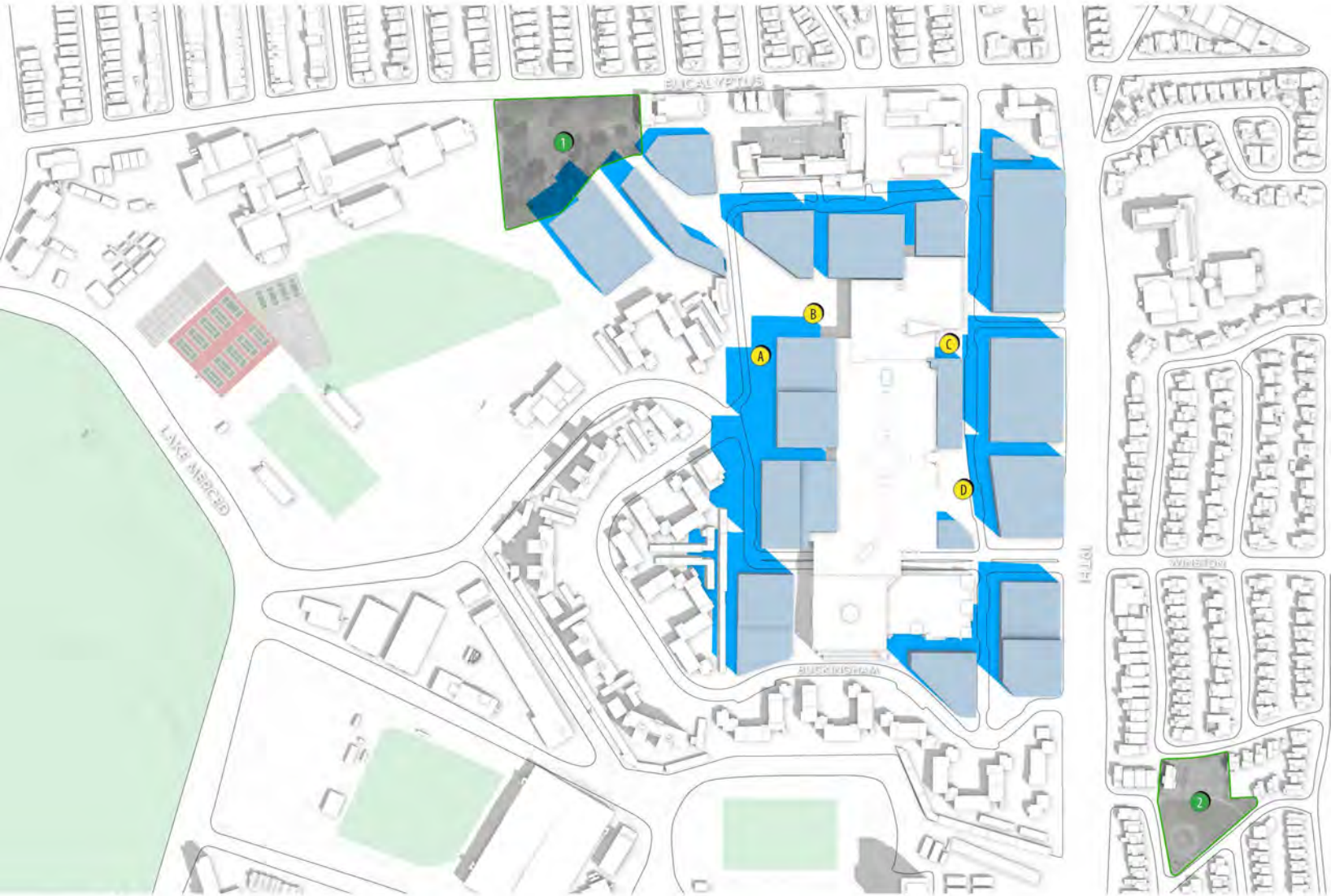
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.20 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.21 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.22 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

1:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.23 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

2:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

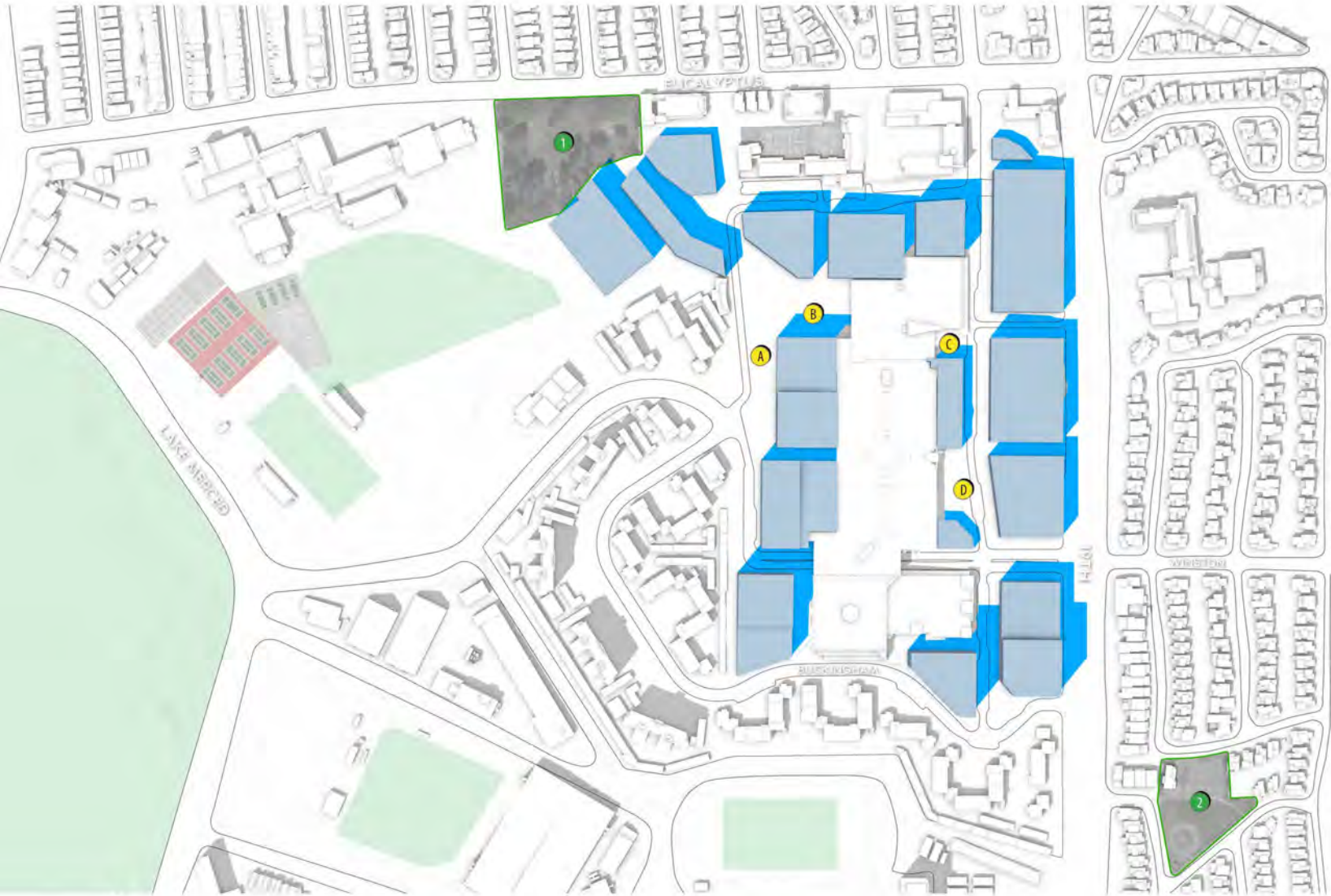
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.24 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

3:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

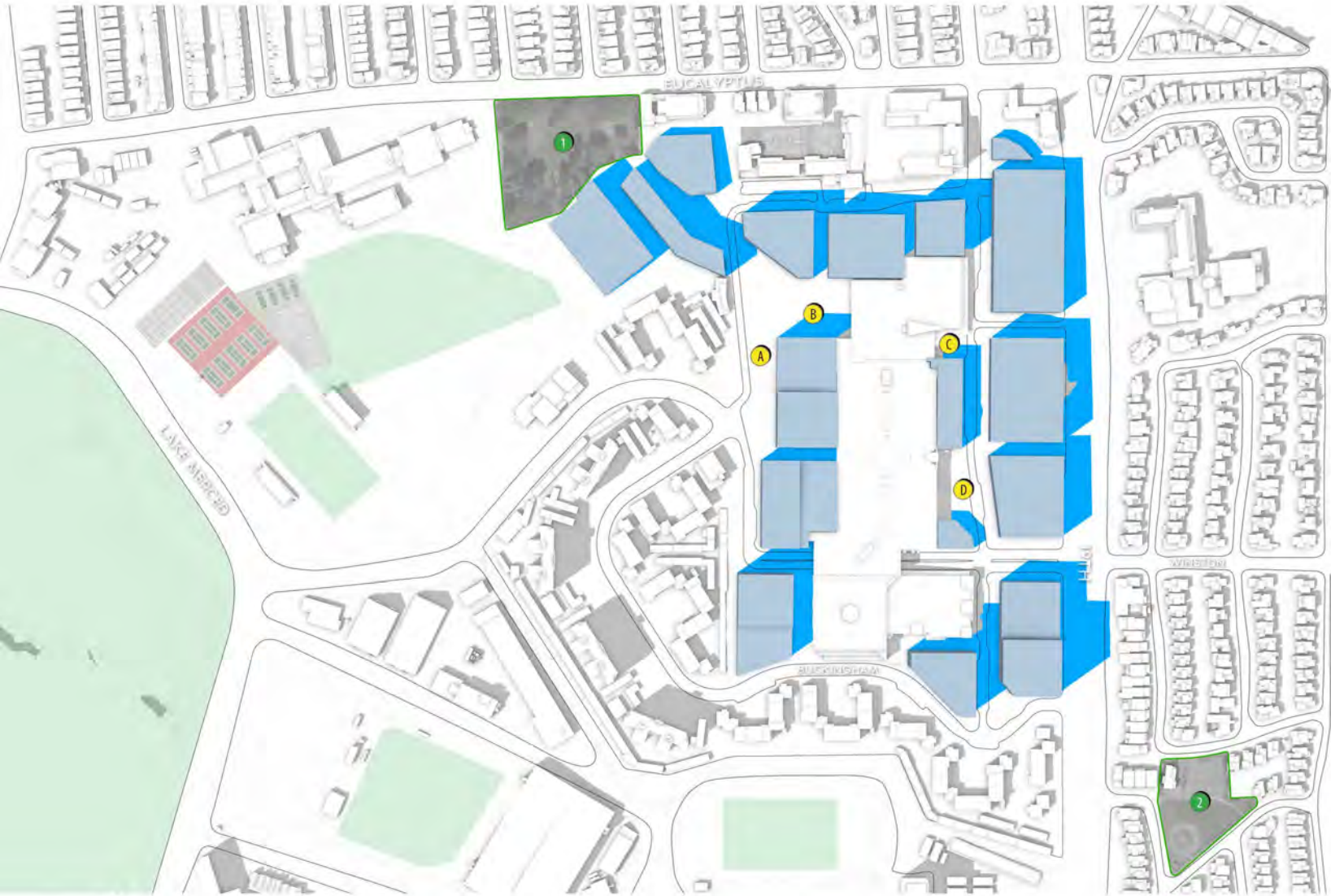
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

A
B
C
D

C1.25 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

4:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

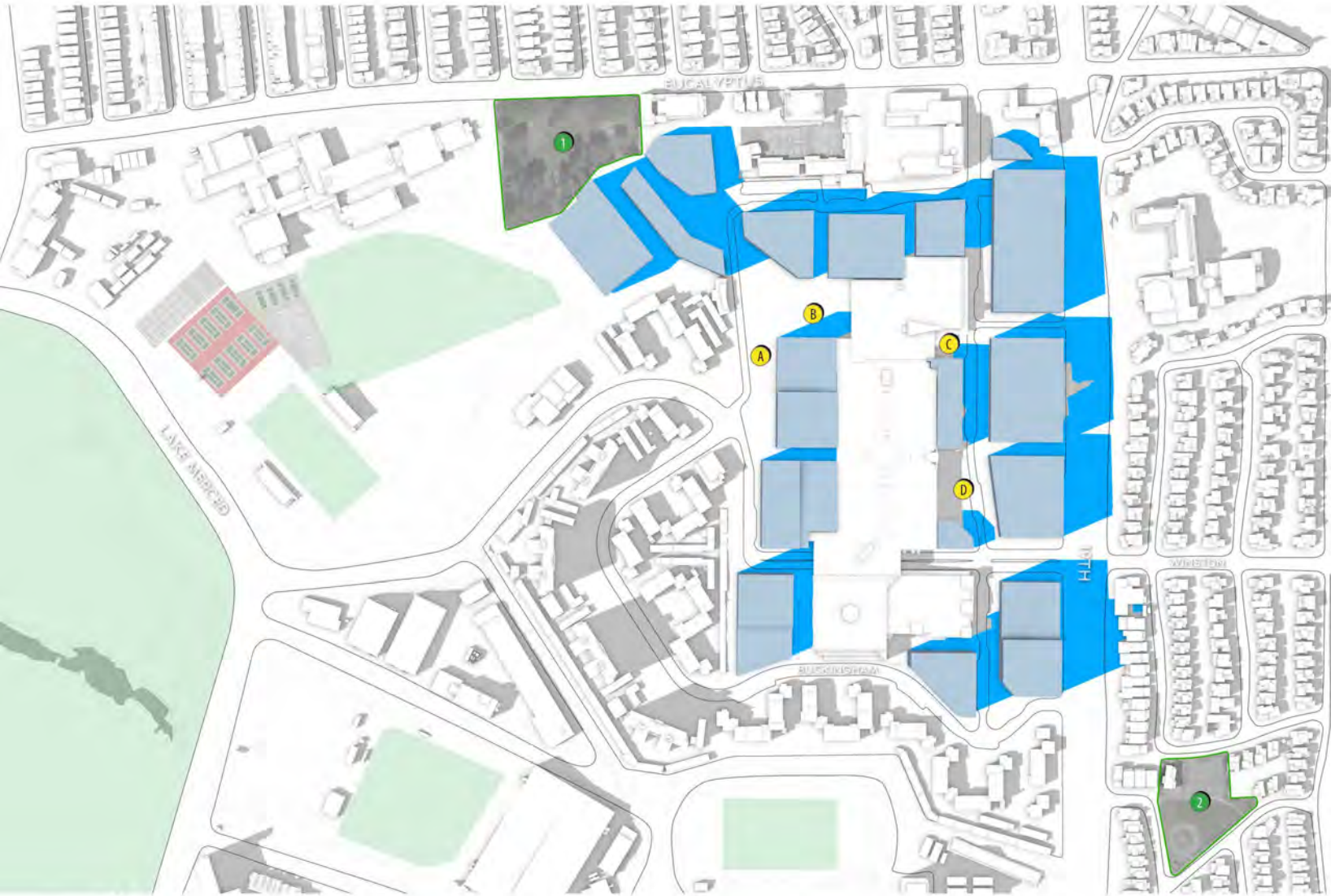
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.26 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

5:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

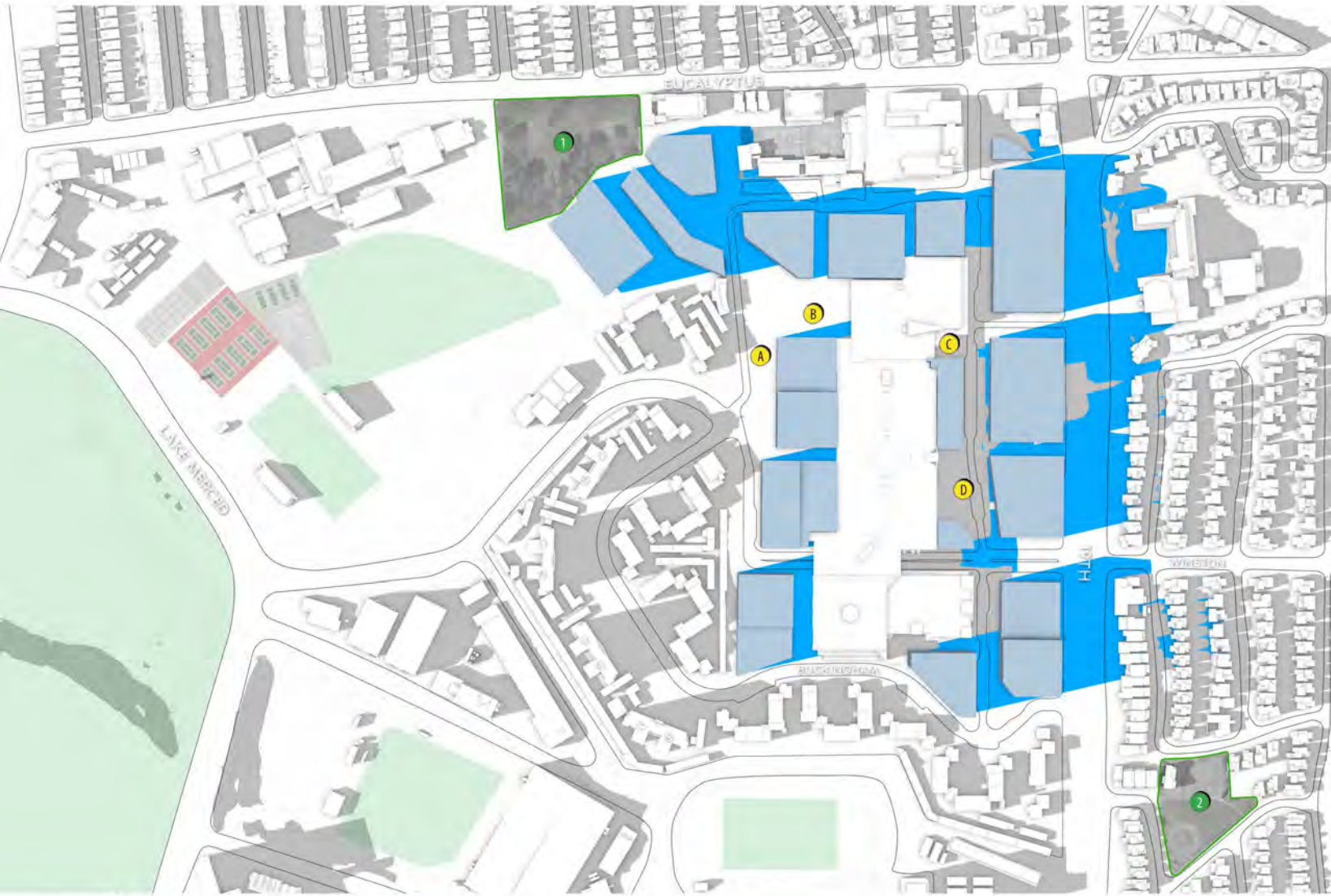
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

A
B
C
D

C1.27 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

6:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

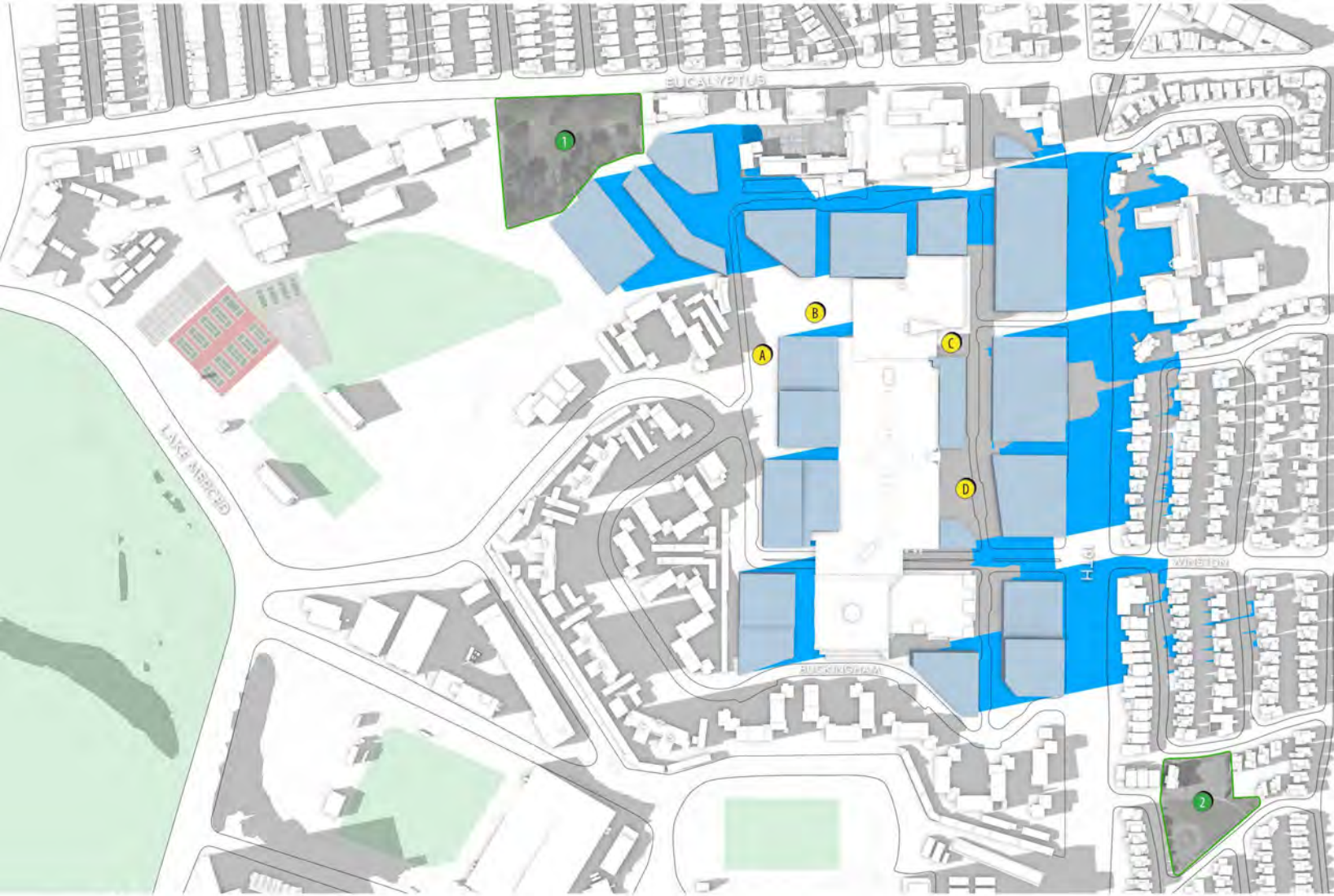
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.28 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*) SEPTEMBER 21

6:10 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

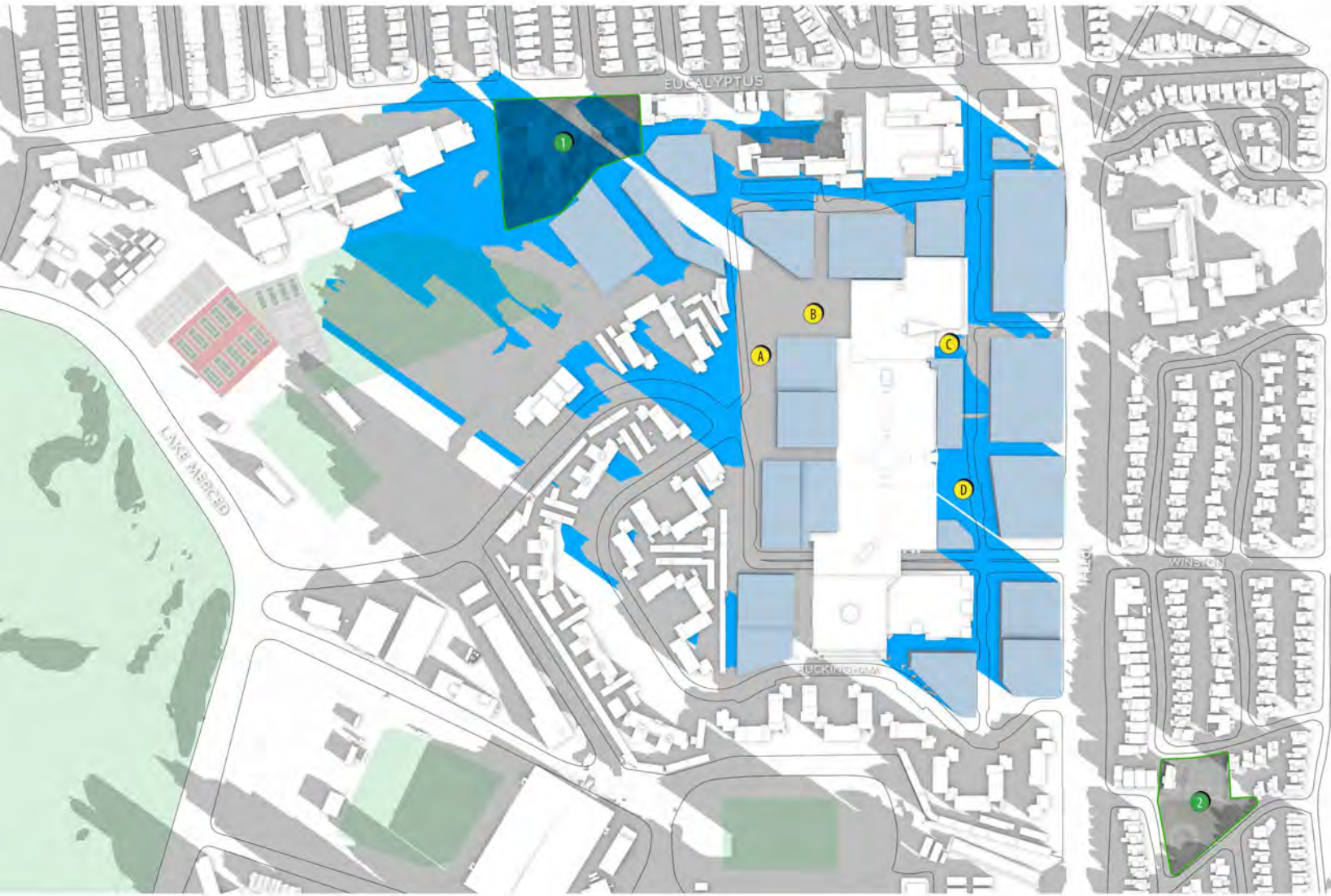
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.29 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

8:20 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

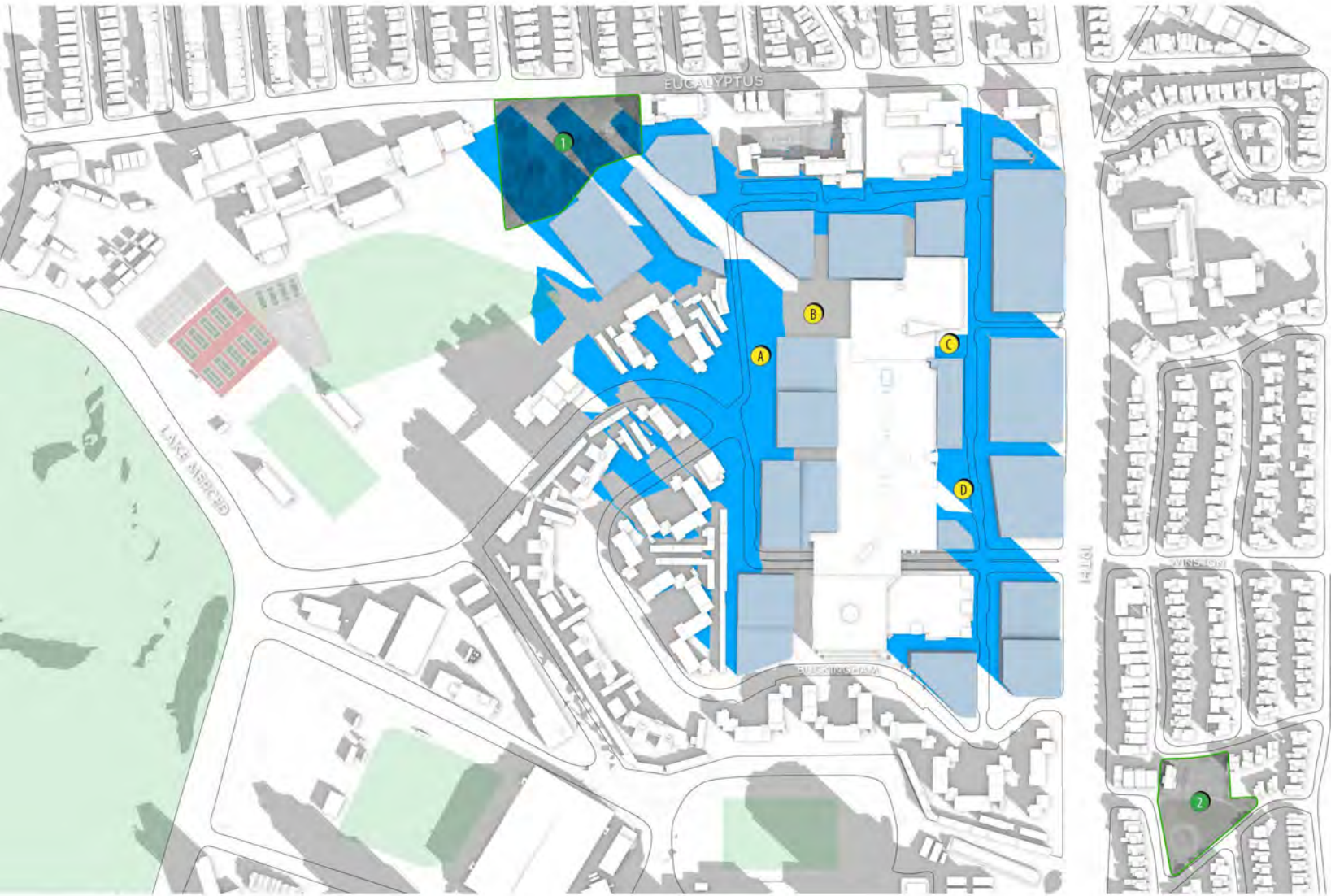
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.30 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.31 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.32 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.33 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.34 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

1:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.35 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

2:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.36 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

3:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

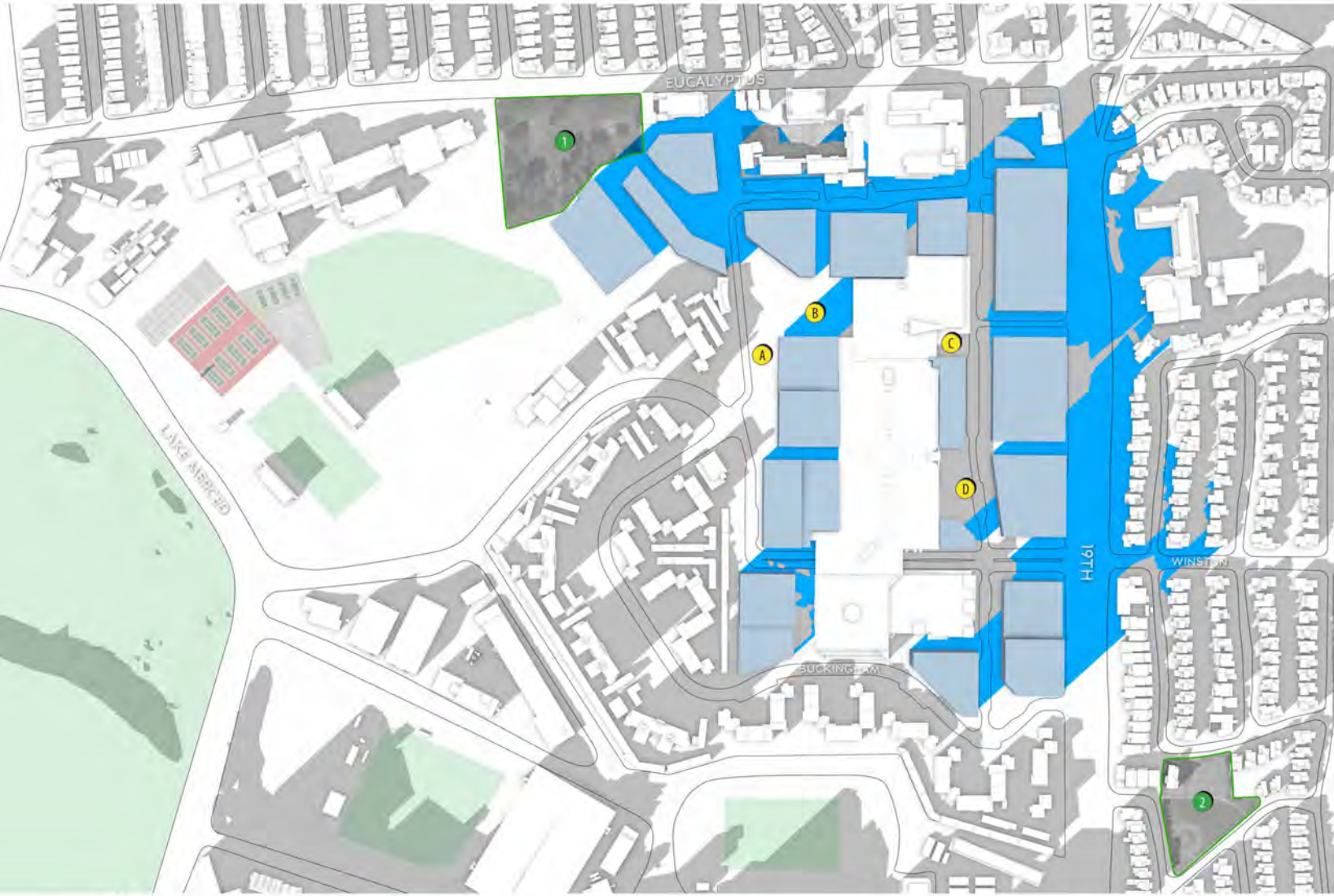
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.37 STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*) DECEMBER 21

3:55 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

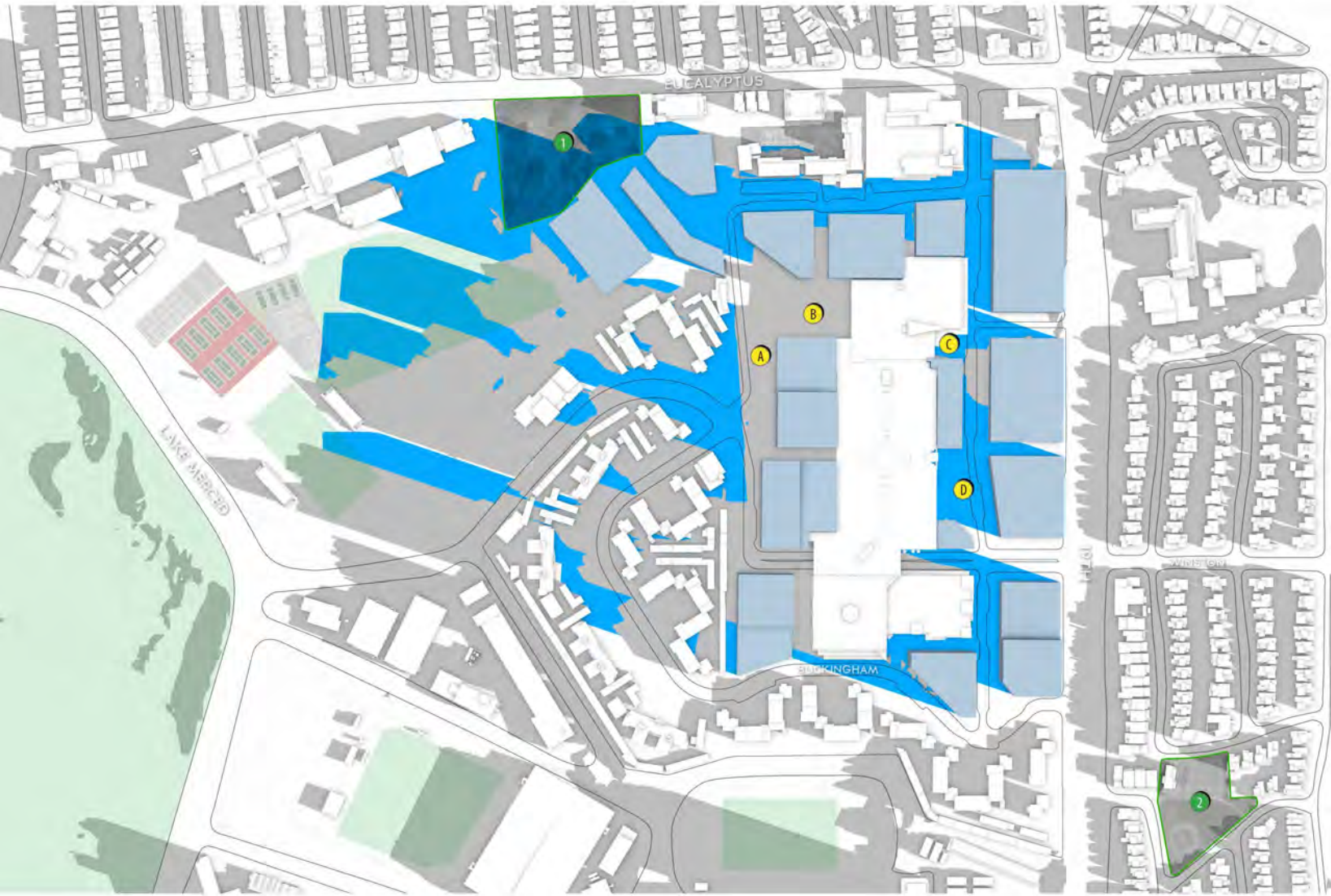
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.38 STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

8:23 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.39 STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)

N

OCTOBER 18
(FEBRUARY 22 MIRROR)

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.40 STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)

N

OCTOBER 18
(FEBRUARY 22 MIRROR)

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.41 STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)

N

OCTOBER 18
(FEBRUARY 22 MIRROR)

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.42 STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)

N

OCTOBER 18
(FEBRUARY 22 MIRROR)

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

ATTACHMENT I

Revised Variant Water Supply Assessment

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. **23-0194**

WHEREAS, Under the California Environmental Quality Act (CEQA) and California Water Code Section 10910(g)(1), the San Francisco Public Utilities Commission (SFPUC) is required to prepare and approve a Water Supply Assessment (WSA) for the cumulative water demands presented by the proposed 3251 20th Avenue (Stonestown) Project, which would redevelop approximately 27 acres surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-used residential and retail community in the Lakeshore area of southwest San Francisco; and

WHEREAS, The 3251 20th Avenue (Stonestown) Project is required to comply with the City's Non-potable Water Ordinance, Article 12C of the San Francisco Health Code, and as a result, the Project will offset its potable water use through the use of alternate water sources; and

WHEREAS, A WSA is an informational document that assesses the adequacy of water supplies to serve a proposed project and is required to be prepared as part of the CEQA environmental review process; and

WHEREAS, The water demand associated with the 3251 20th Avenue (Stonestown) Project is encompassed within the 2020 Urban Water Management Plan water demand projections; and

WHEREAS, The water demand associated with the 3251 20th Avenue (Stonestown) Project is also encompassed within the 2023 Interim Water Demand Projections, which the SFPUC prepared after the 2020 Urban Water Management Plan water demand projections to account for slightly higher housing unit projections associated with the Housing Element 2022 Updated adopted by the City in January 2023; and

WHEREAS, Approval of a WSA as an informational document is not considered an approval action as defined in section 15378 of the CEQA Guidelines; and

WHEREAS, A WSA must be approved at a public meeting by the governing body of the public water supplier that would serve the proposed project; and

WHEREAS, On October 24, 2022 by Resolution No. 22-0186, this Commission approved a WSA for the 3251 20th Avenue (Stonestown) Project, which concluded that the SFPUC has adequate water supplies to meet the proposed project's water demands through 2040; and

WHEREAS, Following this Commission's approval of the WSA, the SFPUC updated its project total retail water demand projections to account for the adopted Housing Element 2022 Update; and

WHEREAS, Following this Commission's approval of the WSA, the project description was revised to include more residential units, less non-retail sales and service use, and no hotel, resulting in higher water demand estimates for the current proposed project compared to those provided in the WSA approved on October 24, 2022; and

WHEREAS, The SFPUC staff prepared the attached Revised WSA for the proposed 3251 20th Avenue (Stonestown) Project, analyzing water supply and demand under three scenarios: (1) No implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement (Scenario 1), (2) Implementation of the Proposed Voluntary Agreement (Scenario 2), and (3) Implementation of the Bay-Delta Plan Amendment (Scenario 3); and

WHEREAS, The Revised WSA concludes that the SFPUC's total projected water supplies through 2045 will (1) meet the demands of the proposed project in normal years under all three scenarios, (2) meet the demands of the proposed project in dry years without rationing beyond the SFPUC's level of service (LOS) goal of no more than 20% system-wide rationing under Scenario 1, (3) meet the demands of the proposed project in dry years but require rationing closer to the LOS goal under Scenario 2, and (4) not reliably meet the demands of the proposed project without rationing at a level greater than that required to achieve the LOS goal under Scenario 3; and

WHEREAS, In dry years, the proposed project may have lower levels of mandatory water use reduction compared to existing buildings because of the installation of water-efficient plumbing fixtures and non-potable water systems associated with new construction, and the relatively small volume of water demand generated by the proposed project itself would not exacerbate the projected shortfalls resulting from implementation of the Bay-Delta Plan Amendment; now, therefore, be it

RESOLVED, This Commission approves the attached Revised Water Supply Assessment for the proposed 3251 20th Avenue (Stonestown) Project pursuant to California Water Code Section 10910(g).

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at it's meeting of October 24, 2023.

Secretary, Public Utilities Commission

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

September 26, 2023

TO: Commissioner Newsha K. Ajami, President
Commissioner Sophie Maxwell, Vice President
Commissioner Tim Paulson
Commissioner Anthony Rivera
Commissioner Kate H. Stacy

THROUGH: Dennis J. Herrera, General Manager DJH

FROM: Steven R. Ritchie, Assistant General Manager, Water Steven R. Ritchie

RE: Revised Water Supply Assessment for the 3251 20th Avenue (Stonestown) Project

---

Summary

Introduction

The California Water Code (Sections 10910 through 10915) requires urban water suppliers like the San Francisco Public Utilities Commission (SFPUC) to furnish a Water Supply Assessment (WSA) to the city or county that has jurisdiction to approve the environmental documentation for certain qualifying projects (as defined in Water Code Section 10912(a)) subject to the California Environmental Quality Act (CEQA). The WSA process typically relies on information contained in a water supplier's Urban Water Management Plan (UWMP) and involves answering specific questions related to the estimated water demand of the proposed project. This memo serves as the WSA for the proposed 3251 20th Avenue (Stonestown) Project (proposed project), for use in the preparation of an environmental impact report by the San Francisco Planning Department (case no. 2021-012028ENV, San Francisco Planning Department).

This WSA is a revision to and supersedes the WSA that was previously prepared for the same proposed project dated September 29, 2022 and approved on October 24, 2022 (Resolution No. 22-0186). This WSA was revised to account for (1) revisions to the proposed project variant resulting in additional residential units, less non-retail sales and service use, and no hotel use compared to the original variant; and (2) recent changes to San Francisco retail water demand projections reflecting the adopted Housing Element 2022 Update described in the next section.

1.1.1 2020 Urban Water Management Plan and 2023 Interim Water Demand Projections

The Commission, by Resolution No. 21-0100, adopted the SFPUC's current 2020 UWMP. The water demand projections in the UWMP incorporated housing unit growth projections from the Housing Element 2022 Update objective and employment growth projections from the 2017 Land Use Allocation (LUA 2017); San Francisco Planning Department provided both projections. Since the SFPUC's adoption of the 2020 UWMP in June 2021, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR) in November 2022. The Housing Element EIR, which supported the City's adoption of the Housing Element in January

2023, assumed slightly higher housing unit projections than those used in the 2020 UWMP, but was still in line with the objective to produce an average of 5,000 housing units per year. Nonetheless, as a result of the slightly higher housing unit projections associated with the Housing Element EIR, the SFPUC determined that its 2020 UWMP no longer accounted for all projected retail water demands.

The SFPUC will not be updating its UWMP until 2025. Therefore, during this interim period, the SFPUC has prepared the 2023 Interim Water Demand Projections (Attachment A) to document the SFPUC's projected retail water supplies when compared to projected retail water demands associated with the adopted Housing Element 2022 Update. The San Francisco Planning Department provided the updated housing unit projections for SFPUC to update its water demand projections. The water demand projections are presented in five-year increments through 2045, meeting Water Code requirements.

Growth associated with the proposed project was encompassed within the growth projections used in the 2020 UWMP, and therefore encompassed within the updated growth projections used in the 2023 Interim Water Demand Projections. Consequently, water demand associated with the proposed project was encompassed within the water demand projections in the 2020 UWMP, and therefore encompassed within the 2023 Interim Water Demand Projections. In other words, **the proposed project has already been accounted for in SFPUC's water supply planning**.

The WSA for a qualifying project within the SFPUC's retail service area[1] may use information from the UWMP and, as applicable, the 2023 Interim Water Demand Projections. Therefore, ***the 2020 UWMP and 2023 Interim Water Demand Projections are incorporated by reference throughout this WSA, as shown in bold, italicized text.*** The 2020 UWMP and 2023 Interim Water Demand Projections may be accessed at www.sfpuc.org/uwmp.

As described in detail in ***Section 7.3.1*** of the UWMP, in December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment). The City, along with multiple other water agencies, filed suit in early 2019 challenging the validity of the Bay-Delta Plan Amendment. That lawsuit, which is consolidated with other legal challenges, is currently pending in Sacramento Superior Court. In January 2021, the SWRCB moved to implement the Bay-Delta Plan Amendment on the Tuolumne River by issuing a water quality certification under Section 401 of the Clean Water Act in the Federal Energy Regulatory Commission (FERC) licensing proceedings for the hydropower projects associated with the New Don Pedro and La Grange dams. The City and other water users on the Tuolumne River have filed pending legal and administrative challenges to these SWRCB actions. FERC has not yet reissued a license for the New Don Pedro Hydropower Project, and the legal challenges to the water quality certification are pending and remain unresolved. Alongside the water quality certification, on August 8, 2022, the SWRCB issued a CEQA Notice of Preparation for an alternative means of implementing the Bay-Delta Plan Amendment.

Recognizing the obstacles to implementing the Bay-Delta Plan Amendment, the SWRCB, by Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment, directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such

[1] SFPUC's "retail service area" refers to water customers inside the City and County of San Francisco (City), as well as select areas outside of the City.

agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB (Proposed Voluntary Agreement). Since 2019, SFPUC has participated in negotiations with the State and other stakeholders regarding the Proposed Voluntary Agreement. On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the State environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement. As of the date of the issuance of this Water Supply Assessment, those negotiations remain ongoing.

Implementation of the Bay-Delta Plan Amendment is uncertain given the ongoing negotiations, litigation, and regulatory proceedings; these are further described in ***Section 7.3.1*** of the UWMP. Given the current uncertainty regarding the extent and timing of the implementation of the Bay-Delta Plan Amendment, this WSA analyzes water supply and demand through 2045 under three scenarios: (1) No implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement (Scenario 1), (2) Implementation of the Proposed Voluntary Agreement (Scenario 2), and (3) Implementation of the Bay-Delta Plan Amendment (Scenario 3).

1.1.2 Basis for Requiring a WSA for the Proposed Project

Except for the WSA approved on October 24, 2022 (Resolution No. 22-0186), which is superseded by this revised WSA, the proposed project has not been the subject of a previous WSA, nor has it been part of a larger project for which a WSA was completed.

The proposed project qualifies for preparation of a WSA under Water Code Section 10912(a) because it is a mixed-use residential development that includes more than 500 dwelling units. The proposed project is characterized further in Section 1.2.

1.2 Proposed Project Description

The proposed project is located on an approximately 41-acre site in the Lakeshore area in southwest San Francisco. The project sponsor (Brookfield Properties Development) proposes to redevelop the approximately 27 acres surrounding the existing on-site Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use residential and retail community. Under the proposed project, the existing 760,000-square-foot (sf) Stonestown Galleria shopping mall would remain, with changes to the façade, entrances, and exits. The existing parking garage in the southwest corner of the project site, the vacant theater at the northwest corner of the site, and the CitySports and commercial building at the northeast corner of the site would be demolished and redeveloped as part of the proposed project.

Overall, the proposed project would include up to approximately 2,930 residential units; up to 160,000 sf of new retail sales and service use space; up to 200,000 sf of new non-retail sales and service use; up to approximately 100,000 sf of hotel use; approximately 53,000 sf of institutional uses to include an approximately 15,000-square-foot childcare facility and space for community use; approximately 4,250 parking spaces; 6 acres of open space; and infrastructure improvements.

One variant to the proposed project is also under consideration, which would include the development of the 0.8-acre parcel that is currently occupied by Authentic Church at 3355 19th Avenue, adjacent to the project site between Eucalyptus and Winston drives. Under the variant, the redevelopment of the 27 acres surrounding the Stonestown Galleria would be the same as the proposed project; however, the

additional 0.8-acre Authentic Church parcel would be developed with an additional 561 residential units (3,491 residential units total); 104,000 sf less non-retail sales and service use (up to 96,000 sf total); additional 611 parking spaces (4,861 spaces total); and no hotel use.

For the purpose of the WSA, only the variant is assessed for water supply as it would result in a higher water demand estimate and would encompass the proposed project demands. Refer to Attachment B for additional details on both the proposed project and variant. All subsequent references to the "proposed project" in this memo refer to the variant unless otherwise noted.

Project construction would occur in six phases over the course of approximately eight years, from 2024 to approximately 2032. The first operational year is assumed to be 2027. By 2030, construction of Phases 1 through 3 is assumed to be completed, consisting of up to approximately 1,893 residential units (1,867,500 sf), up to 66,000 sf of new retail sales and service use space; up to 12,000 sf of new non-retail sales and service use; and up to approximately 21,000 sf of institutional uses.

For additional details on the proposed project, see Attachment B.

2.0 Water Supply

This section reviews San Francisco's existing and planned water supplies.

2.1 Regional Water System

See ***Section 3.1 of the UWMP*** for descriptions of the San Francisco Regional Water System (RWS), ***Section 6.1 of the UWMP*** for water rights held by City and County of San Francisco, and ***Section 7.1 of the UWMP*** for the SFPUC Water System Improvement Program (WSIP).

2.2 Existing Retail Supplies

Retail water supplies from the RWS are described in ***Section 6.1 of the UWMP***.

Local groundwater supplies, including the Westside Groundwater Basin, are described in ***Section 6.2.1 of the UWMP***.

Local recycled water supplies, including the Harding Park Recycled Water Project and Pacifica Recycled Water Project, are described in ***Section 6.2.1 of the UWMP***.

2.3 Planned Retail Water Supply Sources

The San Francisco Groundwater Supply Project is described in ***Section 6.2.1.1 of the UWMP***.

The Westside and Treasure Island Recycled Water Projects are described in ***Section 6.2.2 of the UWMP***.

2.4 Summary of Current and Future Retail Water Supplies

A breakdown of water supply sources for meeting SFPUC retail water demand through 2045 in normal years is provided in ***Section 6.2.5 of the UWMP***. For dry years, see the next section.

2.5 Dry-Year Water Supplies

A description of dry-year supplies developed under WSIP is provided in ***Section 7.2 of the UWMP***.

2.6 Additional Water Supplies

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would increase overall water supply resilience through the Alternate Water Supply Program. A description of the Alternative Water Supply Program and the supplies being studied is provided in ***Section 7.4 of the UWMP***.

3.0 Water Demand

This section reviews the projected retail water demands and the demand associated with the proposed project.

3.1 Projected Retail Water Demand

The projected retail water demand through 2045 is described in ***Section 4.1 of the UWMP and updated in the 2023 Interim Water Demand Projections (Attachment A)***. This section of the UWMP also describes the methodology used for demand projections and the factors considered. Updates specific to the to the change in housing unit projections are described in the 2023 Interim Water Demand Projections.

3.2 Proposed Project Water Demand

The project sponsor's consultants provided a memo describing the methods and assumptions used to estimate the water demand of the proposed project, along with the resulting demand (Attachment B).

Because the proposed project must comply with San Francisco's Non-potable Water Ordinance (Article 12C of the San Francisco Health Code), estimates for both potable and non-potable demands were submitted as part of the WSA request. The Non-potable Water Ordinance requires new development projects with 100,000 square feet or more of gross floor area, that apply for a site permit after January 1, 2022, to install and operate an onsite non-potable water system. Commercial buildings must meet their toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate. Residential and mixed-use buildings must meet their toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. While not required, residential and mixed-use projects may use treated blackwater if desired. As indicated in the water demand memo provided on behalf of the project sponsor in Attachment B, the proposed project would exceed the requirements of the Non-potable Water Ordinance by also using non-potable water to meet heating and cooling demands, in additional demands for toilet and urinal flushing, irrigation, clothes washing, and drain trap priming.

Both potable and non-potable demands for the project were estimated using the SFPUC's Non-potable Water Calculator and supplemented with additional calculations for heating and cooling demands and alternate estimates of persons per household. The SFPUC reviewed the memo to ensure that the methodology is appropriate for the types of proposed water uses, the assumptions are valid and thoroughly documented along with verifiable data sources, and a professional standard of care was used. The SFPUC concluded that the demand estimates provided on behalf of the project

sponsor are reasonable. Water demand associated with the proposed project over the 20-year planning horizon is shown in the following Table 1.

The non-potable demand estimates in Table 1 are based on building uses anticipated at the time the WSA was requested, i.e., during the planning and environmental review stage of the proposed project. It is understood that these estimates will likely change as the proposed project's design progresses, and information submitted for the WSA request is not part of the proposed project's compliance with the Non-potable Water Ordinance. City review and approval of a proposed onsite water system must be performed separately through the Non-potable Water Program. However, the intent of providing a breakdown of potable and non-potable demand estimates in this WSA is to demonstrate that the proposed project will incorporate water reuse per City requirements and the proposed project's sustainability goals, if any. As noted earlier, the total demand of the proposed project, regardless of non-potable use, is already encompassed in the 2023 Interim Water Demand Projections. Furthermore, total demand represents the most conservative estimate and accounts for back-up potable supplies that must be provided by the SFPUC in the event that non-potable supplies serving the proposed project are unavailable.

Table 1: Water Demand Based on Project Phasing (mgd)

	2025	2030	2035	2040	2045
Potable Demand	--	0.103	0.191	0.191	0.191
Non-potable Demand	--	0.075	0.118	0.118	0.118
Total Demand	--	0.178	0.309	0.309	0.309
Potential Potable Water Savings as Percentage of Total Demand	--	40%	38%	38%	38%

mgd = million gallons per day

Notes:
Total demand conservatively assumes that all demands are met with potable supplies.

The San Francisco Planning Department has determined that the proposed project is encompassed within the housing projections described in the Housing Element 2022 Update and the employment projections from LUA 2017, as indicated in the letter from the Planning Department to the SFPUC (Attachment A). Therefore, the demand of the proposed project is also encompassed within the San Francisco retail water demands that are presented in the ***2023 Interim Water Demand Projections***, which considers retail water demand based on the housing and employment projections provided by the Planning Department. The following Table 2 shows the demand of the proposed project relative to total retail demand.

Table 2: Proposed Project Demand Relative to Total Retail Demand

	2025	2030	2035	2040	2045
Total Retail Demand (mgd)[1]	71.3	73.0	75.0	77.9	81.1
Total Demand of Proposed Project (mgd)	--	0.178	0.309	0.309	0.309
Total Demand of Proposed Project as Percentage of Total Retail Demand[2]	--	0.24%	0.41%	0.40%	0.38%

Notes:
1. Retail water demands per ***Table 3 of the 2023 Interim Water Demand Projections***.
2. The proposed project is accounted for in the housing and employment projections provided by the Planning Department; therefore, total demands associated with the proposed project are accounted for in the 2023 Interim Water Demand Projections.

4.0 Conclusion

4.1 Comparison of Projected Supply and Demand

For all scenarios presented here, local supplies (i.e., supplies not from the RWS) correspond to those in ***Table 6-5 of the UWMP***. Procedures for determining RWS supply availability per the SFPUC's Water Shortage Allocation Plan (WSAP) are described in ***Section 8.2.4 of the UWMP***.

As explained previously in Section 3.2, water demands associated with the proposed project are already captured in the retail demand projections presented in the UWMP. The proposed project is expected to represent up to 0.41% of the total retail water demand. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections*** and reflect both passive and active conservation, onsite water reuse savings, and water loss.

4.1.1 Scenario 1: No Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement

Table 3 below is adapted from ***Table 5 of the 2023 Interim Water Demand Projections*** and compares the SFPUC's retail water supplies and demands through 2045 during normal year, single dry-, and multiple dry-year periods under Scenario 1.

As shown in Table 3, under Scenario 1 without implementation of the Bay-Delta Plan Amendment, existing and planned supplies would meet all projected RWS demands in all years. Even though system-wide shortages of RWS supplies would occur in the 4th and 5th years of a multi-year drought at 2045 projected levels of demand, retail customers would reduce their demands by 5% as required by the Water Supply Agreement between SFPUC and its Wholesale Customers. To achieve a small reduction such as this, the SFPUC may prohibit certain discretionary outdoor water uses and/or call for voluntary water use reduction by its retail customers pursuant to its Water Shortage Contingency Plan (***Appendix K of the UWMP***). The required level of water use reduction is well below the SFPUC's RWS level of service (LOS) goal of limiting water use reduction to no more than 20% on a system-wide basis (i.e., an average throughout the RWS) in drought years. In 2008, by Resolution No. 08-0200, the Commission adopted this goal.

4.1.2 Scenario 2: Implementation of the Proposed Voluntary Agreement

A Voluntary Agreement has yet to be accepted by SWRCB as an alternative to the Bay-Delta Plan Amendment and thus the shortages that would occur with its implementation are not known with certainty. However, given that the objectives of the Proposed Voluntary Agreement are to provide fishery improvements while protecting water supply through flow and non-flow measures, the RWS supply shortfalls under the Proposed Voluntary Agreement would be less than those under the Bay-Delta Plan Amendment, and therefore would require water use reductions of a lesser degree than that which would occur under Scenario 3. The degree of water use reduction would also more closely align with the SFPUC's RWS LOS goal of limiting water use reduction to no more than 20% on a system-wide basis in drought years.

4.1.3 Scenario 3: Implementation of the Bay-Delta Plan Amendment

Table 4 below provides projected supplies and demands under Scenario 3. The RWS is projected to experience significant shortfalls in single dry and multiple dry years through 2045, regardless of whether the proposed project is constructed. These significant shortfalls are a result of implementation of the Bay-Delta Plan Amendment and not attributed to the incremental retail demand associated with the proposed project. Shortfalls would range from about 11 to 29 mgd, corresponding to water use reduction in the retail service area ranging from 15-36%, over the next 20 years.

Table 3: Projected Supply and Demand Comparison Under Scenario 1 (No Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years[2]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand[3]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Total Retail Supply[4]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2030	Total Retail Demand[3]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Total Retail Supply[4]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2035	Total Retail Demand[3]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Total Retail Supply[4]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2040	Total Retail Demand[3]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Total Retail Supply[4]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2045	Total Retail Demand[3, 5]	81.1	81.1	81.1	81.1	81.1	77.0	77.0
	Total Retail Supply[4]	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Shortfall	0.0	0.0	0.0	0.0	0.0	4.1	4.1
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%

Notes:
1. During all single dry years, no RWS system-wide shortages are in effect.
2. During multiple dry years, no RWS system-wide shortages are in effect until years 4 and 5 at 2045 levels of demand. During those years, a 10% system-wide shortage is in effect.
3. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections***.
4. Local supplies (i.e., supplies not from the RWS, including groundwater and recycled water) correspond to those in ***Table 6-5 of the UWMP***. Local supplies are assumed to be used before RWS supplies to meet retail demand.
5. As amended in 2018, the WSAP Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the RWS are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. This provision is in effect in years 4 and 5 of a multi-dry year sequence at 2045 levels of demand.

Table 4: Projected Supply and Demand Comparison Under Scenario 3 (Implementation of the Bay-Delta Plan Amendment) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years[2]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand[3]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Total Retail Supply[4]	70.7	59.5	59.5	51.5	51.5	51.5	51.5
	Shortfall	0.0	-11.8	-11.8	-19.8	-19.8	-19.8	-19.8
	Shortfall as % of Demand	0.0%	-16.5%	-16.5%	-27.8%	-27.8%	-27.8%	-27.8%
2030	Total Retail Demand[3]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Total Retail Supply[4]	72.4	61.4	61.4	53.4	53.4	53.4	53.4
	Shortfall	0.0	-11.6	-11.6	-19.6	-19.6	-19.6	-19.6
	Shortfall as % of Demand	0.0%	-15.9%	-15.9%	-26.8%	-26.8%	-26.8%	-26.8%
2035	Total Retail Demand[3]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Total Retail Supply[4]	74.5	63.8	63.8	55.5	55.5	55.5	51.4
	Shortfall	0.0	-11.2	-11.2	-19.5	-19.5	-19.5	-23.6
	Shortfall as % of Demand	0.0%	-14.9%	-14.9%	-26.0%	-26.0%	-26.0%	-31.5%
2040	Total Retail Demand[3]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Total Retail Supply[4]	77.4	66.4	66.4	57.9	57.9	52.0	52.0
	Shortfall	0.0	-11.5	-11.5	-20.0	-20.0	-25.9	-25.9
	Shortfall as % of Demand	0.0%	-14.8%	-14.8%	-25.7%	-25.7%	-33.2%	-33.2%
2045	Total Retail Demand[3]	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Total Retail Supply[4]	80.6	60.1	60.1	60.1	60.1	52.1	52.1
	Shortfall	0.0	-21.0	-21.0	-21.0	-21.0	-29.0	-29.0
	Shortfall as % of Demand	0.0%	-25.9%	-25.9%	-25.9%	-25.9%	-35.8%	-35.8%

Notes:

1. During a single dry year, system-wide shortages of 30 – 40% are in effect (see ***Table 8-3 of the 2020 UWMP***). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the Water Shortage Allocation Plan (WSAP).
2. During multiple dry years, system-wide shortages of 30 – 55% are in effect (see ***Table 8-3 of the 2020 UWMP***). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the WSAP.
3. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections***.
4. Local supplies (i.e., supplies not from the RWS, including groundwater and recycled water) correspond to those in ***Table 6-5 of the UWMP***. Local supplies are assumed to be used before RWS supplies to meet retail demand.

4.2 Potential for Shortages in SFPUC Service Area

The inflow to SFPUC reservoirs can vary greatly from year to year, based on the hydrology of the region. When inflows are low during dry years, the potential exists for water supply shortages in the SFPUC service area. The occurrence of shortages depends on the magnitude and duration of dry conditions, and also on the system demand for water supply.

- In an evaluation of historical hydrology (1920 – 2017) combined with 2020 system demand, the potential for water supply shortages due to dry hydrology is low.
- When projected system demand in 2045 (an increase over 2020 demand) is evaluated along with historical hydrology, the potential for shortage increases but remains relatively low.
- When large increases in instream flow requirements (such as those associated with the Bay-Delta Plan update) are included in either of the above evaluations, the potential for water shortages in the SFPUC system increases markedly. The instream flow requirements are analogous to an increase in demand in this evaluation.

4.3 Water Use Reduction Implications to the Proposed Project

While the levels of water use reduction described above apply to the retail service area as a whole (i.e., 15-36% under Scenario 3), the SFPUC may allocate different levels of water use reduction to individual retail customers based on customer type (e.g., dedicated irrigation, single family residential, multi-family residential, commercial) to achieve the required level of retail system-wide demand reduction. Allocation methods and processes that have been considered in the past and may be used in future droughts are described in the SFPUC's 2020 Water Shortage Contingency Plan (***Appendix K of the UWMP***). For both residential and commercial customers, the SFPUC may implement varying levels of water use reductions based on the baseline level of water use, e.g., require less reduction from customers that use less water to begin with. Under the 2020 Water Shortage Contingency Plan, the allocation method or combination of methods that would be applied during water shortages caused by drought would be subject to the discretion of the General Manager.

In accordance with the Water Shortage Contingency Plan, the level of water use reduction that would be imposed on the proposed project would be determined at the time of a drought or other water shortage and cannot be established with certainty prior to the shortage event. However, newly constructed buildings, such as the proposed project, have water-efficient fixtures and non-potable water systems that comply with the latest regulations and should be better prepared than older buildings to meet the required reductions.

4.4 Findings

Regarding the availability of water supplies to serve the proposed project beginning in 2027, the SFPUC finds, based on the entire record before it, as follows:

- During normal years, the SFPUC's total projected water supplies will meet the projected demands of its retail customers, including those of the proposed project, existing customers, and foreseeable future development under Scenario 1, Scenario 2, and Scenario 3.
- During single dry years and multiple dry years under Scenario 1—No implementation of the Bay-Delta Plan Amendment or a Voluntary Agreement—the SFPUC can meet the projected demands of its retail customers, including those of the proposed project, existing customers, and foreseeable future development without the need for water use reduction beyond the LOS goal of 20% system-wide water use reduction.

- During single dry years and multiple dry years under Scenario 2—Implementation of a Voluntary Agreement—the SFPUC would still face a shortfall in single dry and multiple dry years, thus requiring water use reduction, but to a lesser degree and in closer alignment to the LOS goal of no more than 20% system-wide water use reduction compared to that which would occur under Scenario 3. Because negotiations in furtherance of the November 9, 2022 Voluntary Agreement Memorandum of Understanding continue in earnest, and litigation challenging the adoption of the Bay-Delta Plan Amendment remains pending, SFPUC further finds that the supply and demand that would result under Scenario 2 are more likely to occur than those projected in Scenario 3.
- During single dry years and multiple dry years under Scenario 3—Implementation of the Bay-Delta Plan Amendment—the SFPUC cannot reliably meet the projected demands of its retail customers, including the proposed project, existing customers, and foreseeable future development, without water use reduction at a level greater than that required to achieve the LOS goal of a maximum of 20% system-wide average water use reduction. The SFPUC estimates it would impose up to 36% water use reductions across the retail service area.
- The SFPUC's 2020 Water Shortage Contingency Plan describes allocation methods and processes that may be used in future droughts. For both residential and commercial customers, the SFPUC may implement varying levels of water use reductions based on the baseline level of water use, e.g., require less reduction from customers that use less water to begin with. For the proposed project specifically, these policies may result in lower levels of mandatory water use reduction as a result of the installation of water-efficient plumbing fixtures and non-potable water systems associated with new construction.
- Under Scenario 3, the relatively small volume of water demand generated by the proposed project itself would not exacerbate the projected shortfalls resulting from implementation of the Bay-Delta Plan Amendment. Regardless of whether the proposed project is constructed, with implementation of the Bay-Delta Plan Amendment, the SFPUC's existing and planned water supplies will not meet the water demands of its retail service area in dry years without significant demand reductions.

Approval of this WSA by the Commission is not equivalent to approval of the development project for which the WSA is prepared. A WSA is an informational document required to be prepared for use in the City's environmental review of a project under CEQA. It assesses the adequacy of water supplies to serve the proposed project and cumulative demand.

Furthermore, this WSA is not a "will serve" letter and does not verify the adequacy of existing distribution system capacity to serve the proposed project. A "will serve" letter and/or hydraulic analysis must be requested separately from the SFPUC City Distribution Division to verify hydraulic capacity.

While this WSA contains information provided by or on behalf of the project sponsor regarding the proposed project's plans for onsite water reuse and demand estimates using the SFPUC's Non-potable Water Calculator, any information submitted to the SFPUC for preparation of this WSA does not fulfill the requirements of the Non-potable Water Ordinance. City review and approval of a proposed onsite water system must be performed separately through the Non-potable Water Program.

If there are any questions or concerns, please contact Steve Ritchie at (415) 934-5736 or SRitchie@sfwater.org.

Attachments: Attachment A, 2023 Interim Water Demand Projections
Attachment B, 3251 20th Avenue (Stonestown) Project Demand Memo

Attachment A –

2023 Interim Water Demand Projections

2023 Interim Water Demand Projections

for the City and County of San Francisco

Prepared by:

San Francisco Public Utilities Commission

September 2023

San Francisco Water Power Sewer

Services of the San Francisco Public Utilities Commission

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1.0 Introduction

1.1 Purpose of Water Supply Assessments

The California Water Code (Sections 10910 through 10915) requires urban water suppliers to evaluate water supply availability to inform environmental review for qualifying projects ("water demand projects") defined in Water Code Section 10912(a). Water Code Section 10910 requires the preparation of a "water supply assessment" (WSA) for water demand projects that include a determination of whether available water supplies are sufficient to serve the demand generated by the project, as well as reasonably foreseeable cumulative demand over a 20 year period, including years of normal precipitation, single dry, and multiple dry years. If the water supplies needed by a water demand project were accounted for in the water supplier's most recently adopted Urban Water Management Plan (UWMP), under Water Code Section 10910(c)(2), the water supplier may incorporate the requested information from the UWMP in preparing a WSA for a water demand project.

1.2 Purpose of this Document

The SFPUC most recently adopted the 2020 UWMP update for the City and County of San Francisco in June 2021. As described in the 2020 UWMP, Section 4.1.2, Projected Retail Demands, the 2020 UWMP relied on the San Francisco Planning Department's (SF Planning) housing projections based on the Housing Element 2022 Update, which was still under development when the 2020 UWMP was adopted. One of the objectives of the Housing Element 2022 Update was to produce an average of 5,000 housing units per year with adjustments for certain large development plans. Since the SFPUC's adoption of the 2020 UWMP in June 2021, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR) in November 2022. The Housing Element EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher housing unit projections than those used in the 2020 UWMP, but was still in line with the objective to produce an average of 5,000 housing units per year. Nonetheless, as a result of the slightly higher housing unit projections associated with the Housing Element EIR, the SFPUC determined that its 2020 UWMP no longer accounted for all projected retail water demands.

The SFPUC will not be updating its UWMP until 2025. Therefore, during this interim period, the SFPUC has prepared the 2023 Interim Water Demand Projections herein to document the SFPUC's projected retail water supplies when compared to projected retail water demands associated with the adopted Housing Element 2022 Update. This document also adjusts the retail water supply projections to meet the updated retail water demands.

The information in this document, in concert with the background information provided in the 2020 UWMP that are not superseded by the 2023 Interim Water Demand Projections herein, can be used in the development of WSAs for pending water demand projects.

1.3 What this Document Does and Does Not Address

This document only updates the following items from the 2020 UWMP as they are directly related to the change in housing unit projections:

- Retail water demand projections, specifically demands of the in-City multi-family residential sector, through 2045
- Retail water supply and demand comparisons (i.e., surpluses and shortfalls) during normal, single dry, and multiply dry years through 2045

This document does not update the following items from the 2020 UWMP as they are not directly related to the change in housing unit projections:

- Population projections associated with the Housing Element 2022 Update
- Employment projections associated with the Housing Element 2022 Update
- Retail water demands for the single family residential and non-residential sectors
- Retail water loss
- Retail water savings associated with Conservation and Onsite Water Reuse programs
- Suburban retail water demands
- Wholesale water demands
- Status of water supply projects

2.0 Housing Unit Projections

SF Planning provided updated housing unit projections in alignment with the Housing Element EIR in a memorandum to the SFPUC dated August 18, 2023 (Appendix A). Per SF Planning's recommendation, it is assumed that the number of single-family detached houses will not increase from existing stock and that all future net housing growth will take the form of multi-family structures.

Table 1 compares the updated housing unit projections to those used in the 2020 UWMP in 5-year increments from 2025 to 2045. SFPUC used the updated housing unit projections as inputs to the same water demand forecasting model (i.e., econometric model) that was developed for the 2020 UWMP, described in the next section.

Table 1: Housing Unit Projections

	2025	2030	2035	2040	2045
Used in 2020 UWMP	425,118	450,923	476,728	502,533	528,338
2023 Update	432,667	458,333	483,600	509,000	534,000
Net Change	**7,549**	**7,410**	**6,872**	**6,467**	**5,662**

3.0 Retail Water Demands

As described in the 2020 UWMP, Section 3.2, Retail Service Area, retail customers include the residents, businesses, and industries located within City limits, referred to as the in-City retail service area. Retail service is also provided to a patchwork of customers located outside the City, such as the Town of Sunol, San Francisco International Airport, Lawrence Livermore National Laboratory, and Castlewood County Service Area. These areas are not contiguous and are collectively referred to as the suburban retail service area.

The SFPUC uses econometric models to project the demands for its in-City single family residential, multi-family residential, and commercial/industrial sectors. Other in-City non-residential demands (i.e., irrigation and municipal) and suburban retail demands are estimated based on historical consumption and supplement the demands projected by the econometric models. Water loss is forecasted separately. For

more information about how retail water demand projections were developed for the 2020 UWMP, refer to Section 4.1.2, Projected Retail Demands, of the 2020 UWMP.

The SFPUC, with the support of its consultant team that developed the econometric models used for the 2020 UWMP, re-ran the model specific to the multi-family residential sector using the updated housing unit projections described in the previous section. No other model inputs were changed from those that were used for the 2020 UWMP. The resulting model outputs are detailed in Appendix B and summarized in Table 2 below. Multi-family residential demands increased by about 0.5 to 0.6 mgd, or 1.5 to 2.5%, compared to those in the 2020 UWMP.

Table 2: Multi-Family Residential Water Demands (million gallons per day [mgd])

	2025	2030	2035	2040	2045
Used in 2020 UWMP	23.7	25.6	27.9	30.3	33.0
2023 Update	24.3	26.2	28.4	30.9	33.5
Difference	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**
% Difference from 2020 UWMP	**2.5%**	**2.3%**	**2.0%**	**1.8%**	**1.5%**

Total retail water demand projections are shown in Table 3, which supersedes Table 4-1 of the 2020 UWMP. These projections comprise the updated multi-family residential demands from Table 2 and the unchanged demands for the remaining sectors. The demands of the remaining sectors are not updated as they are not directly related to the change in housing unit projections. Total retail demands increased by about 0.6 to 0.8% compared to those in the 2020 UWMP.

Table 3: Retail Water Demands (mgd)

Retail Sector or Use Type	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
In-City Retail						
Single-Family Residential	14.5	13.7	13.5	13.4	13.5	13.5
Multi-Family Residential	22.9	24.3	26.2	28.4	30.9	33.5
Non-residential	20.9	22.9	22.9	22.8	23.1	23.6
Water Loss[c]	7.2	6.0	6.0	6.0	6.0	6.0
Subtotal In-City Retail Demand	65.3	66.9	68.6	70.6	73.5	76.7
Suburban Retail						
Single-Family Residential[d]	0.1	0.1	0.1	0.1	0.1	0.1
Non-Residential	3.1	4.0	4.0	4.0	4.0	4.0
Groveland CSD[e]	0.3	0.3	0.3	0.3	0.3	0.3
Water Loss[c]	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Suburban Retail Demand	3.5	4.4	4.4	4.4	4.4	4.4
Total Retail Demand	**68.8**	**71.3**	**73.0**	**75.0**	**77.9**	**81.1**
% Difference from 2020 UWMP	**N/A**	**0.8%**	**0.8%**	**0.8%**	**0.7%**	**0.6%**

a Actual consumption data are obtained from customer billing data.

b Single family residential and multi-family residential demand projections are from an econometric model developed for the SFPUC. Non-residential demands include commercial/industrial demands, which are also from an econometric model, as well as municipal and irrigation demands, which are assumed to remain constant at the previous five-year average level.

c Water losses include both apparent and real losses. Suburban retail water losses are considered to be negligible. Actual water loss in 2020 is based on SFPUC's July 2019 – June 2020 water loss audit.

d Suburban retail residential demands are for single family only as no multi-family residential buildings are served.

e Groveland Community Services District (CSD) is accounted for as a retail customer for the purpose of this table and subsequent retail supply and demand comparisons in the 2020 UWMP. Demand projections were provided by Groveland CSD based on its population projections and assumed per capita water use of 107 GPCD (projections are subject to change as part of its UWMP process). In the corresponding standardized tables in UWMP 2020 Appendix B, Groveland CSD is not reported as retail, but rather wholesale.

4.0 Water Supply and Demand Comparisons

This section compares the SFPUC's retail water supplies (unchanged from the 2020 UWMP) and demands (updated in Table 3) through 2045 during normal, single dry, and multiple dry years. The supply and demand comparisons are presented for two Regional Water System (RWS) supply scenarios: (1) with full implementation of the Bay-Delta Plan Amendment and (2) without implementation of the Bay-Delta Plan Amendment. For more information about these scenarios and how their corresponding supplies were estimated, refer to Section 8, Water Supply Reliability Assessment, of the 2020 UWMP[1].

4.1 With Bay-Delta Plan Amendment

The instream flow requirements of the Bay-Delta Plan Amendment would impact the RWS supplies in single dry years and multiple dry years. The comparison of retail demands and supplies under the Bay-Delta Plan Amendment is presented in Table 4, which supersedes Table 8-4 of the 2020 UWMP and demonstrates the following:

- **Normal Years:** During normal hydrologic years, the SFPUC will have adequate supplies to meet its projected retail water demands. This is unchanged from the 2020 UWMP.
- **Single Dry Year:** During single dry years, there would be an anticipated 30 to 40% shortage of RWS supplies. When the supplies available to retail customers (RWS plus local supplies) are compared to the projected retail demands, a retail supply shortfall of 15% to 26% (11 to 21 mgd) is expected in single dry year conditions. These shortfalls are less than 1%, or 1 mgd, higher than estimated in the 2020 UWMP.
- **Multiple Dry Years:** If a multiple dry year event occurs, there would be anticipated shortages in RWS supplies of 30 to 49%, depending on demand levels. When the supplies available to retail customers (RWS plus local supplies) are compared to the projected retail demands, there is an anticipated shortfall of almost 36%, or 29 mgd, by the fifth dry year at 2045 projected levels of demand. This shortfall is less than 1%, or 1 mgd, higher than estimated in the 2020 UWMP.

4.2 Without Bay-Delta Plan Amendment

Without implementation of the Bay-Delta Plan Amendment, existing and planned supplies would meet all projected RWS demands in all years except deep into a multi-year drought at 2045 projected levels of demand. The comparison of retail demands and supplies is presented in Table 5, which supersedes Table 8-6 of the 2020 UWMP and demonstrates the following:

- **Normal Years:** During normal hydrologic years, the SFPUC will have adequate supplies to meet its projected retail water demands. This is unchanged from the 2020 UWMP.
- **Single Dry Year:** During single dry years, there are no anticipated shortages of RWS supplies. This is unchanged from the 2020 UWMP.
- **Multiple Dry Years:** In the multiple dry year scenario, the SFPUC would only experience system-wide shortages in RWS supplies of 10% during years 4 and 5 of an extended drought at 2045

[1] Section 7.3.1, page 7-5, of the 2020 UWMP states, "Although the [State Water Resources Control Board] has stated it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, given the current level of uncertainty, it is assumed for the purposes of this draft UWMP that the Bay-Delta Plan Amendment will be fully implemented starting in 2023." To date, the Bay-Delta Plan Amendment has not been implemented and the SFPUC currently does not have an anticipated date for implementation.

levels of demand. In a 10% shortage, retail customers would reduce their demands by 5% as required by the Water Supply Agreement between SFPUC and its Wholesale Customers. As a result of this demand reduction, there is a projected surplus of 5.3%, or 4.1 mgd, which is 0.1 mgd greater than that estimated in the 2020 UWMP.

Table 4: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios With Bay-Delta Plan Amendment (mgd)

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Baseline Retail Demand[c]	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	70.7	59.5	59.5	51.5	51.5	51.5	51.5
	Retail Groundwater[e]	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*
	Retail Recycled Water[f]	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*
	RWS Supply Utilized by Retail[g]	*67.2*	*56.0*	*56.0*	*48.0*	*48.0*	*48.0*	*48.0*
	Difference (Supply Surplus or Shortfall)	0.0	-11.8	-11.8	-19.8	-19.8	-19.8	-19.8
	Difference as Percentage of Demand	0.0%	-16.5%	-16.5%	-27.8%	-27.8%	-27.8%	-27.8%
2030	Total Retail Demand	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Baseline Retail Demand[c]	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	72.4	61.4	61.4	53.4	53.4	53.4	53.4
	Retail Groundwater[e]	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*67.5*	*56.5*	*56.5*	*48.5*	*48.5*	*48.5*	*48.5*
	Difference (Supply Surplus or Shortfall)	0.0	-11.6	-11.6	-19.6	-19.6	-19.6	-19.6
	Difference as Percentage of Demand	0.0%	-15.9%	-15.9%	-26.8%	-26.8%	-26.8%	-26.8%
2035	Total Retail Demand	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Baseline Retail Demand[c]	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	74.5	63.8	63.8	55.5	55.5	55.5	51.4
	Retail Groundwater[e]	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*68.6*	*57.9*	*57.9*	*49.6*	*49.6*	*49.6*	*45.5*
	Difference (Supply Surplus or Shortfall)	0.0	-11.2	-11.2	-19.5	-19.5	-19.5	-23.6
	Difference as Percentage of Demand	0.0%	-14.9%	-14.9%	-26.0%	-26.0%	-26.0%	-31.5%

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2040	Total Retail Demand	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Baseline Retail Demand[c]	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	77.4	66.4	66.4	57.9	57.9	52.0	52.0
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*70.5*	*59.5*	*59.5*	*51.0*	*51.0*	*45.1*	*45.1*
	Difference (Supply Surplus or Shortfall)	0.0	-11.5	-11.5	-20.0	-20.0	-25.9	-25.9
	Difference as Percentage of Demand	0.0%	-14.8%	-14.8%	-25.7%	-25.7%	-33.2%	-33.2%
2045	Total Retail Demand	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Baseline Retail Demand[c]	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	80.6	60.1	60.1	60.1	60.1	52.1	52.1
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*73.7*	*53.2*	*53.2*	*53.2*	*53.2*	*45.2*	*45.2*
	Difference (Supply Surplus or Shortfall)	0.0	-21.0	-21.0	-21.0	-21.0	-29.0	-29.0
	Difference as Percentage of Demand	0.0%	-25.9%	-25.9%	-25.9%	-25.9%	-35.8%	-35.8%

Normal, single dry, and multiple dry year conditions are on a water year basis.

a During a single dry year, system-wide shortages of 30 – 40% are in effect (see Table 8-3 of the 2020 UWMP). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the Water Shortage Allocation Plan (WSAP).

b During multiple dry years, system-wide shortages of 30 – 55% are in effect (see Table 8-3 of the 2020 UWMP). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the WSAP.

c Total retail demands correspond to those in Table 3 and reflect passive and active conservation, onsite water reuse savings, and water loss. Demands for Groveland Community Services District is included in the table above.

d As amended in 2018, the WSAP Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the Regional Water System (RWS) are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. An N/A on this row means that either this 5% rationing requirement doesn't apply (i.e. no declared water shortage), or retail customers are already rationing greater than 5%.

e Groundwater supplies are assumed to be equivalent to projected demands for the San Francisco Groundwater Supply Project (ramping up to 4 mgd by 2040) and Castlewood County Service Area (0.4 mgd). Groundwater availability would not be affected by dry year conditions.

f Recycled water supplies are assumed to be equivalent to projected demands related to the Westside Recycled Water Project (1.6 mgd by 2021 and 1.8 mgd by 2030), Harding Park and Fleming Golf Courses (0.23 mgd), and Sharp Park Golf Course (up to 0.1 mgd) and Treasure Island (0.2 mgd by 2025 and 0.4 mgd by 2030). Recycled water availability would not be affected by dry year conditions.

g Procedures for RWS allocations and the WSAP are described in Section 8.3 of the 2020 UWMP. Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, in normal years, if groundwater and recycled water supplies are not available, up to 81 mgd of RWS supply could be used.

Table 5: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios Without Bay-Delta Plan Amendment (mgd)

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Baseline Retail Demand[c]	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Retail Groundwater[e]	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*
	Retail Recycled Water[f]	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*
	RWS Supply Utilized by Retail[g]	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2030	Total Retail Demand	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Baseline Retail Demand[c]	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Retail Groundwater[e]	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2035	Total Retail Demand	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Baseline Retail Demand[c]	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Retail Groundwater[e]	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2040	Total Retail Demand	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Baseline Retail Demand[c]	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2045	Total Retail Demand	81.1	81.1	81.1	81.1	81.1	77.0	77.0
	Baseline Retail Demand[c]	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*-4.1*	*-4.1*
	Total Retail Supply	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	4.1	4.1
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%

Normal, single dry, and multiple dry year conditions are on a water year basis.

a During all single dry years, no RWS system-wide shortages are in effect.

b During multiple dry years, no RWS system-wide shortages are in effect until years 4 and 5 at 2045 levels of demand. During those years, a 10% system-wide shortage is in effect.

c Total retail demands correspond to those in Table 3 and reflect passive and active conservation, onsite water reuse savings, and water loss. Demands for Groveland Community Services District is included in the table above.

d As amended in 2018, the Water Shortage Allocation Plan (WSAP) Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the Regional Water System (RWS) are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. An N/A on this row means that either this 5% rationing requirement doesn't apply (i.e. no declared water shortage), or retail customers are already rationing greater than 5%.

e Groundwater supplies are assumed to be equivalent to projected demands for the San Francisco Groundwater Supply Project (ramping up to 4 mgd by 2040) and Castlewood County Service Area (0.4 mgd). Groundwater availability would not be affected by dry year conditions.

f Recycled water supplies are assumed to be equivalent to projected demands related to the Westside Recycled Water Project (1.6 mgd by 2021 and 1.8 mgd by 2030), Harding Park and Fleming Golf Courses (0.23 mgd), and Sharp Park Golf Course (up to 0.1 mgd) and Treasure Island (0.2 mgd by 2025 and 0.4 mgd by 2030). Recycled water availability would not be affected by dry year conditions.

g Procedures for RWS allocations and the WSAP are described in Section 8.3 of the 2020 UWMP. Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, in normal years, if groundwater and recycled water supplies are not available, up to 81 mgd of RWS supply could be used.

Appendix A – San Francisco Planning Memorandum

San Francisco Planning

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August 18, 2023

Paula Kehoe
Director of Water Resources, SFPUC
525 Golden Gate Street, 10th Floor
San Francisco, CA 94102

Re: Projections of growth for San Francisco through 2050

Dear Paula:

On October 27, 2020, the Planning Department provided SFPUC household and job growth projections to inform the citywide water demand projections in the 2020 update of the SFPUC's Urban Water Management Plan (UWMP). The SFPUC adopted the 2020 UWMP in June 2021. Since that time, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR or EIR) in November 2022. The EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher household projections than those used in the UWMP. As you requested, this memo provides the EIR's household projections[1] to inform a minor update to SFPUC's water demand projections.

Citywide Growth Projections

Table 1 shows the Planning Department's housing projections for the years 2020-2050. We recognize that the 2020 UWMP water planning horizon extends only to 2045.

Table 1: Development Projections

	2020	2025	2030	2035	2040	2045	2050
Housing Units	407,000	432,667	458,333	483,600	509,000	534,000	559,000

The Housing Element update is required to be adopted every eight years by state law and was approved by the Board of Supervisors in January 2023 and certified by the state Department of Housing and Community Development on February 1, 2023. One of the primary goals of the Housing Element 2022 Update is to improve housing affordability by increasing the rate of housing production compared with the past several decades. The projections are based on the Housing Element objective of producing an average of approximately 5,000

[1] The Housing Element EIR assumed slightly less job growth than that assumed in the Planning Department's October 27, 2020 memo used to inform the 2020 UWMP water demand projections (i.e., EIR assumed 869,000 jobs in 2045 whereas October 2020 memo assumed 894,255 jobs). Given that the 2020 UWMP water demand projections used more conservative (i.e., slightly higher) job growth assumptions, there is no need to update the water demand projections to account for the Housing Element EIR job growth assumptions.

housing units per year, with adjustments for certain large development plans. These projections were analyzed in the Housing Element EIR. (The projections can be found in Appendix C of the EIR.) The Housing Element EIR considered two projection years – 2035 and 2050. For the purposes of generating the 5-year incremental projections required by the SFPUC through 2045, the Planning Department assumes a constant, straight-line average pace of housing production for the periods of 2020-2035 and 2035-2050.

Regarding the typology of projected new housing stock, our memo provided to SFPUC dated October 27, 2020, to inform preparation of the 2020 UWMP, contained analysis supporting a Planning Department recommendation that the SFPUC assume for the purposes of modelling citywide projected housing development in San Francisco that **the number of single-family detached houses will not increase from existing stock and that all future net housing growth will take the form of multi-family structures.** This recommendation is unchanged.

Sincerely,

Joshua Switzky
Acting Director of Citywide Planning

cc:
Fan Lau, SFPUC
Lisa Gibson, Planning
Wade Wietgrefe, Planning
Debra Dwyer, Planning
Julie Moore, Planning
Scott Edmondson, Planning
Peter Miljanich, City Attorney
Andrea Ruiz-Esquide, City Attorney

Appendix B – Woodard & Curran Memorandum

TECHNICAL MEMORANDUM

TO: Paula Kehoe, Director of Water Resources, San Francisco Public Utilities Commission

Fan Lau, Water Resources Division, San Francisco Public Utilities Commission

PREPARED BY: Chris Hewes, Woodard & Curran

REVIEWED BY: Katie Cole, Woodard & Curran

DATE: August 25, 2023

RE: SFPUC Demand Forecast Model Re-Run with Updated Housing Unit Forecast

In 2020, the San Francisco Public Utilities Commission (SFPUC) engaged The Brattle Group to develop an econometric-based water demand forecast model (Model) to generate retail water demands for the SFPUC's 2020 Urban Water Management Plan (UWMP). A key input to the Model was household development forecasts provided by the San Francisco Planning Department (October 27, 2020 memo from Joshua Switzky, Land Use & Community Planning Program Manager). At the time, these forecasts were in draft form, developed during preparation of the city's General Plan Housing Element (Housing Element 2022 Update). Since June 2021 when the 2020 UWMP was published, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (EIR) in November 2022. The EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher household forecasts than those used in the UWMP.

Woodard & Curran worked with the Model developers to re-run it with the updated housing development forecasts provided by the San Francisco Planning Department (see Section 1 – Updated Model Inputs). The resulting Model outputs (water demands) were combined with other values external to the Model that together provide full retail water demand for SFPUC (see Section 2 – Updated Results).

1. UPDATED MODEL INPUTS

See **Table 1** for the updated housing development forecast provided by the San Francisco Planning Department (August 18, 2023 memo from Joshua Switzky, Acting Director of Citywide Planning). Per SFPUC's guidance in the previous Model effort, and re-confirmed by the San Francisco Planning Department for the current Model effort, it was assumed that there will not be an increase in the number of single-family detached houses from the existing stock. Therefore, the water demand forecast for the single-family sector is the same as the prior outputs. All future housing growth is expected to occur in the multi-family residential sector. No other inputs to the Model were changed (e.g., employment forecast, econometric variables, etc.).

Table 1: Housing Development Forecast

Housing Units	2020	2025	2030	2035	2040	2045
For 2020 UWMP	399,313	425,118	450,923	476,728	502,533	528,338
For 2023 Update	407,000	432,667	458,333	483,600	509,000	534,000

2. UPDATED RESULTS

See **Table 2** for the updated outputs directly from the Model. **Table 3** shows the updated multi-family residential sector forecast details. Tables 2 and 3 contain rows that specify the water savings associated with the Onsite Water Reuse Program. These savings were estimated for the 2020 UWMP but are not updated for this memo as (1) they are estimated separately from the Model and (2) the types of new multi-family residential projects and their participation in the Onsite Water Reuse Program are currently unknown.

See **Table 4** for a comparison of the previous and updated multi-family residential sector forecasts.

See **Table 5** for the updated retail demand forecast, which incorporates additional information that is external to the Model, as it was presented in the 2020 UWMP (e.g., municipal and irrigation demands in the "non-residential" sector, as well as Suburban Retail demands).

Table 2: Model Outputs (mgd)

		FY2019-20	FY2024-25	FY2029-30	FY2034-35	FY2039-40	FY2044-45
Single Family Residential							
Unadjusted Baseline Demand		14.32	13.83	13.63	13.60	13.63	13.65
Conservation:	*Active*	0.00	-0.15	-0.18	-0.17	-0.13	-0.11
Total		14.32	13.68	13.45	13.43	13.49	13.54
Multifamily Residential							
Unadjusted Baseline Demand		23.09	24.63	26.74	29.21	31.85	34.46
Conservation:	*Active*	0.00	-0.15	-0.20	-0.18	-0.11	-0.06
	Non-Potable / Onsite Reuse	-0.07	-0.21	-0.35	-0.63	-0.91	-0.91
Other Accounts:	*Fire*	0.01	0.01	0.01	0.01	0.01	0.01
Total		23.03	24.28	26.19	28.41	30.85	33.51
Commercial and Industrial							
Unadjusted Baseline Demand		17.81	17.25	17.33	17.49	17.93	18.38
Conservation:	*Active*	0.00	-0.28	-0.30	-0.30	-0.28	-0.23
	Non-Potable / Onsite Reuse	-0.03	-0.09	-0.15	-0.27	-0.39	-0.39
Other Accounts:	*Docks / Ships*	0.02	0.02	0.02	0.02	0.02	0.02
	Builders / Contractors	0.18	0.18	0.18	0.18	0.18	0.18
	Fire	0.04	0.04	0.04	0.04	0.04	0.04
Total		18.02	17.12	17.11	17.16	17.51	18.00
Grand Total		55.38	55.08	56.76	59.00	61.85	65.05

Notes:

FY2019-20: This column is a forecast that assumes no COVID-19 pandemic and average weather conditions. Actual demand for FY2019-20 is shown in Table 5 of this memo.
Unadjusted Baseline Demand: This is the raw output of the statistical forecast model.
Conservation Adjustments: These estimates are the output of the SFPUC Conservation model and have not been updated in this memo.
Multifamily Residential Fire Accounts: These values were supplied by SFPUC and have not been updated in this memo.
Commercial and Industrial: These forecasts are unchanged from the previous forecasts.
Grand Total: This row does not include water losses, suburban accounts, irrigation accounts, or municipal accounts. The volumes from these additional sector types are included in Table 5 of this memo and are unchanged from the previous forecasts.

Table 3: Multi-Family Demand Forecast Details

	FY2019-20	FY2024-25	FY2029-30	FY2034-35	FY2039-40	FY2044-45
Number of Units	282,814	308,481	334,147	359,414	384,814	409,814
Residents per Unit	2.30	2.30	2.30	2.30	2.30	2.30
Avg. Consumption per Capita (gal / day)						
Unadjusted Baseline Demand	35.50	34.71	34.79	35.34	35.99	36.56
Conservation: *Active*	0.00	-0.21	-0.27	-0.23	-0.12	-0.06
Non-Potable / Onsite Reuse	-0.11	-0.30	-0.47	-0.78	-1.05	-0.98
Demand per Capita	35.39	34.20	34.05	34.33	34.82	35.52
Avg. Consumption per Unit (gal / day)						
Unadjusted Baseline Demand	81.66	79.84	80.01	81.27	82.78	84.09
Conservation: *Active*	0.00	-0.49	-0.63	-0.52	-0.29	-0.14
Non-Potable / Onsite Reuse	-0.25	-0.70	-1.07	-1.79	-2.41	-2.25
Demand per Unit	81.40	78.65	78.31	78.97	80.09	81.70
Total Consumption (MGD)						
Unadjusted Baseline Demand	23.09	24.63	26.74	29.21	31.85	34.46
Conservation: *Active*	0.00	-0.15	-0.20	-0.18	-0.11	-0.06
Non-Potable / Onsite Reuse	-0.07	-0.21	-0.35	-0.63	-0.91	-0.91
Total Demand	23.02	24.27	26.18	28.40	30.84	33.50

Notes:

FY2019-20: This column is a forecast that assumes no COVID-19 pandemic and average weather conditions. Actual demand for FY2019-20 is shown in Table 5 of this memo.
Unadjusted Baseline Demand: This is the raw output of the statistical forecast model.
Conservation Adjustments: These estimates are the output of the SFPUC Conservation model and have not been updated in this memo.

Table 4: Multi-Family Residential Water Demand Forecast (mgd)

Multi-Family Residential	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
From 2020 UWMP	22.9	23.7	25.6	27.9	30.3	33.0
From 2023 Update (from Table 3)	22.9	24.3	26.2	28.4	30.9	33.5
Difference	0.0	0.6	0.6	0.6	0.5	0.5

a Actual consumption data are obtained from customer billing data.

b Multi-family residential demand projections are from an econometric model developed for the SFPUC.

Table 5: Retail Water Demand Forecast (mgd)

Retail Sector or Use Type	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
In-City Retail						
Single-Family Residential	14.5	13.7	13.5	13.4	13.5	13.5
Multi-Family Residential	22.9	24.3	26.2	28.4	30.9	33.5
Non-residential	20.9	22.9	22.9	22.8	23.1	23.6
Water Loss[c]	7.2	6.0	6.0	6.0	6.0	6.0
Subtotal In-City Retail Demand	65.3	66.9	68.6	70.6	73.5	76.7
Suburban Retail						
Single-Family Residential[d]	0.1	0.1	0.1	0.1	0.1	0.1
Non-Residential	3.1	4.0	4.0	4.0	4.0	4.0
Groveland CSD[e]	0.3	0.3	0.3	0.3	0.3	0.3
Water Loss[c]	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Suburban Retail Demand	3.5	4.4	4.4	4.4	4.4	4.4
Total Retail Demand	**68.8**	**71.3**	**73.0**	**75.0**	**77.9**	**81.1**

a Actual consumption data are obtained from customer billing data.

b Single family residential and multi-family residential demand projections are from an econometric model developed for the SFPUC. Non-residential demands include commercial/industrial demands, which are also from an econometric model, as well as municipal and irrigation demands, which are assumed to remain constant at the previous five-year average level.

c Water losses include both apparent and real losses. Suburban retail water losses are considered to be negligible. Actual water loss in 2020 is based on SFPUC's July 2019 – June 2020 water loss audit.

d Suburban retail residential demands are for single family only as no multi-family residential buildings are served.

e Groveland Community Services District (CSD) is accounted for as a retail customer for the purpose of this table and subsequent retail supply and demand comparisons in the 2020 UWMP. Demand projections were provided by Groveland CSD based on its population projections and assumed per capita water use of 107 GPCD (projections are subject to change as part of its UWMP process). In the corresponding standardized tables in UWMP 2020 Appendix B, Groveland CSD is not reported as retail, but rather wholesale.

Attachment B –

3251 20th Avenue (Stonestown) Project Demand Memo

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
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September 18, 2023

To: Fan Lau, P.E. – San Francisco Utilities Commission
From: Florentina Craciun, AICP – Environmental Planning

Re: 3251 20th Avenues (Stonestown) Water Supply Assessment Request
Planning Department File No. 2021-012028ENV

The purpose of this memorandum is to request that the San Francisco Public Utilities Commission (SFPUC) prepare a revised Water Supply Assessment (WSA) for the proposed project at 3251 20th Avenue (Stonestown), in compliance with CEQA Guidelines Section 15155 and Sections 10910 through 10915 of the California Water Code. A prior Project Water Demand Memo and WSA analysis was prepared for the project and was reviewed and approved by the SFPUC Commission on October 24, 2022. This Project Water Demand Memo request provides updated information based on current requirements for a modified project at 3251 20th Avenue (Stonestown Mall).

The project sponsor (Brookfield Properties Development) proposes to redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use residential and retail community. Under the Revised Variant, the existing 775,000-square-foot mall would remain, with changes to the façade, entrances, and exits. Overall, the proposed project would include up to approximately 3,491 residential units; up to 160,000 square feet of new retail sales and service use space; up to 96,000 square feet of non-retail sales and service use; approximately 63,000 square feet of institutional uses; approximately 4,700 parking spaces; 6 acres of open space; and infrastructure improvements.

The project sponsor provided project information intended to meet the requirements outlined in the SFPUC guidance memo dated January 13, 2022. A summary of the project description, average daily water demands, and supporting tables prepared by the project sponsor's consultant (based on the SFPUC District Scale Non-Potable Water Calculator Version 9.1), are attached.

Should you have questions or need additional information from the Planning Department or the project sponsor, please contact me at 628.652.7510 or Florentina.craciun@sfgov.org.

Sincerely,

Florentina Craciun, AICP

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esassoc.com

memorandum

date	July 28, 2023
to	Florentina Craciun, San Francisco Planning Department, Environmental Planning
from	Susan Yogi and Jill Feyk-Miney, ESA
subject	Revised Stonestown Development Project Demand Memorandum for Preparation of Water Supply Assessment Case No. 2021-012028ENV

This memorandum presents the revised project description and project information regarding water demand in order for the San Francisco Public Utilities Commission (SFPUC) to prepare a Water Supply Assessment (WSA) for the Stonestown Development Project (proposed project). The SFPUC prepared the WSA for the proposed project based on the 2020 Urban Water Management Plan for the City and County of San Francisco. As described on page 2 of this memorandum, the original proposed project included a variant (original variant), which considered additional development. The previous WSA calculator was prepared using the original variant's projected demand because it represents the most conservative buildout for the project site from a water demand perspective. The SFPUC approved the WSA for the proposed project by Resolution No. 22-0186 on October 24, 2022. Since then, the project sponsor has revised the original variant to add residential units and reduce non-retail sales and service and hotel uses (herein referred to as the "revised variant"). The "proposed project" as described in this memorandum refers to the original and revised variant. This memorandum is expected to be attached to the revised WSA as an appendix and referenced in the WSA as needed. **Table 1** provides the basic information of the proposed project.

Revised Variant Description

The proposed Stonestown Development project is located on an approximately 41-acre site in the Lakeshore area in southwest San Francisco. The project sponsor (Brookfield Properties Development) proposes to redevelop the approximately 27 acres surrounding the existing on-site Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use residential and retail community. Under the proposed project, the existing 760,000-square-foot Stonestown Galleria shopping mall would remain, with changes to the façade, entrances, and exits. The existing parking garage in the southwest corner of the project site, the vacant theater at the northwest corner of the site, and the CitySports and commercial building at the northeast corner of the site would be demolished and redeveloped as part of the proposed project.

TABLE 1
PROJECT INFORMATION

Project Name	Stonestown Development Project
Case No.	2021-012028ENV
Estimated Construction Completion	2032
Project Contact	Florentina Craciun – 628.652.7510, Florentina.Craciun@sfgov.org
Current Land Use(s)	Retail Sales and Services (shopping mall) Parking Lots Institutional
Proposed Land Use(s)	Residential Retail Sales and Services Non-Retail Sales and Services Parking Lots Hotel (the revised variant does not include hotel uses) Institutional
Project Address	3251 20th Avenue
Block/Lot	7295/Lots 2, 4, 6, 7, 35, 37, 38; 7296/Lots 5, 6, 7, 8, 9, 10
Project Site Size	1,781,604 square feet (40.9 acres)
Days In Operation Per Year	365 residential days; 365 retail days; 260 general office days, 260 childcare days

Overall, the proposed project would include up to approximately 2,930 residential units; up to 160,000 square feet of new retail sales and service use space; up to 200,000 square feet of new non-retail sales and service use[1]; up to approximately 100,000 square feet of hotel use; approximately 53,000 square feet of institutional uses to include an approximately 15,000-square-foot childcare facility and space for community use; approximately 4,250 parking spaces; 6 acres of open space; and infrastructure improvements. The original variant would include the development of the 0.8-acre parcel that is currently occupied by Authentic Church (Block/Lot 7295/002) at 3355 19th Avenue, adjacent to the project site between Eucalyptus and Winston drives. Under the original variant, the redevelopment of the 27 acres surrounding the Stonestown Galleria would be the same as the proposed project; however, the additional 0.8-acre Authentic Church parcel would be developed with an additional 150 residential units; 10,000 square feet of institutional use; and 200 parking spaces in a partially below grade parking structure. However, as compared to the original variant, the revised variant would include 3,491 residential units (an additional 411 residential units including 200 senior housing units), an additional 411 parking spaces, 104,000 square feet less non-retail sales and service use, and no hotel use. **Table 2** presents the existing, original variant, revised variant, and net change from the original variant.

The WSA calculator prepared for the land uses proposed under the revised variant provide a conservative estimate of water demand for the proposed project (see **Attachment 1**).

1 "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (San Francisco Planning Code section 102, herein referred to as "planning code").

TABLE 2
PROJECT CHARACTERISTICS: ORIGINAL AND REVISED VARIANT

Project Characteristics	Existing	Proposed Project Including Authentic Church Variant (Original Variant)	Revised Variant	Net Change from Original Variant
Residential Use	0	3,200,000 sf	Up to 3,534,000	+334,000
Retail Sales and Services Use[a]	760,000 sf mall	**Up to 160,000 sf**	**Up to 160,000 sf**	No Change
	13,300 sf, 30-foot-tall vacant theater	710,000[d] sf of the existing mall retained	710,000[d] sf of the existing mall retained	
	15,000 sf, 15- to 30-foot-tall commercial building	13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished	13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished	
		81,700 sf net new	81,700 sf net new	
Non-Retail Sales and Service Use[b]	0	Up to 200,000 net new sf	Up to 96,000	-104,000
Hotel	0	Up to 100,000 sf (200 rooms) net new	0	-100,000 (-200 rooms)
Institutional Use[c]	30,000 sf, 30-foot-tall church	**Up to 63,000 sf**	**Up to 63,000 sf**	No change
		30,000 sf church demolished	30,000 sf church demolished	
		33,000 sf net new**;** including an approximately 15,000-square-foot childcare facility	33,000 sf net new**;** including an approximately 15,000-square-foot childcare facility	
Proposed Total Dwelling Units (Approximate Number)	***0***	***3,080***	***3,491***	***+411***
Proposed Parking	**Number (approximate)**			
Vehicle parking spaces:	**3,400**	**4,450**	**4,861**	**+411**
Car-Share parking spaces	0	82	82	No Change
Open Space	**Area**			
Publicly accessible open space	1.6 acres	Approximately 6 net new acres		No Change
Private residential open space	N/A	Approximately 36 square feet per unit if located on balcony, or approximately 48 square feet per unit if commonly accessible to residents, or as otherwise refined in the planning code.		No Change
Building Characteristics				
Stories	1 to 3 stories	3 to 18 stories		No Change
Height	15 to 65 feet	30 to 190 feet		No Change
Ground floor	Retail sales and service	All blocks would include ground floor active uses, which could include any combination of retail sales and service, non-retail sales and service, institutional, or residential space facing the street		No Change

NOTES

a. "Retail Sales and Service Use" is a use category that includes, but not limited to: the sale of goods, typically in small quantities, or services directly to the ultimate consumer or end user with some space for retail service on site, excluding Retail Entertainment Arts and Recreation, and Retail Automobile Uses and including, but not limited to: Adult Business, Animal Hospital, Bar, Cannabis Retail, Chair and Foot Massage, Tourist Oriented Gift Store, General Grocery, Specialty Grocery, Gym 2 Hotel, Jewelry Store, Kennel, Laundromat, Liquor Store, Massage Establishment, Mortuary (Columbarium), Motel, Non-Auto Sales, Pharmacy, Restaurant, Limited Restaurant, General Retail Sales and Service, Financial Service, Fringe Financial Service, Limited Financial Service, Health Service, Personal Service, Retail Professional Service, Self-Storage, Tobacco Paraphernalia Establishment, and Trade Shop (planning code section 102).

b. "Non-Retail Sales and Service Use" includes the sale of goods or services to other businesses rather than the end user, or that does not provide for direct sales to the consumer on site. Uses in this category include, but are not limited to: Business Services, Catering, Commercial Storage, Design Professional, General Office, Laboratory, Life Science, Non-Retail Professional Service, Trade Office, Wholesale Sales, and Wholesale Storage (planning code section 102).

c. "Institutional Use" includes Child Care Facility, Community Facility, Private Community Facility, Hospital, Job Training, Medical Cannabis Dispensary, Religious Institution, Residential Care Facility, Social Service or Philanthropic Facility, Post-Secondary Educational Institution, Public Facility, School, and Trade School (planning code section 102).

d. The 50,000 sf CitySports building would be demolished and is subtracted from the existing mall square footage to be retained.

Project construction would occur in six phases over the course of approximately eight years, from 2024 to approximately 2032 (see **Table 3**). The first operational year is assumed to be 2027. By 2030, construction of Phases 1–3 is assumed to be completed, consisting of up to approximately 1,893 residential units (1,867,500 square feet), up to 66,000 square feet of new retail sales and service use space; up to 12,000 square feet of new non-retail sales and service use;[2] and up to approximately 21,000 square feet of institutional uses.[3] The revised variant would have the same construction schedule as the original variant for Phases 1 through 5, but would extend Phase 6 by approximately 3 months.

TABLE 3
PRELIMINARY ORIGINAL AND REVISED ESTIMATED CONSTRUCTION SCHEDULE

Construction Phase	Start	Finish	Duration (Months)
Phase 1	4/1/2024	1/11/2028	45
Phase 2	4/1/2025	12/22/2028	44
Phase 3	6/1/2026	10/1/2028	28
Phase 4[a]	4/1/2027	12/1/2030	44
Phase 5	4/1/2028	11/1/2031	43
Phase 6	4/1/2029	4/1/2032 (original) 6/30/2032 (revised)	36 (original) 39 (revised)
Total	***4/1/2024***	***4/1/2032 (original)*** ***6/30/2032 (revised)***	***96 (original)*** ***99 (revised)***

SOURCE: Brookfield Properties Development, 2022 and 2023.
NOTE:
a. The construction of the Authentic Church Variant would be accommodated within Phase 4.

The original and revised variant would meet the requirements of all applicable City and County of San Francisco ordinances related to water conservation and resources, including:

- The original and revised variant would construct potable water distribution pipelines to serve the new uses. The existing potable water pipeline in the segments of 20th Avenue and Buckingham Way would be relocated to the proposed alignments of these streets. To reduce potable water demand, high-efficiency fixtures and appliances would be installed in new buildings comply with the state's Title 24 requirements and the City's Residential Water Conservation Ordinance (San Francisco Housing Code, Ch. 12A) and Commercial Water Conservation Ordinance (San Francisco Building Code, Ch. 13A).
- The project site is located within a designated recycled water use area, and the original and revised variant would provide the piping needed to distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance (San Francisco Public Works Code, Article 22).
- The original and revised variant would comply with San Francisco's Non-potable Water Ordinance (San Francisco Health Code, Article 12C) and would include the diversion and reuse of water from HVAC/cooling systems, graywater, blackwater (from commercial uses only), and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

2 "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (planning code section 102).

3 Brookfield Properties Development, 2023, Stonestown Program Summary Spreadsheet, February 7, 2023.

- Landscaped areas would be installed, constructed, operated, and maintained in accordance with the Water Efficient Irrigation Ordinance (San Francisco Administrative Code, Ch. 63).

Revised Variant Water Demand

Table 4 shows the estimated daily and annual water demand for the original and revised variant by land use category. As shown, the total water use for the revised variant would be approximately 309,400 gallons per day (gpd), or 112.92 million gallons per year (gpy). Of the total water demand, 104.06 million gpy would be for indoor water use and 8.85 million gpy would be for irrigation and HVAC/cooling purposes. In addition, because the revised variant would comply with the City's Non-potable Water Ordinance and Recycled Water Use Ordinance, other water saving measures involving water efficient fixtures and onsite reuse, could result in the availability of up to 56.38 million gpy of non-potable water to offset projected water demand. Approximately 42.94 million gpy or 38 percent of revised variant demand is expected to be met by non-potable supply. The calculations were developed using the SFPUC District Scale Non-Potable Water Calculator, Version 9.1.

TABLE 4
ORIGINAL AND REVISED VARIANT ESTIMATED WATER DEMAND

Proposed Use	Original Variant Estimated Daily Water Demand (gpd)	Original Variant Estimated Annual Water Demand (gpy)	Revised Variant Estimated Daily Water Demand (gpd)	Revised Variant Estimated Annual Water Demand (gpy)
Commercial water demand (indoor)	15,746	5,747,220	6,288	2,295,041
Multi-Family water demand (indoor)[a]	209,507	76,469,901	278,813	101,766,679
Landscape irrigation demand (outdoor)	6,259	2,284,409	6,259	2,284,409
HVAC/Cooling demand (outdoor)[b]	17,091	6,238,215	18,003	6,570,986
Total	***248,700***	***90,739,800***	***309,400***	***112,917,200***

NOTES:

a. The persons per household value of 2.36 was used instead of the default value of 2.01 in the WSA calculator. The WSA calculator's default is based on the 2011 Retail Demand Model Update, while the 2.36 persons per household value is based on the latest U.S. Census data and consistent with the population analyzed in the environmental impact report.

b. The HVAC/Cooling demands are calculated by applying demand factors for each land use and typical usage percentages by month. This is based on the project area's typical climate and the project sponsor's data.

Table 5 summarizes water volumes reported in units of million gallons per day (mgd) for the original and revised variant. Note that the revised variant would not vary demands based on water year type.

TABLE 5
WATER DEMAND BASED ON PROJECT PHASING FOR THE ORIGINAL AND REVISED VARIANTS (MGD)

Demand (mgd)	2025[a]	2030	2035	2040	2045
Original Variant					
Potable Demand	0	0.083	0.152	0.152	0.152
Non-potable Demand	0	0.064	0.097	0.097	0.097
Total Demand	***0***	***0.147***	***0.249***	***0.249***	***0.249***
Potential Potable Water Savings as Percentage of Total Demand	—	41%	39%	39%	39%
Revised Variant					
Potable Demand	0	0.103	0.191	0.191	0.191
Non-potable Demand	0	0.075	0.118	0.118	0.118
Total Demand	***0***	***0.178***	***0.309***	***0.309***	***0.309***
Potential Potable Water Savings as Percentage of Total Demand	—	40%	38%	38%	38%

SOURCE: SFPUC District Scale Non-Potable Water Calculator, Version 9.1

NOTES:

a. Assumes first operational year is 2027.

NON-POTABLE WATER CALCULATOR

Project Summary Sheet Stonestown

Project Contact: Christie Donnelly
510-816-0761
christie.donnelly@brookfieldpropertiesdevelopment.com

Total Gross Square Footage: 5,467,863 **Estimated Final Site/Building Permit Issuance Date:** 1/1/2024

1. Demand and Supply Summary

Demand Met by Non-Potable Supply (gallons/year):	**42,940,015** *38% of total*
Total Annual Water Demand (gallons/year):	**112,917,200**

	6-Month Compliance Periods	
	January - June	**July - December**
Potable Make-Up Allocation (gallons/period):	**1,814,459**	**1,822,444**

2. Building Information Summary

	Site 1	Site 2	Site 3	Project Total
Project / Building Name:	**Stonestown**			**Stonestown**
Project Address:	3251 20th Avenue			3251 20th Avenue San Francisco, CA
Assessor's Block & Lot No. / APN:	7295-004, 005, 035, 037, 038 & 7296			-
Date of Completion:	2038			-
Building Type:	Mixres	MIPS	MIPS	-
Total Building Size (GSF):	5,467,863	0	0	5,467,863
Total Lot Size (ft^2):	1,432,940	0	0	1,432,940
Number of Residential Units:	3,491	0	0	3,491
Impervious Surface Above Grade (ft^2):	664,590	0	0	664,590
Impervious Surface Below Grade (ft^2):	436,030	0	0	436,030
Irrigated Landscaped Area (ft^2):	242,870	0	0	242,870

3. Summary of Non-Potable Demands and Supplies for the Project

Non-Potable Supply Estimates

	Annual Supply (gpy)				
Onsite Alternate Water Sources	**Site 1**	**Site 2**	**Site 3**	**Project Total**	
Graywater:	0	0	0	0	
Blackwater:	55,494,848	0	0	55,494,848	*(includes GW)*
Condensate:	887,083	0	0	887,083	
Rainwater/Stormwater:	0	0	0	0	
Other Supplies:	0	0	0	0	
TOTAL:	**56,381,931**	**0**	**0**	**56,381,931**	

Non-Potable Demand Estimates

	Annual Demand (gpy)			
Project Non-Potable Demands	**Site 1**	**Site 2**	**Site 3**	**Project Total**
Toilets/Urinals:	20,516,371	0	0	20,516,371
Drain Trap Priming:	0	0	0	0
Irrigation:	2,284,409	0	0	2,284,409
Clothes Washing:	13,568,249	0	0	13,568,249
HVAC/Cooling:	6,570,986	0	0	6,570,986
Other Demands:	0	0	0	0
TOTAL:	**42,940,015**	**0**	**0**	**42,940,015**

4. Project Phasing

This offset analysis assumes the full year of supplies is available to offset non-potable demands. Some scenarios may require storage to allow excess supplies from one part of the year to be used in later months with available demand.

	SITE 1: Stonestown		SITE 2:		SITE 3:		Project Total		
15-Year Timeframe (enter dates on Tab 1)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	Re-Used Non-Potable Supplies (gpy)
2038	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2039	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2040	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2041	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2042	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2043	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2044	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2045	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2046	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2047	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2048	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2049	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2050	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2051	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2052	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015