

660 University Avenue Mixed-Use Project

REVISED Final Environmental Impact Report/ Responses to Comments on the Draft EIR

SCH#2022110095

prepared by

City of Palo Alto
Planning and Community Environment Department
250 Hamilton Avenue Palo Alto, California 94301 Contact: Emily Kallas, AICP, Planner

prepared with the assistance of

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October **2025**

RINCON CONSULTANTS

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1 Introduction

1.1 Purpose of the Response to Comments on the Draft EIR

This document contains responses to comments received on the Draft Environmental Impact Report (Draft EIR) prepared for the proposed 660 University Avenue Mixed-Use Project (proposed project). It also contains an analysis of impacts related to certain changes to the proposed project since circulation of the Draft EIR. The Draft EIR identifies the likely environmental consequences associated with development of the proposed project and recommends mitigation measures to reduce potentially significant impacts. This document, together with the Draft EIR, constitutes the Final EIR for the proposed project.

1.2 Environmental Review Process

Pursuant to the California Environmental Quality Act (CEQA), lead agencies are required to consult with public agencies having jurisdiction over a proposed project and to provide the general public with an opportunity to comment on the Draft EIR.

On November 4, 2022, the City of Palo Alto circulated a Notice of Preparation (NOP) for a 30-day comment period to help identify the types of impacts that could result from the proposed project, as well as potential areas of controversy. The NOP was filed with the County Clerk, sent to the State Clearinghouse, published in a local newspaper (the Palo Alto Weekly), and mailed to local and state agencies, and notices were mailed to nearby addresses. The City received eight written letters in response to the NOP during the comment period.

The Draft EIR was made available for public review for a comment period that began on April 2, 2024, and ended on May 17, 2024. The Notice of Availability of a Draft EIR was posted with the Santa Clara County Clerk, sent to the State Clearinghouse, mailed to local and state agencies, and published in the local newspaper (the Post). The City received 44 comment letters on the Draft EIR and received verbal comments at an Architectural Review Board (ARB) hearing on April 18, 2024. Copies of written comments relevant to the Draft EIR received during the comment period are included in Chapter 2 of this document, and responses to comments relevant to the Draft EIR received at the ARB hearing are included in Chapter 3 of this document. In August 2025 the applicant submitted revised plans, which were then reviewed for associated environmental impacts. Chapter 4 of this document includes the revisions made to the EIR in response to comments, and Chapter 5 describes project changes and includes environmental analysis for the modified project.

1.3 Document Organization

This document consists of the following chapters:

- **Chapter 1: Introduction**. This chapter discusses the purpose and organization of this response to comments Document and the Final EIR and summarizes the environmental review process for the project.
- **Chapter 2: Written Comments and Responses.** This chapter contains reproductions of comment letters received on the Draft EIR. A written response for each CEQA-related written comment

received during the public review period is provided. Each response is keyed to the corresponding comment.

- **Chapter 3: Public Hearing Comments and Responses.** This chapter contains a summary of comments relevant to the Draft EIR raised during the public hearings held on the Draft EIR (Architectural Review Board on April 18, 2024). A written response to CEQA-related comments received at the hearings is provided.
- **Chapter 4: Revisions to the Draft EIR**. Changes to the Draft EIR that have been made in light of the comments received are contained in this chapter.
- **Chapter 5: CEQA Implications of Changes to the Proposed Project**. This chapter contains an analysis of impacts related to changes to the proposed project since circulation of the Draft EIR.

1.4 Draft EIR Recirculation Not Required

CEQA Guidelines Section 15088.5 requires Draft EIR recirculation when comments on the Draft EIR or responses thereto identify "significant new information." Significant new information is defined as including:

1. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
2. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
3. A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.
4. The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

The comments, responses, and Draft EIR clarifications and edits presented in this document do not constitute such "significant new information;" instead, they clarify, amplify, or make insignificant modifications to the Draft EIR. For example, none of the comments, responses, and Draft EIR revisions disclose new or substantially more severe significant environmental effects of the proposed project, or new feasible mitigation measures or alternatives considerably different than those analyzed in the Draft EIR that would clearly lessen the proposed project's significant effects.

2 Comments and Responses

This chapter includes relevant written comments received during the circulation of the Draft EIR prepared for the 660 University Avenue Mixed-Use Project, and responses to those comments.

The Draft EIR was circulated for a public review period that began on April 2, 2024 and ended on May 17, 2024. The City of Palo Alto received 44 comment letters on the Draft EIR. The commenters and the page number on which each commenter's letter appear are listed below.

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The comment letters and responses follow. The comment letters have been numbered sequentially and each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment Letter 1).

During the Draft EIR review period, the City solicited written public and agency comments on the Draft EIR pursuant to CEQA as well as verbal comments at the ARB meeting on April 18, 2024. Responses to environmental issues raised at this hearing are included in Chapter 3 following the written comments and responses.

In some cases, specific changes to the text of the Draft EIR have been made in response to comments received, and parts of the analysis have been updated to address changes to the project description, as detailed in Chapter 5 of this document. In no case do these revisions result in a greater number of impacts or impacts of a substantially greater severity than those set forth in the Draft EIR. Where revisions to the main text are called for, the page and paragraph are set forth, followed by the appropriate revision. Added text is indicated with <u>underlined</u> and deleted text is indicated with ~~strikeout~~. Page numbers correspond to the page numbers of the Draft EIR (DEIR).

Letter A-1

From: Mathews, Marley@DOT
To: Kallas, Emily
Cc: Luo, Yunsheng@DOT
Subject: 660 University Avenue Mixed-Use Project Caltrans Comment
Date: Wednesday, May 8, 2024 1:06:33 PM

You don't often get email from marley.mathews@dot.ca.gov. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Hello Emily,

Thank you for including Caltrans in this review of the 660 University Avenue Mixed-Use Project DIER. At this time, Caltrans has no comments on the material provided. Please note this correspondence does not indicate an official position by Caltrans on this project and is for informational purposes only. Please continue to include Caltrans in discussions regarding this Project to stay informed. We encourage multi-agency collaboration and welcome any potential opportunities. Any future material or correspondence regarding this Project can be submitted to LDR-D4@dot.ca.gov. 1

Thank you,
Marley Mathews

Transportation Planner (she/her)
D4 Caltrans 510-960-0841

Letter A1

COMMENTER: **Marley Matthews, Transportation Planner, Caltrans**

DATE: **May 8, 2024**

Response A1.1

The commenter states that Caltrans has no comments on the DEIR.

This comment does not pertain to the information, analysis, or conclusions in the DEIR and No changes to the EIR were made in response to this comment.

Letter A-2

From: Gennifer Wehrmeyer
To: Kallas, Emily
Cc: CPRU-Dropbox; Shree Dharasker
Subject: VW File 34811 – Comments on DEIR for 660 University Avenue Mixed-Use Project
Date: Friday, May 17, 2024 4:14:49 PM
Attachments: image001.png

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Dear Emily,

The Santa Clara Valley Water District (Valley Water) has reviewed Notice of Availability of a Draft Environmental Impact Report (DEIR) for the 660 University Avenue Mixed-Use Project to merge three parcels to construct a four-story mixed-use building at 511 Bryon Street, 660 University Ave, and 680 University Ave/500 Middlefield Rd in Palo Alto, received on April 2, 2024, and has the following comments: 1

1. Valley Water does not have any right of way or facilities within the project site boundary; therefore, in accordance with Valley Water's Water Resources Protection Ordinance, a Valley Water encroachment permit will not be required for the project. 2

2. Valley Water previously commented on the Notice of Preparation (NOP) that underground structures should be designed for waterproofing that avoids the need for permanent dewatering after construction is complete. As stated in Section 10-a, construction will involve excavation up to 38 feet below ground surface, during which time dewatering will be used. It is unclear if dewatering will occur after construction. Underground structures should be designed for waterproofing and permanent dewatering should be avoided once construction is finished. 3

3. Valley Water records indicate that no active wells are located on the subject property. While Valley Water has records for most wells located in the County, it is always possible that a well exists that is not in the Valley Water's records. If previously unknown wells are found on the subject property during development, they must be properly destroyed under permit from Valley Water or registered with Valley Water and protected from damage. For more information, please call the Valley Water's Well Ordinance Program Hotline at 408-630-2660. 4

4. According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) 006085C0010H, effective May 18, 2009, the project site is within FEMA Flood Zone AH, an area with 1% annual chance of shallow flooding (usually areas of ponding), located between base flood elevations of 46 feet and 47 feet. The project is required to follow the flood plain ordinance and national flood insurance requirements. 5

If you have any questions or need further information, you can reach me at gwehrmeyer@valleywater.org or at (408) 694-2069. Please reference Valley Water File 34811 on further correspondence regarding this project. 6

Thank you,

Gennifer Wehrmeyer
ASSISTANT ENGINEER, CIVIL

Community Projects Review Unit
Watershed Stewardship and Planning Division
GWehrmeyer@valleywater.org
Tel. (408) 630-2588 Cell. (408) 694-2069



SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

Clean Water · Healthy Environment · Flood Protection

Letter A2

COMMENTER: Gennifer Wehrmeyer, Assistant Civil Engineer, Valley Water

DATE: May 17, 2024

Response A2.1

The commenter states that Valley Water has reviewed the NOA and DEIR and has comments. No changes to the EIR were made in response to this comment. Specific comments are responded to below.

Response A2.2

The commenter explains that Valley Water does not have any right of way or facilities within the project site boundary and therefore a Valley Water encroachment permit will not be required.

This comment is noted. This comment does not pertain to the information, analysis, or conclusions in the DEIR. No changes to the EIR were made in response to this comment.

Response A2.3

The commenter refers to Section 10-a of the DEIR, which states that construction would involve excavation up to 38 feet below ground surface, during which time dewatering will be used. The commenter states that underground structures should be designed for waterproofing and permanent dewatering should be avoided once construction is finished.

As discussed in Section 10, *Hydrology and Water Quality*, of Appendix B of the DEIR, excavation could encounter groundwater and dewatering could be required during construction. However, dewatering is regulated by the City during the permitting process, including through the City's *Construction Dewatering System Policy and Plan Preparation Guidelines*. The project would be required to comply with regulations for groundwater dewatering as detailed in the City's How-to Guide, which would prevent contaminated groundwater from entering the stormwater system. Permanent dewatering would not be required during operation of the proposed project, and underground structures would be designed for waterproofing. No changes to the EIR were made in response to this comment.

Response A2.4

The commenter states that Valley Water records indicate that no active wells are located on the project site. However, if previously unknown wells were to be encountered during construction, they must be properly destroyed under permit from Valley Water or registered with Valley Water and protected from damage.

As discussed in Section 10, *Hydrology and Water Quality*, of Appendix B of the DEIR, the proposed project would not include installation of new groundwater wells or use of groundwater from existing wells. If unknown wells were to be encountered during construction, they would be properly destroyed under permit from Valley Water or registered with Valley Water and protected from damage. No changes to the EIR were made in response to this comment.

Response A2.5

The commenter states that the project site is located within FEMA Flood Zone AH, an area with a 1 percent annual chance of shallow flooding. The commenter also states that the project is required to follow the flood plain ordinance and national flood insurance requirements.

This comment is noted, and Section 10, *Hydrology and Water Quality*, of Appendix B of the DEIR has been revised pursuant to this comment (Please refer to Section 4, Revisions to the Draft EIR). The proposed project would be required to comply with the flood plain ordinance and national flood insurance requirements. No changes to the EIR were made in response to this comment.

Response A2.6

The commenter provides her contact information if any questions or further information is needed.

This comment is noted. This comment does not pertain to the information, analysis, or conclusions in the DEIR. No changes to the EIR were made in response to this comment.

Letter P1

From: Mimi and Eric Carlson
To: Christopher Ream; Kallas, Emily
Subject: Re: 660 University Project
Date: Thursday, April 11, 2024 11:02:35 AM

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Chris et al.

Please note that the proposed project will create a traffic nightmare, espesciallly if the entrance is on Byron.- which is effectively a one wao street during the day. 1

Eric Carlson

From: Christopher Ream <ream@reamlaw.com>
Sent: Wednesday, April 10, 2024 3:38 PM
To: Kallas, Emily <Emily.Kallas@cityofpaloalto.org>
Subject: 660 University Project

Emily,

Chris Ream here, the President of the Hamilton Homeowners Association.

I intend to prepare a letter to the Architectural Review Board outlining The Hamilton's objections to the planned project at 660 University, and I also intend to attend and comment at the ARB Hearing new week on April 18.

I have done a quick review of the Draft EIR. The Draft EIR addresses many of the points I had previously brought up to the ARB along with some new points, including in particular, the danger of killing Tree #10 (the protected coastal oak) and the alternative of adding a fifth above-ground story to the building, and the alternative of eliminating the second floor of the underground garage. These are not shown in the developer's current plans, but are obviously issues that need to be addressed at some point.

My question is: Would it be proper for me to address in my letter to the ARB and at the Hearing points raised in the Draft EIR but not yet appearing in the developer's plans.

I will call you to have a brief discussion on this.

Chris

Christopher Ream
555 Byron Street, #409
Palo Alto, CA 94301
1-650-424-0821
ream@reamlaw.com

Letter P1

COMMENTER: **Eric Carlson**

DATE: **April 11, 2024**

Response P1.1

The commenter expresses an opinion that the proposed project would result in an adverse impact on traffic, especially if the entrance is on Byron Street.

Vehicular access for the proposed project would be provided from a driveway on Byron Street. As discussed in Section 4.3, *Transportation*, of the DEIR, California's Third District Court of Appeal ruled that under SB 743, automobile delay may no longer be treated as a significant impact in CEQA analysis. The City has adopted a separate Local Transportation Analysis (LTA) Policy, which retains LOS to determine if projects create local transportation impacts. Because the proposed project would generate fewer than 50 net a.m. and p.m. peak hour trips, an offsite intersection LOS analysis and a separate LTA was not required. Therefore, impacts related to traffic were determined to be less than significant. As discussed in the DEIR, Byron Street is a local residential street that carries light traffic volumes throughout the day. Because the speed and volume of vehicular traffic would be low on Byron Street it is anticipated that traffic accessing the project site would not result in safety or operational impacts. In addition, the Transportation Impact Analysis prepared by Hexagon Transportation Consultants, Inc on February 15, 2024 (Appendix E to the DEIR), and the updated Transportation Impact Analysis prepared by Hexagon Transportation Consultants on September 10, 2025 contained in Attachment E determined that the 90-degree turn between the driveway opening on Byron Street and the garage entrance is wide enough to accommodate simultaneous turning movements of inbound and outbound vehicles, and that the sight distance at the project driveway is adequate. No changes to the EIR were made in response to this comment.

Letter P-2

From: Christopher Ream
To: Kallas, Emily
Subject: 660 University, ARB Hearing
Date: Wednesday, April 17, 2024 12:27:59 AM
Attachments: 660 - Ream Letter re Tree - 20240416 w Attachments.pdf

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Emily,

Please find attached my letter which I wish the Architectural Review Board will have a chance to review before the Hearing Thursday morning. Please share it with each Member and with anyone else for whom you think would be appropriate.

Please point out to them that Walter Levison's Impact Analysis is attached.

Thank you.

Chris

Christopher Ream
555 Byron Street, #409
Palo Alto, CA 94301
1-650-424-0821
ream@reamlaw.com

1

Letter P-2

THE HAMILTON HOMEOWNERS ASSOCIATION

Christopher Ream, President

555 Byron Street
Palo Alto, California 94301

Telephone: 1-650-424-0821
Email: ream@reamlaw.com

April 16, 2024

Via email: Emily.Kallas@CityofPaloAlto.org

Re: 660 University Project
Architectural Review Board Hearing on April 18, 2024
Draft EIR April 2024
Comments re Protection of the Coast Live Oak Tree

Dear Emily,

Please consider the comments in this letter as you continue to work on the Draft EIR for the 660 University Project and pass on these comments to members of the Architectural Review Board and to others where appropriate. There is an Attachment A and an Attachment B to this letter.

1, con't

The Hamilton is a senior living (55+) condominium development with 36 residential units and the average age of the residents in The Hamilton is mid-80's. The Hamilton shares the same small block with the proposed development at 660 University Avenue. Lytton Gardens, Webster House and Webster House Health Center are within a block and directly across the street from the proposed development. Channing House is two blocks away. Because of this concentration of elderly citizens, the area is frequently referred to as "Senior Corner."

2

I am Christopher Ream. My wife Anne and I have been Palo Alto residents for 53 years and have been residents of The Hamilton for the past five years. The Hamilton community strongly opposes the proposed development at 660 University, and the Board of Directors of the Hamilton Homeowners Association (the "HHA"), with the support of its members/residents, has resolved to fight against the proposed development. I am the President of the HHA and am personally committed to significantly revising the proposed building that will materially adversely affect us and all of our neighbors.

There is a majestic, beautiful Coast Live Oak tree (the "Tree") in the middle of our block and is listed as Tree #10 on Applicant's plans. Applicant's arborist reports that the Tree's trunk is 50 inches in diameter and its limbs stretch out 90 feet in diameter "in a mostly balanced canopy." The Tree abuts the back property line of the 660 University project and so its limbs reach out approximately 45 feet over the project's property, and its root structure is larger than that. The Tree brings shade and joy to us and everyone else on the block. The Tree is several hundred

3

years old and is deemed a Protected Heritage Tree by the City of Palo Alto. Applicant's arborist rates the Tree "High" for suitability for preservation.

This proposed project puts this beautiful Tree in grave danger:

> *"It is WLCA's professional opinion that the tree's vigor would be negatively impacted to a severe degree as a direct result of proposed site work as currently described on the 10/31/2023 set of plan sheets, resulting in tree #10 falling into a spiral of condition decline from which it cannot recover."*
>
> Walter Levison Consulting Arborist
> Impact Analysis dated 12/18/2023, p.6

3 (cont.)

Please see Attachment A to this letter for the full Impact Analysis by Walter Levison Consulting Arborist.

<u>Tree Protection Zone</u>

Applicant's plans recite that the City's Tree Technical Manual (TTM) ¶1.36 specifies a "Tree Protection Zone" (TPZ) for a protected tree with a radius equal to the ten times the trunk's diameter. For the Tree, that would be 10 x 50" = 500" = 41 feet. Another rule is that the TPZ should be equal to the foliage, so here that would be a radius of 45 feet based upon the arborist's report of a 90-foot canopy spread. I am not an arborist, but I am told that one common rule of thumb is that a tree's roots are one and a half to three times wider than the canopy. For the Tree's 45-foot limbs, that would be 67 to 135 feet of roots out under the parking lot where the new building would go. Robert Booty, arborist retained by Rincon Consultants on behalf of the City, reports that his LIDAR root scan of the existing asphalt parking lot at 600 University Avenue shows that the Tree's roots are still dense and going out strong at his 51-foot scan, the furthest extent of his investigation. (*See Attachment B.*)

4

Applicant has drawn a TPZ of only 30 feet on its plans and has the new building right next to and touching that 30 feet. That is 11 to 15 feet less than required. And the 30 feet is just what the building is supposed to look like – you don't have to be an experienced contractor to know that there will be plenty of damaging construction work done on the exterior side of the two-story underground garage walls, and that will be much closer than 30 feet to the Tree. Robert Booty's report points out that the roots are going to be sliced off at his scan of 31 feet. (*See Attachment B.*)

Now, look up at the 2nd, 3rd and 4th floors, there are residential units with balconies sticking out 6 feet into the TPZ. Applicant's arborist admits that pruning will be required, including a 17-inch limb. The Tree has to be pruned back to clear those balconies. Then be realistic: Applicant is going to prune the Tree even further back so that there is at least 5 feet of clearance between those balconies and the Tree. We are now cutting the Tree back to only 19 feet of foliage left.

5

If 660 University is allowed to be built as now proposed, the Tree's canopy will be severed on one side, disrupting the Tree's balance, potentially allowing strong gravitational forces to push the Tree over. In addition, the roots needed to hold the Tree back from tipping over will have been cut and lost their gripping force. How soon will the Tree topple over and crash into The Hamilton and others. It would destroy the dental offices at 517 Byron, and badly injure and maybe kill anyone in those offices at the time. The neighborhood will lose this beautiful tree. The privacy of the seniors in the sixteen apartments in The Hamilton on that side of our development will be exposed to the 36 units with balconies on our side of the 660 University building as well as the noisy crowds on the roof top party deck. 5 (cont.)

Security

The Staff Report for the Architectural Review Board Hearing to be held April 18, 2024 reported that the Urban Forestry Section has requested that any building permit be conditioned upon the Applicant obtaining an appraisal of the replacement value of the Tree and posting security for that amount. What does that mean in this situation? It will be completely impossible to replace the Tree, thus how can anyone come up with a replacement value. And, if the Tree "dies" within three years of the completion of the project, then the money from the security will go into the Forestry Fund to plant trees elsewhere. So much for the owner of 517 Byron and thus the person who was the owner of the Tree and the one most damaged by its death. 6

> This might make sense if the permit was conditioned upon obtain an appraisal value using the Trunk Formula Method (TTM 6.45B) rather than the Replacement Cost Method (TTM 6.45A).

Solution

At the Architectural Review Board hearing in December 2022, everyone, including the Applicant's architect and its landscaper actively agreed that the Tree had to be protected; but the Applicant did not suggest that a 41-45 foot TPZ should be observed. No, their answer was that they knew of a tree in Mountain View that has so far survived a small TPZ (although they did not say how long it has survived). One tree surviving for an unknown time is not a valid argument to ignore the universally accepted rule of a TPZ equal to 10 times the trunk's diameter or the extent of the canopy. The only solution here to save this Protected Heritage Tree is that the proper 41-foot TPZ must be imposed and complied by both the proposed building and its construction. 7

This is not an unfair burden on the Applicant: They have known all along that their 30-foot TPZ was in violation of TTM regulations, and that the building could not be constructed without violating even that reduced TPZ because of the necessity to have construction closer to the Tree than that artificial 30 feet. The first time they showed a TPZ on their plans was their C3 filing on October 6, 2022 when they showed a TPZ with a radius of 29'11-½" (strange number for a TPZ). C3_660 University Ave_PLAN1.pdf, p.24. This was later updated to the 30 feet we see now.

Applicant's arborist David L. Babby discusses the size of the TPZ in §5.3 of his Tree Protection Report, 660 University Avenue, February 7, 2024:

> "The CPA's Tree Protection Zone (TPZ) standard is a radial distance from the trunk equal to 10 times its diameter, which for oak #10, identifies a TPZ of 41 feet from the trunk. The proposed project establishes the TPZ to be 30 feet from the trunk, which equates to a multiplier of 7 times the trunk diameter (and 11 feet inside)."

He then goes on to say that the small 30-foot TPZ only applies to the finished building and garage, and sets up an even smaller, undisclosed zone where all sorts of construction work can tear up the ground and destroy the Tree's roots:

> "The architectural design substantially conforms to my recommendations provided in January 2021, which stipulates a minimum 30-foot setback from the oak's trunk to construct the future building and parking garage, and a minimum setback of 20 feet from the trunk for all ground disturbance beneath the existing asphalt surface.
>
> "<u>Roots</u>
> The 20-foot setback from #10's trunk for ground disturbance applies to any soil compaction, grading, subexcavation, overexcavation, trenching, drilling/auguring, storm drains, swales, etc."

7 (cont.)

In other words, once you are 20 feet or more from the Tree, you can go at it, tear up the ground and destroy the Tree's roots anyway and as much as you want.

It appears to me that the Applicant didn't have a thought when they started about Palo Alto's desire to protect its beautiful Heritage Trees. They just saw some land, put together plans to fill that land with rental opportunities, and moved forward. When they discovered that Palo Alto wanted to protect the Tree, they drew a TPZ to accommodate their plans, rather than drawing their plans to accommodate the Tree.

As Chair David Hirsch so succinctly stated at the December, 2022 Architectural Review Board Hearing on this project:

"This is too much building in too small of a space."

Thank you for your consideration,

Christopher Ream

Christopher Ream

660 University Project
Ream Comments re Protection of the Coast Live Oak Tree
April 16, 2024

Attachment A

Walter Levison
CONSULTING ARBORIST
ISA Tree Risk Assessment Qualified
ISA Certified Arborist #WE-3172A

ASCA|RCA #401
Registered Consulting Arborist®
Cell (415) 203-0990
Email walterslevisonjr@yahoo.com

Date: 12/18/2023

Impact Analysis of Proposed 660 University, Palo Alto Site Plan Project Work on
One (1) Off-Site Coast Live Oak (*Quercus agrifolia*) Specimen
(Project Tree #10, Palo Alto City Tree Tag #1572)
at
517 Byron
Palo Alto, CA

Mr. Chris Ream, President
The Hamilton Homeowners Association
555 Byron
Palo Alto, CA
ream@reamlaw.com

Dear Mr. Ream,

The following written letter report is the single deliverable prepared by Walter Levison, Consulting Arborist (WLCA) per your request as an association with members residing at The Hamilton, in close proximity to the proposed multi-story 660 University project.

Background and Assignment

The proposed private development project stated above proposes to demolish various existing office buildings and parking lot areas, and build an underground parking garage, with residential and commercial office facility directly over the garage footprint. WLCA's assignment was to determine whether the site work as currently proposed per the set of plan sheets (dated October 2023) would cause severe or otherwise irreversible injury to the subject oak specimen to such as degree that it would be expected to fall into a spiral of decline from which it could not recover, as a direct result of the site work. WLCA visited the site on 12/13/2023 to archive digital images, create a tree map markup showing actual site-verified canopy dimensions (rough approx.), and confirm existing site conditions.

The project encompasses three lots, 660 University, 680 University, and 511 Byron. An adjacent lot at 517 Byron just south of the proposed work area exhibits a relatively very large "veteran tree" coast live oak (*Quercus agrifolia*) referenced by David L. Babby, author of the Tree Protection Report filed by the developer, as tree #10 (City tag #1572), a specimen in good overall condition (62% out of 100% possible) as visually assessed by WLCA, with a canopy spread that is equal to the largest coast live oak specimens ever assessed in the author's entire 25 year professional consulting career (see digital images below in this report showing the 90 foot diameter canopy).

WLCA reviewed the private development proposed plan sheets dated 10/31/2023 (planning resubmittal #5) which were downloaded from the City of Palo Alto website, and an arborist report by David Babby dated 11/19/2021, which does not actually contain any site plan sheets (Mr. Babby used a topographic survey sheet for his site tree map markup).

Multiple marked-up tree location maps, color-coded by WLCA, show expected construction-related impacts in relation to the tree #10 existing canopy dripline and in relation to the standard tree protection zone (TPZ) of 10 x diameter as an offset radius from mainstem edge. These markups are attached to the end of this letter report for reference (view document using Adobe Pro, Adobe CS, or other paid form of Adobe Acrobat, to maintain the visibility of the color-coded markups).

Digital images archived by WLCA in December 2023 are also included in this report for reference of pre-project conditions.

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Basic Data

Diameter: 50 inches, per Babby report.

Spread: Approximately 90 feet total diameter, per David Babby report and WLCA.

Health (Vigor): 70% per Babby, 80% per WLCA.

Structure: 40% per Babby, 50% per WLCA.

Overall Condition Rating: 50% (fair) per Babby, 62% (good) per WLCA.

Live Twig Density and Live Foliar Density: Good.

Additional Tree Information per WLCA's Visual Tree Assessment (VTA) 12/13/2023 and Research

Foliage hangs down to 15 to 25 feet above grade at 45 feet radius north of mainstem edge.

Multiple mainstems exhibit wide angle saddle shaped (i.e."normal") attachment forks between 10 and 15 feet elevation above grade. These stems are somewhat upward oriented.

Buttress root flares at root crown appear normal, though root system extent and condition are essentially unknowable due to hardscape presence over a large percentage of actual root zone. It is hypothesized that the actual extent of root zone is at least 2x to 3x the 45 foot canopy radius in terms of lateral distance in most directions out from trunk[1], based on both Arboriculture 4th Edition (2004), and on WLCA's past 25 years of construction site consulting experience with coast live oak specimens on older sites with older less-compacted root zone conditions, where historical building foundations and parking lot baserock base sections were constructed to far less strict standards than modern engineer specifications. There may be extensive rooting occurring out through various private lots that adjoin the 517 Byron lot on which tree #10 stands, with lateral woody roots extending from tree #10 underneath various retaining wall footings and building footings, out to underneath existing asphalt parking lot surfacing, etc.

Per USGS local quadrangle soils map, tree #10 is growing in the "Qoa" unit, which is defined as an older alluvium (oa): a gravelly riparian soil that is derived from stream associated movements, and typically contains smooth rocky material that drains relatively well, and is excellent for development of deep, elongated native oak tree root systems (based on WLCA's professional experience and research). This Palo Alto site probably has one of the best soils in the entire Bay Area in terms of allowing for fast growth of native oaks. See the digital images section of this report for an overlay map created by WLCA using various online sources and the USGS soil map shows how groundwater at this location is relatively high in elevation (25 foot groundwater contour), and shows existing roads, historical streams, and red dot plots where a past survey by others indicated locations of extremely old native valley oak specimens for reference. What this all means is that the proposed project site has very good growing conditions for native oaks with a high groundwater table elevation contour and gravelly alluvium soil associated with historical waterways which drains relatively quickly and may also exhibit relatively good aeration related to the larger material components of the soil.

[1] Per Harris et. al. 2004. *Arboriculture 4th Edition*. Prentice Hall. Upper Saddle River, New Jersey, USA.

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Expected Tree Root Zone and Canopy Impact Analysis / Based on October 2023 Set of Proposed Plan Sheets

- Canopy:

  Expect 20 to 30% of canopy live wood and foliage to be removed to clear southward-extended balcony construction, garage vertical wall construction, foundation footing construction for main building structure, vertical exterior walls along the south side of the residential structure, and an additional +/- 10 feet of horizontal width required to be totally cleared up to roof peak elevations as a "construction corridor" airspace for exterior work, scaffold erection, and bucket lift machinery use (based on WLCA's past projects to date, which required between 6 feet and 15 feet of horizontal clearance as construction corridors around building exterior walls, between soil surface grade and the roof peaks).

  Note that the curvilinear section of garage entry ramp, although it is below grade elevation, may actually require tall vertical machinery clearance directly above the proposed wall cut locations, resulting in further clearance pruning of the tree #10 northwest corner of canopy (not verified). This information is based on past projects overseen by WLCA involving underground parking garage retaining wall construction in the Bay Area.

  Total expected canopy loss will likely result in a remnant canopy with 20 to 25 feet of north, northeast, and northwest extension from mainstem base, whereas existing canopy is +/- 45 feet radial extension in those directions. Refer to the attached WLCA tree map markup for a graphic representation of the various impacts indicated as color-coded lines.

- Roots:

  Expected subgrade work will encroach to within the City of Palo Alto "10 times diameter" tree protection zone on the north side of tree, inside which special methods/materials/monitoring is required for site construction work.

  Extent of root zone compromised by the various elements of proposed work (garage wall excavation using vertical shoring, landscape decking, landscape irrigation, landscape plant and tree installation, etc. is expected to be moderate to severe, depending on actual cut depths and depending on whether machinery and personnel are allowed to enter into the TPZ and compact the root zone in the north area of TPZ.

  Note that the actual extent of roots may or may not be 2x to 3x the tree canopy dripline radius distance northward from trunk, and is currently obscured by hardscape and not able to be verified in terms of lateral distance of growth.

  Critical Root Zone (i.e. "CRZ") or "Tree Protection Zone", in terms of structural root plate, lateral woody roots, and absorbing root mass retention during work on one or more sides of a tree, is ten times the diameter of trunk (10 x 50 inch diameter as noted in the David Babby report). Therefore, it is WLCA's understanding that the required TPZ work offset radius for tree #10 is approximately 10 x 50 inches = 41.6 feet radius[2]), unless site work at offset distances less than 10 x diameter is specifically authorized by City Urban Forestry Staff. Note that in the case of the 660 University project, the severe extent of clearance pruning creates a cumulative impact in terms of loss of tree condition, such that the combined root zone and canopy impacts are relatively severe or extremely severe (see attached WLCA markups showing deep excavation work impacts, for example, expected to within 30 feet offset from trunk, which is far less than the 41.6 foot official TPZ offset).

[2] Reference the developer's Tree Disclosure Statement, which notes that the official TPZ is 10 x diameter of trunk, per City of Palo Alto *Tree Technical Manual* (TTM) standards. Blue link to full TTM below shows up erroneously as a hyperlink to "Appendix A", but is actually the full TTM document:
APPENDIX A (cityofpaloalto.org)

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Note also that there is no guarantee that site work will be performed by the developer in a manner consistent with specific conditions of project approval as set forth by Palo Alto Urban Forestry Staff, even if those special conditions were mandated by the City. There is no way for an arborist monitoring site work, for instance, to be on site during every stage of the work. The arborist monitor, if retained to inspect site work near to tree #10 during the development phase of the project, would only be able to visibly inspect the site once a month or so, leaving him/her with a limited snapshot of what below-ground impacts occurred in relation to the tree #10 root zone.

Soil Compaction within the CRZ/TPZ:

Note that proposed driving of machinery, foot traffic, extensive landscape footing development, and extensive planting and (possibly also) extensive irrigation pipe trenching are expected to occur within the CRZ/TPZ of 41.6 feet radius from trunk edge of tree #10. Consulting Arborists will typically specify use of robust "ground protection" in these cases, covering the ground with a thick mat of geotextile overlaid with 6 or more inches of wood chips, and finally covered with steel trench plates or full sheets of exterior grade plywood strapped together with steel strap plates to create a soil buffer. But given that there is planned intense landscaping and decking, etc. to be developed in the area between the garage retaining wall and the south property line abutted up against the 517 Byron lot, WLCA expects that it would be virtually impossible for the developer to actually implement use of robust ground protection and maintain it for any length of time, without causing a major problem in terms of ground logistics (staging, storage, movement of tools and materials, performance of landscape related development between 517 Byron and the underground parking garage wall, etc.). Therefore, it is expected that soil compaction of a high degree will likely occur in the north section of the tree #10 root zone, within the CRZ/TPZ offset radius, causing additional reduction in overall tree health and structural condition as soil oxygen pore space is compacted and root zone root growing conditions end up suffering as a result of loss of oxygen pore spaces within the tree root growth section of the soil profile (i.e. mainly the uppermost two feet of the soil profile, but potentially down to 4 or 5 feet or more below soil surface grade elevation in native Palo Alto area historical riparian cobble type soils).

- TRAQ Risk:

The removal of 20% to 30% of the canopy of tree #10 for clearance as noted above, will cause southward lopsidedness of the currently-symmetrical canopy tree specimen of extremely large spread radius (45 feet radius), resulting in increased load forces acting on the north side ("tension" side) of the root system. The root system will have been compromised to an unknown degree during site work (underground parking garage wall excavation, landscape development, and possible adjustments to or demolition of the existing brick retaining wall that separates 517 Byron from the proposed 660 University project site.

Risk of whole tree failure mode and impact with targets to the south of the mainstem location will be necessarily increased and elevated due to these site plan work activities.

Risk of stem failure and impact with various ground targets will over time be increased and elevated, due to the required clearance pruning through the north side of the canopy to clear scaffolding, bucket lift machinery, balconies, and the new building exterior wall plus underground parking retaining wall work that requires vertical machinery airspace clearance. Very large diameter pruning cuts will be made to accomplish the work, ranging from a few inches diameter each, up to 17 or more inches diameter each[3], on some stems that extend northward into the proposed project airspace area.

Pruning cuts of this relatively large diameter will allow for fungal wood decay-causing pathogen entrance into the stems via these open cut wounds, resulting in extensive decay column formation over time that progresses down into the stems from the cut wounds.

[3] David Babby's arborist report notes that a 14" and a 17" diameter stem will require pruning.

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- Heritage Tree Designation in City of Palo Alto

  There are currently +/- eight (8) trees listed on the City heritage tree list maintained by the City. Per the following information, trees are apparently not required to meet any specific "approval criteria" in terms of species, size, condition, or other relevant parameters, to be selected as formal heritage tree specimens in City of Palo Alto, other than that the trees are native oak species or redwoods located on private property:

  (Excerpt from a City Staff Report Online):
  "In 1996, Council enacted the Tree Preservation Ordinance, Chapter 8.10 of the Palo Alto Municipal Code, to preserve and maintain specified native oaks, redwoods, and heritage trees on private property, and to protect them from disfigurement or removal, except in certain circumstances. Section 8.10.090 of the ordinance allows persons to nominate a tree on their property forheritage tree status. After Council approval of such designation, the tree is added to the heritage tree listing, which includes specific location, overall size, and canopy spread. The list is maintained by the Department of Public Works and available to the public on the City's Urban Forestry website. Once designated, a heritage tree is protected by the provisions of the Tree Preservation and Management Regulations, unless removed from the heritage tree list by subsequent Council action at the request of the property owner."

  Per the above information, protected size tree #10 (City tree tag #1572) appears to be an excellent candidate for inclusion in the City's heritage tree designation program which protects native oaks on private properties. It is a specimen in good overall condition, with exceptional size in terms of both mainstem diameter (est. 50 inches), and canopy spread (90 feet total diameter), with good vigor, good buttress root flares, and good saddle-shaped wide angle forks of mainstem attachment.

- David Babby Report 11/19/2021 Page 6

  Per page 6 of the developer's arborist report by David Babby, tree #10 exhibits a "high" rating in terms of suitability for preservation (see below excerpt from page 6 of Babby report):

> **High**: Applies to #10.
>
> This coast live oak appears healthy and structurally stable; has no obvious, significant health issues or structural defects; presents a good potential for contributing long-term to the site; and requires only periodic or regular care and monitoring to maintain its longevity and structural integrity.

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Conclusion

If the proposed 660 University site plan project were built out as currently proposed per the 10/31/2023 planning resubmittal #5 versions of the plan sheets, WLCA expects that tree #10 would experience relatively moderate to severe root loss, and relatively severe pruning, which combined as a cumulative below-ground and above-ground negative impact would necessarily result in loss of vigor (health) and structure to a severe degree.

The tree's safe and useful life expectancy in its current condition rating of "good" (+/- 62% overall condition rating) may be reduced as a result of site plan project work from (EXISTING: no-construction scenario) 50 to 100 years remaining, to (PROPOSED: post-construction scenario) 10 to 20 years remaining, or less, depending on the tree's response to very significant project clearance canopy and root pruning as described above in this letter report.

It is WLCA's professional opinion that the tree's vigor would be negatively impacted to a severe degree as a direct result of proposed site work as currently described on the 10/31/2023 set of plan sheets, resulting in tree #10 falling into a spiral of condition decline from which it cannot recover.

There would also necessarily be a corresponding elevation of the TRAQ risk rating in terms of risk of whole tree and/or tree part failure and impact with various static and moving targets with moderate to high occupancy ratings within the target zone and a reasonable time frame such as 12 to 24 months, starting as of the proposed site construction completion date (this would need to be assessed at a future time, and is outside the scope of WLCA's initial pre-project assignment).

The tree is located in the an area known to have high water table elevations and gravelly (gravel-laden) riparian type alluvium soil that tends to support excellent native oak tree root growth in terms of both rooting depth and root lateral extension.

It is highly recommended that this exceptionally large native oak specimen in good overall condition be designated by the City Council as a City of Palo Alto Heritage Tree on private land, and formally added to the list maintained by the City on their official website, with the added tree protection guarantees that this tree special protection status includes (tree specimens are typically nominated for such designation by the owner of the property on which the tree stands).

Refer also to David Babby's arborist report dated 11/19/202, page 6, which notes that tree #10 is rated as "high" suitability for preservation, appearing healthy and structurally stable per his assessment, presenting "good potential for contributing long-term to the site".

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ISA Tree Risk Assessment Qualified
ISA Certified Arborist #WE-3172A

ASCA RCA #401
Registered Consulting Arborist®
Cell (415) 203-0990
Email walterslevisonjr@yahoo.com

Digital Images by WLCA 12/13/2023 / Tree #10 Coast live oak (*Quercus agrifolia*)



View looking eastward while standing on 517 Byron. Note the excellent buttress root flaring at the root crown of tree #10 which is considered normal and desirable.



View of the relatively wide angle fork attachments between 10 and 15 feet elevation above grade at which the tree #10 codominant mainstems arise. These saddle shaped forms are normal and desirable from a structural stability standpoint. Although it is not “optimal” to have codominant mainstems forking in a tree, the best case scenario would be for all of the forks to exhibit wide saddle-shaped attachments like this tree. It is actually extremely unusual for a coast live oak to exhibit saddle-shaped forks at every bifurcation of the codominant mainstems.

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View of subject oak #10 looking northward from 517 Byron.

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View of oak #10 lower 50% of canopy/mainstem architecture, with the adjoining asphalt parking lot area west of 517 Byron visible at left half of the image. The root system is assumed to be extended through most or all adjoining lots surrounding 517 Byron (not verified), as is assumed to reach as much as 2x to 3x the 45 foot canopy radius (again, not verified, but very possible, per WLCA's past experience with older oaks in Palo Alto and Menlo Park area, especially if the soil is a historical cobble-based riparian soil profile with fast drainage (not verified).

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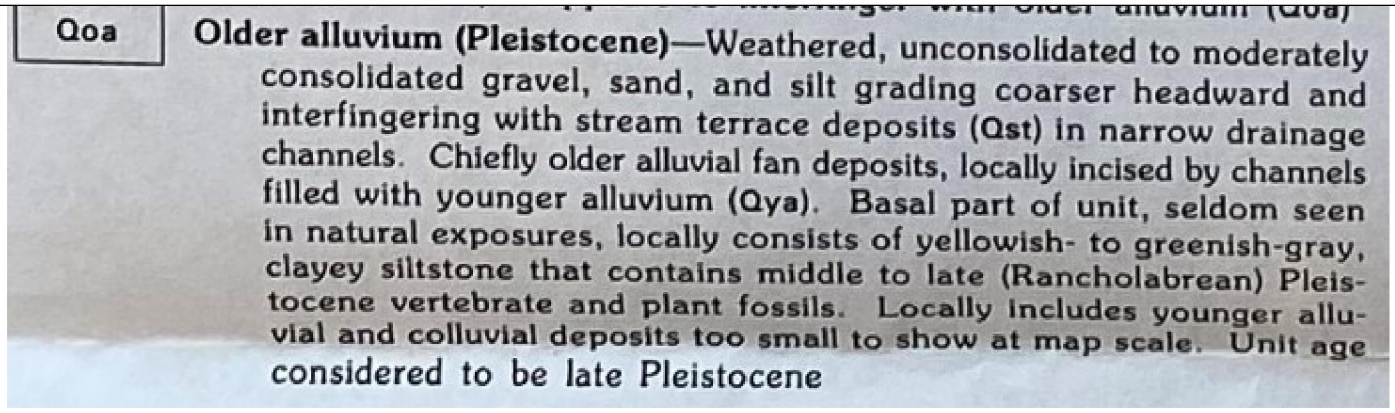
Per WLCA's multi-layer mockup created for a valley oak location comparison with groundwater depths and soil types, the tree #10 location has a 25 foot depth groundwater table, and nearby Palo Alto study-noted red dots which indicate very large older valley oak specimens surveyed in the past and included on internet maps for reference.

The Qoa soil type at the 660 University site is defined as "older alluvium" (hence the "oa" designation): a Pleistocene soil of gravels, sand, and silt that is unconsolidated to consolidated, interspersed with alluvial materials from stream action.

See next page of this report for the United States Geological Survey legend pertaining to this soil unit, clipped from the local Palo Alto soil map, obtained from USGS Menlo Park headquarters.

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Above was excerpted from the USGS Quadrangle (soil unit map) which includes the City of Palo Alto area.

Assumptions and Limiting Conditions

Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised and evaluated as through free and clean, under responsible ownership and competent management.

It is assumed that any property is not in violation of any applicable codes, ordinance, statutes, or other government regulations.

Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.

The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

Unless required by law otherwise, the possession of this report or a copy thereof does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.

Unless required by law otherwise, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initiated designation conferred upon the consultant/appraiser as stated in his qualifications.

This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

Sketches, drawings, and photographs in this report, being intended for visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by engineers, architects, or other consultants on any sketches, drawings, or photographs is for the express purpose of coordination and ease of reference only. Inclusion of said information on any

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drawings or other documents does not constitute a representation by Walter Levison to the sufficiency or accuracy of said information.

Unless expressed otherwise:

- information contained in this report covers only those items that were examined and reflects the conditions of those items at the time of inspection; and
- the inspection is limited to ground-based visual examination of accessible items without climbing, dissection, excavation, probing, or coring.
- There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

Loss or alteration of any part of this report invalidates the entire report.

Arborist Disclosure Statement:

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Tree are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborist cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning, and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate the trees.

Certification

I hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Signature of Consultant 

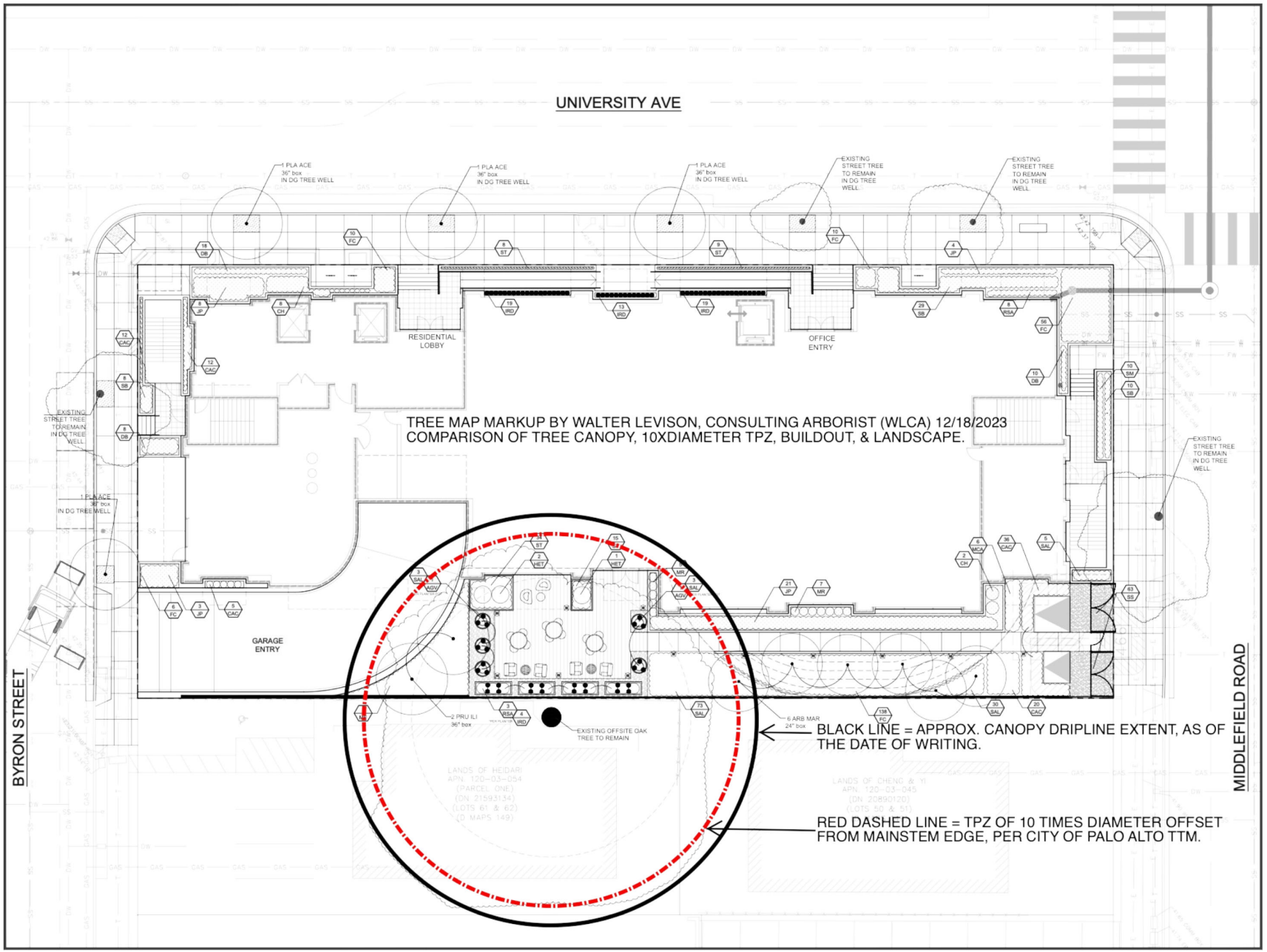
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ISA CERTIFIED ARBORIST CREDENTIAL:
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(Renewed through June, 2026)

ISA TREE RISK ASSESSMENT QUALIFIED (TRAQ):
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(Renewed through March, 2028)

Attached: Tree Map Markups by WLCA 12/18/2023
(View Using Adobe or Adobe CS in Order to Allow for Full Visibility of the Markups Created Using Adobe Pro Software).

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SMITH DEVELOPMENT

660 UNIVERSITY
PALO ALTO, CA 94301

THE Guzzardo Partnership, INC.
Landscape Architects | Land Planners
Pier 9, The Embarcadero, Suite 115
San Francisco, CA 94111 | www.tgp-inc.com

ISSUES AND REVISIONS

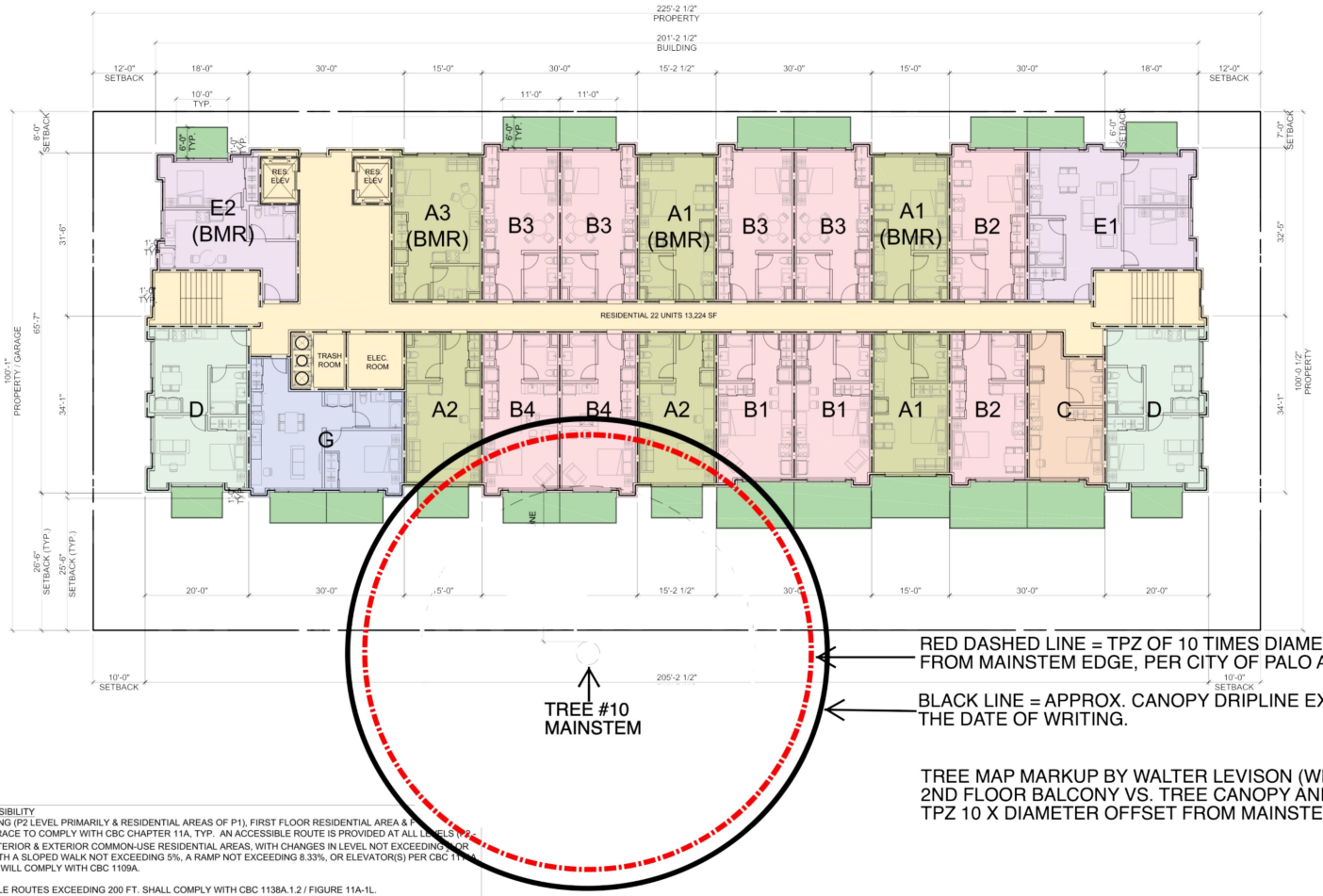
NO.	DATE	DESCRIPTION
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	05.13.22	PLANNING RESUBMITTAL #1
	08.15.22	PLANNING RESUBMITTAL #2
	11.02.22	PLANNING RESUBMITTAL #3
	08.28.23	PLANNING RESUBMITTAL #4
	10.31.23	PLANNING RESUBMITTAL #4

PROJECT NUMBER
21003

SHEET TITLE
PLANTING PLAN - SITE

SCALE
SCALE: 1" = 10'-0"

SHEET NUMBER
L 3.1



RESIDENTIAL ACCESSIBILITY

PORTIONS OF PARKING (P2 LEVEL PRIMARILY & RESIDENTIAL AREAS OF P1), FIRST FLOOR RESIDENTIAL AREA & T[illegible] WELL AS ROOF TERRACE TO COMPLY WITH CBC CHAPTER 11A, TYP. AN ACCESSIBLE ROUTE IS PROVIDED AT ALL LEVELS (P2, P1, ROOF) FOR BOTH INTERIOR & EXTERIOR COMMON-USE RESIDENTIAL AREAS, WITH CHANGES IN LEVEL NOT EXCEEDING ½", OR BEING PROVIDED WITH A SLOPED WALK NOT EXCEEDING 5%, A RAMP NOT EXCEEDING 8.33%, OR ELEVATOR(S) PER CBC 11A. PARKING FACILITIES WILL COMPLY WITH CBC 1109A.

INTERIOR ACCESSIBLE ROUTES EXCEEDING 200 FT. SHALL COMPLY WITH CBC 1138A.1.2 / FIGURE 11A-1L.

ALL UNITS, INCLUDING PRIVATE OUTDOOR BALCONIES / TERRACES WILL BE EITHER ACCESSIBLE OR ADAPTABLE INCLUDING KITCHEN AND AT LEAST ONE BATHROOM, PER CBC 11A. THIS INCLUDES DOORS, PATH OF TRAVEL, APPLIANCE / FIXTURE CLEARANCES AS WELL AS ANY OTHER LIFE-SAFETY REQUIREMENTS.

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ARCHITECT

SMITH DEVELOPMENT

660 UNIVERSITY
PALO ALTO, CA 94301

KSH ARCHITECTS
KORTH SUNSERI HAGEY

ISSUES AND REVISIONS

NO.	DATE	DESCRIPTION
	12.01.21	PLANNING SUBMITTAL
	05.13.22	PLANNING RESUBMITTAL #1
	08.15.22	PLANNING RESUBMITTAL #2
	11.02.22	PLANNING RESUBMITTAL #3
	08.28.23	PLANNING RESUBMITTAL #4
	10.31.23	PLANNING RESUBMITTAL #5

PROJECT NUMBER
21003

SHEET TITLE
PROPOSED PLAN
SECOND FLOOR

SCALE
3/32" = 1'-0"
0 10'-8" 21'-4"

PROJ NORTH
TN

SHEET NUMBER
A2.2A

660 University Project
Ream Comments re Protection of the Coast Live Oak Tree
April 16, 2024

Attachment B

Arborist OnSite®

Horticultural Consulting, Inc.

ISA Certified Arborist Report

Submitted To:

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

Project Location:

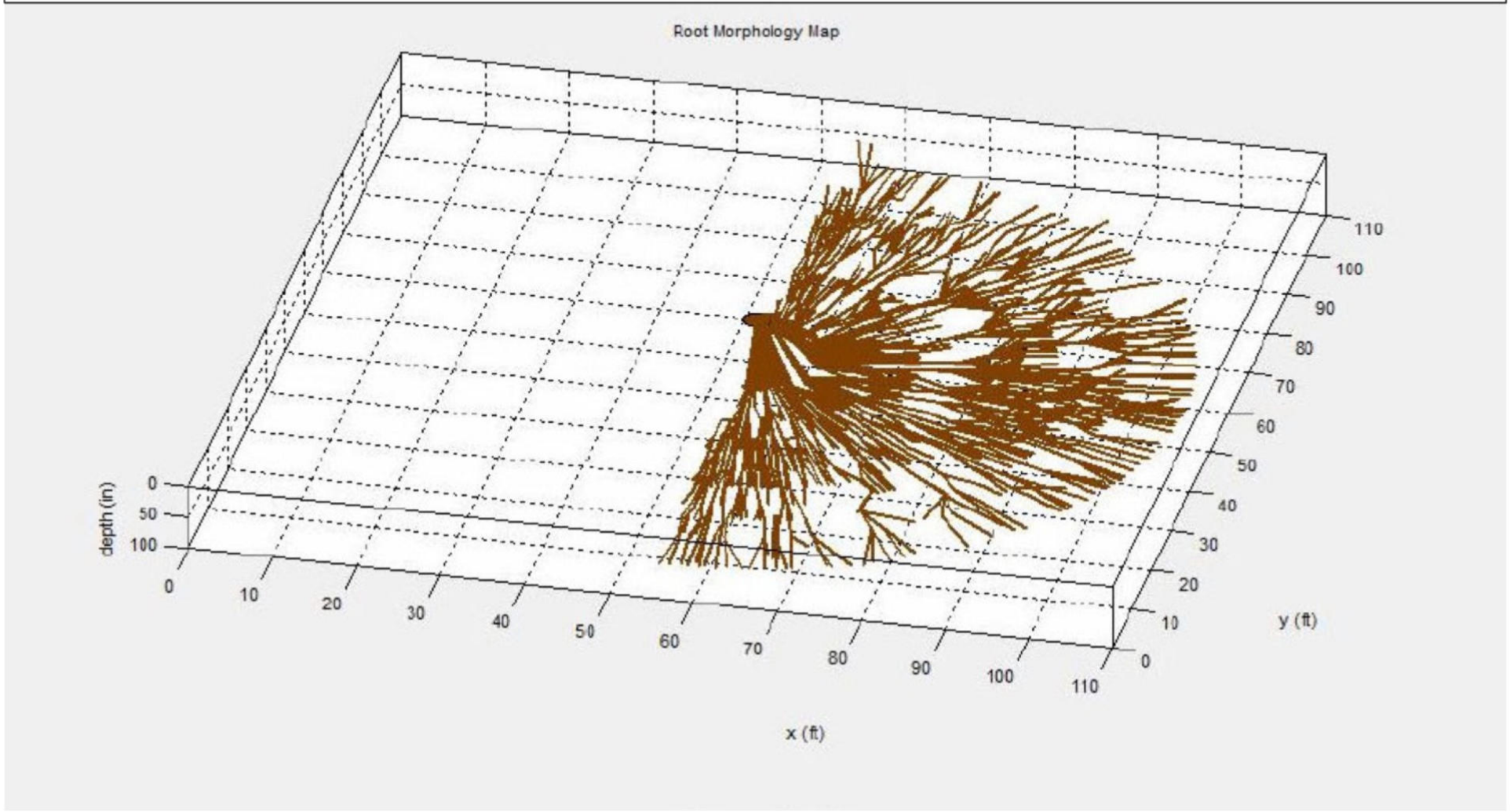
660 University Avenue
Palo Alto, California

Submitted By:

Robert Booty, Registered Member # 487
ISA Qualified Tree Risk Assessor
The American Society of Consulting Arborists
ISA Certified Arborist WC-4286
May 23, 2022

This is a conceptual 3D Top-Down diagram of what the root structure may look like below the ground of Oak Tree #1572 on University Avenue. It is obtained from the root data collected from the 12 half circle scans performed over the asphalt parking lot.

The software uses the results of the predicted root locations from the 12 half circle scans generated from the virtual trench data on the following pages and connects the predicted root hits, creating what you see on this page. This provides a visualization concept of what the root structure may look like below ground. The scan begins from a distance of 7ft. from the tree and ends at a distance of 51ft. The scanning depth was set to penetrate to 7 feet, in an effort to compensate for the 3 foot difference of the lower grade the tree is actually growing in.



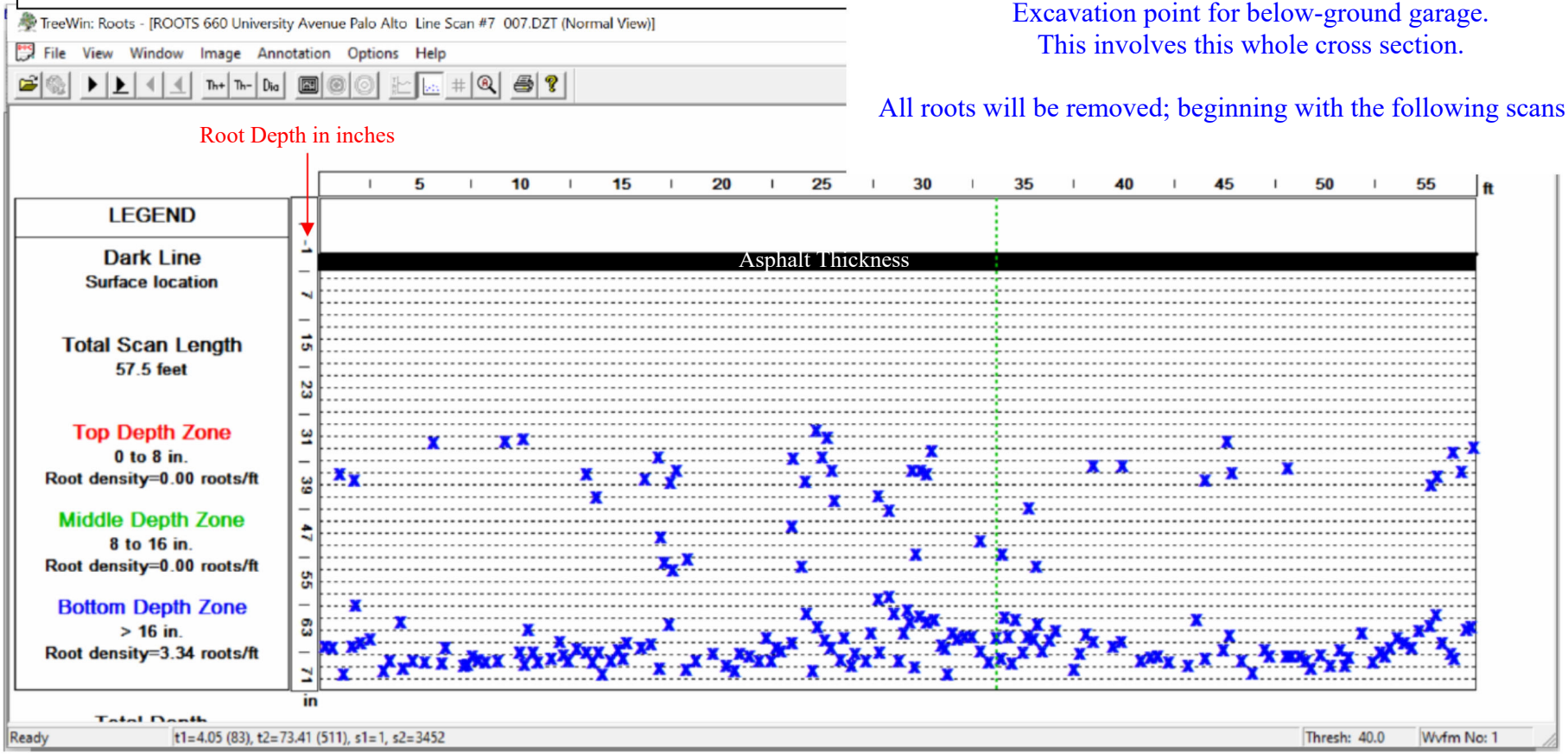
Copyright 2022 Arborist OnSite Horticultural Consulting, Inc.

May 8, 2022 660 University Avenue Palo Alto, California.

Scan #7 Line scan over parking lot 31 feet away from Oak tree #1572

Excavation point for below-ground garage.
This involves this whole cross section.

All roots will be removed; beginning with the following scans 7-12



Robert Booty Registered Consulting Arborist 487
ISA Qualified Tree Risk Assessor
Copyright 2022 Arborist OnSite Horticultural Consulting, Inc.

From:	Kallas, Emily
To:	Dao, Veronica
Subject:	FW: The Review of 660 University Ave.
Date:	Wednesday, April 17, 2024 1:05:26 PM
Attachments:	660 ARB April 2024.pdf image001.png image002.png

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Emily Kallas, AICP
Planner
Planning and Development Services Department
(650) 617-3125 | emily.kallas@cityofpaloalto.org
www.cityofpaloalto.org

Provide feedback on Planning Development and Administration services

Parcel Report | Palo Alto Zoning Code | Online Permitting System | Planning Forms & Applications | Planning Applications Mapped

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From: Kallas, Emily
Sent: Monday, April 15, 2024 2:34 PM
To: Dao, Veronica <Veronica.Dao@CityofPaloAlto.org>
Subject: FW: The Review of 660 University Ave.

Hi Veronica,

Can you please add this to the batch of neighbor comments for 660 University/4/18 ARB?

Thanks,
Emily

Emily Kallas, AICP
Planner
Planning and Development Services Department
(650) 617-3125 | emily.kallas@cityofpaloalto.org
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Letter P2

COMMENTER: **Christopher Ream**

DATE: **April 16, 2024**

Response P2.1

The commenter urges the City to consider comments in the letter. No changes to the EIR were made in response to this comment. Specific comments are addressed below.

Response P2.2

The commenter states an opinion that the project site is located in an area with predominantly senior housing. The commenter states that The Hamilton community strongly opposes the project since he believes that it would materially adversely affect him and his neighbors.

This comment does not pertain to the information, analysis, or conclusions in the DEIR. No changes to the EIR were made in response to this comment.

Response P2.3

The commenter expresses an opinion that the project would put the coast live oak tree on the adjacent property in danger since its limbs reach out approximately 45 feet over the project's property, and its root structure is larger than that. The commenter refers to Attachment A of the letter for an analysis by Walter Levison, Consulting Arborist.

Potential impacts to this tree are analyzed in Section 4.1, *Biological Resources*, of the DEIR, which includes two mitigation measures (Mitigation Measures BIO-2 and BIO-3) specifically addressing the tree. As discussed in Section 5.2, *CEQA Implications of Changes to the Proposed Project*, of this Final Environmental Impact Report/Responses to Comments document, these mitigation measures would apply to the project, as revised. Furthermore, it is the subject of two different arborist reports included in the Draft EIR in Appendix C. Appendix C has also been supplemented with a memorandum from David L. Babby, included as Attachment B to this document, and Mitigation Measure BIO-3 has been revised to include mitigation for branch pruning as described in the memorandum. Mitigation Measure BIO-3 has been revised to read:

> **BIO-3 OAK TREE ~~ROOT~~ PRUNING AND PROTECTION**
>
> Larger roots shall be pruned using a fine-tooth saw, and smaller roots shall be pruned using a hand looper. If roots are to be left exposed for long periods of time, especially in warm weather, they must be covered in burlap cloth and kept wet. Branch pruning shall be highly selective and limited to avoid significant cuts. A qualified arborist shall be present on site to oversee any root pruning activities, as well as any branch pruning activities and shall provide guidance regarding which branches to cut. The qualified arborist shall also perform annual inspections for five to 10 years following building occupancy. Branch pruning work shall be performed by a tree service with an ISA Certified Arborist in a supervisory role on-site.

Implementation of revised Mitigation Measure BIO-3 would ensure protection of the coast live oak during root and branch pruning activities, which would further ensure that impacts to the tree would be less than significant. The minor revisions to Mitigation Measure BIO-3 do not warrant

recirculation or change any impacts or findings of the EIR, as the changes do not meet any of the recirculation criteria as listed in Section 1.4.

Response P2.4

The commenter states an opinion that a tree protection zone (TPZ) of 41 feet or 45 feet is required for the coast live oak based on the parameters of a radius equal to ten times the trunk's parameters and a footage equal to the foliage, respectively, based on the City's Tree Technical Manual. The commenter asserts that construction work would be closer than 30 feet to the tree.

As discussed in Section 4.1, *Biological Resources*, of the DEIR, and Section 5.2, *CEQA Implications of Changes to the Proposed Project*, of this document under the *Biological Resources* subheading, the project design includes a minimum 30-foot setback from the oak tree's trunk for the future building and parking garage, and a minimum setback of 20 feet for ground disturbance beneath the existing asphalt surface. Careful shoring placement (for driving piles or a drill rig) and pruning would also limit impacts to the oak tree. According to the Arborist Report prepared by Robert Booty on May 23, Appendix C to the DEIR), the edge of proposed excavation for the below-grade parking structure would occur approximately 30 feet from the oak tree. However, the root system of the oak tree extends up to 51 feet and construction activities could potentially result in damages to the root system, which could affect the long-term viability of the tree if tree protection measures are not properly conducted. Implementation of mitigation measures BIO-2 and BIO-3 would be required to ensure compliance with tree protection guidelines outlined in the Arborist Report prepared by David L. Babby on February 7, 2024 (included as Attachment B to this document), and to ensure protection of tree roots and branches. Therefore, with implementation of Mitigation Measure BIO-2 and revised Mitigation Measure BIO-3 (refer to Response 2.3), impacts related to the oak tree's roots would be less than significant. The commenter does not provide specific information or analysis to question the DEIR analysis, and No changes to the EIR were made in response to this comment.

Response P2.5

The commenter states that the second to fourth floors of the proposed building would include balconies extending 6 feet into the TPZ. The commenter suggests that the applicant would prune the tree, leaving only 19 feet of foliage left, which would disrupt the tree's balance and result in the tree falling over. The commenter expresses a concern that the tree could topple over into The Hamilton as well as dental offices at 517 Byron Street. The commenter also expresses concerns regarding privacy and noise on the rooftop deck of the proposed building.

As discussed in the Arborist Memorandum prepared by David L. Babby on May 28, 2024 and appended to Appendix C of the DEIR, regular pruning is planned to maintain clearances while avoiding large or adverse cuts. As outlined in Chapter 4, Mitigation Measure BIO-3 has been revised to incorporate updated branch pruning measures outlined in the Arborist Memorandum, which would ensure branch pruning impacts do not threaten the health of the tree. Additionally, as discussed in Section 5.2, *CEQA Implications of Changes to the Proposed Project*, of this document, under the *Biological Resources* subheading, the addition of two floors as part of the project, as revised, would not have greater impacts on the adjacent protected tree as compared to the original altproject. The commenter's references to the tree falling over and destroying buildings are speculative.

As discussed in Section 5.1, *Project Changes and Clarifications*, of this document, the project description has been modified since circulation of the Draft EIR, and although the original project included a 4,462 square-foot roof terrace, the project as now proposed would not include a roof terrace. Since the rooftop terrace has been removed, compared to the analysis included in Section 4.2, *Noise*, of the DEIR, impacts related to noise from outdoor amenities would be reduced and there would be no impact. Furthermore, per Assembly Bill 1307 (2023), the effect of noise generated by residential project occupants and their guests is not a significant effect on the environment.

The commenter's opinion regarding privacy will be considered by the City's decisionmakers, but privacy is not a CEQA issue and therefore is not discussed in the DEIR.

Response P2.6

The commenter expresses an opinion that it does not make sense to come up with a replacement value for the tree, and instead the appraisal value should be calculated using the trunk formula method.

The Palo Alto Municipal Code (PAMC) Section 8.10.030 outlines appraisal determination methods pursuant to the City's Tree and Landscape Technical Manual. This comment does not pertain to the information, analysis, or conclusions in the DEIR. No changes to the EIR were made in response to this comment.

Response P2.7

The commenter opines that a 41-foot TPZ is necessary and refers to the Arborist Report prepared by David L. Babby on February 7, 2024. The commenter suggests that the proposed building is too large for the site.

Please refer to Response P2.4. The tree would be impacted by construction, but mitigation measures in Section 4.1, *Biological Resources*, of the DEIR would ensure that impacts to the tree are less-than-significant. As noted in the ARB hearing, the City arborist, Catherine Mondkar, agrees with the conclusions of the arborist reports prepared for the project concluding that the impacts to the tree would not be significant; the commenter does not provide specific analysis or information to challenge the conclusions of the DEIR upon which to base a more detailed response.

As discussed in Section 11, *Land Use and Planning*, of Appendix B to the DEIR, and Section 4.2, *Land Use and Planning*, of Section 5.2, *Environmental Implications*, of this document, under the subheading *Land Use and Planning*, the proposed project would not be compliant with the allowable density, FAR, building height, residential open space, site coverage, daylight plane, rear setback, and street side setback for RM-20.[1], as well as the parking standards in Section 18.52 of the PAMC. To allow for these increases, the applicant has submitted an application for a rezoning of the site to Planned Community (PC) (also referred to as the Planned Home Zoning, PHZ, zone) in accordance with PAMC Section 18.38. This process allows rezoning for housing projects that exceed the otherwise applicable Development Standards in exchange for the public benefit of new housing units, including additional below market rate units and/or units providing deeper levels of affordability, within the City of Palo Alto. Pursuant to the City's Below Market Rate (BMR) Program (PAMC Chapter 18.15), developers of projects with five or more units must provide 15 percent of the units to be affordable and pay in-lieu fees to fund affordable housing projects in the city for any

[1] The project description originally analyzed in the DEIR was not compliant with the interior side setback requirements, but the project as currently proposed would be compliant with the interior side setback requirements.

fractional remainder less than 0.5 unit. The project as revised would provide 20 percent, or 14 units, of BMR housing, which exceeds this requirement, as anticipated for PHZ applications. Therefore, with approval of the rezone, the proposed project would be consistent with applicable regulations in the PAMC and would be rewarded exceptions to allowable density, FAR, building height, residential open space, site coverage, , daylight plane, rear setback, and street side setback standards for RM-20.[2], as well as the parking standards in the Zoning Code. Impacts would be less than significant. No changes to the EIR were made in response to this comment.

[2] The project description originally analyzed in the DEIR was not compliant with the interior side setback requirements, but the project as currently proposed would be compliant with the interior side setback requirements.

Planning Applications Mapped

Letter P-3

From: Admin <carol.gilbert@comcast.net>
Sent: Monday, April 15, 2024 2:00 PM
To: Kallas, Emily <Emily.Kallas@cityofpaloalto.org>
Subject: The Review of 660 University Ave.

[You don't often get email from carol.gilbert@comcast.net. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Emily,
Am sending you a summary of issues I think exist with the planning of 660 University up for review on the 18th. I hope that you can share this with the other members of the committee. Looking forward to seeing all of you this week.

Carol Gilbert
555 Byron St.
Palo Alto, CA 94301
650-323-2862

The 660 Project
April 18, 2024



Long story short,
this project was and still
is an oversized building
being shoehorned into a too small property

Summarized by Carol Gilbert
555 Byron St. #209
Palo Alto, CA

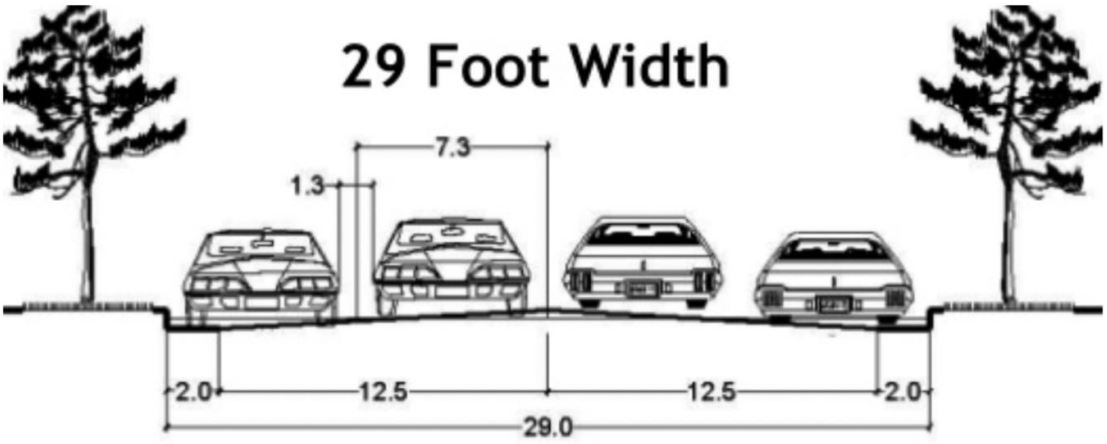
First, I would like to thank Smith Development for trying to make this work by making adjustments in size and number of units and auto access. However, this project still remains trying to shoehorn a building too big into a property too small. 1

Here are several of the areas the various city committees including yours must consider.

- **Maintain reasonable privacy** for The Hamilton side of the building from 660 balconies and especially the rooftop area. It is high and will support partying and televised sports gatherings that have both visibility and noise on us. 2

- **Ensure life of the Coast Life Oak** according to arborist report. Chris Ream will speak to this further and has previously submitted a report. Understand that putting up a bond to ensure its health doesn't protect the loss of the tree. In Hawaii, Four Seasons blew up a coral reef to provide them with more beachfront. They could say, "Sorry" and pay a fine, but it couldn't bring back the reef. A penalty wouldn't bring back this Heritage Oak. 3

- **Keep Byron Street safe** for the added traffic which would ensue. Byron Street is extremely narrow. With parking on both sides, two cars or trucks cannot safely pass. Given the width of Byron Street, you need to consider reconfiguring it to handle reduced parking or making it one way. Alternatively, return 660 as the ingress/egress to Middlefield Rd. Having recently met a UPS coming toward me, I could not find anywhere to go. 4



- **Where will the 660 residents park**? There are not adequate number of parking spaces. No street that surrounds 660 allows parking except Byron which is already normally fully parked M-F. See problem described above. 5

Thank you for your consideration.

Carol Gilbert, 555 Byron St., #209, Palo Alto, CA 94301. 1-650-3323-2862

Letter P3

COMMENTER: Carol Gilbert

DATE: April 18, 2024

Response P3.1

The commenter expresses an opinion that the proposed building is too big for the project site.

Please refer to Response P2.7. This comment does not pertain to the information, analysis, or conclusions in the DEIR. No changes to the EIR were made in response to this comment.

Response P3.2

The commenter expresses concerns regarding privacy and noise impacts on The Hamilton.

The commenter's opinion will be considered by the City's decisionmakers, but privacy is not a CEQA issue and therefore is not discussed in the DEIR. Please refer to Response P2.5 regarding noise impacts.

Response P3.3

The commenter urges the City to protect the coast live oak and expresses an opinion that a penalty would not bring the tree back.

As discussed in Section 4.1, *Biological Resources*, of the DEIR, and Section 5.2, *Environmental Implications*, of this document, under the subheading *Biological Resources*, implementation of Mitigation Measure BIO-2 and revised Mitigation Measure BIO-3 (refer to Response P2.3) would ensure compliance with tree protection guidelines outlined in the Arborist Report prepared by David L. Babby on February 7, 2024, and ensure protection of the oak tree. The commenter does not provide specific information or analysis on which to base a more detailed response. No changes to the EIR were made in response to this comment.

Response P3.4

The commenter expresses concerns regarding additional traffic on Byron Street and suggests reconfiguring it to handle reduced parking or making it one way, or using Middlefield Road for project ingress/egress.

Please refer to Response P1.1.

Response P3.5

The commenter suggests that the project would not include an adequate number of parking spaces for future residents.

Parking is not considered an environmental impact requiring analysis under CEQA, and therefore is not studied in this DEIR. However, the project's compliance with the municipal code is evaluated as part of the planning entitlement process. As shown in Table 1 of Section 5.1, *Project Changes and Clarifications*, of this document, the project would include 78 parking stalls, where 89 is required by the Zoning Code. The applicant is requesting a 13 percent Transportation Demand Management (TDM) reduction, which is consistent with the 20 percent reduction normally allowed by a TDM per PAMC 18.52.050 Table 4, Allowable Parking Adjustments. In addition, the proposed project would include 88 long-term and 10 short-term bicycle parking spaces and would be located approximately

0.7 miles northeast of the Palo Alto Caltrain Station at 95 University Avenue and within walking distance of SamTrans bus stops for routes 280, 281, 296, and 397, VTA bus route 21, as well as bus stops for the Dumbarton Express, which would reduce reliance on single-occupancy vehicles and reduce GHG and VMT. No changes to the EIR were made in response to this comment.

Letter P-4

From: Kallas, Emily
To: Kallas, Emily
Subject: FW: New Construction at 511 Byron Street, and more, Palo Alto
Date: Tuesday, May 21, 2024 4:22:00 PM

From: Faith Brigel <faithwb3@yahoo.com>
Sent: Thursday, April 18, 2024 5:21 PM
To: Council, City <city.council@cityofpaloalto.org>; Lythcott-Haims, Julie <Julie.LythcottHaims@CityofPaloAlto.org>; Veenker, Vicki <Vicki.Veenker@CityofPaloAlto.org>; Lauing, Ed <Ed.Lauing@CityofPaloAlto.org>; Kou, Lydia <Lydia.Kou@CityofPaloAlto.org>; Tanaka, Greg <Greg.Tanaka@CityofPaloAlto.org>
Cc: Faith Brigel <faithwb3@yahoo.com>; greg.stone@cityofpaloalto.org; Burt, Patrick <Pat.Burt@CityofPaloAlto.org>
Subject: New Construction at 511 Byron Street, and more, Palo Alto

Some people who received this message don't often get email from faithwb3@yahoo.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear City Council of City of Palo Alto,

This morning I attended an Architectural Review Board meeting to discuss the new construction that is being proposed for 511 Byron Street, 660 University Ave., 680 University Ave., and 500 Middlefield Road. Once all of these buildings will be demolished they will construct an immense four story, mixed usage of many offices and many residential rentals, and a two story basement for parking, though the parking spaces will be much reduced from what is needed. And I assume a lot of water will need to be drained since our water level is shallow. Their presentation talked about several of the other buildings in that area that are large, though not as large as this one: the Hamilton project, Lytton Gardens, The Webster House and there is the 3 story 2 condo on Webster and University Ave. There are already several large buildings in this area. And I think none of them have a two story basement. 1

That intersection is already very congested. And there is rarely any parking on Byron Street. One person opposed to this project this morning stated that constructing this building into that area is like squeezing it into a lot that is much too small. 2

I have owned the single, story Victorian that is more than 100 years old, for almost 40 years. My building was not mentioned this morning. And I will lose some of my daylight plan, which was also not mentioned. Byron Street and University Ave. in 3

that area has always been a quiet, professional area for the past 40 years. My building has a psychiatrist, and a psychologist. They work in my building because it is quiet.
Adding many residential apartments with balconies to those structures will totally change the nature of this area. And I more than likely will lose at least some of my tenants, if not all of them. I understand that the State is requiring more housing. But a very large building with offices and apartments right downtown on University Ave. beside Middlefield is not a good spot for it.
There should be some consideration for people like myself who have been in that area for many years- not just the developers who are not concerned that they are overbuilding the downtown area.

3 (cont.)

I ask and hope that you who represent all of us on the City Council and will take into consideration all of us not just the developers.

Thank you for your consideration,

Faith W. Brigel

Letter P4

COMMENTER: **Faith Brigel**

DATE: **May 21, 2024**

Response P4.1

The commenter expresses an opinion that there are already several large buildings in the area and none of them include a two-story basement like the proposed project. The commenter also opines that although the proposed project would include a two-story basement, parking would be much reduced from what is needed. The commenter assumes that water will need to be drained since the water level is shallow.

Parking is not considered an environmental impact under CEQA, and therefore is not studied in this DEIR. However, the project's compliance with the municipal code is evaluated as part of the planning entitlement process. As shown in Table 1 of Section 5.1, *Project Changes and Clarifications*, of this document, the project would include 78 parking stalls, where 89 is required by the Zoning Code. The applicant is requesting a 13 percent TDM reduction, which is consistent with the 20 percent reduction normally allowed by a TDM per PAMC 18.52.050 Table 4, Allowable Parking Adjustments. In addition, the proposed project would include 88 long-term and 10 short-term bicycle parking spaces and would be located approximately 0.7 miles northeast of the Palo Alto Caltrain Station at 95 University Avenue and within walking distance of SamTrans bus stops for routes 280, 281, 296, and 397, VTA bus route 21, as well as bus stops for the Dumbarton Express, which would reduce reliance on single-occupancy vehicles and reduce GHG and VMT.

As discussed in Section 10, *Hydrology and Water Quality*, of Appendix B to the DEIR, temporary dewatering during construction would not substantially affect groundwater levels because of the relatively small area of the project site. As mentioned in Section 10, *Hydrology and Water Quality*, of Appendix B to the DEIR, dewatering is regulated by the City during the permitting process, including through the City's *Construction Dewatering System Policy and Plan Preparation Guidelines*. The proposed project would be required to comply with regulations for groundwater dewatering as detailed in the City's How-to Guide, which would prevent contaminated groundwater from entering the stormwater system. In addition, as discussed in Section 5.2, *Environmental Implications* of this document under the subheading *Utilities and Service Systems*, the proposed project would constitute less than one percent of excess water supply in 2025, and the City would have sufficient water supplies available to serve the project. No changes to the EIR were made in response to this comment.

Response P4.2

The commenter expresses an opinion that the intersection where the project site is located is already congested and there is rarely any parking on Byron Street. The commenter also asserts that the proposed building is too large for the project site.

Please refer to responses P1.1 and P2.7.

Response P4.3

The commenter states that she owns a single-story Victorian in the area and suggests that developers are overbuilding the downtown area, and the proposed project would change the quiet nature of the area. The commenter expresses concerns regarding losing some of her tenants, and states that she will lose some of her daylight plane.

This comment will be considered by the City's decision makers but does not pertain to the information, analysis, or conclusions in the DEIR. No changes to the EIR were made in response to this comment.

Letter NC-1

From: Susan Setterholm
To: Architectural Review Board
Cc: Palo Forward
Subject: Action Item#1 Housing support from former Palo Alto resident.
Date: Friday, April 12, 2024 7:43:13 AM

[You don't often get email from susan.setterholm@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

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Hello,

I lived in Palo Alto for four years as a renter. I have been priced out.

I think I'm a nice person. I have a masters degree from Cal Berkeley and I work as a teacher. My income is low by Santa Clara County Standards. 1

Please allow the housing to be built.

Sincerely,

Susan Setterholm
1000 Sutter Street
San Francisco CA 94109

Letter NC-2

From: Bryce Tuttle
To: Architectural Review Board
Subject: Action Item #2
Date: Friday, April 12, 2024 7:45:10 AM

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Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Bryce Tuttle

Letter NC-3

From: Eugene Chong
To: Architectural Review Board
Subject: 660 University Avenue project
Date: Friday, April 12, 2024 7:58:08 AM

You don't often get email from eugene.chong@gmail.com. Learn why this is important

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Dear Architectural Review Board Members,

I am a Palo Alto resident, and I support the 660 University Avenue project for the following reasons. I urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

The choice is clear and obvious. Approving the project means providing new homes in our city and in the South Bay - the most important issue in the entire region. Delaying the project further means affirming an opposition more interested in preserving their own property values than providing fellow residents with a place to live.

Thank you,

Eugene Chong

Letter NC-4

From: Zack Parker
To: Architectural Review Board
Subject: 660 University Avenue
Date: Friday, April 12, 2024 8:25:55 AM

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Dear Architectural Review Board Members,

As a parent of a child at Addison Elementary, I'm writing to you to express my support for the project at 660 University Avenue, action item 2 on today's meeting agenda. This project will help shore up Addison's student numbers and keep the school vibrant. As a cyclist, I'm also enthusiastic about any development that encourages more walking and cycling. This project's proximity to shops, transit, and services, along with its substantial bicycle storage and parking infrastructure, will be a step in the right direction for our city. 1

Thank you,
Zack Parker

Letter NC-5

From: Ben Moran
To: Architectural Review Board
Subject: Comment Supporting 660 University Ave (Apr 18 Action Item #2)
Date: Friday, April 12, 2024 8:33:24 AM

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Dear Architectural Review Board Members,

I hope this email finds you well. I am writing as a Palo Alto renter in support of the 660 University Avenue project (Action Item #2). The project is a step in the direction to keep Palo Alto livable for the future, and hope that you will approve it as submitted. Specifically:

- The project is situated at an ideal location for carless commuters (<1 mi from Caltrain, many downtown businesses, and multiple parks), supporting both low-income and climate-conscious residents
- The project includes ample bicycle parking in a secure location, a choice that will minimize both climate and noise impacts on the surroundings.
- The project includes 20% Below Market Rate units, bringing us closer to an equitable community.
- The project's affordable spaces could have knock-on positive effects for the surrounding community (e.g. bringing in more school-age children).
- The project requires exemptions and Comprehensive Plan amendments, but these changes are definitively for the better, relative to the alternatives. The existing rules do not realistically allow for the kind of housing density needed to reach Regional Housing Needs Assessment goals.

1

In summary, this is exactly the kind of project that the community must approve if it has any realistic chance of solving the housing and climate crises. I hope it will be approved without further delay.

Thank you,

Benjamin Moran

From: Hershel Macaulay
To: Architectural Review Board
Subject: Please approve 660 University Ave
Date: Friday, April 12, 2024 8:35:47 AM

Letter NC-6

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We need way more housing in Palo Alto and need to move much faster. Houses on my block have taken 2-5 years from start to finish. This is wildly out of line with national averages, with the urgency of climate goals, and with the growth needed to ensure Palo Alto survives as an urban area as other regions compete for our industries. Please accelerate the process. 1

Thank you,

Hershel Macaulay
1015 Stanford Ave, Palo Alto, CA 94306

From: Pablo Hernandez
To: Architectural Review Board
Subject: Build more housing
Date: Friday, April 12, 2024 8:45:54 AM

Letter NC-7

You don't often get email from pablo.hdz.sanz@gmail.com. Learn why this is important

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We are in a housing shortage.

I grew up in Mexico City, where the average salary is $20,000 not $110,000 like California. When you visit the city you know what you don't see? Homelessness. You're welcome to visit and judge for yourself.

Why is that? Homelessness is not a poverty issue (we have plenty of that in Mexico). It's a housing shortage issue.

1

It's insane, degrading and humiliating that this state has been blessed with so much wealth, yet people have to poop on the streets, in the wealthiest state in the world, because neighbors refuse to permit building more housing.

I know it's much easier to blame everyone else. But in reality it's up to you.
Please approve the 660 University Avenue project.

Yours truly,
Pablo Hernandez

Letter NC-8

From: Craig
To: Architectural Review Board
Subject: In support of 660 University Avenue
Date: Friday, April 12, 2024 9:08:47 AM

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CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary. 1
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

Thank you,

Craig Olshan

861 Newell Place, Palo Alto

From: Rachel Miller
To: Architectural Review Board
Subject: 660 University Ave
Date: Friday, April 12, 2024 9:14:02 AM

Letter NC-9

You don't often get email from rlhello@yahoo.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members,

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Rachel Miller (Palo Alto resident at 810 Arroyo Court who would one day love to downsize into a single story condo in a more walkable part of my community and who would also like for my kids to one day be able to afford to live in California near jobs and amenities)

Sent from my iPhone

Letter NC-10

From: Lizzie DeKraai
To: Architectural Review Board
Subject: In support of the 660 University Ave project
Date: Friday, April 12, 2024 9:33:01 AM

You don't often get email from lizziedekraai@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members,

My name is Lizzie DeKraai and I am a teacher at Palo Alto High School. I have lived in Palo Alto for the past eight years thanks to a miraculously affordable (in that it only costs half my monthly income) apartment. Last year the owners of the lot put our home on the market, but thankfully, it was not sold. In that time, my husband and I looked for rentals we could afford in Palo Alto, and were dismayed at the limited availability. We need more housing in Palo Alto, and so, I strongly support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Lizzie DeKraai

From: Zachary Anglemyer
To: Architectural Review Board
Subject: Support 660 University Ave
Date: Friday, April 12, 2024 9:35:52 AM

Letter NC-11

You don't often get email from ziaprogolfer@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Zachary I Anglemyer
303-250-2150
Ziaprogolfer@gmail.com
“Today you make the world a more sustainable and livable place”

Letter NC-12

From: Alice Smith
To: Architectural Review Board
Subject: I support 660 University Ave Project.
Date: Friday, April 12, 2024 10:09:09 AM

You don't often get email from alice.smith@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

1

Alice Schaffer Smith
850 Webster St #520

Why should my Zip Code determine if I may vote and how and when? We need one federal law that governs voting for every American. Please write or call your US Senator and Congressperson and tell them to Pass The Freedom to Vote: John R Lewis Act now! Click this LINK to telephone/addresses



www.nationalvotercorps.org

Letter NC-13

From: Patricia Campbell
To: Architectural Review Board
Subject: Please move forward with 660 University Avenue
Date: Friday, April 12, 2024 10:12:15 AM

You don't often get email from campbell.noroian@gmail.com. Learn why this is important

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Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary. 1
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

Thank you,

Patricia Campbell

2296 Bryant Street

Letter NC-14

From: Sam Gersten
To: Architectural Review Board
Subject: Support 660 University Avenue
Date: Friday, April 12, 2024 10:32:46 AM

You don't often get email from sam.gersten@gmail.com. Learn why this is important

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Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) and urge you to approve it as submitted without further delay.

It is unacceptable that this process has taken 3 years since originally submitted in 2021 and is indicative of a system and institutions that unwillingly and willingly prevent the building of additional housing. Additional housing helps keep rent low for Palo Alto renters like me and my family.

The project is conveniently located to downtown and mass transit and will exceed affordability and bicycle parking requirements. The project will support local schools facing enrollment declines. I have no issues with the setback exemption being requested - it is in line with the neighborhood architecture. 1

Please speedily approve this project.

Thank you,

Sam

2901 Middlefield Road, #1
Palo Alto, CA 94306

--
Sam Gersten
sam.gersten@gmail.com | 718-570-7661

Letter NC-15

From: Jeffrey Miller
To: Architectural Review Board
Subject: 660 University Avenue project
Date: Friday, April 12, 2024 10:53:23 AM

You don't often get email from jeffrey.miller@outlook.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members
I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Regards,
Jeffrey Miller
Palo Alto, CA

From: Erin Heinemeyer
To: Architectural Review Board
Subject: 660 University Avenue project
Date: Friday, April 12, 2024 11:04:41 AM

Letter NC-16

You don't often get email from erin.heinemeyer@gmail.com. Learn why this is important

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Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Erin Heinemeyer

From: slevy@ccsce.com
To: Architectural Review Board
Subject: 4/17 agenda items 2 and 3
Date: Friday, April 12, 2024 11:13:42 AM

Letter NC-17

You don't often get email from slevy@ccsce.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear ARB members,

I encourage the ARB to make comments but give swift approval of both of these projects

With regard to 660 University

As a DTN resident I see benefits beyond just helping with our housing shortage

With this location new residents will be customers to the struggling DTN businesses feeling the loss of customers from WFH, online shopping and close fierce competition from T&C and Stanford

This location, moreover, lends itself to more trips being taken by walking ore biking regardless of whether residents own a car or not.

This location is in one of the prime locations for new housing in our city

1

And by acting quickly now you can reverse the almost 3 years of the Palo Alto process this project has endured.

With regard to the teacher housing project

The bottom line is that the community and future residents will be better off with the project than if it is denied or killed with excessive asks.

If the city wants to donate $10+M as they did for Wilton Court, there could be changes BUT currently all of the concerns voiced at the PTC run into a) the law, this project is legal re affordability and the economics of this owner funded with no city cost AFH project.

Thank you for hearing this project so quickly and as with the PTC, please move it forward so we can get this needed housing.

Thank you

Stephen Levy

From: Andrea Eckstein Gara
To: Architectural Review Board
Subject: Action Item #2--Support
Date: Friday, April 12, 2024 11:29:35 AM

Letter NC-18

You don't often get email from aegara@gmail.com. Learn why this is important

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Dear ARB Members

As an environmentally concerned citizen, I am writing in support of the 660 University Avenue project (Action Item #2). Denser housing near Caltrain is exactly what we need to encourage walking and biking as commute options--actions that are called for in our S/CAP. It is also something everyone in the community can benefit from in the form of cleaner air to breathe and less traffic from car commuters. We currently have a mismatch between jobs and housing, which is exacerbating traffic and car pollution.

1

Furthermore, this action will help to address the significant housing crunch our community is facing.

It has recently been reported that Palo Alto is falling behind on our S/CAP progress. Fast-tracking this project is a first step in correcting that situation.

Thank you for your consideration of this matter.

Sincerely,

Andrea Gara

1265 Wilson Street

Letter NC-19

From: Hayden Kantor
To: Architectural Review Board
Subject: support for 660 University Avenue project
Date: Friday, April 12, 2024 11:37:13 AM

You don't often get email from haydenkantor@gmail.com. Learn why this is important

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Dear Architectural Review Board Members:

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Hayden Kantor

Letter NC-20

From: Valentin Bolotnyy
To: Architectural Review Board
Subject: Reflections on 660 University Ave project
Date: Friday, April 12, 2024 12:17:27 PM

You don't often get email from valen909@gmail.com. Learn why this is important

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Dear Architectural Review Board Members,

I am a Palo Alto resident and I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,
Valentin Bolotnyy

Letter NC-21

From: Bill Fitch
To: Architectural Review Board
Subject: 660 University Avenue project
Date: Friday, April 12, 2024 1:18:55 PM

You don't often get email from facehiker@gmail.com. Learn why this is important

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Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.
- My wife Mary and I have been residents of Palo Alto for 54 years. We came for Stanford and stayed for the schools. Our daughters got a great education. But they never could afford to live here. Now my 4 grandaughters could never come close to affording here. Even worse, quality education wont be sustainable if our teachers can't afford to live here. It's time to open up Palo Alto to high rise and affordable housing in any and all ways possible.

1

I do support the ARB demanding beauty as well as functionality from housing developers. I have a fantasy of Paris housing in my mind.

Thank you,

Bill Fitch

178 Park Ave

Letter NC-22

From: Wendy Sinton
To: Architectural Review Board
Subject: 660 University Ave.
Date: Friday, April 12, 2024 1:53:22 PM

You don't often get email from wendy.sinton@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Hello,
This is exactly the type of development that Palo Alto needs.
Please approve this project. It will fit in with the neighborhood.
Perhaps there should be more if the larger apartments instead if so many studio apartments, but otherwise it seems like a great proposal.
Thank you,
Wendy Sinton

1

From: Rob Schreiber
To: Architectural Review Board
Subject: 660 University Ave
Date: Friday, April 12, 2024 2:18:10 PM

Letter NC-23

You don't often get email from r_schreiber_98@yahoo.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear board members,

I support this proposed improvement to downtown without reservation. It provides sorely needed new housing in an ideal location. This fact alone outweighs any negatives concerning setback, parking, aesthetics. The long-delayed approval of this and like projects should be a top priority for the city.

1

(I am a 42-years-long resident of Palo Alto, and the former president of the Greenmeadow Community Association.)

Thank you for helping Palo Alto evolve and grow to meet the needs of its people.

Sincerely,

Rob Schreiber

Letter NC-24

From: Kristen Hughes
To: Architectural Review Board
Subject: Support for 660 University Ave project
Date: Friday, April 12, 2024 4:14:23 PM

[You don't often get email from kristen@hughes-family.org. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

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Dear Architectural Review Board Members,

I am writing in support the of the 660 University Avenue project and urge you to approve it as submitted as soon as possible.

Palo Alto needs housing, and housing near businesses and transportation is better than housing away from transportation and services. 660 University is walking distance to downtown and the Caltrain. 1

I own a home in Downtown North, and feel that our neighborhood and the downtown corridor is where Palo Alto should be adding housing.

This project was originally submitted in 2021 — don't make Palo Alto wait any longer!

Thank you,

Kristen Hughes

Letter NC-25

From: Ginny Madsen
To: Architectural Review Board
Subject: 660 University is a good and needed project
Date: Friday, April 12, 2024 6:40:56 PM

You don't often get email from madsenginny3@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members

I used to live and work on Middlefield Road not far away from this project at 660 University Avenue but now live far away because of the lack of affordable housing in Palo Alto. I ask that you approve the 660 University project (your Action Item #2) submitted without further delay. Palo Alto needs this housing to be built for many reasons.

- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood. This is a time to maximize living spaces.
- This project will provide 65 new homes with 20% affordable, where only 15% is required. Hallelujah!
- This project is withing easy walking distance to downtown businesses, retail, and services, 0.6 mile from Caltrain and adjacent to major transit stops - residents will be able to drive less which will reduce carbon their emissions which benefits everyone. 1
- More than twice the amount of required bicycle parking will be provided making this a climate conscious development.
- Children living in these homes will support adjacent schools facing steep declines, such as Addison Elementary. They are the future.
- This project was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings. It represents a success in the onerous "Palo Alto Process".

Thank you for taking a step in the right direction,

Letter NC-26

From: Barbara Voss
To: Architectural Review Board
Subject: support for the 660 University Avenue project
Date: Saturday, April 13, 2024 8:47:30 AM

You don't often get email from barbvossis@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Barbara Voss

2600 Columbia Street Unit 200

Palo Alto CA 94304

--

Barb Voss - barbvossis@gmail.com

Letter NC-27

From: Adam Schwartz
To: Architectural Review Board
Subject: Please APPROVE proposed homes at 660 University Avenue
Date: Saturday, April 13, 2024 10:25:24 AM

You don't often get email from adamdschwartz@yahoo.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

To the members of the Palo Alto Architectural Review Board:

Greetings. I write in strong support of the proposed housing project at 660 University Avenue. This is Action Item #2 of the Board's upcoming meeting on April 18. Please approve this proposal, and please recommend that the City Council do so, too.

Our city has a housing crisis. So many of my friends and family are being priced out. The solution is to build more homes, for people at all income levels. Including infill developments near our city's amenities.

1

This proposal at 660 University Avenue is exactly what we need. It is a short walk to our downtown commercial district, and just 0.6 miles to the Caltrain. It will include 65 new homes, including 20% affordable.

Please let these homes get built!

Sincerely,

Adam Schwartz
523 Channing Ave.

Letter NC-28

From: Alexandra Konings
To: Architectural Review Board
Subject: Support for 660 University Avenue project
Date: Saturday, April 13, 2024 10:21:59 PM

You don't often get email from agkonings@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Hello,

I'm writing in support of the project at 660 University Avenue. We desperately need more housing in Palo Alto and I hope you approve this project. Given that this project is walking distance to downtown, its residents will provide significant boosts to downtown businesses. Given that nearby schools have had steep declines in enrollment, we also really need new residents in these areas with children so that the schools can remain viable. This project is consistent with the overall architectural & setback pattern in the neighborhood, and would provide a much needed boost to downtown and to Palo Alto's available housing stock. 1

All the best,
Alex Konings
Palo Alto resident

Letter NC-29

From: HappilyGoingMad
To: Architectural Review Board
Subject: Support for Action Item #2 (the 660 University Avenue project)
Date: Sunday, April 14, 2024 9:53:06 AM

You don't often get email from happilygoingmad@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members

I want you to know that I support the 660 University Avenue project (Action Item #2). I urge you to approve it as submitted without further delay. I want to feel proud of Palo Alto for complying with the law! Here are a few of the reasons this is a good idea:

- This project is close to Caltrain and near transit stops, so residents can drive less. It's also within walking distance of downtown businesses, retail, and other services.
- This project will provide 65 new homes with 20% will be affordable, where only 15% is required. Going above and beyond is something to be proud of!
- Potential students living at these homes will support adjacent schools, such as Addison Elementary, which are currently facing steep declines. 1
- More than twice the amount of required bicycle parking will be provided, another thing to be proud of.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings. This is no accident. The "Palo Alto process" is something to be embarrassed about.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

Thank you,
Cindy Carroll

Letter NC-30

From: Joyce Beattie
To: Architectural Review Board
Subject: Approve 660 University Ave. Housing Proposal: Action Item #2
Date: Sunday, April 14, 2024 11:09:16 AM

You don't often get email from jycbyt@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

To the Architectural Review Board Members

Please approve the 660 University Avenue project as submitted.

- It is convenient to downtown businesses, and services. The project is easy walking distance to Caltrain and adjacent to major transit.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you, Joyce Beattie

Stevenson House, Senior Residences, Palo Alto, CA 94306

Letter NC-31

From: Joy Sleizer
To: Architectural Review Board
Subject: 660 University Avenue
Date: Sunday, April 14, 2024 3:26:19 PM

You don't often get email from joy.sleizer142@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Dear Architectural Review Board Members

As a long time member of Palo Alto, I am concerned about the lack of housing in our city. I see that 660 University is up for your approval on April 15, and I urge you to approve it.

I support this project because:

1. It is in downtown Palo Alto, within walking distance to the train & the buses on El Camino. It is also walking distance to downtown businesses which certainly need our support. 1
2. I am pleased with the number of affordable homes that will be included in that project. Of the 65 new homes, 20% will be affordable--more than required.
3. Ample bicycle parking will be provided.

Please help this project move along. There have been too many delays.

Thank you,

Joy Sleizer

850 Webster Street Apt 706
Palo Alto, CA 94301
650-324-7425

Letter NC-32

From: Dan Kletter
To: Architectural Review Board
Subject: Please support new homes at 660 University Ave without delay!
Date: Sunday, April 14, 2024 5:28:35 PM

You don't often get email from yol@esophagus.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Palo Alto Palo Alto Commissioners,

I am writing to express my wholehearted support for the proposed 63-unit housing project at 660 University Ave. As a resident of this vibrant community, I am thrilled about the prospect of welcoming such a valuable addition to our city.

The proposed housing project offers an incredible opportunity to enhance our downtown area. One of the most exciting aspects of this project is its proximity to downtown amenities and the Caltrain station. Having housing within walking distance of these essential resources not only promotes a more sustainable and eco-friendly lifestyle but also fosters a stronger sense of community among residents.

Furthermore, as a resident who cherishes the unique character of Palo Alto, I believe that the addition of more housing options will only enrich our city. Palo Alto is in dire need of housing, and this project presents a timely solution to address this pressing issue. The project has been in the pipeline for over 3 years which is a testament to the developer's patience and commitment to providing more housing to the downtown area. They have also included more lower-tiered-income housing than what is required by the city. Access to low-income housing is vital to make the downtown area accessible to more people, ensuring that individuals from diverse socioeconomic backgrounds can partake in and contribute to our community. 1

In conclusion, I urge you to support this housing project for the betterment of our community without further delay! By embracing initiatives that promote sustainability, inclusivity, and affordability, we can ensure that Palo Alto continues to thrive as a dynamic and welcoming place to live.

Thank you!

Dan Kletter
yol@esophagus.com
665 Rock Ct
Mountain View, California 94043

From: Martinez Martines
To: Architectural Review Board
Date: Sunday, April 14, 2024 7:04:35 PM

Letter NC-33

You don't often get email from martinezmartines25@gmail.com. Learn why this is important

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Yes to the project .

Letter NC-34

From: Jo Chuang
To: Architectural Review Board
Subject: Public comment on Action Item #2
Date: Sunday, April 14, 2024 9:04:36 PM

You don't often get email from josephch405@gmail.com. Learn why this is important

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Dear Architectural Review Board Members

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less. I have lived in Palo Alto for 4 years and counting and living near transit has radically changed how I get around - this makes a difference!
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,

Jo Chuang

Letter NC-35

From: Michael Szeto
To: Architectural Review Board
Subject: Support 660 University Avenue
Date: Sunday, April 14, 2024 10:33:18 PM

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Dear ARB Members

I write to ask you to join in the support for 660 University Avenue project (Action Item #2). The below reasons are important reasons for you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary.
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

1

Thank you,
Michael Szeto
Palo Alto.

Letter NC-36

From: Palo Alto Forward
To: Architectural Review Board
Subject: Item #2 - 660 University
Date: Wednesday, April 17, 2024 11:23:13 AM
Attachments: Item #2 660 Univ Support Ltr.pdf

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Hello,

Please find our attached comment letter on 660 University Avenue.

Thank you!

--
Amie Ashton
Executive Director, Palo Alto Forward
650-793-1585

PALO ALTO FORWARD

April 17, 2024

SUBJECT: Agenda Item #2 - 600 University Avenue Mixed-Use Project

Dear Chair Baltay and Architectural Review Board Members,

We urge quick and thoughtful action on the proposed mixed-use project at 660 University Avenue. The project has been modified based on the architectural comments received on December 1, 2022, from the Architectural Review Board. Modifications include a significant change to move the vehicular ramp to Byron Street (from Middlefield), adding visual elements, and varying the proposed materials and floor typology.

Further, we support the setback exemption being requested. It is reasonable and consistent with the architectural pattern in the overall neighborhood and creates interest and connection to the sidewalk and street.

We support the project because it is walking distance to downtown businesses, retail, and services. It is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less. In furtherance of our affordable housing goals, the project will provide 65 new homes where 20% will be affordable (where normally 15% is required). Potential students living at these homes will support adjacent schools facing steep enrollment declines, such as Addison Elementary.

We hear often from tenants in Palo Alto that there is not enough bike parking in their multi-family developments. This is especially true as more residents are adopting e-bikes and cargo bikes. More than twice the amount of required bicycle parking will be provided as part of the project – a huge bonus to future residents and businesses. The vehicle parking ratio is adequate based on recent development trends and given the project's location near transit and retail.

This modest 65-unit project has been through a long (but sadly typical) PHZ process since 2021, including an exhaustive Environmental Impact Report that is normally reserved for significantly larger projects. We urge you not to delay this project further. **Please provide clear direction and take substantive action at the hearing to recommend approval of the project to Council.**

1

Thank you for your service to our community!

Sincerely,

Amie Ashton
Executive Director, and on behalf of the Board of Palo Alto Forward

Letter NC-37

From: Steven Baker
To: Architectural Review Board
Subject: 660 University
Date: Wednesday, April 17, 2024 12:04:31 PM

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Dear Architectural Review Board Members

As a city we need to build more, sensibly, in our downtown corridors (university and cal ave).

I support the 660 University Avenue project (Action Item #2) for the following reasons and urge you to approve it as submitted without further delay.

- It is walking distance to downtown businesses, retail, and services. The project is 0.6 mile from Caltrain and adjacent to major transit stops, thus reducing residents' climate emissions because they can drive less.
- It will provide 65 new homes where 20% will be affordable, where only 15% is required.
- Potential students living at these homes will support adjacent schools facing steep declines, such as Addison Elementary. 1
- More than twice the amount of required bicycle parking will be provided.
- This project is another example of the onerous "Palo Alto Process". It was originally submitted in 2021, and now (3 years later) it is moving towards the first of many approval hearings.
- The setback exemption being requested is reasonable and consistent with the architectural pattern in the overall neighborhood.

Thank you,

Steve Baker

Letter NC-38

From: Rob Nielsen
To: Architectural Review Board
Subject: Item #2, 3265 El Camino Real
Date: Wednesday, April 17, 2024 2:22:00 PM

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Dear Architectural Review Board,

My name is Rob Nielsen, and I live in Palo Alto. I am writing you in support of the project at 3265 El Camino Real, which is Item #2 on this week's agenda.

We are in a housing crisis and a climate crisis, and a project like this will help bring more housing to the transit-rich area of El Camino Real. 1

An additional public benefit is the assistance it gives teachers, and as a result our schools, who are so necessary to our community. Teachers should not have to commute from places Gilroy and Aptos to work here.

Thank you very much,
Rob Nielsen

Letter NC-39

From: Linnea WICKSTROM
To: Architectural Review Board
Subject: YES! to housing at 660 University and 3265 El Camino
Date: Wednesday, April 17, 2024 4:38:20 PM

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To the members of the ARB,

I hope that you will support the proposed housing developments in process for both downtown housing and teacher housing on El Camino. Both are important additions to desperately needed housing stock. 1

Please give these projects swift approval.

Linnea Wickstrom
Palo Alto

Letters NC1 to NC39

COMMENTER: **Various Commenters**

DATE: **April 12, 2024 to April 17, 2024**

Response NC1.1 to NC39.1

This group of letters is generally limited to statements of support for the proposed project and reasons for the commenters' support. Although there is some variation in the reasons stated for the commenters' support, none of the comments refer to, question or challenge the information, analysis, or conclusions in the DEIR. No response is required to these comments.

3 Public Hearing Comments and Responses

Verbal comments received at the public hearing (Architectural Review Board April 18, 2024 from the public are summarized below. In some cases minor clarifying edits have been made.

3.1 Architectural Review Board Hearing – April 18, 2024

Response ARB-1

Commenters expressed concerns regarding building height and massing.

Please refer to Response P2.7.

Response ARB-2

Public commenters and commissioners expressed concerns regarding impacts to the off-site oak tree, including concerns about the tree protection zone and canopy impacts.

Please refer to responses P2.3 through P2.5.

Response ARB-3

Commenters expressed concerns about construction noise and operational rooftop noise from residents.

As discussed in Section 4.2, *Noise*, of the DEIR, and in Section 5.2, *Environmental Implications*, of this document under the subheading *Noise*, at a distance of 25 feet, use of a concrete saw, excavator, and front-end loader during demolition would generate a noise level up to 93 dBA L_{max}. Construction noise levels would be up to 90 dBA L_{max} at the Lytton Garden Assisted Living facility approximately 70 feet to the northwest. As stated in Section 9.10.060 of the PAMC, the noise level at the property line may not exceed 110 dBA L_{max}. Noise during the highest intensity phase of construction would be below the City's Municipal Code threshold of 110 dBA L_{max}. Nevertheless, if uncontrolled, construction activity may cause a temporary increase of noise levels in the project vicinity. Therefore, Mitigation Measure N-1 is recommended to further reduce noise levels during construction.

As discussed in Section 5.1, *Project Changes and Clarifications*, of this document, the project description has been modified since circulation of the Draft EIR, and although the original project included a 4,462 square-foot roof terrace, the project as now proposed would not include a roof terrace. Nevertheless, in accordance with Assembly Bill 1307*,* the effect of noise generated by residential project occupants and their guests is not a significant effect on the environment. See also response to comment P2.5 for further discussion of operational noise from proposed residents*.*

Response ARB-4

Commenters expressed opinions for or against the project.

These comments do not pertain to the information, analysis, or conclusions in the DEIR. No revisions to the DEIR have been made in response to these comments.

Response ARB-5

Commenters and commissioners expressed concerns regarding traffic and traffic safety.

Please refer to Response P1.1.

Response ARB-6

Commenters and commissioners expressed concerns about project site setbacks.

Please refer to Response P2.7.

4 Revisions to the Draft EIR

This section presents changes to the text of the Draft EIR made in response to comments received or to make corrections. In no case do these revisions result in a greater number of impacts or impacts of a substantially greater severity than those set forth in the Draft EIR. Where revisions to the main text are called for, the page and paragraph are set forth, followed by the appropriate revision. Added text is indicated with underlined and deleted text is indicated with ~~strikeout~~. Page numbers correspond to the page numbers of the Draft EIR.

The following revision has been made to Page 4.1-10 in Section 4.1, *Biological Resources*, of the DEIR:

BIO-3 Oak Tree ~~Root~~ Pruning and Protection

Larger roots shall be pruned using a fine-tooth saw, and smaller roots shall be pruned using a hand looper. If roots are to be left exposed for long periods of time, especially in warm weather, they must be covered in burlap cloth and kept wet. Branch pruning shall be highly selective and limited to avoid significant cuts. A qualified arborist shall be present on site to oversee any root pruning activities, as well as any branch pruning activities and shall provide guidance regarding which branches to cut. The qualified arborist shall also perform annual inspections for five to 10 years following building occupancy. Branch pruning work shall be performed by a tree service with an ISA Certified Arborist in a supervisory role on-site.

Please see Attachment A for the following revision that has been made to Page 83 in Section 10, *Hydrology and Water Quality*, of Appendix B of the DEIR:

According to the State of California Tsunami Inundation Map (DOC 2021b), the site is not located within a tsunami inundation zone. According to the City of Palo Alto's Natural Environment Element and Safety Element of the 2030 Comprehensive Plan, mudflows and seiches are not identified as issues for the City. ~~In addition, t~~The nearest body of water that could experience a seiche event is the San Francisco Bay, and it is not anticipated that a seiche in the Bay would have potential to affect the project site. According to the Federal Emergency Management Agency (FEMA), the project site is located within Flood Zone AH, an area with a one percent annual chance of shallow flooding. The proposed project would be required to comply with the City's floodplain ordinance pursuant to PAMC Chapter 16.52 as well as national flood insurance requirements. Lastly, ~~T~~the project site is flat and surrounded by residential and commercial development away from crests and steep ridges. Therefore, the ~~project site is located in a low hazard area for tsunami, seiche, and mudflow. Impacts would be~~ project would result in less than significant impacts related to flooding, tsunamis, seiches, and mudflows, and further analysis in the EIR is not warranted.

Please see Attachment B for the Arborist Memorandum prepared by David L. Babby on May 28, 2024, which has been appended to Appendix C, Revised Arborist Reports, of the DEIR.

Please see Attachment C for Air Quality Modeling Results, which has been appended to Appendix B, Revised Air Quality Modeling Results, of Appendix B, Initial Study and Initial Study Appendices, of the DEIR.

Please see Attachment D for Energy Calculations, which has been appended to Appendix D, Revised Energy Calculations, of Appendix B, Initial Study and Initial Study Appendices, of the DEIR.

Please see Attachment E for the Transportation Impact Analysis prepared by Hexagon Transportation Consultants, Inc on September 10, 2025, which has been appended to Appendix E, Revised Transportation Impact Analysis, of the DEIR.

5 CEQA Implications of Changes to the Proposed Project

This chapter provides a discussion of the CEQA implications of changes to the project that have been made after circulation of the Draft EIR (DEIR). The revisions to the project, as summarized in Table 1, do not change the fundamental nature or main features of the project and do not constitute "significant new information" that would require recirculation of the Draft EIR under CEQA Guidelines Section 15088.5.

5.1 Project Changes and Clarifications

The modified specifications to the project include several changes to the proposed project design including an increase in height, floor area ratio, residential units. Additionally, the modified specifications to the project would result in a decrease in office space, proposed roof space, vehicle parking, residential common open space, and total open space as compared to the project description reflected in the Draft EIR. Modifications to the project description are summarized in Table 1 below, and the updated site plan is provided in Figure 1. The potential environmental impacts of these changes are discussed in detail in Section 5.2, *Environmental Implications*, of this document.

Table 1 Comparison of Previous and Modified Project Specifications

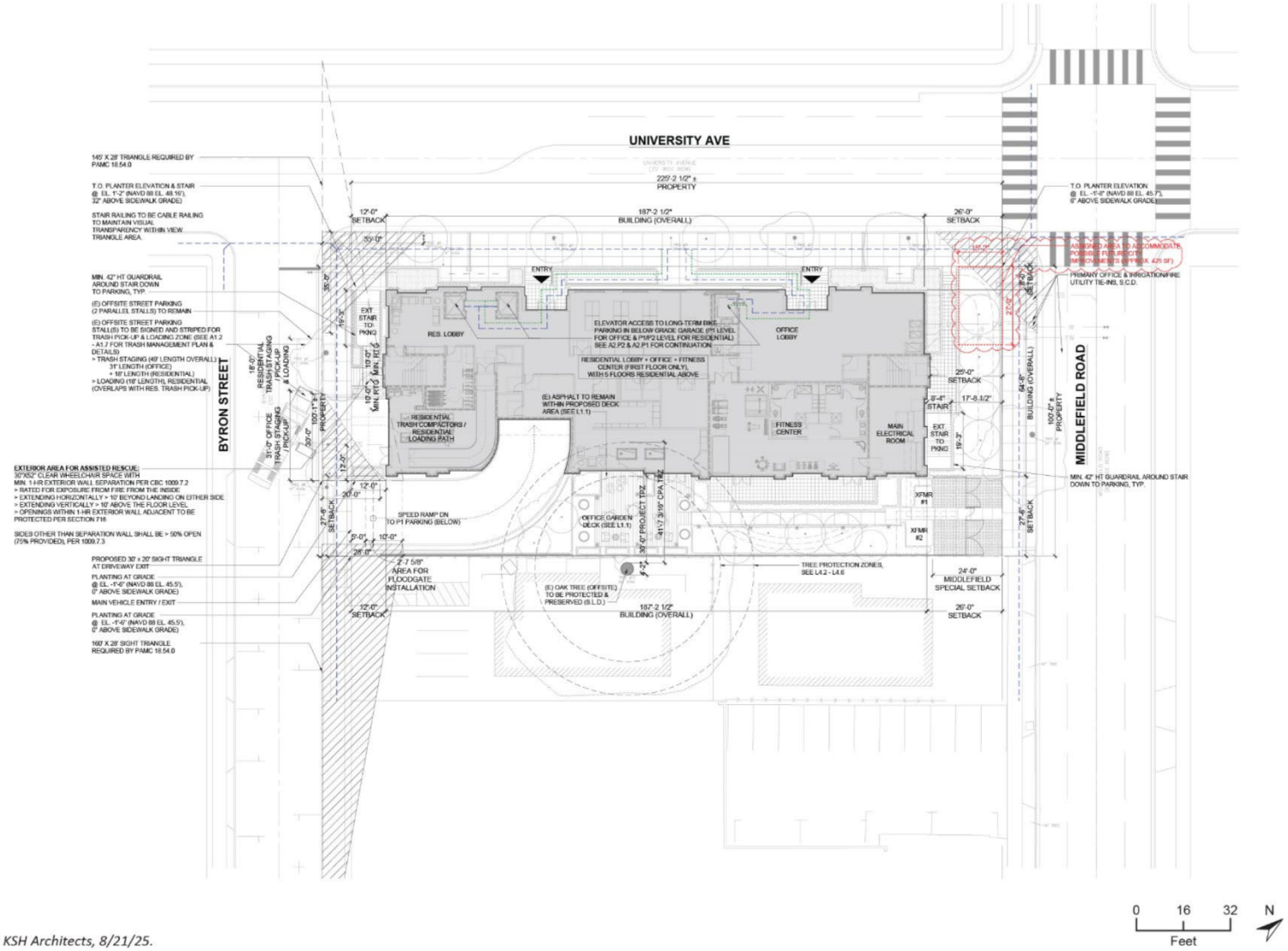
	Previous Specifications	Modified Specifications
Building Height	4 stories	6 stories
FAR[1]	2.18	2.96
Residential Space	63 units (39,806 sf[2])	70 units (59,121 sf)
Office Space	9,115 sf	1,984 sf
Roof Space	1,365 sf of penthouse and 4,642 sf of roof terrace	5,749 sf
Total building area	93,824 sf	111,068 sf
Vehicle Parking	79 parking spaces (37,805 sf)	78 parking spaces[1] (36,581 sf)
Bicycle Parking	80 long-term residential and 20 long-term office	80 long-term residential and 8 long-term office
	3 short-term residential and 2 short-term office	8 short-term residential and 2 short-term office
Residential Open Space	9,872 sf (5,230 sf private and 4,462 sf common)	6,842 sf (6,107 sf private and 735 sf common)
Total Open Space	19,327 sf	17,251 sf

[1] 62 actual stalls are provided per TDM reduction proposed. All 62 stalls would be EVSE stalls.

FAR = floor area ratio; sf = square feet

Source: KSH Architects January 2025

Figure 1 ProposedProject Site Plan



Source: KSH Architects, 8/21/25.

Figure 2 Proposed Project West Elevation (View from Byron Street)



Source: KSH Architects, 8/21/25.

0 16 32 N
Feet

Figure 3 Proposed Project North Elevation (View from University Avenue)



Source: KSH Architects, 8/21/25.

0 16 32 N
Feet

5.2 Environmental Implications

Aesthetics

Scenic Vistas

The project as revised would be six stories tall, two stories taller than the project analyzed in Appendix B to the DEIR. The project would be located on University Avenue, which is identified in the 2030 Comprehensive Plan as a scenic route; however, existing views through the site from public viewpoints in the site vicinity toward scenic vistas are currently blocked by existing buildings and trees. This condition would be the same after construction of the project, whether four or six stories. Therefore, impacts to scenic vistas would remain less than significant.

State Scenic Highways

There would be no change to the state scenic highway impacts as a result of the revised project description since the project location, which is approximately four miles away from the nearest designated State scenic highway (I-280), has not changed. The analysis included in Section 1, *Aesthetics*, of Appendix B to the DEIR remains accurate and impacts of the project would be less than significant.

Visual Character

The project site is in a fully urbanized area. The project would involve the construction of a mixed-use six-story building on a site that currently is developed with two existing one-story office buildings with surface parking. The project would increase the massing and intensity of development as compared to existing conditions on the project site and introduce a building with a different architectural style. The project applicant has submitted an application for a rezoning of the site to Planned Community (PC) (also referred to as the Planned Home Zoning [PHZ] zone) in accordance with PAMC Section 18.38, which would allow exceedances in exchange for the public benefit of new housing units, particularly an increased number of affordable units, within the City of Palo Alto. Although the project would exceed maximum height and FAR, the PC approval process, which requires a recommendation from the Architectural Review Board and consistency with the findings set forth in PAMC Section 18.76.020 for Architectural Review, would ensure that the project would be consistent with the scale and character of the community as well as the City's adopted goals, policies, and guidelines related to site design. Additionally, the modified project would include landscaping along the project frontage to reduce the visual impact of the project and soften the appearance of the new building. Therefore, impacts of the project would be less than significant.

Light and Glare

The proposed modifications to the project description would not cause a substantial change to the light and glare impacts of the project. The project would continue to be located on the same site as, would use similar building materials and interior and exterior lighting, and would be required to comply with PAMC requirements to reduce glare. The analysis included in Section 1, *Aesthetics*, of Appendix B to the DEIR remains accurate and impacts of the project would be less than significant.

Air Quality

Conflict With/Obstruct Implementation of the 2017 Clean Air Plan

While the project, as revised, would be six-stories tall in comparison to the four-stories analyzed in the Draft EIR, the project would continue to meet California Green Building Standards, incorporate energy efficient appliances and lighting, provide 62 electric vehicle supply equipment (EVSE) residential parking stalls and four EVSE office parking stalls, and provide 10 short-term bicycle parking spaces and approximately 88 long-term bicycle parking spaces. Therefore, the project would not conflict with or obstruct the implementation of an applicable air quality plan and impacts would remain less than significant.

Cumulatively Considerable Net Increase of Criteria Air Pollutants

CONSTRUCTION EMISSIONS

Since the project, as revised, would include three more residential units in comparison to the project analyzed in the Draft EIR, emissions were remodeled to account for the changes. Construction activities from the proposed project would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction equipment and construction vehicles in addition to ROG emissions that would be released during the drying phase of architectural coating, as previously discussed in the Draft EIR. Table 2 shows and compares estimated construction emissions for the proposed project, as revised, to BAAQMD significance thresholds. As shown therein, construction-related emissions would continue to not exceed BAAQMD thresholds. Project construction would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. Impacts would remain less than significant.

Table 2 Estimated Construction Emissions

	Average Daily Emissions (lbs/day)					
Sources	**ROG**	**NO_X**	**CO**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**	**SO_X**
Average Daily Construction Emissions	3	8	10	<1	<1	<1
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; CO = Carbon Monoxide; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_X = oxides of sulfur.

No BAAQMD threshold for CO or SO_X

See Attachment C for AQ CalEEMod worksheets.

OPERATIONAL EMISSIONS

Operation of the project would generate criteria air pollutant emissions associated with area sources (e.g., architectural coatings, consumer products, and landscaping equipment), mobile sources (i.e., vehicle trips to and from the project site), and stationary sources (e.g. emergency generator). The proposed project, as revised, would not generate air pollutant emissions associated with energy since the project would not use natural gas and would include an all-electric design pursuant to 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and the City's All-Electric Mandate. Table 3 compares estimated daily operational emissions to BAAQMD significance

thresholds and Table 4 compares estimated annual operational emissions to BAAQMD significance thresholds. As shown therein, neither daily nor annual operational emissions would exceed BAAQMD regional thresholds for criteria pollutants. Project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment and, impacts would remain less than significant, consistent with the conclusion in the Draft EIR.

Table 3 Daily Operational Emissions (pounds/day)

	Emissions (lbs/day)					
Sources	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_X**
Average Daily Operational Emissions						
Mobile	1	1	4	1	<1	<1
Area	2	<1	3	<1	<1	<1
Energy	0	0	0	0	0	0
Stationary Sources (Generators)	<1	<1	<1	<1	<1	<1
Total Average Daily Operational Emissions	**3**	**1**	**7**	**1**	**1**	**<1**
BAAQMD Thresholds (average daily emissions)	54	54	N/A	82	54	N/A
Threshold Exceeded?	**No**	**No**	**N/A**	**No**	**No**	**N/A**

N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; CO = carbon monoxide; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

Notes: All numbers have been rounded to the nearest tenth.

See Attachment C for CalEEMod worksheets.

Table 4 Annual Operational Emissions (tons/year)

	Average Annual Emissions					
Sources	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**
Annual Operational Emissions						
Mobile	<1	<1	1	<1	<1	<1
Area	<1	<1	1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Stationary Sources (Generators)	<1	<1	<1	<1	<1	<1
Total Emissions	<1	<1	2	<1	<1	<1
BAAQMD Thresholds	10	10	N/A	15	10	N/A
Threshold Exceeded?	**No**	**No**	**N/A**	**No**	**No**	**N/A**

N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; CO = carbon monoxide; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

Notes: All numbers have been rounded to the nearest tenth.

See Attachment C for CalEEMod worksheets.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

There would be no change to the toxic air contaminant (TAC) impacts of the proposed project as compared to the project as analyzed in the Draft EIR. The project, as revised, would still comply with Mitigation Measure AQ-1, which would minimize emissions of TACs during construction. Impacts related to construction and operational TACs would remain less than significant.

Odors

There would be no change to odor impacts as a result of changes to the proposed project description. Impacts would remain less than significant.

Biological Resources

Adverse Effects on Special Status Species, Species Movement

The project location has not changed. The project, as revised, would involve removal of 19 trees, all of which were proposed to be removed as part of the project as analyzed in the Draft EIR. Therefore, the analysis included in Section 4.1, *Biological Resources*, of the EIR remains accurate. As discussed therein, impacts to nesting birds would be potentially significant and Mitigation Measure BIO-1 would still be required to reduce impacts to be less than significant. Mitigation Measure BIO-1 would ensure protection of nesting birds that may be affected during construction activities and would therefore reduce the impact of the project on special-status species and wildlife movement to be less than significant, consistent with the conclusions of the analysis in the Draft EIR.

Effect on a Riparian Habitat

The project location has not changed. The analysis included in Section 4, *Biological Resources*, of Appendix B remains accurate and impacts of the project, as revised, would remain less than significant.

Effect on State or Federally Protected Wetlands

The project location has not changed. The analysis included in Section 4, *Biological Resources,* of Appendix B to the DEIR remains accurate and the project, as revised, would have no impact.

Conflict with Local Policies or Ordinances Protecting Biological Resources

The project location has not changed. As discussed in Section 4.1, *Biological Resources*, of the EIR, under the Tree and Landscape Preservation and Management Ordinance, development approvals for property containing protected public trees are required to include appropriate conditions as set forth in the Tree and Landscape Technical Manual, providing for the protection of such trees during construction and for maintenance of such trees thereafter. A “protected tree” is defined as any tree of the species Coast Live Oak, Valley Oak (greater than 11.5 inches in diameter), and Coast Redwood (greater than 16 inches in diameter).

There are currently 25 trees within or adjacent to the project site. The project, as revised, would preserve six trees off-site (5 street trees and the Coast Live Oak on the adjacent parcel at 519 Byron Street), while removing 19 trees (15 onsite trees and 4 street trees) located in the developable area of the site. Of the 19 trees to be removed, none are “protected trees” under the City’s tree protection ordinance. However, the project, as revised, consistent with the project as analyzed in the Draft EIR, has the potential to impact trees planned for retention.

There is one protected oak tree located on the adjacent parcel at 519 Byron Street that extends onto the site (canopy and root zone). According to the Arborist Report prepared by David L. Babby, Registered Consulting Arborist on February 7, 2024 (David L. Babby 2024; Appendix C), the project design includes a minimum 30-foot setback from the oak tree's trunk for the future building and parking garage, and a minimum setback of 20 feet for ground disturbance beneath the existing asphalt surface, which would ensure protection of the adjacent oak tree. The project, as revised, would include the same setbacks as the project as analyzed in the Draft EIR; therefore, the project, as revised, would not impose on this protected tree any more than what was previously analyzed. As discussed in the EIR, careful shoring placement (for driving piles or a drill rig) and pruning would also limit impacts to the oak tree. Additionally, according to the Arborist Report prepared by Robert Booty on May 23, 2022 (Robert Booty 2022; Appendix C), the edge of proposed excavation for the below-grade parking structure would occur approximately 30 feet from the oak tree. However, the root system of the oak tree extends up to 51 feet and construction activities could potentially result in damages to the root system; this could affect the long-term viability of the tree if tree protection measures are not properly conducted. The project, as revised, would not include any changes to excavation depths or locations compared to the original project and mitigation measures BIO-2 and BIO-3 remain applicable. Similar to the project as proposed and analyzed in the Draft EIR, implementation of mitigation measures BIO-2 and BIO-3 during construction of the project would ensure the protection of on- and off-site trees, especially the protected oak tree, and reduce impacts of the project to be less than significant.

Conflict with a Habitat Conservation Plan

The project location has not changed. The analysis included in Section 4, *Biological Resources*, of Appendix B remains accurate and the project, as revised, would have no impact.

Effect on State or Federally Protected Wetlands

The project location has not changed. The analysis included in Section 4, *Biological Resources*, of Appendix B to the DEIR remains accurate and the modified project would have no impact.

Energy

Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources

Construction Energy Demand

The project, as revised, would include three more units compared to the project as analyzed in the DEIR and would similarly consume energy during project construction in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. Table 5 presents the estimated construction phase fuel consumption for the modified project. Construction equipment would consume approximately 97,727 gallons of diesel fuel; vendor/haul trips would consume approximately 5,198 gallons of diesel fuel; and worker trips would consume approximately 12,040 gallons of gasoline fuel over the project's estimated construction period. Fuel consumption associated with project construction, as revised, would account for approximately 0.3 percent of annual retail diesel sales and approximately 0.002 percent of annual retail gasoline sales in Santa Clara County.

Table 5 Project Construction Fuel Consumption

	Fuel Consumption (gallons)	
Source	**Gasoline**	**Diesel**
Construction Equipment	–	97,727
Construction Vendor Haul Trips	–	5,198
Construction Worker Vehicle Trips	12,040	–
Total	**12,040**	**102,925**

See Attachment D for energy calculation sheets.

Similar to the project as analyzed in the DEIR, the project, as revised, would be required to comply with the same energy and fuel-efficient regulations as discussed in Section 6, *Energy*, of Appendix B and impacts related to the inefficient, wasteful, and unnecessary use of energy during construction would be less than significant.

Operational Energy Demand

The project, as revised, would include three more units compared to the project as analyzed in the DEIR and would similarly consume energy during project operation. The project would continue to include an all-electric design and include the same energy efficient and sustainable design features as outlined in Section 6, Energy, of Appendix B. Table 6 summarizes the estimated operational energy consumption for the project as revised. As shown in Table 6, the project would consume approximately 25,752 gallons of gasoline, which would be less than one percent of Santa Clara County's annual gasoline demand; approximately 3,902 gallons of diesel, which would be less than one percent of Santa Clara County's annual gasoline demand; and 768,908 kilowatts of electricity, which would be approximately 0.09 percent of CPAU's annual electricity demand.

Table 6 Project Operational Energy Consumption

Source Transportation Fuels	Energy Consumption[1]	
Gasoline	25,752 gallons	2,827 MMBtu
Diesel	3,902 gallons	497 MMBtu
Electricity	768,908 kWh/year	2,624 MMBtu

MMBtu = million metric British thermal units; kWh = kilowatt-hours

[1] Energy consumption is converted to MMBtu for each source

See Attachment D for energy calculation sheets and Attachment C for CalEEMod output results for electricity.

Therefore, impacts related to the inefficient, wasteful, and unnecessary use of energy during operation would remain less than significant.

Conflict with a Renewable Energy or Energy Efficiency Plan

The project location has not changed and the project, as revised, would include the same energy efficient and sustainable design features as outlined in Section 6, *Energy*, of Appendix B. Therefore, the consistency analysis included in Section 6, *Energy*, of Appendix B remains accurate and the project, as revised, would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, impacts would remain less than significant.

Greenhouse Gas Emissions

Similar to the project as analyzed in the DEIR, the project as revised would be consistent with BAAQMD's GHG significance criteria 1a since it would include an all-electric design; significance criteria 1b since it would not result in wasteful or unnecessary energy consumption during construction and operation or conflict with existing energy standards and regulations; significance criteria 2a since the project location has not changed and would continue to be located in a transportation analysis zone where daily VMT per resident is 9.39, which is below the City's 15 percent below existing average VMT per resident impact threshold of 11.33 daily VMT; and significance criteria 2b for the residential portion of the project since it would comply with the CALGreen Tier 2 residential electric vehicle requirements. Consistent with the analysis in the DEIR, the project as revised would not satisfy CALGreen Tier 2 electric vehicle requirements for office uses. The project would be subject to a standard City of Palo Alto Condition of Approval to provide the code-compliant number of EVSE parking stalls consistent with Criterion 2b of the BAAQMD thresholds, resulting in less than significant impacts.

Although BAAQMD does not have numeric thresholds for GHG under the updated guidelines, the modified project's emissions inventory is still presented for informational purposes. Table 7 shows the estimated annual operational GHG emissions associated with the project.

Table 7 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions ($MTCO_2e$)
Project Operation	
Mobile	187
Area	1
Energy	0[1]
Water	2
Solid Waste	14
Refrigerants	<1
Stationary	<1
Total Emissions from Proposed Project	**206**

[1] GHG emissions for energy is 0 because Palo Alto has been carbon neutral since 2013, and electricity is derived from non-polluting sources.

Source: Table 2.6 in AQ CalEEMod annual worksheets (Attachment C)

Conflict with a GHG Reduction Plan

The project location has not changed and the project, as revised, would include the same energy efficient and sustainable design features as outlined in Section 6, Energy, of Appendix B. Therefore, the consistency analysis included in Section 8, *Greenhouse Gas Emissions*, of Appendix B remains accurate and the project, as revised, would have a less than significant impact on conflicting with or obstructing a State or local plan for renewable energy or energy efficiency.

Hazards and Hazardous Materials

Transport, Use, Disposal, or Release of Hazardous Materials

The project would be constructed on the same site for which the Phase I ESA was prepared and the proposed uses for the mixed-use development have not changed. Therefore, the findings of the ESA,

as described in Section 9, *Hazardous Materials*, of Appendix B to the DEIR would remain applicable to the project. The analysis included in Section 9, *Hazards and Hazardous Materials,* of Appendix B remains accurate and impacts of the project, as revised, would remain less than significant.

Emission of Hazardous Materials and Significant Hazards to the Public or the Environment

The project location and proposed uses have not changed. Therefore, the analysis included in Section 9, *Hazards and Hazardous Materials*, of Appendix B remains accurate and impacts of the project, as revised, would be less than significant.

Safety Hazards within an Airport Land Use Plan

The project location has not changed. Therefore, the analysis included in Section 9, *Hazards and Hazardous Materials*, of Appendix B remains accurate and the project, as revised, would have no impact.

Interference with an Adopted Emergency Response or Emergency Evacuation Plan

The project would involve the demolition of existing buildings and the construction of a six-story mixed-use building. The new building would not obstruct existing roadways, require full road closures during construction, or require the construction of new roadways or access points. Therefore, the proposed building would not block emergency response or evacuation routes or interfere with adopted emergency response and emergency evacuation plans. The project, as revised, would continue to result in no impact.

Risk of Loss, Injury, or Death Involving Wildland Fires

The project location has not changed. Therefore, the analysis included in Section 9, *Hazards and Hazardous Materials*, of Appendix B remains accurate and the project, as revised, would have no impact.

Land Use and Planning

Physical Division of an Established Community

The proposed project would involve the construction of a six-story mixed-use building on three contiguous existing parcels in a fully urbanized area in Palo Alto. The project would not separate connected neighborhoods or land uses from each other. No new roads, linear infrastructure, or other development features are proposed that would divide an established community or limit movement, travel, or social interaction between established land uses. Therefore, the project, as revised, would have no impact.

Conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

CONSISTENCY WITH THE PALO ALTO MUNICIPAL CODE

The project site is currently zoned Low Density Multiple-Family Residential (RM-20), which permits a mixture of single-family and multiple-family housing. Table 8 compares existing Low Density Multiple-Family Residential (RM-20) standards to the project, as revised. As shown in the table, the project would not be compliant with the allowable density, FAR, building height, usable open space,

site coverage, rear setback, and street side setback standards for RM-20. To allow for these increases, the applicant has submitted an application for a rezoning of the site to Planned Community (PC) (also referred to as the Planned Home Zoning, PHZ, zone) in accordance with PAMC Section 18.38. This rezoning process allows housing projects that exceed the otherwise applicable Development Standards in exchange for public benefits, which may include the benefit of new housing units, increased inclusionary units, and/or inclusionary units provided at a deeper level of affordability, among other benefits, within the City of Palo Alto. According to PAMC Section 18.38.010, the Planned Community (PC) zone is "intended to accommodate developments for residential, commercial, professional, research, administrative, industrial, or other activities, including combinations of uses appropriately requiring flexibility under controlled conditions not otherwise attainable under other districts."

Table 8 Zoning Development Standards Comparison Table

Project Characteristics	RM-20 Requirements[1]	Project as Revised	Project Compliance with RM-20 Requirements
Density	20 du/ac	140 du/ac	Requested exception
Floor Area Ratio	0.5: 1	3.1	Requested exception
Building Height	30 ft (maximum)	77 ft 11 in to mechanical screen	Requested exception
Useable Open Space (private and common)	150 sf per unit (9,900 sf)	6,842 sf	Requested exception
Site Coverage	35%	50.5%	Requested exception
Front Setback	24 ft	25 ft	Complies
Rear Setback	16 ft	11 ft	Requested exception
Interior Side Setback	10 ft (when abutting a residential district)	26 ft	Complies
Street Side Setback	16 ft	7 ft	Requested exception
Parking			
Garage Parking	0.5 spaces per residential unit 1 space per 250 sf of office space	Office: 7 stalls Residential: 71 stalls Total: 78 stalls	Consistent with 13% TDM reduction
Total Bicycle Parking Spaces	1 space per residential unit 1 space per 2,500 sf of office space	88 spaces (80 residential and 8 office)	Complies

[1] Per PAMC Section 18.13.040, development standards for the RM-20 district.

Similar to the project as analyzed in the DEIR, the project as revised would also be required to comply with the City's Below Market Rate (BMR) Program (PAMC Chapter 16.65). This program requires developers of projects with five or more units to provide 15 percent of the units to be affordable or to pay in-lieu fees to fund affordable housing projects in the city. The project as revised would continue to exceed the number of BMR housing required to be provided under the base zoning, providing 20 percent, or 14 units, of BMR housing. The PC rezoning process, as set forth in PAMC Section 18.38, also requires review and recommendation by the Architectural Review Board. Therefore, with approval of the rezone, the project, as revised, would continue to be consistent with applicable regulations in the PAMC and impacts would be less than significant.

CONSISTENCY WITH THE PALO ALTO COMPREHENSIVE PLAN

Like the project, as analyzed in the DEIR, the project, as revised, would require a Comprehensive Plan Text Amendment to allow existing office uses and square footages to be maintained when part of a housing development project in a Planned Community Zone District, where typically only residential and other limited neighborhood serving uses (such as daycares) would be allowed. The proposed amendment to the Multi-family land use designation would remain consistent with the vision for the multi-family land use designation to provide multi-family land uses and smaller, neighborhood serving commercial uses.

The project, as revised, would involve the construction of a new mixed-use development with office space on the first floor and 70 dwelling units. Although the project as revised would include six stories, or four more stories compared to the existing uses, the project would be generally consistent with the scale of surrounding properties such as the Lytton Gardens Assisted Living building across University Avenue, which is four stories. In addition, the project would be located in an area with a range of residential densities, from the single-family residence immediately adjacent to the site to the Lytton Gardens Assisted Living building west of the project site and The Hamilton retirement community east of the project site, and therefore would not result in abrupt, substantial changes in density. The proposed use and development of the project, as revised, would not conflict with any plans or policies set forth in the Comprehensive plan, and is generally consistent with the scale and character of neighboring uses. Therefore, the project, as revised, would not conflict with the City's Comprehensive Plan and this impact would be less than significant.

Noise

Construction Noise

The project location and general footprint have not changed. While the building height of the proposed project has increased from four stories to six stories, this modification would not substantially change the quantity, size, or type of construction equipment. Therefore, the analysis included in Section 4.2, *Noise*, of the EIR remains accurate. As discussed therein, noise during the highest intensity phase of construction would be below the City's Municipal Code threshold of 110 dBA L_{max}. Nevertheless, if uncontrolled, construction activity may cause a temporary increase of noise levels in the project vicinity. Therefore, Mitigation Measure N-1, which is discussed in Section 4.2, *Noise*, of the EIR, is recommended to further reduce noise levels during construction.

Mechanical Equipment Noise

The project location and general footprint have not changed. The building height of the proposed project has increased from four stories to six stories. Although the roof-mounted HVAC units would be located at a greater height, this conservative analysis does not consider the height of the proposed project as a factor that would attenuate project-related noise due to additional distance between the sensitive receptors and noise source. Therefore, the analysis included in Section 4.2, *Noise*, of the EIR remains accurate. As discussed therein, noise generated by HVAC equipment would not produce a noise level of 3 dBA above the local ambient noise level of 63 dBA L_{dn}. In addition, project HVAC noise would be approximately 37 dBA L_{eq} at 80 feet at other nearby sensitive receptors, such as the Lytton Garden Assisted Living facility to the northwest, which are further from proposed project buildings. This impact would be the same as the project as analyzed in the DEIR and remains less than significant.

Off-Site Traffic Noise

The project site and general footprint. The project trip generation rate would decrease from 284 daily trips to 213 daily trips with the addition of seven additional residential units and the reduction in 7,131 square feet of office space. The project's traffic noise increase due to 213 new trips would be 0.1 dbA L_{dn} on the most affected roadway[3], which would not exceed the most stringent 1.5 dBA L_{dn} threshold for off-site traffic noise impacts. Therefore, compared to the analysis included in Section 4.2, *Noise*, of the EIR, impacts would remain less than significant.

Outdoor Amenities

The rooftop terrace has been removed. Therefore, compared to the analysis included in Section 4.2, *Noise*, of the EIR would be reduced related to outdoor amenities .

Construction Vibration

The project location and general building footprint have not changed. The building height of the proposed project has increased from four stories to six stories. The additional height would not substantially change the quantity, size or type of vibration-generating construction equipment used. The analysis in Section 4.2, *Noise,* of the EIR remains applicable, including the inclusion of Mitigation Measure N-2.

Population and Housing

Substantial Unplanned Population Growth

Table 9 includes a comparison between the population growth associated with the project as analyzed in the DEIR and the project, as revised.

Table 9 Population Growth Comparison Between the Original Project and the Modified Project

	Project as Analyzed in the DEIR	Project as Revised
Residential Units	63 units	70 units
Number of Additional Residents	156 new residents	174 new residents
Citywide population with implementation of the project	67,443 persons	67,461 persons
Total number of housing units in the City	29,348 unit	29,418 units

The project, as revised, would include 70 new residential units as well as office space (replacing an existing office use) and would therefore directly generate population growth. Based on the estimated persons per household number of 2.48 (DOF 2023), the project would add an estimated 174 new residents[4] , which would increase the City population to 67,461, or an increase of approximately 0.2 percent. The City also currently has 29,285 housing units. The addition of 70 units would bring the total number of housing units to 29,418, or an increase of approximately 0.2 percent. ABAG projections estimate that the number of housing units in the North Santa Clara County would increase from 107,000 in 2015 to 320,000 by 2050. The housing growth associated with the project is therefore well within the growth forecasts for North Santa Clara County in Plan Bay Area 2050, which projects a 199 percent increase in housing for North Santa Clara County.

[3] As calculated using the same formula and methodology in Table 4.2-8 of the EIR.

[4] 70 new residential units x 2.48 persons per household = 174 new residents.

Therefore, the proposed project would not substantially induce population growth through the provision of new housing units.

As discussed in the City's Comprehensive Plan 2015-2023 Housing Element (adopted November 2014), the City has a jobs/housing imbalance skewed to the jobs side of the ratio. This trend requires the City to import most of its workers to meet the needs of business and industry, indicating an unmet need for housing in the City. The project as revised would result in a reduction in office space from 9,115 square feet to 1,984 square feet and would generate approximately eight employees that could indirectly generate population growth and a greater need for employee housing. However, when accounting for the current existing office use on site, which generated approximately 37 jobs[5], the project as revised would generate 28 less employees. The proposed project would provide 70 housing units, which would improve the jobs to housing ratio. Therefore, the project as revised would not adversely affect the jobs to housing ratio and impacts would be less than significant.

Displacement of Existing People or Housing

The project location has not changed. Therefore, the analysis included in Section 14, *Population and Housing*, of Appendix B remains applicable and the project, as revised, would have no impact.

Public Services

Police and Fire Services

The project location has not changed. While the population associated with the project, as revised, would be slightly higher than what was assessed in the DEIR, the project would remain consistent with the development goals and vision of the 2030 Comprehensive Plan as well as ABAG population estimates. Therefore, the analysis of police and fire services as written in Section 15, *Public Services*, of Appendix B remains accurate and impacts would be less than significant.

Schools

The project, as revised, would include up to 70 new residential units. Assuming a conservative student generation rate of one student per residential unit, the proposed project would generate up to 70 additional students at PAUSD schools. The analysis of school impacts included in Section 15, Public Services, of Appendix B remains accurate and impacts would be less than significant. Pursuant to Senate Bill 50 (Section 65995(h)), payment of mandatory fees to the affected school district would reduce potential school impacts to less than significant level under CEQA. If approved, this project would be subject to the Palo Alto Unified School District School Impact Fees, which are assessed based on proposed land use and floor area. Therefore, the project, as revised, would not have a significant impact with respect to schools.

Other Public Facilities

The project, as revised, would generate a population growth of approximately 174 new residents. This level of population growth would not be substantial and would not require the construction of new library facilities. Therefore, similar to the project as analyzed in the DEIR, the project as revised would have less than significant impacts.

[5] 9,216 square feet of existing office space/250 square feet per employee = 37 employees.

Recreation

Increased Use of Existing Public Facilities which would Substantially Deteriorate the Facility and the Construction and Expansion of Recreational Facilities

As explained above under ***Population and Housing***, the project, as revised, would generate an estimated 174 new residents, which would represent less than one percent of the total citywide population. As with the project as analyzed in the DEIR, the incremental increase in new residents derived from the project would not substantially alter citywide demand for parks such that substantial physical deterioration of parks would occur, or the construction of new recreational facilities would be required.

The proposed project would not include recreational facilities other than the on-site areas that would serve future residents and employees of the project. Therefore, the analysis of recreational impacts included in Section 16, *Recreation*, of Appendix B remains accurate and impacts would be less than significant.

Transportation

Conflict with policies Addressing Transit, Roadway, Bicycle, or Pedestrian Facilities

The project, as revised, would be located on the same site previously analyzed in Section 4.3, *Transportation*, of the EIR. Additionally, according to the revised Transportation Impact Analysis prepared by Hexagon Transportation Consultants, Inc. in September 2025 and included as Attachment E to this document, the project, as revised, would generate 15 net new a.m. peak hour trips and 11 net new p.m. peak hour trips, which is below the significance threshold adopted by the City (50 net new a.m. or p.m. peak hour trips). Furthermore, the project, as revised, would not remove existing bike/pedestrian facilities, nor would it preclude future planned improvements. Therefore, the analysis included under impact TRA-1 in Section 4.3, *Transportation*, of the EIR would remain accurate and impacts of the project as revised would be less than significant.

Impacts related to CEQA Guidelines section 15064.3, subdivision (b)

As discussed in Section 4.3, *Transportation*, of the EIR, a significant impact would occur if the project generates an average daily home-based VMT exceeding 11.33 miles per county resident, which is equivalent to 15 percent below the existing County metric. As discussed in Attachment E, the project, as revised, would be located in a Transportation Analysis Zone (TAZ) where the daily VMT per resident is 9.39, which is below the threshold of 11.33. Additionally, there would be a net decrease in office space from 9,216 square feet under existing conditions to 1,984 square feet under the project, which would result in a net reduction in VMT. Therefore, the proposed project would result in a less than significant VMT impact for both the residential and office components.

Utilities and Service Systems

Water and Wastewater

The Preliminary Domestic Water and Sanitary Sewer Demand Memorandum provided by BKF on May 13, 2022, and included as Appendix G to the Initial Study, analyzed the water and wastewater generation for a project with 65 residential units and 9,115 square feet of commercial space. The project as revised would result in five additional residential unit and the 7,131 fewer square feet of commercial space as previously analyzed. Using the methodology included in the Preliminary

Domestic Water and Sanitary Sewer Demand Memorandum, the addition of five residential units would result in an additional 840 gallons of water per day for a total of 13,227 gallons per day[6]. The project, as revised, would constitute less than one percent of excess water supply in 2025. Therefore, the city would have sufficient water supplies available to serve the project. Although additional supplies are needed in drought years, the City has prepared a Water Shortage Contingency Plan (WSCP) which includes water use restrictions that depends on local conditions and the length of water shortage or droughts. The WSCP identifies measures appropriate for various stages of action, based on reduction targets for each stage, and would help the City reduce potable water consumption (City of Palo Alto 2022). The project, as revised, would continue to be required to comply with reduction targets during drought years.

Additionally, the project, as revised, would increase wastewater generation on the project site by 800 gallons per day for a total of 12,567 gpd[7]. As discussed in Appendix B to the DEIR, the RWQCP has a dry weather flow capacity of 39 mgd and has an excess capacity of approximately 22 mgd. The increase in wastewater generation associated with the project would be approximately 0.06 percent of the existing unused capacity of the RWQCP. Therefore, there would be sufficient wastewater capacity to serve the project site. The project, as revised, would not exceed wastewater treatment requirements or require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. The project, as revised, would not result in a substantial physical deterioration of public wastewater facilities.

Therefore, no new or expanded facilities would be needed to serve the project, and impacts would remain less than significant.

Stormwater

The project site has not changed and the project, as revised, would include the same surface runoff system and would have the same volume of surface water runoff as the original project. The discussion in Section 10, *Hydrology and Water Quality*, and Section 19, *Utilities and Service Systems*, of Appendix B remains accurate.

Electricity, Natural Gas, and Telecommunications

The project, as revised, would continue to be served by CPAU for electricity. Long-term operation of development projects would require permanent grid connections for electricity and natural gas service to power internal and exterior building lighting, and heating and cooling systems. As described above under the *Energy* subheading, the project would require approximately 0.77 gigawatt hours (GWh) of electricity. The City consumed approximately 825.4 GWh of electricity in 2020 (CEC 2021c). Thus, the project would only account for 0.09 percent of the projected energy use for the City. Additionally, similar to the project as analyzed in the DEIR, the project would have to comply with the California Building Standards Code, California's CALGreen standards, and the 2022 Building Energy Efficiency Standards to minimize wasteful, inefficient, or unnecessary consumption of energy resources and meet energy performance standards. Accordingly, like the project as analyzed in the DEIR, the project as revised would be accommodated adequately by existing electricity and telecommunication facilities and would not require improvements to existing facilities, or the provision of new facilities, that would cause significant environmental effects. Therefore, impacts would remain less than significant.

[6] 12,387 gpd + 840 gpd = 13,227 gpd

[7] 11,767 gpd + 800 gpd = 12,567 gpd

Solid Waste

As shown in Table 10, the project, as revised, would generate approximately 292 pounds, or 0.15 tons, of solid waste per day. The incremental increase in solid waste associated with the project would be within the permitted capacities of Kirby Canyon Landfill. As with the project as analyzed in the DEIR, the project would still be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. The project, as revised, would not result in a substantial physical deterioration of public solid waste facilities. Furthermore, the project as revised would be required to comply with all federal, state, and local solid waste regulations, such as the Palo Alto Recycling and Composting Ordinance and SB 1383. Impacts would remain less than significant.

Table 10 Estimated Solid Waste Generation

Type of Use	Quantity	Generation Factor	Total (lbs/day)	Total (tons/day)
Residential	70 du	4 lbs/du/day	280	0.14
Office	1,984 sf	6 lbs/1,000 sf/day	12	0.006
Total solid waste sent to landfill			**292**	**0.15**
Total solid waste sent to landfill assuming 50% diversion rate			**146**	**0.07**

Source: CalRecycle Waste Generation Rates 2018. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates

Notes: du=dwelling unit, lbs = pounds, sf = square feet

Other Impact Areas

Agriculture and Forestry Resources

The project location has not changed. Therefore, the analysis included in Section 2, *Agriculture Resources*, of Appendix B of the DEIR remains accurate and impacts of the project as revised would continue to be less than significant.

Cultural Resources

The project location, general footprint, and depth of construction have not changed. Therefore, the analysis included in Section 5, *Cultural Resources*, of Appendix B of the DEIR remains accurate and impacts of the project as revised would continue to be less than significant with implementation of Mitigation Measures CUL-1 and CUL-2.

Geology and Soils

The project location and type of construction has not changed. Therefore, the analysis included in Section 7, *Geology and Soils,* of Appendix B to the DEIR remains accurate and impacts of the project as revised would continue to be less than significant with implementation of Mitigation Measure GEO-1.

Hydrology and Water Quality

The project location has not changed. Additionally, the same types of heavy equipment would be used and the same amount of new impervious space would be created. The project would continue to be subject to all the regulations included in the hydrology analysis in Appendix B. Therefore, the analysis in Section 10, *Hydrology and Water Quality,* of Appendix B to the DEIR remains accurate and impacts of the project would continue to be less than significant.

Mineral Resources

The project location has not changed. Therefore, the analysis included in Section 12, *Mineral Resources*, of Appendix B to the DEIR remains accurate and the project would have no impact.

Tribal Cultural Resources

The project location, depth of excavation, and extent of ground disturbance have not changed. Therefore, the analysis included in Section 18, *Tribal Cultural Resources,* of Appendix B to the DEIR remains accurate the project as revised would continue to have less than significant impacts with implementation of mitigation measure TCR-1.

Wildfire

The project location has not changed. Therefore, the analysis included in Section 20, *Wildfire*, of Appendix B to the DEIR remains accurate, and the project, as revised, would have no impact.

Attachment A

Revised Initial Study

Initial Study



660 University Avenue Mixed Use Project

prepared by	City of Palo Alto Planning and Development Services Department Development Center 285 Hamilton Avenue, Suite 100 Palo Alto, California 94301 Contact: Emily Kallas, AICP, Planner
prepared with the assistance of	Rincon Consultants, Inc. 449 15th Street, Suite 303 Oakland, California 94612
Report Date	April 2024

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INITIAL STUDY

This section describes the proposed project, including the project applicant, the project site and surrounding land uses, major project characteristics, project objectives, and discretionary actions needed for approval.

1. LEAD AGENCY AND CONTACT

City of Palo Alto
Planning and Development Services Department
285 Hamilton Avenue, Suite 100
Palo Alto, California 94301
Contact: Emily Kallas, AICP, Planner, (650) 617-3125

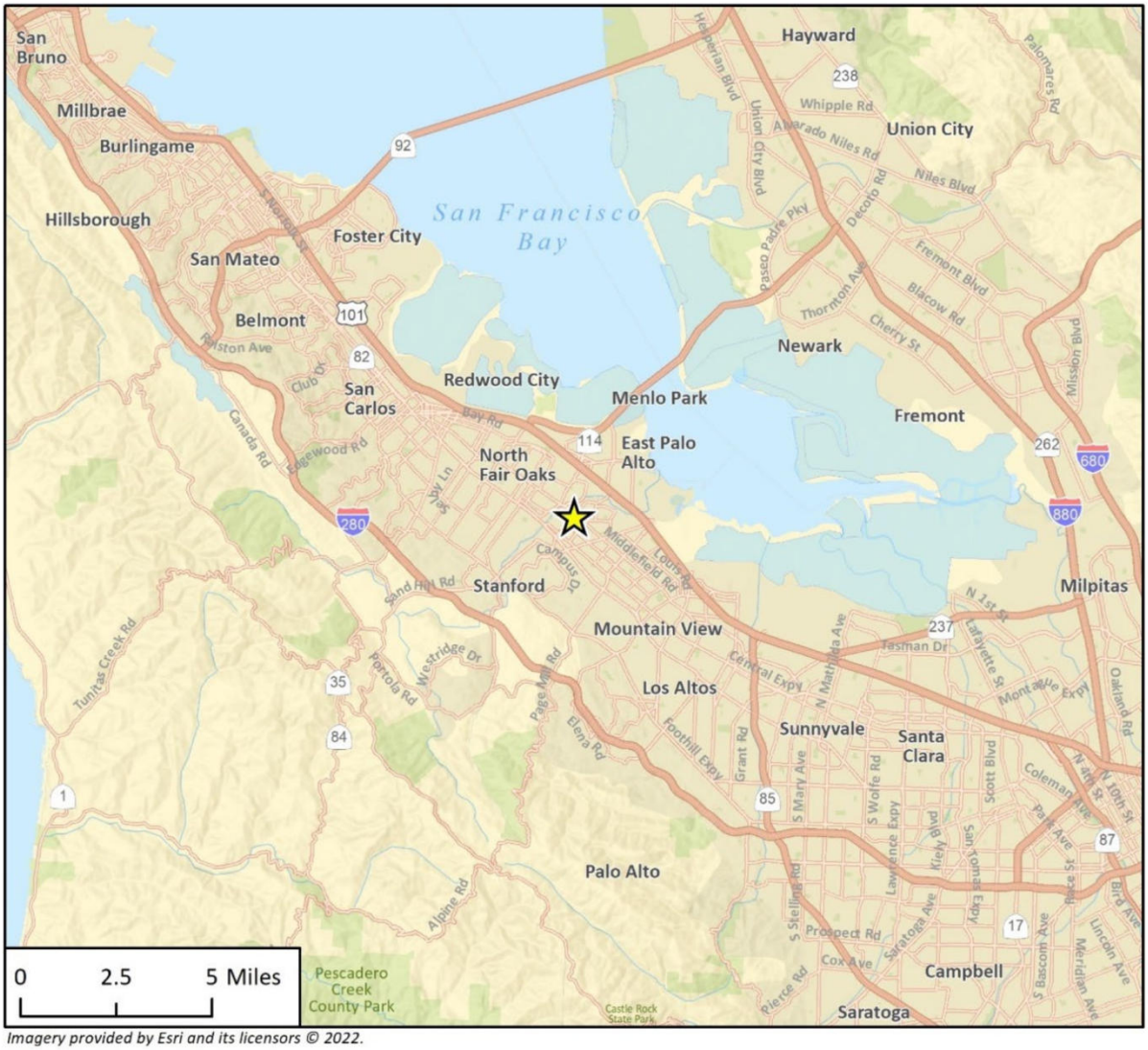
2. PROJECT APPLICANT

Smith Development
682 Villa Street, Suite G
Mountain View, California 94041

3. PROJECT LOCATION

Figure 1 shows the regional location of the project site and Figure 2 shows the project site's immediate location and selected nearby land uses. For the purposes of this analysis, the "project site" includes the entire area bounded in a yellow line on Figure 2. The project site encompasses approximately 0.5 acres (22,526 square feet) across three parcels. The project site includes all of Assessor's Parcel Numbers (APNs) 120-03-042, 120-03-043, and 120-03-044 at the addresses of 511 Byron Street, 660 University Avenue, and 680 University Avenue/500 Middlefield Road, respectively. The site is bounded by the intersection of University Avenue and Middlefield Road to the north; Middlefield Road to the east; Byron Street, Cardinal Dental, a single-family residence, and The Hamilton Independent Senior Living community to the south; and University Avenue to the west.

Figure 1 Regional Location



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Project Location

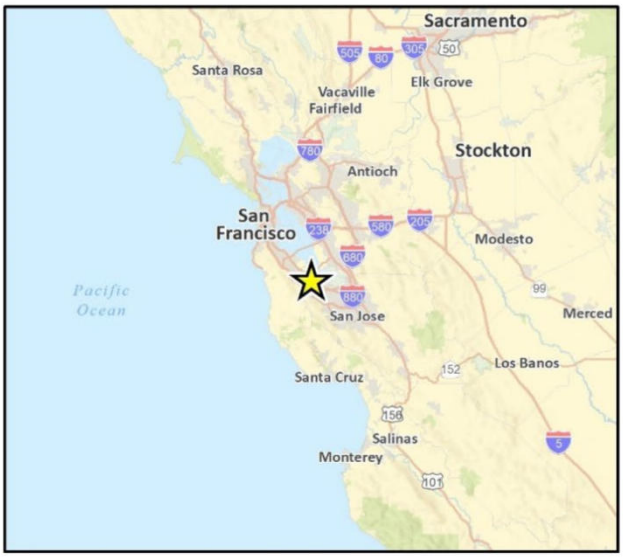


Figure 2 Project Location



4. CURRENT ZONING AND EXISTING SITE CHARACTERISTICS

CURRENT LAND USE AND ZONING DESIGNATIONS

The project site has a 2030 Comprehensive Plan designation of Multiple Family Residential (MF). The City of Palo Alto's 2030 Comprehensive Plan Land Use and Community Design Element (City of Palo Alto 2017) defines the Multiple-Family Residential category as follows:

> The permitted number of housing units will vary by area, depending on existing land use, proximity to major streets and public transit, distance to shopping and environmental problems. Net densities will range from 8 to 40 units and 8 to 90 persons per acre. Density should be on the lower end of the scale next to single-family residential areas. Densities higher than what is permitted may be allowed where measurable community benefits will be derived, services and facilities are available, and the net effect will be consistent with the Comprehensive Plan. Population densities will range up to 2.25 persons per unit by 2030.

The project site is within the Low Density Multiple-Family Residence District (RM-20). The Palo Alto Municipal Code (PAMC) defines the RM-20 district as follows:

> The RM-20 low-density multiple-family residence district is intended to create, preserve and enhance areas for a mixture of single-family and multiple-family housing which is compatible with lower density and residential districts nearby, including single-family residence districts. The RM-20 residence district also serves as a transition to moderate density multiple-family districts or districts with nonresidential uses. Permitted densities in the RM-20 residence district range from eight to twenty dwelling units per acre (PAMC Section 18.13.010).

SURROUNDING LAND USES

The project site is in a neighborhood characterized by a mix of uses including residential development and commercial offices. Uses to the north on the other side of the University Avenue and Middlefield Road intersection, east across Middlefield Road, and southwest across Byron Street comprise primarily of office uses such as medical offices, corporate offices, software companies, and law services. Uses directly adjacent to the east and southeast of the project site include Cardinal Dental, a single-family residence, and an Independent living facility. Uses further south across Byron Street include a preschool and church. Uses northwest of the site across University Avenue include an assisted living facility and a skilled nursing facility.

EXISTING PROJECT SITE CONDITIONS

The project site is developed with two office buildings located on the parcels at 511 Byron Street and 680 University Avenue/500 Middlefield Road, respectively, that are currently used by dental offices, and a surface parking lot. The total floor area of the building at 511 Byron Street is approximately 5,260 square feet and the total floor area of the building at 680 University Avenue/500 Middlefield Road is approximately 3,955 square feet. The project site is generally flat with minimal sloping and an elevation of approximately 40 feet

above mean sea level. Aside from some perimeter landscaping and trees, the project site is almost entirely covered in impermeable surfaces. One oak tree, considered a "protected tree" under the City's Tree Protection Ordinance, is located on the adjacent parcel at 519 Byron Street and its canopy and root zone extend into the eastern portion of the site. Figure 3 shows photographs of the existing buildings on the project site and the oak tree on the adjacent parcel.

Figure 3 Photographs of Project Site – Photographs 1 through 4



Photograph 1. View of existing structure at 511 Byron Street (on the left side of the frame), taken from Byron street, looking northeast. The adjacent structure at 517 Byron Street is visible in the right side of the frame.



Photograph 2. View of existing parking lot on the project site and the oak tree on the adjacent parcel, taken from the University Avenue sidewalk looking southeast. The two existing on-site structures are visible on either site of the parking lot.



Photograph 3. View of the existing structure on the project site at 500 Middlefield Road (on the right side of the frame) from Middlefield Road looking southwest. The adjacent structure at 524 Middlefield Road is visible in the left side of the frame.



Photograph 4. View of protected oak tree on the adjacent parcel, taken from the interior of the project site.

5. PROJECT DESCRIPTION

PROJECT OVERVIEW

The proposed project would involve merging the three parcels, demolition of the two existing on-site office buildings and the surface parking lot and construction of a four-story mixed-use building with two levels of below grade parking. Proposed uses include 9,115 sf of office space, 63 residential units, and parking. Table 1 provides a summary of the proposed development and Figure 4 shows the proposed site plan. The office space, an office lobby, and a residential lobby would be located only on the first floor. The remaining three stories above the office space would be used for residential units.

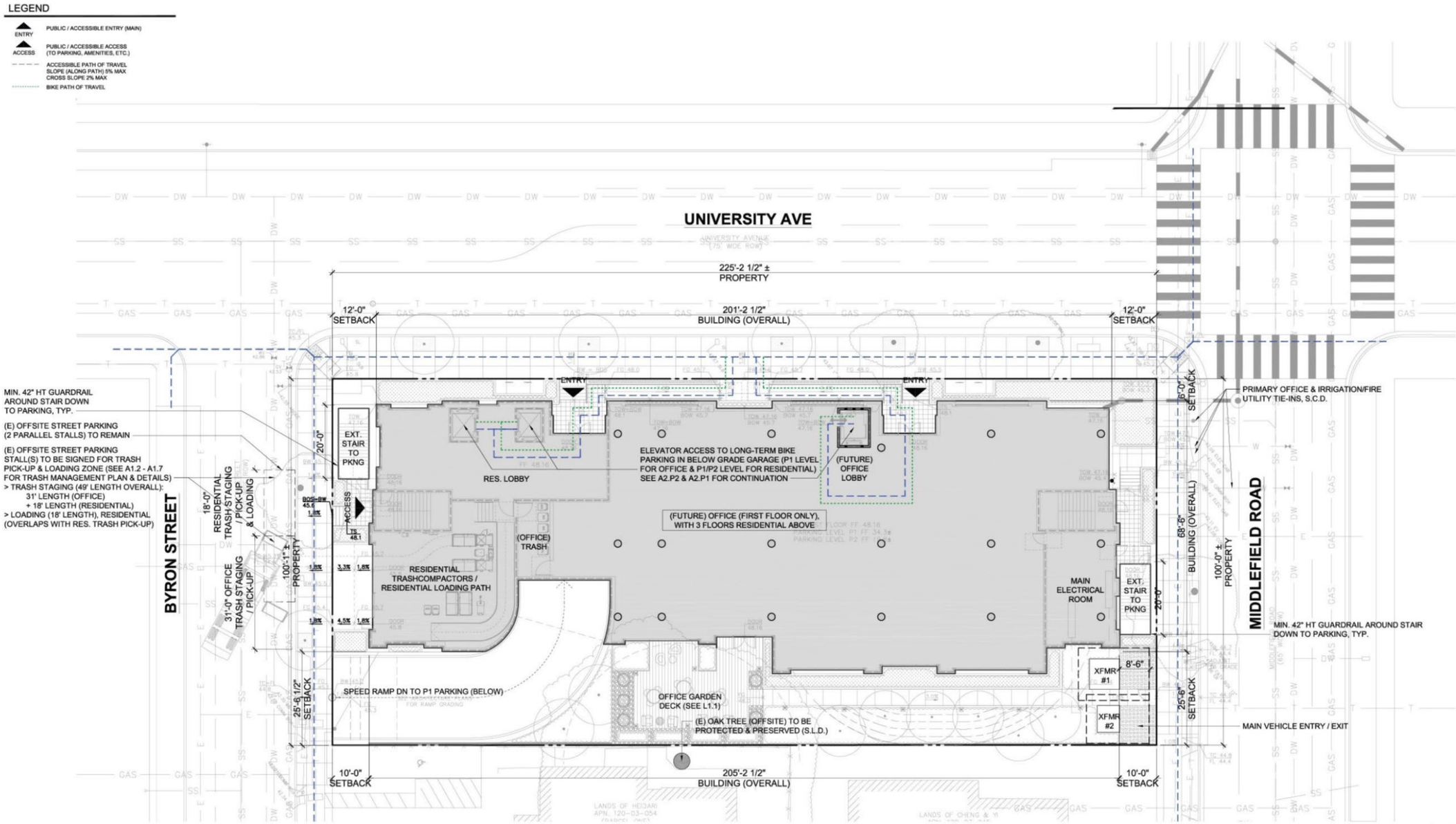
Residential units would include studios, one-bedroom units, and two-bedroom units ranging from 387 square feet to 755 square feet. The project would provide 20 percent affordable housing units (13 units) and the project applicant is therefore seeking allowances through the discretionary Planned Community (PC) rezoning process pursuant to Palo Alto Municipal Code (PAMC) Section 18.38. The proposed PC ordinance for this site would include the following allowances that deviate from the RM-20 Zone District development standards:

- **Floor area ratio (FAR) maximum.** The project would have a maximum FAR of 2.19 where a FAR of 0.5:1 is currently permitted.
- **Setback requirement.** The project site is subject to front yard, street side yard, and street rear yard setback requirements. The project would have a front yard (Middlefield Road) setback at a minimum of 10 feet where a 24-foot special setback is currently required; a street side yard (University Avenue) setback at a minimum of 10 feet where 16 feet is currently required; and a street rear yard (Byron Street) setback at a minimum of 10 feet where 16 feet is currently required.
- **Height requirement.** The project would have a maximum building height of 50 feet and 8.5 inches to the top of the roof terrace where a building height of 30 feet is currently permitted.
- **Density requirement.** The project's density would be 63 units per approximately 0.5 acres, or approximately 126 dwelling units per acre (du/ac) where 20 du/ac are currently allowed.
- **Lot coverage.** The project would have 58% lot coverage where a maximum of 35% lot coverage with an additional 5% coverage allocated for covered patios is currently permitted.
- **Open space requirement**. The RM-20 zone district requires 50 square feet of private open space and 75 square feet of common open space per residential unit. The proposed units that include balconies and terraces would have a range of approximately 60 square feet to 490 square feet of private open space per unit. Eight units would not have private open space. The project would not meet the common open space requirement; however, the proposed combined private and common space[1] would exceed the total open space minimum requirement.

[1] The project proposes 5,230 sq ft of private open space and 4,642 sq ft of common space for a total of 9,872 square feet of combined private and common space, which exceeds the minimum 9,450 square feet of total open space required.

The rezoning of a site to PC for a residential use has more recently been referred to as "Planned Home Zoning" to emphasize the focus on housing as the benefit to the community. However, PAMC Section 18.38, which outlines the requirement and process for Planned Community (PC) Zoning remains the underlying code supporting application of this policy. In accordance with the PC rezoning process, the project would provide housing, including affordable housing with 20 percent of the units below market rate, as the project's public benefit. The applicant is also asking Council to consider the medical office use as a public benefit, as the residents, especially senior citizens living in the neighborhood can walk to this location. The project would also require a Comprehensive Plan Text Amendment to the Multi-family land use designation allow for existing nonconforming office use to be retained if proposed as part of a housing development project.

Figure 4 Proposed Project Site Plan



Source: KSH Architects, 2023

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Table 1 Proposed Residential Development Summary[1]

Feature	Details
Proposed Office Area	
Office Area	First Floor: 9,115 square feet
Floor Area Ratio (FAR)	**0.4**
Proposed Residential Area	
Residential Area	First Floor (Lobby): 1,418 square feet Second Floor (22 Units): 13,224 square feet Third Floor (22 Units): 13,224 square feet Fourth Floor (19 Units): 11,840 square feet Total (63 Units): 39,806 square feet
Floor Area Ratio (FAR)	**1.77**
Density	**63 dwelling units per 0.5 acres (or 126 du/ac)**
Setbacks	
Building Height	**50 feet 8.5 inches**
Front Yard (Middlefield Road)	**Minimum of 10 feet**
Street Side Yard (University Avenue, Arterial Roadway)	**Minimum of 6 feet**
Street Rear Yard (Byron Street)	**Minimum of 10 feet**
Interior Side Yard	Minimum of 19 feet 6.5 inches
Proposed Parking	
Below Grade Parking	Below Grade Level P2 (51 Stalls): 18,038 square feet Below Grade Level P1 (28 Stalls): 19,767 square feet
Proposed Number of Stalls	Office: 18 stalls Residential: 52 stalls ADA/Accessible: 9 stalls **Total: 79 stalls**
Number of Accessible Parking Spaces (ADA)	2 ADA on P2 7 ADA on P1
Number of Electric Vehicle Supply Equipment (EVSE) Parking Spaces	Office: 5 spaces **Residential: 50 spaces**
Total Bicycle Parking Spaces	Short-Term (Racks): 5 bicycle spaces Long-Term (Secured Enclosure): Approximately 100 bicycle spaces at residential (80 spaces) and office area (20 spaces)
Proposed Open Space	
Private Open Space (private unit balconies/terraces)	5,230 square feet
Common Open Space (roof terrace)	4,642 square feet
Ground Level Open Space	9,455 square feet
Total Residential Open Space	9,872 square feet
Total Open Space	19,327 square feet
Lot Coverage	**13,071 square feet (58%)**

[1] As described under Project Overview above, the **bolded** characteristics shown in this table seek to deviate from the existing RM-20 zoning.

CIRCULATION, ACCESS, AND PARKING

Primary pedestrian access to the proposed residential units and office space would be provided via two entrances on University Avenue: one leading to the office lobby and one leading to the residential lobby. Secondary doors are on all other sides of the building. Separate elevators would be provided for office and residential uses. Vehicular access would be provided via an entrance on Byron Street, which would grant access to the below grade parking lots. The project would include a total of 79 stalls, with 28 stalls on Level P1, 51 and stalls on Level P2 including 9 ADA stalls. The project would also include five short term bicycle parking spaces and 100 long term spaces. Short term bicycle parking spaces would be provided via two bicycle racks fronting University Avenue and long term spaces would be provided in dedicated office and residential bike rooms on Level P1 and Level P2.

OPEN SPACE

The project would include common open space in the form of an office garden deck (735 square feet) on the first floor of the office space as well as a roof terrace (4,642 square feet) for residential units. Private open space would be provided in the form of private balconies (5,230 square feet) for most of the units.

LANDSCAPING

There are currently 25 trees within or adjacent to the project site. The proposed project would preserve 6 trees off-site and remove 19 trees mostly located in the center of the site or on the southeast border of the site. Two street trees on the northwest border of the site, one street tree on the northeast corner of the site, one street tree on the southwest border, one street tree along the frontage of the adjoining southeast property, and the Oak tree on the neighboring property would remain. This oak tree, considered as a “protected tree” under the City’s Tree Protection Ordinance, is located on the adjacent parcel at 519 Byron Street and its canopy and root zone extend into the site. The proposed project would not involve removal of the oak tree and would ensure its protection through a root study and implementation of a tree protection plan, further discussed in Section 4, *Biological Resources*, of this Initial Study. The project would involve planting of 12 proposed new trees, 8 on-site and 4 street trees, resulting in a total of 17 trees on site.

Proposed landscaping other than the 12 new trees would include new plantings along the borders of the project site and would include the use of native shrubs, groundcovers, grasses, and perennials. Landscaping would be required to comply with the Bay Friendly Landscape Guidelines. To treat stormwater, the proposed project would include raised concrete treatment planters and flush treatment planters located on the borders of the project site.

BUILDING AND ARCHITECTURE

The buildings would feature a contemporary design, with flat roofs, large rectangular windows with clear vision glass, metal mullions, public art, and a pastel color palette.

CONSTRUCTION

Construction would occur over approximately 23 months and would involve the following phases and timeframes:

- **Demolition:** Approximately 20 days
- **Site preparation:** Approximately 10 days
- **Grading/excavation:** Approximately 55 days
- **Building construction:** Approximately 315 days
- **Site utilities and sitework:** Approximately 90 days
- **Interior/architectural coating:** Approximately 50 days
- **Paving:** Approximately 15 days

To complete the construction of the project, grading would take place over most of the area of development, and approximately 20,000 cubic yards (CY) of soil would be exported, 200 CY of cut soil would be used as fill, and 100 CY of soil would be imported from off-site sources. Excavation would reach a maximum depth of 38 feet based on the lowest proposed parking level below-grade.

UTILITIES

The City of Palo Alto Utilities department (CPAU) provides electric services; natural gas; water; and wastewater collection, treatment, and disposal to the site to the project site. Water is provided through the City's Individual Supply Guarantee with the San Francisco Public Utilities Commission (SFPUC). The City of Palo Alto's Public Works Division provides refuse service and storm drain services to the site. Police and fire protection services would be provided by the City of Palo Alto.

PALO ALTO GREEN BUILDING CHECKLIST

In addition to California Building Code (CBC) requirements, the City of Palo Alto has adopted more stringent green building regulations. The Palo Alto Green Building Ordinance (Ord. 5393, 2017) requires applicants to incorporate sustainable design, construction, and operational requirements into most single-family residential, multi-family residential, and non-residential projects. For residential development, the City has adopted California Green Building Standards Code (CALGreen) Tier 1 for additions and renovations over 1,000 square feet and CALGreen for Tier 2 for new construction. To achieve Tier 2 status, a project must comply with the requirements identified in CALGreen Appendix A4, Division A4.601.5 and be 10 percent more energy efficient than the base CALGreen code requirements. In accordance with the City's Green Building Ordinance, the proposed project would satisfy requirements for CALGreen Tier 2.

6. REQUIRED APPROVALS

The proposed project would require Council approval of the following discretionary entitlements:

- Zoning Code Text Amendment and Zoning Map Amendment to rezone the site to a Planned Community Zone District[2]
- Comprehensive Plan Text Amendment to modify the Multi-family land use designation

No approvals from other public agencies would be required for the proposed development.

7. CALIFORNIA NATIVE AMERICAN TRIBAL CONSULTATION

Tribal consultation is discussed in Section 18, *Tribal Cultural Resources*, of this Initial Study. California Native American Tribes traditionally and culturally affiliated with the project area have not requested consultation pursuant to Public Resources Code Section 21080.3.1.

[2] The rezoning of a site to PC for a residential use has more recently been referred to as "Planned Home Zoning" to emphasize the focus on housing as the benefit to the community. However, PAMC Section 18.38, which outlines the requirement and process for Planned Community (PC) Zoning remains the underlying code supporting application of this policy.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

□	Aesthetics	□	Agriculture and Forestry Resources	■	Air Quality
■	Biological Resources	■	Cultural Resources	□	Energy
■	Geology/Soils	■	Greenhouse Gas Emissions	□	Hazards & Hazardous Materials
□	Hydrology/Water Quality	□	Land Use/Planning	□	Mineral Resources
■	Noise	□	Population/Housing	□	Public Services
□	Recreation	■	Transportation	■	Tribal Cultural Resources
□	Utilities/Service Systems	□	Wildfire	■	Mandatory Findings of Significance

DETERMINATION

Based on this initial evaluation:

□ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

□ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

■ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

□ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

□ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	Title

ENVIRONMENTAL CHECKLIST

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	□	□	■	□
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	□	□	■	□
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	□	□	■	□
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	□	□	■	□

a. Would the project have a substantial adverse effect on a scenic vista?

The 2030 Palo Alto Comprehensive Plan identifies views of the baylands to the northeast and views of the foothills to the southwest as important in contributing to the City's visual character and identity. The 2030 Comprehensive Plan Policy L-9.1 also identifies scenic routes and major view corridors that should be protected: Sand Hill Road, University Avenue, Embarcadero Road, Page Mill Road/Oregon Expressway, Interstate 280, Arastradero Road (west of Foothill Expressway), Junipero Serra Boulevard/Foothill Expressway, and Skyline Boulevard.

The project would involve the construction of a four-story building on a site that currently is developed with two existing one-story office buildings with surface parking. Although the proposed project would be located on University Avenue, which is identified in the 2030 Comprehensive Plan as a scenic route, the scale of the project would be consistent with that of surrounding development, which generally ranges from one to four stories in height. Views through the site from public viewpoints are currently blocked by existing buildings and trees; this condition would be the same after construction of the project. As a result, the proposed project would not substantially block views from University Avenue down the

route. The project would have a less than significant impact on scenic vistas and further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The project site is not located along or in proximity to a California State Officially Designated Scenic Highway (Caltrans 2018). The nearest Officially Designated State Scenic Highway is Interstate 280 (I-280) located approximately four miles southwest of the site. The project would not substantially damage scenic resources within a state scenic highway. This impact would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The project site is in a fully urbanized area. The project would involve the construction of a mixed-use four-story building on a site that currently is developed with two existing one-story office buildings with surface parking. Given existing conditions, the project would increase the massing and intensity of development on the project site and introduce a building with a different architectural style. As described in Section 11, *Land Use and Planning*, the project applicant has submitted an application for a rezoning of the site to Planned Community (PC) (also referred to as the Planned Home Zoning, PHZ, zone) in accordance with PAMC Section 18.38, which would allow exceedances in exchange for the public benefit of new housing units, particularly an increased number of affordable units, within the City of Palo Alto. Although the proposed project would exceed maximum height and FAR the proposed project, the PC approval process, which requires a recommendation from the Architectural Review Board and consistency with the findings set forth in PAMC Section 18.76.020 for Architectural Review, would ensure that the proposed project would be consistent with the scale and character of the community as well as the City's adopted goals, policies, and guidelines related to site design. Furthermore, the proposed project would introduce a building of higher visual quality with a contemporary design compared to the existing buildings and several landscaping elements along the project frontage. The additional landscaping would reduce the visual impact of the project and soften the appearance of the new building. Therefore, given the project's required compliance with applicable findings related to visual quality and its consistency with applicable zoning standards and regulations, it would not conflict with applicable zoning and other regulations governing scenic quality. Impacts would be less than significant, and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The project site is in an urbanized area with moderate levels of existing lighting. The adjacent residential, commercial, and roadway uses generate light and glare along all sides of the property. Primary sources of light adjacent to the project site include lighting associated with the existing residential and commercial buildings, including building-mounted and perimeter lighting as well as interior lighting visible through windows; streetlights; and headlights from vehicles on nearby streets. Sources of light on the project site include interior lighting visible through windows and exterior building lights. The primary sources of glare adjacent to and on the project site include the sun's reflection from metallic and glass surfaces on buildings and vehicles parked on adjacent streets and in adjacent parking areas.

The proposed project would incorporate exterior lighting in the form of pedestrian walkway lighting and other safety-related lighting. Additionally, interior lighting would be visible through the proposed building's windows. These light sources would not have a significant impact on the night sky, as they would only incrementally add to the existing background light levels already present as a result of the surrounding street lighting and urban development. Because of the existing relatively high ambient lighting levels in the vicinity of the project site, project development would not substantially alter this condition. Furthermore, the proposed project would be required to comply with PAMC Section 18.40.250 which outlines guidelines for lighting, such as requiring interior lighting to be designed to minimize nighttime glow visible from and/or intruding into nearby properties, and requiring lighting of building exterior to be of the lowest intensity and energy use and designed to focus illumination downward. Therefore, impacts related to lighting would be less than significant and further analysis in an EIR is not warranted.

The proposed project would include building materials such as glass railings and windows that may create some glare. However, because the project would include below grade parking, glare from vehicles parked on site would be reduced compared to existing conditions. In addition, the proposed project would be required to comply with PAMC Section 18.40.250 which outlines guidelines for glare, such as requiring timing devices and dimmers for exterior and interior lights in order to minimize light glare at night and control lighting levels, and requiring interior lighting to be shielded to eliminate glare and light spillover beyond the perimeter property line of the development. Overall, the proposed project would not create a substantial source of glare that would adversely affect day or nighttime views. Impacts related to glare would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*	□	□	□	■
b. *Conflict with existing zoning for agricultural use or a Williamson Act contract?*	□	□	□	■
c. *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*	□	□	□	■
d. *Result in the loss of forest land or conversion of forest land to non-forest use?*	□	□	□	■
e. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?*	□	□	□	■

a. *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

b. *Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?*

c. *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*

d. *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

The project site is zoned Low Density Multiple-Family Residence District (RM-20) and has a Comprehensive Plan designation of Multiple Family Residential. The project site and adjacent properties are not identified as farmland type under the Farmland Mapping and Monitoring Program and do not support forest land or resources (California Department of Conservation (DOC) 2022). The project site is not located on or adjacent to agricultural land or forest land, and so the project would not result in the conversion of farmland to non-agricultural uses. For the same reasons, the project would have no impact with respect to non-agricultural use; conflict with agricultural zoning or the Williamson Act contract; result in the loss of forest land or conversion of forest land to non-forest use; or conversion of farmland to non-agricultural use. No impact would occur and further analysis in an EIR is not warranted.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. *Conflict with or obstruct implementation of the applicable air quality plan?*	□	□	■	□
b. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*	□	□	■	□
c. *Expose sensitive receptors to substantial pollutant concentrations?*	□	■	□	□
d. *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*	□	□	■	□

AIR QUALITY SETTING

The project site is located within the San Francisco Bay Area Air Basin (the Basin), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). As the local air quality management agency, the BAAQMD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met, and, if they are not met, to develop strategies to meet standards.

Depending on whether the standards are met or exceeded, the Basin is classified as being in "attainment" or "nonattainment." Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The BAAQMD is in non-attainment for the state and federal ozone standards, the state and federal $PM_{2.5}$ (particulate matter up to 2.5 microns in size) standards and the state PM_{10} (particulate matter up to 10 microns in size) standards and is required to prepare a plan for improvement (BAAQMD 2017a).

BAAQMD adopted the 2017 Clean Air Plan (2017 Plan) as an update to the 2010 Clean Air Plan. The 2017 Plan provides a regional strategy to protect public health and the climate. Consistent with the greenhouse gas (GHG) reduction targets adopted by the state, the 2017 Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors (ROG and NO_X) and reduce transport of ozone and its precursors to neighboring air basins. In addition, the 2017 Plan builds upon and enhances

the BAAQMD's efforts to reduce emissions of fine particulate matter and toxic air contaminants (TAC) (BAAQMD 2017b).

AIR POLLUTANT EMISSION THRESHOLDS

The BAAQMD has adopted guidelines for quantifying and determining the significance of air quality emissions in its *2022 California Environmental Quality Act (CEQA) Air Quality Guidelines* (BAAQMD 2023). BAAQMD recommends that lead agencies determine appropriate air quality emissions thresholds of significance based on substantial evidence in the record. The BAAQMD's significance thresholds in the updated 2022 *CEQA Air Quality Guidelines* for project operations within the San Francisco Bay Area Air Basin are the most appropriate thresholds for use in determining air quality impacts of the Project. BAAQMD developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant air quality impacts.

Table 2 presents the significance thresholds for construction and operational-related criteria air pollutant and precursor emissions used for the purposes of this analysis. These represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the San Francisco Bay Area Air Basin's existing air quality conditions. For the purposes of this analysis, the project would result in a significant impact if construction or operational emissions would exceed any of the thresholds shown in Table 2.

Table 2 BAAQMD Air Quality Thresholds of Significance

Pollutant/Precursor	Construction: Average Daily Emissions (lbs/day)	Operation: Average Daily Emissions (lbs/day)	Operation: Maximum Annual Emissions (tpy)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10

lbs/day = pounds per day; tpy = tons per year; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less.

Source: BAAQMD 2023

In the absence of a qualified Community Risk Reduction Plan, BAAQMD has established the following *Thresholds of Significance* for local community risks and hazards associated with TACs and $PM_{2.5}$ for assessing individual source impacts at a local level. Impacts would be significant if:

- The project would result in an increased cancer risk of > 10 in one million.
- The project would result in an increased non-cancer (i.e., Chronic or Acute) risk of > 1.0 Hazard Index.
- The project would result in an ambient $PM_{2.5}$ concentration increase of > 0.3 $\mu g/m^3$ annual average.

A project would be considered to have a cumulatively considerable impact if the aggregate total of current and proposed TAC sources within a 1,000 foot radius of the project property line in addition to the project would exceed the *Cumulative Thresholds of Significance*. Impacts would be significant if:

- The project would result in an increased cancer risk of > 100 in one million.
- The project would result in an increased non-cancer (i.e., Chronic or Acute) risk of > 10 Hazard Index.
- The project would result in an ambient PM2.5 concentration increase of > 0.8 µg/m3 annual average.

Excess cancer risks are defined as those occurring in excess of or above and beyond those risks that would normally be associated with a location or activity if toxic pollutants were not present. Non-carcinogenic health effects are expressed as a hazard index, which is the ratio of expected exposure levels to an acceptable reference exposure level.

BAAQMD defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and those with pre-existing health problems. These facilities include schools, parks, daycare centers and pre-schools, medical care facilities, and residential communities (BAAQMD 2023). The closest sensitive receptors to the project site are the single-family residence immediately southeast of the site, the Lytton Gardens Assisted Living facility approximately 50 feet west, the Hamilton retirement community approximately 75 feet southeast, and the First School preschool approximately 180 feet south.

METHODOLOGY

Air pollutant emissions generated by project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses (e.g., residential, office, and parking lot), and location, to model a project's construction and operational emissions. The analysis reflects the construction and operation of the project as described under *Project Description*.

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors. Construction of the proposed project was analyzed based on the applicant-provided construction schedule and construction equipment list. The proposed project would include demolition of the on-site structure totaling 9,216 square feet. Construction would occur over approximately 23 months and approximately 20,000 cubic yards (CY) of cut soil would be exported, 200 CY of cut soil would be used as fill, and 100 CY of soil would be imported from off-site sources approximately 30 miles from the site. It is assumed that all construction equipment used would be diesel-powered. This analysis conservatively includes generators for each phase of construction since the size or type of generator is currently unknown at this time. This analysis also assumes that the project would comply with all applicable regulatory

standards. In particular, the project would comply with BAAQMD Regulation 6 Rule 3 for wood burning devices and Regulation 8 Rule 3 for architectural coatings.

Operational emissions modeled include mobile source emissions (i.e., vehicle emissions), energy emissions, and area source emissions. Mobile source emissions are generated by vehicle trips to and from the project site, and trip generation rates provided in the Traffic Impact Analysis prepared by Hexagon Transportation Consultants in 2023 were used in the modeling (Hexagon 2023). Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coatings. Energy sources are not included since the project would include an all-electric design and would not utilize natural gas; therefore, emissions from energy sources would not be generated on-site. The project would include an emergency generator, which was assumed to operate 15 minutes each month and 4 hours per year, with a horsepower of 403 and a load factor of 0.35. Since specific data on the emergency generator was unavailable, this assumption was based on a similar project type with the use of a similar emergency generator.

HEALTH RISK ASSESSMENT

BAAQMD identifies construction activities as a common source of TAC and $PM_{2.5}$ emissions due to the operation of diesel-powered equipment and heavy-duty trucks that emit diesel particulate matter (DPM). Although construction activity is short-lived, it may increase TAC concentrations in the short term at nearby sensitive receptors. DPM is the primary contaminant of concern for construction of the project and would be the TAC emitted in the largest quantity, thus health risks from construction activity were assessed as they relate to DPM exposure. This health risk assessment (HRA) was conducted to evaluate DPM construction emissions, and their potential impacts on the sensitive receptors located 1,000 feet from the project site.

The construction HRA was prepared following BAAQMD's *Health Risk Assessment Modeling Protocol*. Potential cancer and non-cancer health impacts were estimated using exposure periods appropriate to evaluate short term emission increases. DPM dispersion was modeled using Lakes Environmental American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) View model (version 11.2.0). Specific meteorology and terrain data for the site were input to the model using the nearest available meteorological data set, Moffet Field Airport (approximately 6.7 miles southeast of the project site), and a 10-meter National Elevation Database (NED) GeoTIFF for the modeling extent in AERMOD. The construction site was modeled as an area source in AERMOD with an assumed release height of five meters, corresponding to the approximate height of off-road equipment mufflers from which exhaust emissions would be released (SCAQMD 2008). In addition, the haul truck route during demolition and grading phases was modeled as a line volume source with a height of 14 feet and road width of 12 meters. To characterize health risk at nearby sensitive receptors, 497 existing residential, retirement community, assisted living facility, and preschool sensitive receptors were selected in AERMOD. Sensitive receptors were selected at the single-family resident adjacent to the project site, the retirement community building approximately75 feet southeast of the project site, the assisted living facility approximately 50 feet west of the project site, and a

preschool approximately 180 feet southeast of the project site. Sensitive receptors within the retirement community building and assisted living facility were sited throughout the buildings and located on the ground level, second floor (ground level plus 6.1 meters), third floor (second floor level plus 6.1 meters), and fourth floor (third floor plus 6.1 meters), as appropriate. A flagpole height of 4.9 feet (1.5 meters) was applied (BAAQMD 2020).

Emissions rates were based on anticipated annual emissions modeled using the California Emissions Estimator Model (CalEEMod) version 2022.1. CalEEMod differentiates between particulate matter emitted from engine exhaust (i.e., DPM) and particulate matter emitted from ground disturbing activities (i.e., fugitive dust, which does not constitute DPM) (California Air Pollution Control Officers Association [CAPCOA] 2022). DPM concentration was estimated based on the PM_{10} exhaust emissions (not including fugitive PM_{10}) provided by CalEEMod, which are DPM emissions resulting from combustion of diesel-fueled vehicles and off-road equipment during construction. PM_{10} exhaust is composed of DPM and other air toxics; therefore, PM_{10} exhaust is a conservative estimate for DPM emissions estimates. In addition, $PM_{2.5}$ emissions from both engine exhaust and fugitive sources were multiplied by AERMOD average concentration output to determine ground-level concentrations at nearby receptors for comparison to BAAQMD's $PM_{2.5}$ concentration thresholds.

Health impacts are evaluated using a dose-response assessment, which describes the relationship between the level of exposure to a substance (i.e., the dose) and the incidence or occurrence of injury (i.e., the response). In accordance with the OEHHA Guidance, the inhalation pathway was evaluated for construction related DPM. For the inhalation pathway, the dose is directly proportional to the breathing rate.

Once dose is calculated, cancer risk is calculated by accounting for cancer potency of the specific pollutant, age sensitivity, exposure duration, averaging time for lifetime cancer risk, and fraction of time spent at home (sensitive receptor). The cancer potency factor (CPF) is specific for each pollutant and is determined through peer-reviewed scientific studies. For example, the Scientific Review Panel recommends a CPF for DPM of 3.0×10^{-4} $(\mu g/m^3)^{-1}$ and a slope factor of 1.1 $(ppm\text{-}day)^{-1}$.[3] The fraction of time at home (FAH) consistent with OEHHA guidelines were used for the analysis. As there is a school within the 1,000-foot buffer, FAH was assumed to be 1 for all receptors under 17 years of age.

Each age group has different exposure parameters which require cancer risk to be calculated separately for each age group. The OEHHA recommended values for the equations and daily breathing rates (DBF) described above were used in the HRA. Specific modeling details are included in Appendix A. Cancer risk was evaluated for residences in the surrounding area. Risk for all receptors as well as modeling output is included as part of Appendix A.

Non-cancer chronic impacts were assessed based on the hazard index (HI). The evaluation of chronic impacts is based on the maximum annual emissions over a 12-month period of construction activity. The chronic HI is calculated by dividing the maximum modeled annual average concentration at the maximum impacted sensitive receptor by the recommended

[3] CPF and slope factors are built into the HARP2 model used for quantifying risk.

exposure limit (REL). The REL is the concentration at or below which no adverse health effects are anticipated. Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The California Clean Air Act requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the BAAQMD 2017 Plan. The 2017 Plan updates the most recent Bay Area plan, the 2010 Clean Air Plan, pursuant to air quality planning requirements defined in the California Health and Safety Code. To fulfill state ozone planning requirements, the 2017 control strategy includes all feasible measures to reduce emissions of ozone precursors—ROG and NO_X—and reduce transport of ozone and its precursors to neighboring air basins. The Clean Air Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter and TACs. The 2017 Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes control measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

The 2017 CAP focuses on two paramount goals, both consistent with the mission of BAAQMD:

- Protect air quality and health at the regional and local scale by attaining all national and state air quality standards and eliminating disparities among Bay Area communities in cancer health risk from TACs.
- Protect the climate by reducing Bay Area GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan.
- Includes applicable control measures from the air quality plan.
- Does not disrupt or hinder implementation of any air quality plan control measures.

A project that would not support the 2017 Clean Air Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the Clean Air Plan's goals. As discussed under Impact AQ-2 below, the project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and thus would not conflict with the 2017 Plan's goal to attain air quality standards.

The 2017 Clean Air Plan includes goals and measures such as control measures TR9 (Bicycle and Pedestrian Access and Facilities), EN2 (Decrease Electricity Demand), BL1 (Green Buildings), and WR2 (Support Water Conservation) to increase the use of electric vehicles, promote the use of on-site renewable energy, and encourage energy efficiency. The project includes features that are consistent with these goals and measures, including meeting

California Green Building Standards, incorporating energy efficient appliances and lighting, providing 50 electric vehicle supply equipment (EVSE) residential parking stalls and 5 EVSE office parking stalls, and providing 5 short-term bicycle parking spaces and approximately 100 long-term bicycle parking spaces. Therefore, the project would not conflict with or obstruct the implementation of an applicable air quality plan and the project would have a less than significant impact. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The San Francisco Bay Area Air Basin is designated nonattainment for the NAAQS for ozone and $PM_{2.5}$ and the CAAQS for ozone, $PM_{2.5}$, and PM_{10}. The following subsections discuss emissions associated with construction and operation of the proposed project.

CONSTRUCTION EMISSIONS

Project construction would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction equipment and construction vehicles in addition to ROG emissions that would be released during the drying phase of architectural coating. Table 3 shows and compares estimated construction emissions to BAAQMD significance thresholds. As shown therein, construction-related emissions would not exceed BAAQMD thresholds. Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. Impacts would be less than significant and further analysis in an EIR is not warranted.

Table 3 Estimated Construction Emissions

	Average Daily Emissions (lbs/day)					
Sources	**ROG**	**NO_X**	**CO**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**	**SO_X**
Average Daily Construction Emissions	3	8	11	<1	<1	<1
BAAQMD Thresholds	54	54	N/A	82	54	N/A
Threshold Exceeded?	No	No	N/A	No	No	N/A

N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; CO = Carbon Monoxide; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

No BAAQMD threshold for CO or SO_X

See Appendix B for AQ CalEEMod worksheets; emission data presented is the highest of winter or summer outputs.

OPERATIONAL EMISSIONS

Operation of the project would generate criteria air pollutant emissions associated with area sources (e.g., architectural coatings, consumer products, and landscaping equipment), mobile sources (i.e., vehicle trips to and from the project site), and stationary sources (e.g. emergency generator). The proposed project would not generate air pollutant emissions associated with energy since the project would not use natural gas and would include an all-

electric design pursuant to 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and the City's All-Electric Mandate. Table 4 compares estimated daily operational emissions to BAAQMD significance thresholds and Table 5 compares estimated annual operational emissions to BAAQMD significance thresholds. As shown therein, neither daily nor annual operational emissions would exceed BAAQMD regional thresholds for criteria pollutants. Project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment, and impacts would be less than significant. Further analysis in an EIR is not warranted.

Table 4 Daily Operational Emissions (pounds/day)

	Emissions (lbs/day)					
Sources	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_X**
Average Daily Operational Emissions						
Mobile	2	1	11	2	1	<1
Area	2	<1	6	<1	<1	<1
Energy	0	0	0	0	0	0
Stationary Sources (Generators)	<1	<1	<1	<1	<1	<1
Total Average Daily Operational Emissions	**4**	**1**	**17**	**2**	**1**	**<1**
BAAQMD Thresholds (average daily emissions)	54	54	N/A	82	54	N/A
Threshold Exceeded?	**No**	**No**	**N/A**	**No**	**No**	**N/A**

N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; CO = carbon monoxide; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

Notes: All numbers have been rounded to the nearest tenth.

See Appendix B for CalEEMod worksheets; emission data presented is the highest of winter or summer outputs

Table 5 Annual Operational Emissions (tons/year)

	Average Annual Emissions					
Sources	**ROG**	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**
Average Annual Operational Emissions						
Mobile	<1	<1	2	<1	<1	<1
Area	<1	<1	1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Stationary Sources (Generators)	<1	<1	<1	<1	<1	<1
Total Emissions	<1	<1	3	<1	<1	<1
BAAQMD Thresholds	10	10	N/A	15	10	N/A
Threshold Exceeded?	**No**	**No**	**N/A**	**No**	**No**	**N/A**

N/A = not applicable; lbs/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; CO = carbon monoxide; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SO_x = oxides of sulfur.

Notes: All numbers have been rounded to the nearest tenth.

See Appendix B for CalEEMod worksheets

LESS THAN SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Certain population groups such as children, the elderly, and people with health issues are particularly sensitive to air pollution. The majority of sensitive receptor locations are schools, residences and hospitals. The closest sensitive receptors to the project site are the single-family residence immediately southeast of the site, the Hamilton Independent Living approximately 75 feet southeast, the Lytton Gardens Assisted Living facility approximately 50 feet west, and the First School preschool approximately 180 feet south. The project also includes the siting of new sensitive receptors in the form of 63 new units. Localized air quality impacts to sensitive receptors typically result from CO hotspots and TACs, which are discussed in the following subsections.

CARBON MONOXIDE HOTSPOTS

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at areas with high vehicle density, such as intersections with heavy peak hour traffic. A project's localized air quality impact is considered significant if CO concentrations exceed the federal one-hour standard of 35.0 ppm and state one-hour standard of 20 ppm, or the federal and state eight-hour standard of 9.0 ppm (BAAQMD 2023).

BAAQMD recommends comparing project's attributes with the following screening criteria as a first step to evaluating whether the project would result in the generation of CO concentrations that would substantially contribute to an exceedance of the *Thresholds of Significance* (BAAQMD 2017c). The project would result in a less than significant impact to localized CO concentrations if:

- The project is consistent with an applicable congestion management program for designated roads or highways, regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44, 000 vehicles per hour.
- The project traffic would not increase traffic volumes at the affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage).

According to the Transportation Impact Analysis by Hexagon Transportation Consultants in 2023, the proposed project would generate a total of 284 net daily trips per day and would not increase volumes at affected intersections to more than 44,000 vehicles per hour, or increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnels, bridge underpasses, parking garages, natural or urban street canyons, below-grade roadways), as the project site is not located near such intersections. Since the project would generate fewer than 50 net AM or PM peak hour trips, an offsite intersection level of service (LOS) analysis was not required pursuant to the City of Palo Alto's LOS policy. Furthermore, the project would be consistent with an applicable congestion management program [Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP)]. Therefore, the project would satisfy the screening threshold and have a less than significant impact on local CO concentrations.

TOXIC AIR CONTAMINANTS

TACs are defined by California law as air pollutants that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The following subsections discuss the project's potential to result in impacts related to TAC emissions during construction and operation.

CONSTRUCTION

TACs are defined by California law as air pollutants that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The following construction HRA evaluates the potential health risk to off-site receptors due to construction of the proposed project. Results of the analysis were compared to BAAQMD thresholds for a cancer risk threshold of 10 in a million, a chronic Hazard Index significance threshold of 1.0, and ambient $PM_{2.5}$ concentration increase greater than 0.3 $\mu g/m^3$ annual average. Neither DPM nor $PM_{2.5}$ is associated with acute health risks (OEHHA 2019); therefore, acute risk was not evaluated.

The maximally exposed individual receptor (MEIR) is the modeled receptor experiencing the highest incremental excess cancer risk under the total exposure duration. The air dispersion and risk analysis identified a single-family residence located immediately southeast of the site to be the MEIR. As shown in Table 6, at the MEIR, the chronic hazard index is less than 1; however, cancer risk per one million would exceed BAAQMD's 10 in one million cancer

risk threshold. Therefore, health risk to nearby residents due to project construction would be potentially significant without mitigation. Mitigation Measure AQ-1 would address this impact. Additionally, the project would be required to comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these existing regulations and Mitigation Measure AQ-1 would minimize emissions of TACs during construction.

Table 6 Health Risks Associated with Unmitigated Construction Activity

Scenario	Excess Cancer Risk (per million)	Chronic Health Risk[1]	$PM_{2.5}$ µg/m³ annual average
Maximally Exposed Individual Receptor (MEIR)	69.6	0.40	0.16
BAAQMD Significance Threshold	>10	>1	0.30
Threshold Exceeded?	Yes	No	No

µg/m³ = micrograms per cubic meter; BAAQMD = Bay Area Air Quality Management District

[1] Noncancer health impacts are determined by dividing the airborne concentration at the receptor by the appropriate Reference Exposure Level (REL) for that substance. A REL is defined as the concentration at which no adverse noncancer health effects are anticipated. Because noncancer health impacts are assessed as the ratio of airborne concentration versus the REL, the resulting hazard index is unitless.

For model outputs, see Appendix A.

Construction-related health risk, combined with health risk from existing major roadways and stationary sources within 1,000 feet of the MEIR, is summarized in Table 7. As shown in Table 7, cumulative sources would not exceed BAAQMD's thresholds. The MEIR would be exposed to a cumulative cancer risk of 88 in one million, which is below the 100 in one million cancer risk cumulative threshold. In addition, the MEIR would be exposed with a cumulative chronic risk of 0.44, which is below the cumulative chronic hazard risk of 10, and a cumulative $PM_{2.5}$ of 0.36 µg/m³, which is below the cumulative threshold of 0.8 µg/m³. Therefore, the health risk to nearby residents due to cumulative impacts would be less than significant.

Table 7 Cumulative Health Risks Associated with Construction Activity at MEIR

Source	Excess Cancer Risk (per million)	Chronic Health Risk[1]	$PM_{2.5}$ µg/m³ Annual Average
Maximally Exposed Individual			
Project Construction	69.6	0.40	0.36
Roadways[2]	14.3	0.04	<0.01
Webster House Health Center (Facility ID 200361)	4.5	<0.01	0.006
Cumulative Total	**88**	**0.44**	**0.36**
BAAQMD Significance Threshold	**>100**	**>10**	**>0.8**
Threshold Exceeded?	**No**	**No**	**No**

[1]Noncancer health impacts are determined by dividing the airborne concentration at the receptor by the appropriate Reference Exposure Level (REL) for that substance. A REL is defined as the concentration at which no adverse noncancer health effects are anticipated. Because noncancer health impacts are assessed as the ratio of airborne concentration versus the REL, the resulting hazard index is unitless.

[2]Based on raster data for roadway provided by BAAQMD (BAAQMD 2024).

For Assumptions and Calculations, see Appendix A. For model outputs, see Appendix A.

ASBESTOS

Asbestos is a mineral fiber that occurs in rock and soil, and exposure to asbestos increases risk of developing lung disease. Asbestos fibers may be released into the air by the disturbance of asbestos-containing material during product use, demolition work, building or home maintenance, repair, and remodeling. Projects that have the potential to disturb asbestos (from soil or building material) must comply with all the requirements of BAAQMD Regulation 11, Rule 2, BAAQMD Regulation 11, Rule 2 is intended to limit asbestos emissions from demolition or renovation of structures and the associated disturbance of asbestos-containing waste material generated or handled during these activities (BAAQMD 2017c). The rule requires a lead agency and its contractors to notify BAAQMD of any regulated renovation or demolition activity. This notification includes a description of structures and methods utilized to determine whether asbestos-containing materials are potentially present. All asbestos-containing material found on the site must be removed prior to demolition or renovation activity in accordance with BAAQMD Regulation 11, Rule 2, including specific requirements for surveying, notification, removal, and disposal of material containing asbestos (BAAQMD 2023). The proposed project would involve the demolition of approximately 9,216 square feet of building material which could contain asbestos. Therefore, impacts would be less than significant with compliance with the regulatory strategies provided by BAAQMD.

OPERATION

Sources of operational TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The project does not include construction of new gas stations, dry cleaners, highways, roadways, or other sources that could be considered new permitted or non-permitted source of TAC or $PM_{2.5}$ in proximity to receivers. However, on-site and nearby sensitive

receptors would be exposed to TAC emissions from the anticipated emergency generator. It is assumed the emergency generator would be a 403-horsepower engine that would operate for maintenance 15 minutes each month and four hours per year. The project itself would not significantly impact human health because the project would involve minor releases of TACs during operation from the emergency generator. The applicant would also be required to obtain a permit from BAAQMD for the emergency generator. Therefore, project operation would not expose sensitive receptors to substantial TAC concentrations, and impacts would be less than significant. Further analysis in an EIR is not warranted.

MITIGATION MEASURE

AQ-1 CONSTRUCTION EMISSIONS REDUCTION

Prior to construction activity and issuance of grading and building permits, the property owner or their designee shall ensure that the following specifications are detailed in the grading plan, building plan, and any contractor agreements and ensure that they be implemented during construction:

- All mobile off-road equipment (wheeled or tracked) used during construction activities over 25 horsepower shall meet the USEPA Tier 4 final standards. Tier 4 certification can be for the original equipment or equipment that is retrofitted to meet the Tier 4 Final standards.
- All mobile off-road equipment (wheeled or tracked) used during construction activities under 25 horsepower, such as generators, pumps, forklifts, cement and mortar mixes, and plate compactors shall be equipped with Level 3 diesel particulate filters.

SIGNIFICANCE AFTER MITIGATION

DPM and $PM_{2.5}$ construction emissions after implementation of Mitigation Measures AQ-1 were estimated using CalEEMod. Table 8 shows the health risks associated with the project's construction activity after incorporation of Tier 4 engines and Level 3 diesel particulate filters on-site construction equipment pursuant to Mitigation Measure AQ-1. As shown in Table 8, the use of Tier 4 engines pursuant to Mitigation Measure AQ-1 reduces the excess cancer risk at the nearest sensitive receptor to below the project-level 10 in one million significance threshold and reduces $PM_{2.5}$ emissions below the increase of > 0.3 $\mu g/m^3$ annual average. Therefore, individual health risk impacts would be less than significant after mitigation. This measure will be included in the EIR's executive summary and mitigation monitoring and reporting program.

Table 8 Health Risks Associated with Construction Activity After Mitigation

Scenario	Excess Cancer Risk (per million)	Chronic Health Risk[1]	$PM_{2.5}$ µg/m³ Annual Average
Maximally Exposed Individual Receptor (MEIR)	5.6	0.03	0.02
BAAQMD Significance Threshold	>10	>1	>0.3
Threshold Exceeded?	**No**	**No**	**No**

[1]Noncancer health impacts are determined by dividing the airborne concentration at the receptor by the appropriate Reference Exposure Level (REL) for that substance. A REL is defined as the concentration at which no adverse noncancer health effects are anticipated. Because noncancer health impacts are assessed as the ratio of airborne concentration versus the REL, the resulting hazard index is unitless.

For model outputs, see Appendix A.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

BAAQMD's 2022 *CEQA Air Quality Guidelines* provides odor screening distances for land uses that have the potential to generate substantial odor complaints. The uses include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2023). Odors are typically associated with industrial projects involving the use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, as well as sewage treatment facilities and landfills. The Palo Alto Comprehensive Plan EIR notes that residential and nonresidential development could include sources of odors, such as composting, greenwaste, and recycling operations; food processing; chemical manufacturing; and painting/coating operations, because these are permitted uses in the commercial and industrial areas in Palo Alto.

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling. However, these odors would be intermittent and temporary and would cease upon completion.

The project does not propose, nor would locate, new sensitive receptors in proximity to odor-emitting uses as identified in BAAQMD's 2017 *CEQA Air Quality Guidelines* or the Palo Alto Comprehensive Plan EIR. The proposed residential uses would not generate objectionable odors that would affect a substantial number of people. Furthermore, the project would be subject to BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. Therefore, the project would not substantially cause new sources of odors and would not significantly expose sensitive receptors to existing odors, and impacts would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	■	□	□	□
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	□	□	■	□
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	□	□	□	■
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	■	□	□	□
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	■	□	□	□
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	□	□	□	■

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The project site is located in an urbanized area of Palo Alto and is currently developed with two office buildings, surface parking lots, and landscaping. There are currently 24 trees on site and one protected oak tree on the adjacent parcel at 519 Byron Street that extends onto the site (canopy and root zone). The proposed project would include removal of 19 trees, preservation of five trees, and planting 12 trees. The project could potentially impact nesting birds and trees within or adjacent to the project site. Therefore, impacts related to birds and tree protection policies are potentially significant and would be further analyzed in the EIR.

POTENTIALLY SIGNIFICANT IMPACT

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The project site does not contain riparian habitat or sensitive natural communities and is not located in a sensitive biological area as indicated by the USFWS Critical Habitat portal (USFWS 2023). Based on the developed nature of the site and lack of native or riparian habitat located on the site, no federal or state listed endangered, threatened, rare, or otherwise sensitive flora or fauna are anticipated to be located on site. Therefore, this impact is less than significant, and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The National Wetlands Inventory (NWI) was reviewed to determine if wetland and/or non-wetland waters had been previously documented and mapped on or in the vicinity of the project site (NWI 2023). According to the NWI, no such features occur on or adjacent to the project site, and the nearest wetland is the San Francisquito Creek located approximately 0.2 miles (1,056 feet) north of the project site across Palo Alto Avenue. The proposed development would not involve the direct removal, filling, hydrological interruption, or other means to the bed, bank or channel of the San Francisquito Creek. No impact would occur and further analysis in an EIR is not warranted.

NO IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

According to the Natural Environment Element in the City's Comprehensive Plan (City of Palo Alto 2017a), the project site is not located within an approved Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur and further analysis in an EIR is not warranted.

NO IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. *Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*	□	□	□	■
b. *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*	□	■	□	□
c. *Disturb any human remains, including those interred outside of formal cemeteries?*	□	□	■	□

This section analyzes the proposed project's potential impacts related to cultural resources, including historical and archeological resources, as well as human remains.

REGULATORY SETTING

The California Environmental Quality Act (CEQA) requires a lead agency determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources, or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (*CEQA Guidelines* Section 15064.5[a][1-3]). Historical resources may include eligible built environment resources and archaeological resources from any time period.

Pursuant to *CEQA Guidelines* Section 15064.5[a](3), a resource is considered historically significant if it:

1. *Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;*
2. *Is associated with the lives of persons important in our past;*
3. *Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or*
4. *Has yielded, or may be likely to yield, information important in prehistory or history.*

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2. If it can be demonstrated that a project would cause damage to a

unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b]).

PRC, Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. *Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;*
2. *Has a special and particular quality such as being the oldest of its type or the best available example of its type; or*
3. *Is directly associated with a scientifically recognized important prehistoric or historic event or person.*

CEQA Guidelines Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during the implementation of a project.

Checklist Question A broadly refers to historical resources. To more clearly differentiate between archaeological and built environment resources, analysis under Checklist Question A is limited to built environment resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are considered under Checklist Question B.

EXISTING CONDITIONS

To support cultural resources compliance with CEQA, Rincon Consultants completed background research, including a review of historical aerial maps and photographs; a search of the California Historical Resources Information System (CHRIS) records search at the Northwest Information Center (NWIC) of the project site and a 0.5-mile radius around it; and a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF). The identification of built environment historical resources is informed by California Department of Parks and Recreation 523 Series forms (DPR forms) for the existing buildings on the project site (680 University Avenue and 511 Byron Street), which were prepared by Page & Turnbull, Inc, in March 2022.

According to the evaluations by Page and Turnbull, Inc., the subject property (511 Byron Street and 680 University Avenue) were recommended inelgible for listing the National Register of Historic Places or the California Register of Historical Resources under any of the four criteria. Although the evaluation did not explictly address local designation criteria, the properties were assigned a California Historical Resources Status Code of 6Z, indicating they were found ineligible for NRHP, CRHR, and local designation through survey evaluation.

The CHRIS search identified no previously recorded cultural resources or reports within the project site. The CHRIS search identified 17 reports and 12 cultural resources within the 0.5-mile radius of the project site. The research conducted for this study indicated that the project site has historically been highly disturbed due to prior construction and demolition activities. Due to the developed nature of the proposed project site and its history of disturbance due to demolition and construction activities through the decades, an archaeological survey was not conducted.

The SLF search was returned on May 17, 2022, with positive results. SLF searches are returned with positive results if an archaeological site has been identified within the USGS quadrangle (approximately 1 square mile) that a project site is within. Although the SLF search indicated positive results, no archaeological resources have been recorded within the project site.

IMPACT ANALYSIS

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

The project site contains two built environment resources, a two-story commercial dental office constructed in 1950 at 511 Byron Street and a two-story commercial medical office constructed in 1950 at 680 University Avenue. As outlined in the evaluations prepared by Page and Turnbull in March 2022, neither property is associated with historic events, was definitively tied to a person significant to history, or is an example of a type or style of architecture. Both buildings were determined ineligible for listing in the NRHP or CRHR and are not eligible for listing locally as a Historic Structure (Appendix C). Neither building, therefore, qualifies as a historical resource as defined by *CEQA Guidelines* Section 15064.5(a) and as such the project would result in no impact to a historical resource. No additional historical analysis is needed for this project and no impact to historical resources would occur. Further analysis in an EIR is not warranted.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

No archaeological resources have been previously recorded within the project site. The project site is within an urbanized area and has been previously graded, paved, and developed. The CHRIS records search 17 resource studies within a 0.5-mile radius, none of which include a portion of the project site or area directly adjacent to the project site. The CHRIS search identified twelve cultural resources with 0.5 miles of the project site, which did not identify any resources within the current project site. Of the 12 previously recorded resources within the radius, only one is a prehistoric site, all others are built environment resources. Although the SLF search indicated positive results, no archaeological resources have been recorded within the project site. SLF searches are returned with positive results if an archaeological site has been identified within the USGS quadrangle that a project site is within. Furthermore, although project site sediments contain alluvium that are of Holocene age, and the site is in proximity to San Francisquito Creek and the San Francisco Bay, due to

the development history of the project site it is unlikely that buried archaeological deposits exist. The site is considered to have low sensitivity for archaeological resources due to a high level of previous ground disturbance within the project site and the absence of previously recorded resources within the project site or vicinity. However, it is possible that unanticipated archaeological deposits could be encountered and impacted during project associated ground-disturbing activities (such as grading and excavation for utilities), especially if those activities occur in less-disturbed buried sediments. Therefore, this impact is potentially significant and mitigation is required.

MITIGATION MEASURES

The following mitigation measures are required:

CUL-1 WORKER'S ENVIRONMENTAL AWARENESS PROGRAM

The property owner or their designee shall retain a qualified archaeologist to conduct a Worker's Environmental Awareness Program (WEAP) training for archaeological sensitivity for all construction personnel prior to the commencement of any ground disturbing activities. Archaeological sensitivity training shall include a description of the types of cultural material that may be encountered, cultural sensitivity issues, regulatory issues, the proper protocol for treatment of the materials in the event of a find, and an outline of the penalties for the willful and intention damage of cultural resources.

CUL-2 UNANTICIPATED DISCOVERY OF ARCHAEOLOGICAL RESOURCES

In the event that archaeological resources are unearthed during project construction, all earth-disturbing work near the find must be temporarily suspended or redirected until an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (NPS 1983) has evaluated the nature and significance of the find. If the discovery proves to be significant under CEQA (Section 15064.5f; PRC 21082), additional work, such as preservation in place or archaeological data recovery, shall occur as recommended by the archeologist in coordination with City staff and if applicable, the most likely descendants. Once the resource has been properly treated or protected, work in the area may resume. A Native American representative shall be retained to monitor mitigation work associated with Native American cultural material.

SIGNIFICANCE AFTER MITIGATION

By implementing Mitigation Measure CUL-1 and CUL-2, the City would evaluate and require steps to protect or treat significant archaeological resources if encountered during construction, and would require archaeological sensitivity training for construction personnel, resulting in a less than significant impact. These measures will be included in the EIR's executive summary and mitigation monitoring and reporting program. Further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No human remains are known to be present within the project site, which has been disturbed by grading and excavation for the existing development. However, there is always potential for previously unrecorded or unidentified human remains to exist below ground surface. Construction of the project would require grading and excavation. Grading and excavation activities would have the potential to unearth and disturb previously unidentified human remains if present.

If human remains are found, California Health and Safety Code Section 7050.5 states no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, Section B6-18 of the Santa Clara County Code of Ordinances requires that upon discovering or unearthing any burial site as evidenced by human skeletal remains, the person making such discovery shall immediately notify the County Coroner. The County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner would notify the NAHC, which would determine and notify a most likely descendant (MLD). The MLD must complete the inspection of the site within 48 hours of being granted access to the site and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Compliance with the Santa Clara County Code of Ordinances, PRC Section 5097.98 and California Health and Safety Code Section 7050.5 would ensure impacts to unknown human remains are less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	□	□	■	□
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	□	□	■	□

ENERGY SETTING

As a state, California is one of the lowest per capita energy users in the United States, ranked 50th in the nation, due to its energy efficiency programs and mild climate (United States Energy Information Administration 2021). Electricity and natural gas are primarily consumed by the built environment for lighting, appliances, heating and cooling systems, fireplaces, and other uses such as industrial processes in addition to being consumed by alternative fuel vehicles. In 2020, California's total generation (in-state generation plus net electricity imports) totaled 272,576 gigawatt-hours (GWH). Most of California's electricity is generated in state with approximately 30 percent imported from the Northwest and Southwest in 2020; however, the state relies on out-of-state natural gas imports for nearly 90 percent of its supply (California Energy Commission [CEC] 2021a and 2021b). Primary fuel sources for the State's electricity generation in 2020 included non-carbon dioxide emitting sources such as nuclear, large hydroelectric, and renewables, which accounted for 51 percent of its generation. In addition, approximately 33 percent of California's electricity supply in 2020 came from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2021a). In 2018, Senate Bill 100 accelerated the state's Renewable Portfolio Standards Program (SB 350), codified in the Public Utilities Act, by requiring electricity providers to increase procurement from eligible renewable energy and zero-carbon resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Palo Alto is the only city in California that owns and operates full-scale municipal utility services, including electric, fiber optics, natural gas, water, and wastewater. The City of Palo Alto Utilities Department (CPAU) supplies electricity to city residents, facilities, and businesses. In 2018, Senate Bill 100 accelerated the state's Renewable Portfolio Standards Program, codified in the Public Utilities Act, by requiring electricity providers to increase procurement from eligible renewable energy and zero-carbon resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. CPAU has

contracted for the construction of 13 new renewable energy generation facilities in California: five landfill gas, six solar, and two wind. These facilities allow CPAU to meet over 50 percent of Palo Alto's electricity demand with renewable energy sources. During a year of normal or high rainfall, CPAU's long-term contracts for carbon free hydroelectric power also meet at least 50 percent of electricity demand. In addition, since 2013, Palo Alto has provided 100 percent carbon neutral electricity. Table 9 shows the electricity consumption by sector and total for the CPAU service area in 2020 (CPAU 2021a).

Table 9 CPAU Service Area Electricity Consumption (GWh)

Agriculture and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
1.9	522.2	19.7	118.7	7.3	155.6	0	825.4

Source: CEC 2021c

The City of Palo Alto consumed approximately 40 million U.S. Therms of natural gas in 2019[4], while Santa Clara County consumed approximately 419 million U.S. Therms (418.9 MMBtus) of natural gas in 2020 (CEC 2021d). In 2017, Palo Alto began offsetting the GHG emissions caused by natural gas use through the purchase of carbon offsets and became the first 100 percent carbon neutral utility in the world (CPAU 2021a).

Petroleum fuels are primarily consumed by on-road and off-road equipment in addition to some industrial processes, with California being one of the top petroleum-producing states in the nation (CEC 2021e). Gasoline, which is used by light-duty cars, pickup trucks, and sport utility vehicles, is the most used transportation fuel in California with 12.6 billion gallons sold in 2020 (CEC 2021f). Diesel, which is used primarily by heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction and military vehicles, is the second most used fuel in California with 1.7 billion gallons sold in 2021 (CEC 2021f).

Although the proposed project would only affect a small area in the City of Palo Alto, the smallest scale to which petroleum consumption information is available is at the county level. Santa Clara County fuel sales are used herein to provide a regional context for fuel consumption in Palo Alto and the surrounding area. In 2020 Santa Clara County consumed an estimated 511 million gallons of gasoline and 35 million gallons of diesel fuel (CEC 2021f).

Energy consumption is directly related to environmental quality in that the consumption of nonrenewable energy resources releases criteria air pollutant and greenhouse gas (GHG) emissions into the atmosphere. The environmental impacts of air pollutant and GHG emissions associated with the project's energy consumption are discussed in detail in Section 3, *Air Quality,* and Section 8, *Greenhouse Gas Emissions*.

[4] Only the City's 2019 natural gas usage was available (CPAU 2021b).

IMPACT ANALYSIS

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

CONSTRUCTION ENERGY DEMAND

During project construction, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to deliver materials to the site. The manufacturing of construction materials would also involve energy use.

The proposed project would require demolition; site preparation and grading; pavement and asphalt installation; building construction; architectural coating; and landscaping and hardscaping. Construction would be typical for the region and building type. The total consumption of gasoline and diesel fuel during project construction was estimated using the assumptions and factors from CalEEMod (Appendix B).

Table 10 presents the estimated construction phase fuel consumption. Construction equipment would consume approximately 97,298gallons of diesel fuel; vendor/haul trips would consume approximately 5,135gallons of diesel fuel; and worker trips would consume approximately 12,422gallons of gasoline fuel over the project's estimated construction period. As mentioned under *Energy Setting*, retail diesel sales in Santa Clara County totaled approximately 35 million gallons, while retail gasoline sales totaled approximately 511 million gallons in 2020 (CEC 2021f). Therefore, fuel consumption associated with project construction would account for approximately 0.3 percent of annual retail diesel sales and approximately 0.002 percent of annual retail gasoline sales in Santa Clara County.

Table 10 Project Construction Fuel Consumption

	Fuel Consumption (gallons)	
Source	**Gasoline**	**Diesel**
Construction Equipment	–	97,298
Construction Vendor Haul Trips	–	5,135
Construction Worker Vehicle Trips	12,422	–
Total	**12,422**	**102,433**

See Appendix D for energy calculation sheets.

Similar to the manufacturers utilizing energy conservation methods to reduce costs, it is reasonable to assume contractors would avoid wasteful, inefficient, and unnecessary fuel consumption during construction to reduce construction costs. The project would comply with the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation, which imposes limits on idling and restricts the use of older vehicles. This would reduce fuel consumption and lead to the use of fuel-efficient vehicles on the construction site. Construction equipment would be maintained to applicable standards, and construction activity and associated fuel

consumption and energy use would be temporary and typical for construction sites. Further, construction activities would be typical for the region and building type. Therefore, the project would not involve the inefficient, wasteful, and unnecessary use of energy during construction, and the construction-phase impact related to energy consumption would be less than significant, and further analysis in an EIR is not warranted.

OPERATIONAL ENERGY DEMAND

Project operation would increase area energy demand from greater electricity and diesel/gasoline consumption at the site. Natural gas would not be used since the building would include an all-electric design pursuant to the City's Reach Code[5] and PAMC Section 16.14.300. Electricity would be used for heating and cooling systems, lighting, appliances, and water use in new residential units. Diesel and gasoline consumption would be attributed to the new residents and truck deliveries.

The proposed project would incorporate the following design features and attributes in order to promote energy efficiency and sustainability:

- Compliance with the Palo Alto Green Building Ordinance and Energy Reach Ordinance to be 10 percent more energy efficient than the mandatory efficiency standards set by the CalGreen requirements. The project would be all-electric and would include energy efficient appliances and lighting, as well as water efficient fixtures and irrigation.
- There is an existing bus stop on the northern corner of the project site serviced by SamTrans (Bus Route 280, Bus Route 281, Bus Route 296, Bus Route 397), and the project site is located within a 0.7 mile walk to the Palo Alto University Avenue Train Station (Caltrain) station.
- Inclusion of 50 EVSE residential stalls (PAMC A4.106.8.2) and 5 EVSE office stalls (PAMC 16.14.430).
- Inclusion of approximately 100 long-term bicycle parking spaces and 5 short-term bicycle parking spaces (80 long-term and 3 short-term residential spaces and 20 long-term and 2 short-term office spaces).

Table 11 summarizes the estimated operational energy consumption for the proposed project. Electricity consumption was based on CalEEMod outputs from the air quality analysis, and energy intensity for electricity was increased to compensate for the elimination of natural gas usage. The outputs include Title 24 standards for the various land uses of the project and are baseline values determined through CEC surveys and studies. The estimated energy consumption from gasoline use was determined based on the average daily trips of the project and the estimated trip rates for the project (Hexagon Transportation Consultants 2023). The estimated number of average daily trips associated with the proposed project was used to determine the energy consumption associated with

[5] Reach Codes are requirements that go beyond the standard statewide building codes and energy requirements. For the City of Palo Alto, their Reach Code aims to increase water conservation and reduce water loss, lower embodied carbon in new construction projects, reduce fossil fuel use in buildings, and facilitate electric vehicle adoption by community members and visitors to Palo Alto. These goals are consistent with Palo Alto's sustainability goals, including the goal of reducing greenhouse gas emissions 80 percent below 1990 levels by 2030.

fuel use from the operation of the project. The majority of the fuel consumption would be from motor vehicles traveling to and from the project site. The CalEEMod outputs indicate the project would result in 1,258,349annual VMT (Appendix B). As shown in Table 11, project operation would require approximately 56,775 gallons of gasoline, 22,862 gallons of diesel fuel, and 773,427 kWh of electricity. Vehicle trips associated with future residents and workers would represent the greatest operational use of energy associated with the project.

Table 11 Project Operational Energy Consumption

Source Transportation Fuels	Energy Consumption[1]	
Gasoline	56,775 gallons	6,233 MMBtu
Diesel	22,862 gallons	2,914 MMBtu
Electricity	773,427 kWh/year	2,639 MMBtu

MMBtu = million metric British thermal units; kWh = kilowatt-hours

[1] Energy consumption is converted to MMBtu for each source

See Appendix D for energy calculation sheets and Appendix B for CalEEMod output results for electricity.

Electricity

Operation of the proposed mixed-use project is estimated to consume approximately 773,427 KWh per year of electricity, or approximately 0.77 GWh per year. CPAU would serve the project, and the company provided 880 GWh in its service area in 2020 (CPAU 2021b). Therefore, operation of the project would represent approximately 0.09 percent of CPAU's annual electricity demand. The project would not place a significant demand on CPAU's electricity supply.

Transportation Fuels

Vehicles of residents and workers from operation of the proposed project would consume approximately 56,775 gallons of gasoline and 22,862 gallons of diesel fuel per year. Santa Clara County consumed an estimated 511 million gallons of gasoline and 35 million gallons of diesel fuel in 2020, totaling 546 million gallons of fuel (CEC 2021g). The project would consume less than one percent of Santa Clara County's annual gasoline demand and of the County's annual diesel fuel demand. Therefore, the project would not place a significant demand on energy use from gasoline or diesel fuel.

Based on the analysis above, project operation would not result in wasteful or unnecessary energy consumption or conflict with existing energy standards and regulations. Impacts would be less than significant, and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The 2030 Comprehensive Plan and the City's Sustainability and Climate Action Plan (S/CAP) contains goals, policies, and actions to increase energy efficiency and promote renewable energy within the city. The proposed project would result in a potentially significant impact if it would conflict with or obstruct the implementation of energy-related goals and policies in the 2030 Comprehensive Plan or the City's S/CAP, which was adopted in June 2023. Table 12 provides an evaluation of project consistency with applicable renewable energy and energy efficiency measures in the 2030 Comprehensive Plan and the S/CAP.

Table 12 Project Consistency with Comprehensive Plan and Sustainability and Climate Action Plan

Measure	Project Consistency
2030 Comprehensive Plan	
Policy L-2.2 Enhance connections between commercial and mixed use centers and the surrounding residential neighborhoods by promoting walkable and bikeable connections and a diverse range of retail and services that caters to the daily needs of residents.	**Consistent.** The project would be a mixed-use development on an existing developed site which would include office and residential uses. The project would place new residents within walking distance of SamTrans and Dumbarton Express bus stops, and approximately 0.7 miles northeast of the Palo Alto Caltrain station, which would encourage walking and bicycling. The project would also include 5 short-term bicycle parking spaces and approximately 100 long-term bicycle parking spaces.
Policy T-1.17 Require new office, commercial and multi-family residential developments to provide improvements that improve bicycle and pedestrian connectivity as called for in the 2012 Palo Alto Bicycle + Pedestrian Transportation Plan	**Consistent.** The project applicant would be required to contribute to the City's development impact fees, including funds that would support bicycle and pedestrian improvements in the City. The project would include 5 short-term bicycle parking spaces as well as approximately 100 long-term bicycle parking spaces. The project site is located adjacent to a Class II bicycle lane on University Avenue that starts on Middlefield Road, and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options. The project would improve pedestrian safety by removing the two driveways on University Avenue and one driveway on Middlefield Road (Hexagon 2024).
Policy N-7.4 Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.	**Consistent.** The project would include an all-electric design pursuant to the City's Reach Code and the 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and would include energy efficient appliances, water efficient fixtures and irrigation, and energy-efficient lighting.
Policy N-7.5 Encourage energy efficient lighting that protects dark skies and promotes energy conservation by minimizing light and glare from development while ensuring public health and safety.	**Consistent.** The project would include an all-electric design pursuant to 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and would include energy efficient energy-efficient lighting that minimizes light trespass and glare. Additionally, because the project would include below grade parking, glare from vehicles parked on site would be reduced compared to existing conditions

Measure	Project Consistency
S/CAP	
Action E1. Reduce all or nearly all greenhouse gas emissions in single-family appliances and equipment, including water heating, space heating, cooking, clothes drying, and other appliances that use natural gas. **Action E7.** Use codes and ordinances - such as the energy reach code, green building ordinance, zoning code, or other mandates - to facilitate electrification in both existing buildings and new-construction projects where feasible.	**Consistent.** The project would include an all-electric design pursuant to the City's Reach Code and the 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and would include energy efficient appliances, water efficient fixtures and irrigation, and energy-efficient lighting
Action EV8. Evaluate mandates or other mechanisms to ensure EV charging capacity is available to support EV growth.	**Consistent.** The project would include 50 EVSE residential stalls (PAMC A4.106.8.2) and 5 EVSE office stalls (PAMC 16.14.430).

Source: City of Palo Alto 2017, City of Palo Alto 2023a

As shown in Table 12, the project would be consistent with applicable energy-related policies in the 2030 Comprehensive Plan. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	■
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	■	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

REGIONAL AND LOCAL GEOLOGY

The City of Palo Alto is part of the Coast Ranges geomorphic province. A geomorphic province is a naturally defined geologic region that displays a distinct landscape or landform according to its geology, faults, topographic relief and climate (Department of Conservation [DOC] 2002). The Coast Ranges are Northwest trending mountain ranges and valleys, running subparallel to the San Andreas Fault. They are composed of thick Mesozoic and Cenozoic sedimentary strata (DOC 2002).

The City is located in the Southwestern part of San Francisco Bay, within Santa Clara County and bordering San Mateo County. The City's boundaries extend from San Francisco Bay to the east to the Skyline Ridge of the coastal mountains in the west, with Menlo Park to the north and Mountain View to the south. The City spans an area of around 26 square miles (City of Palo Alto 2017a).

Palo Alto is located in the United States Geological Survey's (USGS) Palo Alto Quadrangle 7.5-minute topographic map areas. The area is typified by low topographic relief. By contrast, the coastal mountains west of Palo Alto have more pronounced topographic relief, with elevations that exceed 300 feet above mean sea level.

FAULT ZONES

Similar to much of California, Palo Alto is located in a seismically active region. The USGS defines Holocene-active faults as those that are likely to have moved one or more times (surface displacement) in the last 10,000 years (USGS, n.d.), while inactive faults have not had surface displacement within that period. Several faults are located near Palo Alto. These major faults and fault zones include:

- The San Andreas Fault: Located around 5.5 miles Southwest from the City of Palo Alto. The San Andreas Fault is the primary surface boundary between the Pacific and the North American plates. There have been numerous historic earthquakes along the San Andreas Fault, and it generally poses the greatest earthquake risk to California. The probability of experiencing a Magnitude 6.7 or greater earthquake along the San Andreas Fault within the next 30 years is 22 percent (Office of Emergency Services 2017).
- The Hayward Fault: Located around 13 miles Northeast from the City of Palo Alto. The Hayward Fault is part of the wide plate boundary between the Pacific and the North American plates. The probability of experiencing a Magnitude 6.7 or greater earthquake along the Hayward Fault in the next 30 years is 33 percent (Office of Emergency Services 2017).
- The Calaveras Fault: Located around 23 miles Northeast from the City of Palo Alto. The probability of experiencing a Magnitude 6.7 or greater earthquake along the Calaveras Fault in the next 30 years is 26 percent (Office of Emergency Services 2017).

In addition to primary hazards like surface fault ruptures, earthquakes also result in secondary hazards and impacts such as ground shaking, landslides, and liquefaction, which could cause widespread damage. The project site is not located within an identified earthquake fault zone as delineated on the Alquist-Priolo Earthquake Fault Zoning Map (DOC 2021a).

GROUND SHAKING

Seismically induced ground shaking covers a wide area and is greatly influenced by the distance of the site to the seismic source, soil conditions, and depth to groundwater. The USGS and Associated Bay Area Governments (ABAG) have worked together to map the likely intensity of ground-shaking throughout the Bay Area under various earthquake scenarios. The most intense ground-shaking scenario mapped in the vicinity assumes a 7.0 magnitude earthquake on the Hayward Fault system (northern and southern segments). The predicted ground-shaking level from such an earthquake would be “strong shaking” to “very strong shaking” throughout the City (ABAG 2019).

LIQUEFACTION AND SEISMICALLY INDUCED SETTLEMENT

Liquefaction is defined as the sudden loss of soil strength due to a rapid increase in soil pore water pressure resulting from seismic ground shaking. Liquefaction potential is dependent on such factors as soil type, depth to ground water, degree of seismic shaking, and the relative density of the soil. When liquefaction of the soil occurs, buildings and other objects on the ground surface may tilt or sink, and lightweight buried structures (such as pipelines) may float toward the ground surface. Liquefied soil may be unable to support its own weight or that of structures, which could result in loss of foundation bearing or differential settlement. Liquefaction may also result in cracks in the ground surface followed by the emergence of a sand-water mixture. Although the project site is located in a liquefaction zone (DOC 2021a), the risk is moderate according to the Safety Element of the City of Palo Alto Comprehensive Plan (City of Palo Alto 2017a).

Seismically induced settlement occurs in loose to medium dense unconsolidated soil above groundwater. These soils compress (settle) when subject to seismic shaking. The settlement can be exacerbated by increased loading, such as from the construction of buildings. Settlement can also result solely from human activities including improperly placed artificial fill, and structures built on soils or bedrock materials with differential settlement rates.

LANDSLIDES

Landslides result when the driving forces that act on a slope (i.e., the weight of the slope material, and the weight of objects placed on it) are greater than the slope’s natural resisting forces (i.e., the shear strength of the slope material). Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream, or by ground shaking caused by an earthquake. Slopes can also be modified artificially by grading, or by the addition of water or structures to a slope. Development that occurs on a slope can substantially increase the frequency and extent of potential slope stability hazards.

Areas susceptible to landslides are typically characterized by steep, unstable slopes in weak soil/bedrock units which have a record of previous slope failure. There are numerous factors that affect the stability of the slope, including: slope height and steepness, type of materials, material strength, structural geologic relationships, ground water level, and level of seismic shaking.

The project site is not located in a landslide hazard zone (DOC 2021a) or in an area of high potential for earthquake-induced landslides according to Map S-4 (Geotechnical Hazards) of the City's Safety Element (City of Palo Alto 2017a).

EXPANSIVE SOILS

Expansive soils can change dramatically in volume depending on moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moistures that can trigger this shrink-swell phenomenon include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can develop wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils. Expansive soils are typically very fine-grained with a high to very high percentage of clay. The clay minerals present typically include montmorillonite, smectite, and/or bentonite. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. According to the United States Department of Agriculture Natural Resources Conservation Service, the project site has moderate soil expansivity (USDA 2023).

EROSION

Erosion is the wearing away of the soil mantle by running water, wind or geologic forces. It is a naturally occurring phenomenon and ordinarily is not hazardous. However, excessive erosion can contribute to landslides, siltation of streams, undermining of foundations, and ultimately the loss of structures. Removal of vegetation tends to heighten erosion hazards. The City enforces grading and erosion control ordinances to reduce these hazards and the 2030 Comprehensive Plan also contains policies to prevent erosion-related issues.

PALEONTOLOGICAL RESOURCES

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils occur in a non-

continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project. Young coarse-grained alluvium covers much of the project site; these soils have low paleontological sensitivity. Older alluvium is mapped in the southeastern portion of the project site; older alluvium has high paleontological sensitivity.

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The project site is not located within an identified earthquake fault zone as delineated on the Alquist-Priolo Earthquake Fault Zoning Map (DOC 2021a). No known fault lines are located on the site. The closest active fault is the San Andreas Fault which is located approximately 7 miles west of the site. Thus, the likelihood of surface rupture occurring from active faulting at the site is remote. There would be no impact. No further analysis in an EIR is warranted.

NO IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

As with any site in the Bay Area region, the project site is susceptible to strong seismic ground shaking in the event of a major earthquake. Nearby faults include the San Andreas Fault, the Hayward Fault and the Calaveras Fault. These faults are capable of producing strong seismic ground shaking at the site. However, the City of Palo Alto 2030 Comprehensive Plan Safety Element contains policies such as policies S-1.9, S-1.10, S-2.1, S-2.2, S-2.5, S-2.6, and S-2.7 that would ensure the protection of life, ecosystems and property from natural hazards and disasters such as earthquakes. In addition, all types of construction must adhere to California Building Code and PAMC Chapter 16.28 seismic safety restrictions and in-depth soil reports must be required as part of the development approval process for residential sites within earthquake fault zones. Impacts would be less than significant. No further analysis in an EIR is warranted.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

As mentioned above under *Liquefaction*, although the project site is located in a liquefaction zone (DOC 2021a), the risk is moderate according to the Safety Element of the City of Palo Alto Comprehensive Plan (City of Palo Alto 2017a). The Seismic Hazards Identification Program of Chapter 16.42 of the PAMC addresses public safety by identifying those buildings in Palo Alto that exhibit structural deficiencies and by accurately determining the severity and extent of those deficiencies in relation to their potential for causing loss of life or injury. Such a seismic hazards identification program is consistent with California Health and Safety Code Sections 19160 - 19169 and is necessary to implement the Comprehensive Plan's Safety Policy S2.7.3 (City of Palo Alto 2017a). Additionally, with modern construction and adherence to the geology and soil provisions of the CBC, which sets forth seismic design standards (Chapters 16, 18) and geohazard study requirements (Chapter 18), impacts would be less than significant. No further analysis in an EIR is warranted.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Earthquakes can trigger landslides that may cause injuries and damage to people and structures. Landslides are typically hazards on or near slopes or hillside areas, rather than generally level areas like the project site and vicinity. According to Map S-4 in the City of Palo Alto 2030 Comprehensive Plan, the project site has low potential for landslides. Impacts would be less than significant. No further analysis in an EIR is warranted.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The project site is generally developed and flat, which limits the potential for substantial soil erosion. Ground disturbing activities that would occur during the grading and excavation phase of construction would have the highest potential for erosion, and as a result temporary erosion could occur. However, the project would be required to comply with PAMC Chapters 16.28.070 and 16.28.120, which require measures for retaining sediment on site such as utilizing sediment detention basins and traps; silt fences; straw bales; and stabilized construction entrances, as well as measures for surface runoff and erosion such as applying seeds and mulches, and designs and specifications for diverters, dikes, and drains to minimize surface runoff, erosion, and sedimentation. In addition, the project would be required to comply with erosion control standards administered by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB) through the National

Pollutant Discharge Elimination System (NPDES) permit process, which requires implementation of nonpoint source control of stormwater runoff. Furthermore, as discussed above in Section 3, *Air Quality*, pursuant to Mitigation Measure AIR-2a of the EIR for the City's 2030 Comprehensive Plan, the project would be required to comply with BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions outlined under Table 5-2 of the BAAQMD 2022 CEQA Guidelines, which address the minimization or avoidance of erosion and loss of topsoil. Additional information related to the prevention of stormwater-induced erosion is provided in *Hydrology and Water Quality*. Compliance with these requirements would ensure that impacts of the proposed development associated with soil erosion and the loss of topsoil would be less than significant. No further analysis in an EIR is warranted.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Building on unsuitable soils would have the potential to create future subsidence or collapse issues that could result in the settlement of infrastructure, and/or the disruption of utility lines and other services. Section 21.12.070 of the PAMC requires the preparation of a preliminary soil report in order to determine the presence of expansive soils and recommend corrective action to prevent structural damage.

Compliance with existing State and local laws and regulations would ensure that impacts associated with expansive soil are minimized by requiring the submittal and review of detailed soils and/or geologic reports prior to construction. Such evaluations must contain recommendations for ground preparation and earthwork specific to the site, which then become an integral part of the construction design. Palo Alto building codes and other City requirements would ensure that potential impacts are minimized or avoided. Impacts associated with expansive soils would be less than significant. No further analysis in an EIR is warranted.

LESS THAN SIGNIFICANT IMPACT

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The proposed project would be connected to the local wastewater treatment system. Septic systems would not be used. No impact would occur. No further analysis in an EIR is warranted.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the project site to assess the project's potential for significant impacts to scientifically important paleontological resources. The analysis was based on the results of a paleontological locality search and a review of existing information in the scientific literature regarding known fossils within geologic units mapped at the project site. According to the SVP (2010) classification system, geologic units can be assigned a high, low, undetermined, or no potential for containing scientifically significant nonrenewable paleontological resources. Following the literature review, a paleontological sensitivity classification was assigned to each geologic unit mapped within the project area. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units.

The geology of the region surrounding the project site was mapped at a scale of 1:24,000 by Pampeyan (1993) who identified two geologic units underlying the project site: young coarse-grained alluvium and older alluvium (Figure 5).

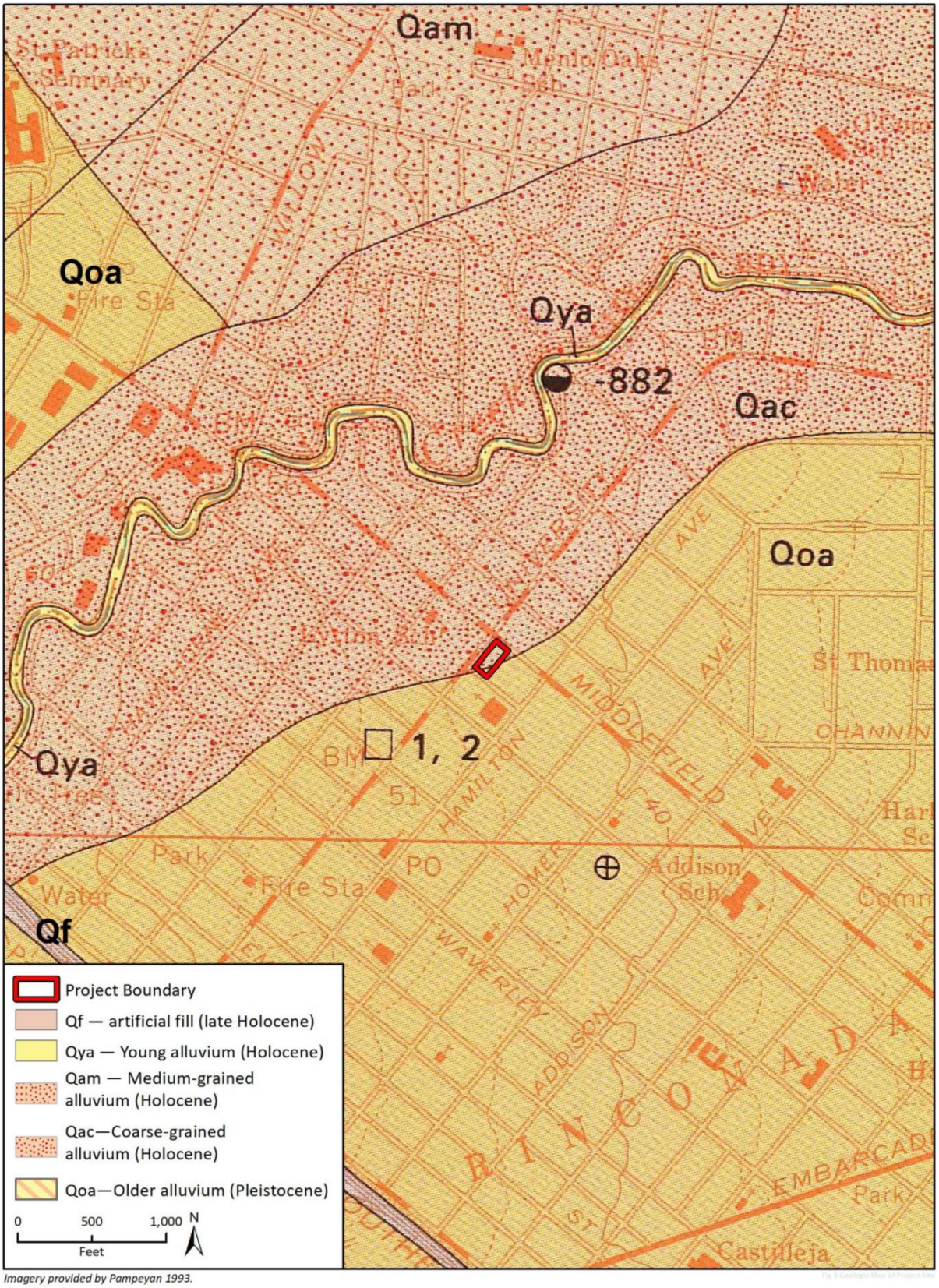
Young coarse-grained alluvium covers much of the project site (Figure 5) and consists of loose or consolidated, moderately sorted, sand and silt that may contain lenses of well-sorted silt, sand, or gravel (Pampeyan 1993). Young coarse-grained alluvium is Holocene in age, so is likely too young (i.e., less than 5,000 years old) to preserve scientifically significant paleontological resources. Therefore, young coarse-grained alluvium has low paleontological sensitivity.

Older alluvium is mapped in the southeastern portion of the project site (Figure 5). Older alluvium consists of loose to moderately consolidated silt, sand, and gravel and is Pleistocene in age (Pampeyan 1993). Pleistocene alluvial sediments have produced scientifically significant fossils throughout California including Santa Clara County, yielding taxa such as mammoth (*Mammuthus*), bison (*Bison*), horse (*Equus*), camel (*Camelops*), and ground sloth (*Paramylodon*) (Maguire and Holroyd 2016; Paleobiology Database 2023; University of California Museum of Paleontology 2023). Given this fossil producing history, older alluvium has high paleontological sensitivity.

A records search of the University of California Museum of Paleontology recovered no known fossil localities within the project site (Holroyd 2022).

Excavations associated with this project are expected to reach 38 feet below the surface. Excavations that disturb previously undisturbed older alluvial sediments have the potential to significantly impact paleontological resources. Older alluvium is mapped at the surface in the southeastern portion of the project site (Figure 5), but excavations in areas mapped as young coarse-grained alluvium may encounter older alluvium in the subsurface. Young coarse-grained alluvium has a maximum depth of 50 feet which occurs in the foothills of the Santa Cruz Mountains (Pampeyan 1993).

Figure 5 Geologic Map of Project Site



Given that the project site is several miles away from these foothills and the surficial contact between these two sediment types occurs within the project area, the subsurface transition from young coarse-grained alluvium to older alluvium may be as shallow as 5 feet. The project site has been previously developed, so construction activities that disturb surficial sediments will likely only impact previously disturbed, and therefore not paleontologically sensitive, sediments. Nevertheless, undiscovered resources could be found at previously disturbed depths, and excavation on the project site may encounter older alluvium which has high paleontological sensitivity.

Therefore, this impact is potentially significant and mitigation is required.

MITIGATION MEASURES

The following mitigation measure is required:

GEO-1 PALEONTOLOGICAL RESOURCES MONITORING AND MITIGATION

Qualified Professional Paleontologist. Prior to excavation, the project applicant shall retain a Qualified Professional Paleontologist (defined by the SVP (2010) as an individual, preferably with an M.S. or Ph.D. in paleontology or geology, who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for at least two years). The Qualified Professional Paleontologist shall direct all mitigation measures related to paleontological resources.

Paleontological Worker Environmental Awareness Program. Prior to the start of construction, the Qualified Professional Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.

Paleontological Monitoring. Full-time paleontological monitoring shall be conducted during ground disturbing construction activities reaching more than 5 feet below the ground surface in areas mapped as Quaternary coarse-grained alluvium and ground. Paleontological monitoring shall be conducted by a paleontological monitor with experience with collection and salvage of paleontological resources and who meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The duration and timing of the monitoring will be determined by the Qualified Professional Paleontologist based on the observation of the geologic setting from initial ground disturbance, and subject to the review and approval by the City of Palo Alto. If the Qualified Professional Paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions once the full depth of excavations has been reached, they may recommend that monitoring be reduced to periodic spot-checking or ceased entirely. Monitoring shall be reinstated if any new ground disturbances are required, and reduction or suspension shall be reconsidered by the Qualified Professional Paleontologist at that time.

In the event of a fossil discovery by the paleontological monitor or construction personnel, the following measures shall apply:

- **Fossil Salvage.** If fossils are discovered, the paleontological monitor shall have the authority to halt or temporarily divert construction equipment within 50 feet of the find until the paleontological monitor and/or Qualified Professional Paleontologist evaluate the discovery and determine if the fossil may be considered significant. Typically, fossils can be safely salvaged quickly by a single paleontological monitor and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits
- **Fossil Preparation and Curation.** Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a museum repository with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Professional Paleontologist.
- **Final Paleontological Mitigation Report.** Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Professional Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the City of Palo Alto Director of Planning and Development Services. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure GEO-1 would require a paleontological WEAP as well as paleontological monitoring and reporting which would reduce impacts related to paleontological resources to a less than significant level. This measure will be included in the EIR's executive summary and mitigation monitoring and reporting program. Further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*	□	□	■	□
b. *Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*	□	□	■	□

CLIMATE CHANGE AND GREENHOUSE GASES SETTING

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of greenhouse gas (GHG) emissions contributing to the "greenhouse effect," a natural occurrence which takes place in Earth's atmosphere and helps regulate the temperature of the planet. The majority of radiation from the sun hits Earth's surface and warms it. The surface, in turn, radiates heat back towards the atmosphere in the form of infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions.

GHG emissions occur both naturally and as a result of human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2021).[6]

The United Nations IPCC expressed that the rise and continued growth of atmospheric CO_2 concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment

[6] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatons of anthropogenic CO_2 was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021). Furthermore, since the late 1700s, estimated concentrations of CO_2, methane, and nitrous oxide in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent, respectively, primarily due to human activity (United States Environmental Protection Agency 2021). Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature. Potential climate change impacts in California may include loss of snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (State of California 2018).

GREENHOUSE GAS EMISSIONS THRESHOLDS

The BAAQMD has adopted updated thresholds of significance for climate impacts on April 20, 2022. Under the updated thresholds, a project must include, at a minimum, the following project design elements, or must be consistent with a local GHG reduction strategy that meets the criteria under *CEQA Guidelines* Section 15183.5(b):

1. Buildings
    a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
    b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under PRC Section 21100(b)(3) and CEQA Guidelines Section 15126.2(b).
2. Transportation
    a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
        i. Residential projects: 15 percent below the existing VMT per capita
        ii. Office projects: 15 percent below the existing VMT per employee
        iii. Retail projects: no net increase in existing VMT
    b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

The 2030 Comprehensive Plan and the City's Sustainability and Climate Action Plan (S/CAP) contains goals, policies, and actions to reduce greenhouse gas emissions and promote renewable energy within the city. The proposed project would result in a potentially

significant impact if it would conflict with or obstruct the implementation of energy-related goals and policies in the 2030 Comprehensive Plan or the City's S/CAP, which was adopted in June 2023. In October 2022, the City Council passed a carbon neutrality by 2030 goal, building on the City's existing goal of cutting emissions 80% below 1990 levels by 2030.

IMPACT ANALYSIS

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

The proposed project would be consistent with BAAQMD significance criteria 1a since it would include an all-electric design pursuant to 2022 California Building Energy Efficiency Standards, Title 24 Part 6. Appliances and plumbing would also be electric and would not utilize natural gas. As described in Section 6, *Energy*, during construction, the project would comply with the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation, which imposes limits on idling and restricts the use of older vehicles, which would reduce fuel consumption and lead to the use of fuel-efficient vehicles on the construction site. Construction equipment would also be maintained to applicable standards, and construction activity and associated fuel consumption and energy use would be temporary and typical for construction sites. During operation, the project would not place a significant demand on CPAU's electricity supply or on energy use from gasoline or diesel fuel. Therefore, the project would not result in wasteful or unnecessary energy consumption during construction and operation or conflict with existing energy standards and regulations and would be consistent with significance criteria 1b of the BAAQMD thresholds.

As discussed in the Transportation Impact Analysis prepared by Hexagon Transportation Consultants on October 13, 2023, the project site is located in a transportation analysis zone (TAZ) where daily VMT per resident is 9.39, which is below the City's 15 percent below existing average VMT per resident impact threshold of 11.33 daily VMT. Since the office component of the project would result in a net reduction of office space from 9,215 square feet to 9,115 square feet, there would also be a net decrease in employment-based VMT. Therefore, the proposed project would be consistent with Criterion 2a of the BAAQMD thresholds. In addition, the project would comply with CALGreen Tier 2 electric vehicle requirements for the residential portion of the project. Although 63 EVSE residential parking stalls should be provided pursuant to PAMC A4.106.8.2, the project would only include 50 EVSE residential parking stalls in total due to a 25 percent TDM reduction. Therefore, the residential portion of the project would be consistent with CALGreen Tier 2 electric vehicle requirements for residential uses. However, for the office portion of the project, only five EVSE office parking stalls would be provided, where at least eight are required under CALGreen Tier 2 electric vehicle requirements for office uses. Therefore, the project would be subject to a standard condition of approval to provide at least eight EVSE parking stalls. This condition of approval would bring the project into compliance with Criterion 2b of the BAAQMD thresholds, and impacts would be less than significant.

Although BAAQMD does not have numeric thresholds for GHG under the updated guidelines, the project's emissions inventory is still presented for informational purposes.

Table 13 shows the estimated annual operational GHG emissions associated with the project.

Table 13 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions ($MTCO_2e$)
Project Operation	
Mobile	420
Area	1
Energy	0[1]
Water	2
Solid Waste	15
Refrigerants	<1
Stationary	<1
Total Emissions from Proposed Project	**439**

[1] GHG emissions for energy is 0 because Palo Alto has been carbon neutral since 2013, and electricity is derived from non-polluting sources.

Source: Table 2.6 in AQ CalEEMod annual worksheets (Appendix B)

The standard condition of approval discussed above would require design features to ensure the project would be consistent with CALGreen Tier 2 EV standards, as well as criteria 2b of BAAQMD's GHG thresholds. With this condition of approval, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

PLAN BAY AREA 2050

The project would result in a potentially significant impact if it would obstruct the implementation of the Plan Bay Area 2050. Table 14 provides an evaluation of project consistency with applicable GHG key strategies in Plan Bay Area 2050.

Table 14 Project Consistency with Plan Bay Area 2050

Measure	Project Consistency
T8. Build a Complete Streets network. Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multi-use paths.	**Consistent**. The project would include 5 short-term bicycle parking spaces as well as approximately 100 long-term bicycle parking spaces. The project site is located adjacent to a Class II bicycle lane on University Avenue that starts on Middlefield Road, and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options.
EN4. Maintain urban growth boundaries. Using urban growth boundaries and other existing environmental protections, focus new development within the existing urban footprint or areas otherwise suitable for growth, as established by local jurisdictions.	**Consistent.** The project would maintain urban growth boundaries through infill development on a developed site.
EN8. Expand clean vehicle initiatives. Expand investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers.	**Consistent.** The project would include 50 EVSE residential parking stalls and 5 EVSE office parking stalls.

Source: ABAG 2021

CITY OF PALO ALTO S/CAP

The project would result in a potentially significant impact if it would obstruct the implementation of the S/CAP. Table 15 provides an evaluation of project consistency with applicable GHG key actions in the S/CAP.

Table 15 Project Consistency with S/CAP

Measure	Project Consistency
C3. Complete study to identify any additional Energy, EV, or Mobility key actions needed to achieve 80% reduction in greenhouse gas emissions from 1990 levels by 2030, such as electrification of additional multifamily or commercial end uses, greater electrification of vehicles, or other emissions reduction actions not already identified in this Plan.	**Consistent.** The project would include 50 EVSE residential parking stalls and 5 EVSE office parking stalls.
E1. Reduce all or nearly all greenhouse gas emissions in single-family appliances and equipment, including water heating, space heating, cooking, clothes drying, and other appliances that use natural gas. **E7.** Use codes and ordinances - such as the energy reach code, green building ordinance, zoning code, or other mandates - to facilitate electrification in both existing buildings and new-construction projects where feasible. **E8.** Seek additional electrification opportunities in commercial and multi-family buildings to contribute as much as possible towards achieving an additional 8% city-wide emissions reduction below 1990 levels.	**Consistent.** The project would include an all-electric design pursuant to 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and would also include energy efficient appliances and lighting, as well as water efficient fixtures and irrigation. Additionally, the project would include 50 EVSE residential parking stalls and 5 EVSE office parking stalls.
M3. Implement the Bicycle and Pedestrian Transportation Plan to expand bicycle and pedestrian infrastructure.	**Consistent**. The project would include 5 short-term bicycle parking spaces as well as approximately 100 long-term bicycle parking spaces. The project site is located adjacent to a Class II bicycle lane on University Avenue that starts on Middlefield Road, and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options.
M7. Continue to implement the City's Housing Element of the Comprehensive Plan to improve jobs - housing balance and reduce vehicle miles traveled (VMT).	**Consistent**. The project includes 63 residential units and would retain existing office uses which would locate residents in proximity to jobs and other services. As discussed above, the project would be located in a TAZ where daily VMT per resident is 9.39, which is below the City's 15 percent below existing average VMT per resident impact threshold of 11.33 daily VMT.
EV6. Expand access to on-site EV charging for multi-family residents.	**Consistent.** The project would include 50 EVSE residential parking stalls and 5 EVSE office parking stalls, as well as 5 short-term bicycle parking spaces and approximately 100 long-term bicycle parking spaces.

Source: City of Palo Alto 2023a

CITY OF PALO ALTO 2030 COMPREHENSIVE PLAN

The project would result in a potentially significant impact if it would obstruct the implementation of the goals and policies within the 2030 Comprehensive Plan. Table 16 provides an evaluation of project consistency with applicable GHG goals and policies.

Table 16 Project Consistency with the City of Palo Alto 2030 Comprehensive Plan

Measure	Project Consistency
Transportation Element	
Policy T-1.3 Reduce GHG and pollutant emissions associated with transportation by reducing VMT and per-mile emissions through increasing transit options, supporting biking and walking, and the use of zero-emission vehicle technologies to meet City and State goals for GHG reductions by 2030.	**Consistent**. The project itself would not expand transit options; however, it is within a 0.7 mile walk to the Palo Alto University Avenue Station (Caltrain) station, and there is an existing bus stop on the northern corner of the project site serviced by SamTrans (Bus Route 280, Bus Route 281, Bus Route 296, Bus Route 397). The project site is located adjacent to a Class II bicycle lane on University Avenue that starts on Middlefield Road, and residents would also be able to utilize pedestrian connections such as sidewalks, crosswalks, and curb ramps in order to access transit options. The project would place residences in a transit-accessible area, improving the viability of transit as an option for travel to services in Palo Alto. The project site would include 5 short-term bicycle parking spaces and approximately 100 long-term bicycle parking spaces.
Policy T-1.4 Ensure that electric vehicle charging infrastructure, including infrastructure for charging e-bikes, is available citywide.	**Consistent.** The project would include 50 EVSE residential parking stalls and 5 EVSE office parking stalls.
Policy T-1.16 Promote personal transportation vehicles an alternative to cars (e.g., bicycles, skateboards, roller blades) to get to work, school, shopping, recreational facilities and transit stops.	**Consistent.** The project would be located within a 0.7 mile walk to the Palo Alto Caltrain station, and there is an existing bus stop on the northern corner of the project site serviced by SamTrans (Bus Route 280, Bus Route 281, Bus Route 296, Bus Route 397). Since the project site is in proximity to bus stops and the Caltrain Station, the project would promote usage of alternative forms of transportation and reduce reliance on single-occupancy vehicles.
Policy T-1.17 Require new office, commercial and multi-family residential developments to provide improvements that improve bicycle and pedestrian connectivity as called for in the 2012 Palo Alto Bicycle + Pedestrian Transportation Plan.	**Consistent.** The project applicant would contribute to the City's development impact fees, including to funds that would support bicycle and pedestrian improvements in the City. The project would also include 5 short-term bicycle parking spaces and approximately 100 long-term bicycle parking spaces.
Natural Environment Element	
Policy N-7.4 Maximize the conservation and efficient use of energy in new and existing residences and other buildings in Palo Alto.	**Consistent.** The project would include an all-electric design pursuant to 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and would also include energy efficient appliances and lighting, as well as water efficient fixtures and irrigation.
Policy N-7.7 Explore a variety of cost-effective ways to reduce natural gas usage in existing and new buildings in Palo Alto in order to reduce associated greenhouse gas emissions.	**Consistent.** The project would include an all-electric design pursuant to 2022 California Building Energy Efficiency Standards, Title 24 Part 6, and would not include natural gas usage. The City also provides 100 percent carbon neutral electricity and purchases carbon offsets to office the GHG emissions from natural gas usage.

Measure	Project Consistency
Policy N-7.8 Support opportunities to maximize energy recovery from organic materials such as food scraps, yard trimmings and residual solids from sewage treatment.	**Consistent.** The project would be required to comply with SB 1383, which aims to reduce organic waste disposal by 75 percent by 2025. Pursuant to the City's Recycling and Composting Ordinance, residential and business uses are required to include a green cart/bin for composting. The compostable material in the green cart is then taken to the Zero Waste Energy Development Company in San Jose where it is anaerobically digested and composted, yielding renewable energy and fertilizer for soil.

Source: City of Palo Alto 2017

As shown in the tables above, the project would generally be consistent with applicable GHG goals, policies, and strategies in the regional plans such as Plan Bay Area 2050, as well as local plans such as the City of Palo Alto S/CAP and the 2030 Comprehensive Plan. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions and this impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*	□	□	■	□
b. *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*	□	□	■	□
c. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*	□	□	■	□
d. *Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*	□	□	■	□
e. *For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*	□	□	□	■
f. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*	□	□	□	■
g. *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?*	□	□	□	■

PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)

A Phase I ESA was completed by EKI Environment & Water, Inc in November 2022, included as Appendix E. As part of the Phase I ESA, EKI Environment & Water, Inc was contracted to review historical land use information for the site and surrounding area; perform a walk-through visual survey of the site; review results of a User Questionnaire and Owner Questionnaire; review an environmental regulatory agency database report for the site and surrounding area; search for public lists of sites that generate, store, treat, or dispose of hazardous materials or sites for which a release or incident has occurred for the project site and surrounding area; and review an Environmental Lien Search report for the site.

The Phase I ESA found that the project site is not subject to a potential hazardous release or permit violation with regulatory agencies, and no releases have been reported at the site. A search on the SWRCB Geotracker Database and the California EPA Department of Toxic Substances Control EnviroStor database showed that the project site is not listed on a State database as a chemical release site. The Environmental Lien Search report showed no records of environmental cleanup liens or use limitations (AULs) filed or recorded against the project site. No recognized environmental concerns (REC) were identified at the project site.

a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

b. *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

The proposed project would involve demolition of the existing structures and construction of a four-story mixed-use structure and two levels of below-grade parking. Demolition and construction activities may include the temporary transport, storage, use, or disposal of potentially hazardous materials including fuels, lubricating fluids, cleaners, solvents, impacted groundwater, or contaminated soils. If spilled, these substances could pose a risk to the environment and to human health. However, the transport, storage, use, or disposal of hazardous materials is subject to various federal, state, and local regulations designed to reduce risks associated with hazardous materials, including potential risks associated with upset or accident conditions. Hazardous materials would be required to be transported under DOT regulations, and the use, storage, and disposal of hazardous materials are regulated through the RCRA and DTSC. Compliance with these existing regulations would reduce the risk of potential release of hazardous materials during demolition, dewatering, soil disturbance/grading, and construction.

The Phase I ESA identified several business environmental risks (BER) associated with the project site, since the site has historically been and is currently used for dental practices. Hazardous substances such as mercury-containing amalgam and x-ray processing chemicals related to dental practice are used on the site. However, the Phase I ESA determined that it is unlikely that minor chemical releases from sewer lines caused significant soil or groundwater contamination on the property. In addition, shallow soils on the site could

contain herbicides and pesticides commonly applied to control pests and weeds. However, this is typical throughout the region and shallow soil impacted by these chemicals would be disposed of properly pursuant to DOT and DTSC regulations and the RCRA. The existing structures, which were constructed in the 1930s and 1950s, may contain asbestos and/or lead-based paint (LBP) due to their age. Demolition of the existing structure could result in health hazard impacts to workers if not remediated prior to construction activities. However, construction activities would be required to adhere to BAAQMD Regulation 11, Rule 2, which governs the proper handling and disposal of ACM for demolition, renovation, and manufacturing activities in the Bay Area, CalOSHA regulations regarding lead-based materials. DTSC has classified PCBs as a hazardous waste when concentrations exceed 50 parts per million in non-liquids, and the DTSC requires that materials containing those concentrations of PCBs be transported and disposed of as hazardous waste. Light ballasts to be removed would be evaluated for the presence of PCBs and managed appropriately. With required adherence to BAAQMD, CalOSHA, and DTSC regulations regarding ACM, LBP, and PCBs, impacts would be less than significant.

Residential and office uses as proposed by the project typically do not use or store large quantities of hazardous materials. Operation of the project would not involve the use, storage, transportation, or disposal of hazardous materials other than those typically used for household cleaning, maintenance and landscaping. Therefore, impacts would be less than significant, and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

d. Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The First School is located approximately 180 feet south of the project site. However, as described under Checklist Questions (a) and (b), operation of the project would not involve use, storage, or transport of hazardous materials within 0.25 miles of schools. As discussed in the Phase I ESA, the project site is not listed as a chemical release site on Geotracker or EnviroStor. Additionally, no hazardous releases have been reported at the site, and no permit violation with regulatory agencies have been reported. Therefore, the project would not emit or handle hazardous emissions or wastes and would not create a significant hazard to the public or environment. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The project site is located approximately 2.5 miles west of the closest airport, Palo Alto Airport. The heliport at Stanford Hospital is located approximately 1.5 miles southwest of the project site. The project site is not located within an airport land use plan, Airport Influence Area, or Airport Safety Zone. No impacts involving airports or private airstrips would occur. Further analysis in an EIR is not warranted.

NO IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would involve the demolition of existing buildings and the construction of a four-story mixed-use building. The new building would not obstruct existing roadways, require full road closures during construction, or require the construction of new roadways or access points. Therefore, the proposed building would not block emergency response or evacuation routes or interfere with adopted emergency response and emergency evacuation plans. No impact would occur and further analysis of this issue in an EIR is not warranted.

NO IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project site is within an urban area in Palo Alto and is not located adjacent to or within the vicinity of wildlands (City of Palo Alto 2017a). Additionally, the project site is not located in a Very High Fire Hazard Severity Zone (VHFHSZ). Therefore, there would be no risk of exposing people or structures to a significant risk of loss, injury or death involving wildland fires. No impact would occur and further analysis in an EIR is not warranted.

NO IMPACT

10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	□	□	■	□
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	□	□	■	□
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
1. Result in substantial erosion or siltation on- or off-site;	□	□	■	□
2. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	□	□	■	□
3. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	□	□	■	□
4. Impede or redirect flood flows?	□	□	■	□
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	□	□	■	□
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	□	□	■	□

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Development of the proposed project would introduce heavy equipment during construction and increase traffic to and from the site during operation. This increase in heavy construction equipment and operational traffic could result in an increase in fuel, oil, and lubricants in the stormwater runoff due to leaks or accidental releases.

The State regulates construction projects with potential to contribute substantial erosion and sedimentation to surface waters through its administering of the NPDES Construction General Permit. Under this program, the State considers construction disturbance exceeding one acre to be substantial enough to regulate under the NPDES permit. The proposed project would be below the threshold of one acre. Additionally, the project would be subject to the PAMC Section 16.28.065, which requires that land-disturbing, land-filling, soil storage, and grading activities, and temporary construction-related groundwater dewatering must be undertaken in a manner designed to minimize surface runoff and erosion. Accordingly, mandatory compliance with the Palo Alto Municipal Code would reduce the potential for erosion and loss of topsoil during project construction. The project site is currently almost entirely developed and/or paved. The proposed project would replace existing impervious surfaces with new impervious surfaces, and therefore would not increase the coverage of impervious surfaces on the site. The project would be required to comply with Chapter 16.11 of the PAMC, which requires that permanent stormwater pollution prevention measures be incorporated into projects. These may include, but are not limited to, minimization of impervious surfaces, construction of sidewalks, walkways, and/or patios with permeable surfaces, and minimization of disturbances to natural drainages. In addition, under Chapter 16.11 of the PAMC, "significant redevelopment projects," which include projects that would result in the replacement of 10,000 square feet or more of impervious surface, must treat, either through capture, flow-through filtration, or a combination of capture and flow-through filtration, the volume of stormwater specified in the PAMC. The project would satisfy this requirement by including flow-through treatment planters along the site boundary adjacent to landscaping areas.

Additionally, since the project would involve replacing more than 10,000 square feet of impervious surfaces, it would be subject to the Santa Clara Valley Urban Runoff Pollution Prevention Program's (Program) Permit Provision C.3, which contains requirements for controlling the potential impacts of land development on stormwater quality and flow. The project would qualify as a Special Project under Category A and would receive LID reduction credits. Runoff from the project site would be treated using flow-through treatment planters along the project site boundary.

The project would involve excavation up to approximately 38 feet below ground surface for construction of below-grade parking. According to the Phase I ESA prepared by EKI Environment & Water, Inc. on November 19, 2022, groundwater was measured in borings at depths of approximately 28 feet and is historically known to occur at depths of 20 feet. Therefore, excavation could encounter groundwater and dewatering could be required during construction. However, dewatering is regulated by the City during the permitting

process, including through the City's *Construction Dewatering System Policy and Plan Preparation Guidelines* (City of Palo Alto 2013). The project would be required to comply with regulations for groundwater dewatering as detailed in the City's How-to Guide (City of Palo Alto 2020), which would prevent contaminated groundwater from entering the stormwater system. With adherence to the City's policies regarding dewatering, the project would not violate water quality standards, waste discharge requirements, or degrade water quality. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

As discussed in Section 17, *Utilities and Service Systems*, the proposed project would receive its water from the San Francisco Public Utilities Commission (SFPUC). The Regional Water System collects water from the Tuolumne River in the Sierra Nevada and from protected local watersheds in the East Bay and Peninsula. Therefore, water supply to the project site would not rely on groundwater supplies. Development under the proposed project would not include installation of new groundwater wells or use of groundwater from existing wells. Temporary dewatering during construction would not substantially affect groundwater levels because of the relatively small area of the project site. Overall, the project would not result in a significant depletion of groundwater supply. Therefore, the proposed project would not result in a net deficit in aquifer volume or a lowering of the groundwater table. Moreover, since the project site is already covered with impervious surfaces, including concrete surface parking lots, the proposed project would not result in decreased groundwater infiltration. The project would not result in an exceedance of safe yield or a significant depletion of groundwater supplies. Impacts related to groundwater would be less than significant, and further analysis in the EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

c.1. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.2. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.3. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

c.4. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

The San Francisquito Creek is the closest watercourse to the site and is located approximately 0.2 miles to the north. The project site and surrounding areas are currently developed and construction of the proposed project would not alter the course of this creek or other stream or river (no other surface water features are identified in the project vicinity). Since the site is currently covered mostly by impervious surfaces, and the project would replace existing structures with a new four-story mixed-use building, the proposed project would not increase impervious surfaces compared to existing conditions.

Additionally, according to the Preliminary Hydrology Memorandum completed by BKF on May 13, 2022 (Appendix F), development of the project would not increase runoff into the storm drain system, as the project would increase the amount of landscaped area which would decrease peak stormwater discharge to the Middlefield Road storm drain main by approximately 22 percent during the 10-year storm and 100-year storm. Additionally, since the proposed project would replace existing impervious surfaces with new impervious surfaces, it would not increase the coverage of impervious surfaces on the site. Therefore, the project would not substantially increase runoff from the project site such that new or increased flooding would occur on- or off-site.

The project would generally involve maintaining the existing surface runoff pattern and would not introduce new surface water discharges, increase runoff volumes, result in substantial erosion or siltation, or result in flooding on- or off-site. The project would also not alter the existing drainage pattern of the site or area. Impacts would be less than significant and further analysis in the EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

According to the State of California Tsunami Inundation Map (DOC 2021b), the site is not located within a tsunami inundation zone. According to the City of Palo Alto's Natural Environment Element and Safety Element of the 2030 Comprehensive Plan, mudflows and seiches are not identified as issues for the City. ~~In addition, t~~The nearest body of water that could experience a seiche event is the San Francisco Bay, and it is not anticipated that a seiche in the Bay would have potential to affect the project site. According to the Federal Emergency Management Agency (FEMA), the project site is located within Flood Zone AH, an area with a one percent annual chance of shallow flooding. The proposed project would be required to comply with the City's floodplain ordinance pursuant to PAMC Chapter 16.52 as well as national flood insurance requirements. Lastly, ~~T~~the project site is flat and surrounded by residential and commercial development away from crests and steep ridges. Therefore, the ~~project site is located in a low hazard area for tsunami, seiche, and mudflow. Impacts would be~~ project would result in less than significant impacts related to flooding, tsunamis, seiches, and mudflows, and further analysis in the EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The City of Palo Alto is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). The San Francisco Bay RWQCB provides permits for projects that may affect surface waters and groundwater locally and is responsible for preparing the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan designates beneficial uses of water in the region and establishes narrative and numerical water quality objectives. The Basin Plan serves as the basis for the San Francisco Bay RWQCB's regulatory programs and incorporates an implementation plan for achieving water quality objectives (California Water Board 2017). The proposed project would not interfere with the objectives and goals in the Basin Plan since it would not result in toxic or sediment discharge to surface waters. Impacts would be less than significant and further analysis in the EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

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11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. *Physically divide an established community?*	□	□	□	■
b. *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*	□	□	■	□

a. Would the project physically divide an established community?

The proposed project would involve the construction of a four-story mixed-use building on three contiguous existing parcels in a fully urbanized area in Palo Alto. The project would not separate connected neighborhoods or land uses from each other. No new roads, linear infrastructure, or other development features are proposed that would divide an established community or limit movement, travel, or social interaction between established land uses. No impacts would occur, and further analysis of this issue in an EIR is not warranted.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

CONSISTENCY WITH THE PALO ALTO MUNICIPAL CODE

The project site is currently zoned Low Density Multiple-Family Residential (RM-20), which permits a mixture of single-family and multiple-family housing. Table 17 compares existing Low Density Multiple-Family Residential (RM-20) standards and the proposed project. As shown in the table, the proposed project would not be compliant with the allowable density, FAR, building height, site coverage, front setback, interior side setback, and street side setback standards for RM-20. To allow for these increases, the applicant has submitted an application for a rezoning of the site to Planned Community (PC) (also referred to as the Planned Home Zoning, PHZ, zone) in accordance with PAMC Section 18.38. This rezoning process allows housing projects that exceed the otherwise applicable Development Standards in exchange for the public benefit of new housing units with the City of Palo Alto. According to PAMC Section 18.38.010, the Planned Community (PC) zone is "intended to accommodate developments for residential, commercial, professional, research, administrative, industrial, or other activities, including combinations of uses appropriately

requiring flexibility under controlled conditions not otherwise attainable under other districts."

Table 17 Zoning Development Standards Comparison Table

Project Characteristics	RM-20 Requirements[1]	Proposed by Project	Project Compliance with RM-20 Requirements
Density	20 du/ac	10 du/ac	Requested exception
Floor Area Ratio	0.5: 1	2.175	Requested exception
Building Height	30 ft (maximum)	43 ft 11 in	Requested exception
Useable Open Space (private and common)	150 sf per unit (19,350 sf)	19,811 sf	Complies
Site Coverage	35%	58%	Requested exception
Front Setback	20 ft	10 ft	Requested exception
Rear Setback	10 ft	10 ft	Complies
Interior Side Setback	10 ft (when abutting a residential district)	19 ft to 6 ft	Requested exception
Street Side Setback	16 ft	6 ft	Requested exception
Parking			
Garage Parking	0.5 spaces per residential unit 1 space per 250 sf of office space	Office: 18 stalls Residential: 52 stalls ADA/Accessible: 9 stalls Total: 79 stalls	Consistent with 25% TDM reduction
Total Bicycle Parking Spaces	1 space per residential unit 1 space per 2,500 sf of office space	100 spaces (80 residential and 20 office)	Complies

[1] Per PAMC Section 18.13.040, development standards for the RM-20 district.

The project would also be required to comply with the City's Below Market Rate (BMR) Program (PAMC Chapter 18.15). This program requires developers of projects with five or more units to provide 15 percent of the units to be affordable or to pay in-lieu fees to fund affordable housing projects in the city. The proposed project would exceed the number of BMR housing required to provide for 20 percent, or 13 units, of BMR housing. The proposed project would also be subject to Major Architectural Review and would be reviewed by the Architectural Review Board as described in Section 18.77.070 of the PAMC. Therefore, with approval of the rezone, the proposed project would be consistent with applicable regulations in the PAMC and impacts would be less than significant.

CONSISTENCY WITH THE PALO ALTO COMPREHENSIVE PLAN

The project site has a 2030 Comprehensive Plan designation of Multiple Family Residential (MF). The City of Palo Alto's 2030 Comprehensive Plan Land Use and Community Design Element (City of Palo Alto 2017) defines the Multiple Family Residential category as follows:

> The permitted number of housing units will vary by area, depending on existing land use, proximity to major streets and public transit, distance to shopping and environmental problems. Net densities will range from 8 to 40 units and 8 to 90 persons per acre. Density should be on the lower end of the scale next to single-family residential areas. Densities higher than what is permitted may be allowed where measurable community benefits will be derived, services and facilities are available, and the net effect will be consistent with the Comprehensive Plan. Population densities will range up to 2.25 persons per unit by 2030.

The project would require a Comprehensive Plan Amendment to maintain the existing office use where typically only residential uses would be allowed, and rezoning to Planned Community (PC) designation. The proposed new uses would remain consistent with the land uses envisioned for the PC land use designation since the project would provide a public benefit to the City by including 20 percent affordable housing as required by the Planned Home Zoning (PHZ) Ordinance. The applicant is also asking Council to consider the medical office use as a public benefit, as the residents, especially senior citizens living in the neighborhood can walk to this location.

The project would result in a potentially significant impact if it would obstruct the implementation of the following 2030 Comprehensive Plan policies:

Policy L-1.1. Maintain and prioritize Palo Alto's varied residential neighborhoods while sustaining the vitality of its commercial areas and public facilities.

Policy L-1.3. Infill development in the urban service area should be compatible with its surroundings and the overall scale and character of the city to ensure a compact, efficient development pattern.

Policy L-1.11. Hold new development to the highest development standards in order to maintain Palo Alto's livability and achieve the highest quality development with the least impacts.

Policy L-3.1. Ensure that new or remodeled structures are compatible with the neighborhood and adjacent structures.

Policy L-6.1. Promote high-quality design and site planning that is compatible with surrounding development and public spaces.

Policy L-6.7. Where possible, avoid abrupt changes in scale and density between residential and non-residential areas and between residential areas of different densities. To promote compatibility and gradual transitions between land uses, place zoning district boundaries at mid-block locations rather than along streets wherever possible.

The project would involve the construction of a new mixed-use development with office space on the first floor and 63 dwelling units. Although the project would include four stories, or two more stories compared to the existing uses, the project would be consistent with the scale of surrounding properties such as the Lytton Gardens Assisted Living building across University Avenue, which is also four stories. In addition, the project would be

located in an area with a range of residential densities, from the single-family residence immediately adjacent to the site to the Lytton Gardens Assisted Living building west of the project site and The Hamilton retirement community east of the project site, and therefore would not result in abrupt changes in density. The proposed new uses would be consistent with the land uses envisioned for the MF land use designation with a Planned Community application, because the project would provide a public benefit to the City by including 20 percent affordable housing. The project would involve high-quality urban design elements, including landscaping elements and open space. The project would also be consistent with the scale and character of neighboring uses. Therefore, the project would not conflict with the City's Comprehensive Plan and this impact would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	□	□	□	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	□	□	□	■

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The project site and surrounding properties are part of an urbanized area with no current oil or gas extraction. According to the Natural Environment Element of the City's Comprehensive Plan, Palo Alto does not contain mineral deposits of regional significance (City of Palo Alto 2017a). Therefore, no mineral resource activities would be altered or displaced by the proposed project and further analysis of this issue in an EIR is not warranted.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*	■	□	□	□
b. *Generation of excessive groundborne vibration or groundborne noise levels?*	■	□	□	□
c. *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*	□	□	□	■

NOISE AND VIBRATION SETTING

Noise is defined as unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Because of the logarithmic scale of the decibel unit, sound levels cannot be added or subtracted arithmetically. If a sound's physical intensity is doubled, the sound level increases by 3 dBA, regardless of the initial sound level. For example, 60 dBA plus 60 dBA equals 63 dBA. Where ambient noise levels are high in comparison to a new noise source, the change in noise level would be less than 3 dBA. For example, when 70 dBA ambient noise levels are combined with a 60 dBA noise source the resulting noise level equals 70.4 dBA.

The time period in which noise occurs is important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level

with a 10-dBA penalty for noise occurring during nighttime (10:00 PM to 7:00 AM) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7:00 PM to 10:00 PM and a 10 dBA penalty for noise occurring from 10:00 PM to 7:00 AM. Noise levels described by Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

Noise that is experienced at any receptor can be attenuated by distance or the presence of noise barriers or intervening terrain. Sound from a single source (*i.e.*, a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of 6 dBA for each doubling of distance. A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by this shielding depends on the size of the object, proximity to the noise source and receiver, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (such as hills and dense woods) and human-made features (such as buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dBA of noise reduction. The manner in which buildings in California are constructed generally provides a reduction of exterior-to-interior noise levels of approximately 25 dBA with closed windows (FTA 2006).

PROJECT SITE NOISE ENVIRONMENT

Like many urban areas, Palo Alto's noise environment is dominated by transportation-related noise, including car and truck traffic and trains. Highway 101 is the largest source of traffic noise in Palo Alto, with other highways and major roadways contributing as well. These include El Camino Real, the Oregon Expressway, the Foothill Expressway, Highway 280, Embarcadero Road, San Antonio Road, Middlefield Road, University Avenue, Page Mill Road/Oregon Expressway, and Alma Street, among others. Noise along all these roadways is generated by private cars, trucks, buses, and other types of vehicles. Caltrain also runs through the center of Palo Alto and contributes to the noise environment of the city. Air traffic makes only a modest contribution to ambient noise levels in Palo Alto.

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction of the proposed project would generate temporary noise that would be audible at nearby sensitive receptors, including the single-family residence immediately adjacent to the site. Noise associated with construction is a function of the type of construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of the construction activities. In addition, construction and operation of the project could increase transportation related noise sources, such as automobiles, trucks, and motorcycles.

Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to areas sensitive to noise exposure. Impacts would be potentially significant and will be further analyzed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

The proposed project would involve construction activities such as demolition, site preparation, grading, and excavation, all of which would result in vibration and noise that would affect nearby sensitive receptors such as the single-family residence immediately southeast of the site, the Hamilton Independent Living facilities approximately 75 feet southeast, the Lytton Gardens Assisted Living facility approximately 50 feet west, and the First School preschool approximately 180 feet south. Due to the presence of sensitive noise receptors near the project site, groundborne noise and vibration could affect these sensitive receptors. Impacts would be potentially significant and will be further analyzed in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not within two miles of a public or private airstrip or airport. No impacts would occur and further analysis of this issue in an EIR is not warranted.

NO IMPACT

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14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. *Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?*	□	□	■	□
b. *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*	□	□	□	■

POPULATION SETTING

The current population of Palo Alto is estimated at 67,287 with a per-person household rate of 2.48 (Department of Finance [DOF] 2023). The city currently has 29,285 housing units (DOF 2023). ABAG estimates that the number of households in North Santa Clara County will increase from 107,000 residents in 2015 to 320,000 residents in 2050, or a 199 percent growth, and the number of jobs will increase from 370,000 jobs in 2015 to 629,000 jobs in 2050, or a 70 percent growth (ABAG 2021).

a. *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The project would include 63 new residential units as well as office space and would therefore directly generate population growth. Based on the estimated persons per household number of 2.48 (DOF 2023), the project would add an estimated 157 new residents[7], which would increase the City population to 67,444, or an increase of approximately 0.2 percent. The City also currently has 29,285 housing units. The addition of 63 units would bring the total number of housing units to 29,384, or an increase of approximately 0.2 percent. ABAG projections estimate that the number of housing units in the North Santa Clara County would increase from 107,000 in 2015 to 320,000 by 2050. The housing growth associated with the project is therefore well within the growth forecasts for North Santa Clara County in Plan Bay Area 2050, which projects a 199 percent increase in housing for North Santa Clara County. Therefore, the proposed project would not substantially induce population growth through the provision of new housing units.

[7] 63 new residential units x 2.48 persons per household = 157 new residents.

As discussed in the City's Comprehensive Plan 2015-2023 Housing Element (adopted November 2014), the City has a jobs/housing imbalance skewed to the jobs side of the ratio. This trend requires the City to import most of its workers to meet the needs of business and industry, indicating an unmet need for housing in the City. Although the proposed project would generate approximately 36 new jobs[8] that could indirectly generate population growth and a greater need for employee housing, the net new employees generated from the project would be one less employee when accounting for the current existing office use on site, which generated approximately 37 jobs[9]. The proposed project would provide 63 housing units, which would improve the jobs to housing ratio. Therefore, the project would not adversely affect the jobs to housing ratio and impacts would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

There are no existing housing units at the project site or people known to be residing on the project site in a form of temporary housing. Therefore, the project would not displace existing housing units or people. No impact would occur, and further analysis in an EIR is not warranted.

NO IMPACT

[8] No City, County, or regional employee density rates are available. This analysis assumes 250 square feet per employee (9,115 square feet of office space/250 square feet per employee = 36 employees), based on an employee density rate from the United States Green Building Council (USGBC 2022).
[9] 9,216 square feet of existing office space/250 square feet per employee = 37 employees.

15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1 Fire protection?	□	□	■	□
2 Police protection?	□	□	■	□
3 Schools?	□	□	■	□
4 Parks?	□	□	■	□
5 Other public facilities?	□	□	■	□

PUBLIC SERVICES SETTING

Fire protection is provided by the City of Palo Alto Fire Department (PAFD). The Fire Department provides fire suppression, paramedic ambulance service, search and rescue, fire prevention inspections/permits, public fire education programs, emergency preparedness planning and other services based on community needs. The fire station closest to the project site is Fire Station 1, located at 301 Alma Street, which is approximately 0.8 miles southwest of the project site.

Police protection in Palo Alto is provided by the Palo Alto Police Department (PAPD). The police station closest to the project site located at 275 Forest Avenue, which is approximately 0.6 miles south of the project site.

Public schools in the project vicinity are managed by the Palo Alto Unified School District (PAUSD), which includes twelve primary schools, three middle schools, two high schools and an adult school.

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The project would add residences to the project site and would therefore increase the demand for fire protections services. However, the 2030 Comprehensive Plan EIR concluded that buildout under the Comprehensive Plan would not require expanded or new fire facilities because new development would be in existing urbanized areas already served by existing PAFD stations and required to comply with California Fire Code regulations (City of Palo Alto 2017b). As outlined in Section 14, *Population and Housing*, the project would be consistent with the development goals and vision of the 2030 Comprehensive Plan as well as ABAG population estimates and would produce housing for an increase in population within the expectations for Palo Alto. Since the project site is located in an urbanized and existing service area of the PAFD and is currently served by the PAFD, continued implementation of existing practices of the City, including required compliance with the California Fire Code, would ensure that the project would not require expanded or new fire facilities. This impact would be less than significant, and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The proposed project would not create excessive demand for police services nor introduce development to areas outside of normal service range that would necessitate new police protection facilities; the project site is within the PAPD's service area and existing uses on the site are currently serviced by the PAPD. The proposed project would thus not create the need for new or expanded police protection facilities and impacts would be less than significant. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The proposed project would include up to 63 new residential units. Assuming a conservative student generation rate of one student per residential unit, the proposed project would generate up to 63 additional students at PAUSD schools. Pursuant to Senate Bill 50 (Section 65995(h)), payment of mandatory fees to the affected school district would reduce

potential school impacts to less than significant level under CEQA. If approved, this project would be subject to the Palo Alto Unified School District School Impact Fees, which are assessed based on proposed land use and floor area. Therefore, the project would not have a significant impact with respect to schools. Further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Refer to Section 16, *Recreation*.

LESS THAN SIGNIFICANT IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

As discussed in Impacts a.1 through a.4 above, impacts related to expanded or altered government facilities, including fire, police, school, and park facilities, would be less than significant. Other government facilities include library services. Library services are provided by the Palo Alto City Library. Palo Alto's public library system is comprised of six libraries: Main, Children's, Downtown, College Terrace, Mitchell Park, and Terman Park. The City has one of the highest library item per capita circulation rates in the nation with over one million volumes loaned in 2017 and some 1 million people using the libraries annually (Palo Alto City Library 2017). The closest library branch is Downtown located at 270 Forest Avenue, which is approximately 0.5 miles south of the project site. The proposed project would generate a population growth of approximately 159 new residents. This level of population growth would not be substantial and would not require the construction of new library facilities. This impact would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*	□	□	■	□
b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*	□	□	■	□

RECREATION SETTING

The City of Palo Alto maintains 162 acres of urban parks distributed throughout the City as well as 43.2 miles of trail and over 4,000 acres in natural open space preserves. The four natural open space preserves are: Baylands Nature Preserve (which includes Byxbee Park), Esther Clark Preserve, Foothills Nature Preserve, and Pearson-Arastradero Preserve (City of Palo Alto 2023b). The ratio of public parks to residents in the City is 2.6 acres of parkland per for every 1,000 residents, which is slightly less than the standard ratio of 3 acres of parkland for every 1,000 residents used by the Quimby Act. Accounting for open space, the City has approximately 62 acres of parks and open space for every 1,000 residents.

a. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

b. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

As explained in Section 14, *Population and Housing*, the proposed project would generate an estimated 159 new residents, which would represent less than one percent of the total citywide population. As described in the Recreation Setting above, the City currently has an urban parks to residents ratio of 2.6 acres of parkland for every 1,000 residents, and an open space to residents ratio of 62 acres of parkland for every 1,000 residents. The addition of 159 new residents to the city's population would slightly reduce the ratio of parkland to residents, but not significantly. The urban parks to residents ratio would still round to 2.6 acres of parkland for every 1,000 residents, and the open space to residents ratio would still round to 62 acres per 1,000 residents. The incremental increase in new residents derived from the project would not substantially alter citywide demand for parks such that

substantial physical deterioration of parks would occur, or the construction of new recreational facilities would be required.

The proposed project would not include recreational facilities other than the on-site areas that would serve future residents and employees of the project, such as the residential common open space roof terrace that would include two barbecue and countertops as well as a lounge and seating area on wood deck; the office garden deck; and two benches fronting University Avenue. The park closest to the project site is Johnson Park, located at 268 Waverley Street, which is a 2.5-acre park with facilities like picnic tables, basketball courts, playgrounds, bicycle trails, and walking trails (City of Palo Alto 2021a). Construction of the project would not involve off-site activities or construction that would directly affect these parks. Impacts would be less than significant and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	■	□	□	□
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	■	□	□	□
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	■	□	□	□
d. Result in inadequate emergency access?	■	□	□	□

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

d. Would the project result in inadequate emergency access?

The proposed project would increase the number of residents in the city by 157 people and could result in potentially significant impacts related to VMT, traffic-related hazards, and emergency access. The proposed project could also potentially conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Therefore, impacts would be potentially significant and would be further analyzed in the EIR.

POTENTIALLY SIGNIFICANT IMPACT

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18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	□	■	□	□
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	□	■	□	□

TRIBAL CULTURAL RESOURCES SETTING

ASSEMBLY BILL 52 OF 2014

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted, expanding CEQA by defining a new resource category of "tribal cultural resources." AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project," specifically with those Native American tribes that have requested notice of projects proposed within the jurisdiction of the lead agency.

CALIFORNIA SENATE BILL 18 OF 2004

California Government Code Section 65352.3 (adopted pursuant to the requirements of Senate Bill [SB] 18) requires local governments to contact, refer plans to, and consult with tribal organizations prior to making a decision to adopt or amend a general or specific plan. The tribal organizations eligible to consult have traditional lands in a local government's jurisdiction, and are identified, upon request, by the NAHC. As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005); "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places." SB 18 refers to PRC Section 5097.9 and 5097.995 to define cultural places as:

- A Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (PRC Section 5097.9)
- A Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historical Resources pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (PRC Section 5097.995).

On June 23, 2022, the City, pursuant to Public Resources 21080.3.1, AB 52, California Government Code Section 65352.3, and SB 18, sent via certified mail notification letters to 9 California Native American Tribes that are traditionally and culturally affiliated with the project area. The letters were sent to representatives of the Amah Mutsun Tribal Band, the Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the SF Bay Area, the Ohlone Indian Tribe, Wuksache Indian Tribe/Eshom Valley Band, and Tamien Nation.

The City did not receive any requests for consultation under AB 52 or SB 18. Native American tribes wishing to partake in AB 52 consultation must have responded by July 23, 2022. Tribes wishing to partake in consultation under SB 18 must have responded by September 23, 2022.

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

AB 52 and SB 18 consultation windows have closed with no response from the Tribes contacted. No tribal cultural resources have been identified within the project site. However, there is potential to uncover buried archaeological and tribal cultural resources during ground disturbing activities, which could potentially be considered tribal cultural resources eligible for listing in the CRHR or a local register or be considered tribal cultural resources. Should project construction activities encounter and damage or destroy a tribal cultural resource or resources, impacts would be potentially significant. Therefore, mitigation is required.

MITIGATION MEASURES

The following mitigation measure is required:

TCR-1 UNANTICIPATED DISCOVERY OF TRIBAL CULTURAL RESOURCES

In the event that cultural resources of Native American origin are identified during implementation of the proposed project, all earth-disturbing work within 50 feet of the find shall be temporarily suspended or redirected until an archaeologist and culturally affiliated Native American representative have evaluated the nature and significance of the find. If the City, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with the culturally affiliated local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure TCR-1 would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, mitigated to a less than significant level. Therefore, with implementation of Mitigation Measure TCR-1, impacts to tribal cultural resources would be reduced to a less than significant level. This measure will be included in the EIR's executive summary and

mitigation monitoring and reporting program. Further analysis of this issue in an EIR is not warranted.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	□	□	■	□
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	□	□	■	□
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	□	□	■	□
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	□	□	■	□
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	□	□	■	□

UTILITIES AND SERVICE SYSTEMS SETTING

WATER SUPPLY

The City receives 100 percent of its potable water from the San Francisco Public Utilities Commission (SFPUC) through the Regional Water System (RWS). To deliver water to its customers, the utility owns roughly 233 miles of mains (which transport the water from the San Francisco Public Utilities Commission (SFPUC) meters at the city's borders to the customer's service laterals and meters), eight wells (to be used in emergencies), five water storage reservoirs (also for emergency purposes), and several tanks used to moderate pressure and deal with peaks in flow and demand (due to fire suppression, heavy usage times, etc.).

In 1993, the City prepared its first Water Integrated Resources Plan (WIRP), and most recently updated and approved a new version in 2017. Supplies from the SFPUC were found to be adequate in normal years, but additional supplies are needed in drought years to avoid shortages. Short-term emergency water needs will be met with the City's groundwater wells and storage system. The City is also a participating agency on the Bay Area Water Supply and Conservation Agency's Long-Term Reliable Water Supply Strategy to meet the projected water needs of its member agencies and their customers through 2040 and to increase their water supply reliability under normal and drought conditions (City of Palo Alto 2021b). The City is also currently developing the One Water Plan, which will evaluate alternative water supplies, define existing and future uncertainties and supply risks, and identify community needs and priorities. The Plan will serve as a long-term guide to better prepare for future uncertainties like multi-year drought and climate change. The One Water Plan is expected to be completed by 2024 (City of Palo Alto 2023c).

Table 18 from the City of Palo Alto 2020 UWMP shows the projected City water supply and demand through the year 2045.

Table 18 City of Palo Alto 2020 to 2045 Projected Water Supply

	2020	2025	2030	2035	2040	2045
Demand	10,921	11,287	11,394	11,546	11,801	12,113
Supply	18,579	18,579	18,579	18,579	18,579	18,579
Difference	7,658	7,292	7,185	7,033	6,778	6,466

AFY = acre-feet per year

Source: City of Palo Alto 2021b, Table 26

WASTEWATER

The City of Palo Alto Utilities Department (CPAU) oversees a wastewater collection system consisting of over 217 miles of sewer lines. The City operates and uses recycled water produced at the Palo Alto-operated Regional Water Quality Control Plant (RWQCP), which has primary treatment (bar screening and primary sedimentation), secondary treatment (fixed film reactors, conventional activated sludge, clarification and filtration), and tertiary treatment (filtration through a sand and coal filter and UV disinfection). Wastewater is routed to RWQCP, where it is treated prior to discharge into the San Francisco Bay. While the CPAU is responsible for the wastewater collection system, the Palo Alto Public Works Department is responsible for the collection/conveyance of sewage collected and delivered to the RWQCP (City of Palo Alto 2021b).

The RWQCP has an average dry weather flow design capacity of 39 million gallons per day (mgd) with full tertiary treatment, and a peak wet weather flow capacity of 80 mgd with full secondary treatment. Average flows in 2020 were are approximately 17.24 mgd. Therefore, the current available capacity of the RWQCP is approximately 22 mgd. The plant capacity is sufficient for current dry and wet weather loads and for future load projections. The RWQCP does not experience any major treatment system constraints and has no planned capacity expansions. Approximately 220,000 people live in the RWQCP service area. Of the

wastewater flow to the RWQCP, about 60 percent is estimated to come from residences, 10 percent from industries, and 30 percent from commercial businesses and institutions. The RWQCP treats 21 million gallons per day of effluent from all the partner cities. All the wastewater treated at the RWQCP can be recycled. The plant already has some capability to produce recycled water that meets the Title 22 unrestricted use standard (approximately 4.5 MGD is presently available) (City of Palo Alto 2021b).

UTILITIES

The City's utility receives electricity at a single connection point with Pacific Gas and Electric's (PG&E's) transmission system. From there the electricity is delivered to customers through nearly 470 miles of distribution lines, of which 223 miles (48 percent) are overhead lines and 245 miles (52 percent) are underground. The City also maintains six substations, roughly 2,000 overhead line transformers, 1,075 underground and substation transformers, and the associated electric services (which connect the distribution lines to the customers' homes and businesses) (City of Palo Alto 2017a).

SOLID WASTE

The City is currently contracted with GreenWaste of Palo Alto for collection of garbage, recycling and composting services and partners with the cities of Mountain View and Sunnyvale on the Sunnyvale Materials Recovery and Transfer Station (SMaRT Station). The SMaRT Station processes mixed garbage from Palo Alto and recovers recyclable and compostable materials that would have otherwise gone to landfill. The City is also contracted with Waste Management Inc. to use the Kirby Canyon Landfill for waste disposal (City of Palo Alto 2018). The Kirby Canyon Landfill has a remaining capacity of 16,191,600 tons (CalRecycle 2019) and the daily permitted capacity is 2,600 tons per day (Waste Management 2022).

a. *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

b. *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

c. *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

WATER

The City of Palo Alto attempts to address issues of water supply in its UWMP. According to the UWMP, the City of Palo Alto has analyzed three different hydrological conditions to determine the reliability of water supplies for the City: average/normal water year, single dry water year, and multiple dry water year period. In each of the three hydrological conditions, the projected water demand was calculated taking into account growth in billing data, water conservation efforts, and demographics. The UWMP states that the City of Palo

Alto can reliably meet the projected water demand in each of the hydrological conditions through 2035 (City of Palo Alto 2021b). As stated in Sections 11, *Land Use and Planning*, and 14, *Population and Housing*, the proposed project would be consistent with the City of Palo Alto Comprehensive Plan and the growth forecast.

As discussed in the Preliminary Domestic Water and Sanitary Sewer Demand Memorandum provided by BKF on May 13, 2022, and included as Appendix G, the project site would be serviced by a 4-inch residential domestic water lateral that stems off the 6-inch main in Byron Street, and a 2-inch commercial domestic water lateral and a 1.5-inch irrigation lateral that stem off the 12-inch main in Middlefield Road. According to the Memorandum, domestic water demand for existing buildings on site is 1,035 gallons per day (gpd). The proposed project would increase domestic water demand to 12,387 gpd, or 13.9 acre-feet per year (AFY). As shown in Table 18, available water supply is projected through 2045. The proposed project would constitute 0.2 percent of excess water supply in 2025. Therefore, the city would have sufficient water supplies available to serve the project. Although additional supplies are needed in drought years, the City has prepared a Water Shortage Contingency Plan (WSCP) which includes water use restrictions that depends on local conditions and the length of water shortage or droughts. The WSCP identifies measures appropriate for various stages of action, based on reduction targets for each stage, and would help the City reduce potable water consumption (City of Palo Alto 2022). The proposed project would be required to comply with reduction targets during drought years. Therefore, no new or expanded facilities would be needed to serve the proposed project, and impacts would be less than significant. Further analysis in an EIR is not warranted.

WASTEWATER

As discussed in the Preliminary Domestic Water and Sanitary Sewer Demand Memorandum provided by BKF on May 13, 2022, the project site would be served by a 4-inch residential sanitary sewer lateral that stems off the 5.4-inch main in Byron Street, and a 4-inch commercial sanitary sewer lateral that stems off the 12-inch main in Middlefield Road. According to the Memorandum, wastewater generation for existing uses on site is 983 gpd. The proposed project would increase wastewater generation to 11,767 gpd. As stated above in the Setting, the RWQCP has a dry weather flow capacity of 39 mgd and has an excess capacity of approximately 22 mgd. The increase in wastewater generation associated with the project would be approximately 0.05 percent of the existing unused capacity of the RWQCP[10]. Therefore, there would be sufficient wastewater capacity to serve the project site. The proposed project would not exceed wastewater treatment requirements or require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. The proposed project would not result in a substantial physical deterioration of public wastewater facilities. Impacts would be less than significant, and further analysis in an EIR is not warranted.

[10] 11,767 gpd / 22 mgd * 100 = 0.05 percent

STORMWATER

As mentioned under *Hydrology and Water Quality*, development of the project would not increase runoff into the storm drain system, as the project would increase the amount of landscaped area which would decrease peak stormwater discharge to the Middlefield Road storm drain main by about 22 percent during the 10-year storm and 100-year storm. The project would involve retention of the existing surface runoff system and would also include flow-through planters along the site boundary adjacent to landscaping areas in order to treat and capture stormwater. Therefore, the volume of stormwater runoff would not exceed the capacity of the storm drain system servicing the site, and the project would not require or result in the construction of new stormwater treatment facilities or expansion of existing facilities. Impacts would be less than significant, and further analysis in an EIR is not warranted.

ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS

The proposed project would continue to be served by CPAU for electricity. Long-term operation of development projects would require permanent grid connections for electricity and natural gas service to power internal and exterior building lighting, and heating and cooling systems. As described in Section 6, *Energy*, the project would require approximately 0.77 gigawatt hours (GWh) of electricity. The City consumed approximately 825.4 GWh of electricity in 2020 (CEC 2021c). Thus, the project would only account for 0.09 percent of the projected energy use for the City. Additionally, the project would have to comply with the California Building Standards Code, California's CALGreen standards, and the 2022 Building Energy Efficiency Standards to minimize wasteful, inefficient, or unnecessary consumption of energy resources and meet energy performance standards. Accordingly, the project would be accommodated adequately by existing electricity and telecommunication facilities and would not require improvements to existing facilities, or the provision of new facilities, that would cause significant environmental effects. Impacts would be less than significant, and further analysis in an EIR is not warranted.

LESS THAN SIGNIFICANT IMPACT

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

As shown in Table 19, the project would generate approximately 307 pounds, or 0.15 tons, of solid waste per day. The incremental increase in solid waste associated with the project would be within the permitted capacities of Kirby Canyon Landfill. Therefore, the project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. The proposed project would not result in a substantial physical deterioration of public solid waste facilities. Furthermore, the project would be required to comply with all federal, state, and local solid waste regulations, such as the Palo

Alto Recycling and Composting Ordinance and SB 1383. Impacts would be less than significant, and further analysis in an EIR is not warranted.

Table 19 Estimated Solid Waste Generation

Type of Use	Quantity	Generation Factor	Total (lbs/day)	Total (tons/day)
Residential	63 du	4 lbs/du/day	252	0.13
Office	9,115 sf	6 lbs/1,000 sf/day	55	0.03
Total solid waste sent to landfill			**307**	**0.15**
Total solid waste sent to landfill assuming 50% diversion rate			**154**	**0.08**

Source: CalRecycle Waste Generation Rates 2018. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates

Notes: du=dwelling unit, lbs = pounds, sf = square feet

LESS THAN SIGNIFICANT IMPACT

20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. *Substantially impair an adopted emergency response plan or emergency evacuation plan?*	□	□	□	■
b. *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*	□	□	□	■
c. *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*	□	□	□	■
d. *Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*	□	□	□	■

a. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

b. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

c. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The project site is not located in or near a State Responsibility Area or Very High Hazard Severity Zone for wildland fires (California Department of Forestry and Fire Protection [CalFire] 2023). The nearest VHFHSZ is located approximately 5.2 miles west of the project site in Redwood City (CalFire 2023). The proposed project would be required to comply with the California Fire Code requirements pursuant to PAMC Section 15.04.015. No impacts would occur.

NO IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	■	□	□	□
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	■	□	□	□
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	■	□	□	□

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

As noted under Section 4, *Biological Resources*, implementation of the project may affect nesting birds protected under the MBTA. The project would also potentially impact the protected oak tree located on the adjacent property at 519 Byron Street since its root system and canopy would extend onto the project site. Therefore, the project could result in cumulatively significant impacts related to biological resources, and this impact will be further analyzed in the EIR.

As noted under Section 5, *Cultural Resources*, implementation of the project would not eliminate important examples of the major periods of California history or prehistory with implementation of mitigation measures CUL-1, CUL-2 and TCR-1. Therefore, the project would not result in cumulatively significant impacts related to cultural resources or tribal cultural resources, and impacts would be less than significant. Further analysis in the EIR is not warranted.

POTENTIALLY SIGNIFICANT IMPACT

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The following includes a list of planned and pending development near the project site (City of Palo Alto 2023d):

- 429 University Avenue, Palo Alto – Mixed-Use Project (0.3 mile north of the project site)
- 565 Hamilton Avenue, Palo Alto – Multi-Family Project (0.3 mile south of the project site)
- 160 Waverley Street, Palo Alto – Residential Project (0.6 mile west of the project site)
- Upstream of Highway 101 Project – Pope/Chaucer Bridge removal and replacement and associated creek improvements (0.3 mile north of the project site)

Cumulative impacts are addressed in the individual topical sections above for Air Quality and Greenhouse Gas Emissions (*CEQA Guidelines* Section 15064[h][3]). For these issue areas, cumulative impacts were found to be less than significant (not cumulatively considerable). Some of the other resource areas were determined to have no impact in comparison to existing conditions, and therefore would not contribute to cumulative impacts, such as those related to mineral resources, agricultural resources, and wildfire. As such, cumulative impacts in these issue areas would also be less than significant (not cumulatively considerable).

The project would involve infill development in an urban area on a site that is currently developed and does not contain special-status species or habitat. Cumulative projects also involve infill development on urban sites. Nonetheless, the proposed project and cumulative projects could potentially affect nesting birds and trees, resulting in potentially significant cumulative impacts. Cumulative impacts for biological resources will be further analyzed in the EIR.

Cumulative development involves projects on areas potentially identified as moderately sensitive for cultural resources; therefore, cumulative development may disturb areas that may potentially contain cultural or tribal cultural resources. Although the majority of the project site has low sensitivity for paleontological resources, the southeastern portion of the project site is underlain with Quaternary older alluvium which has high paleontological sensitivity. However, implementation of Mitigation Measure GEO-1 would reduce impacts to a less than significant level. Additionally, the proposed project includes mitigation

measures CUL-1, CUL-2 and TCR-1 to reduce the potential for project-specific impacts to cultural or tribal cultural resources. It is anticipated that the other cumulative projects would include similar measures to reduce impacts associated with individual development projects. Impacts associated with cultural resources are typically addressed on a case-by-case basis. Therefore, significant cumulative resource impacts would not occur.

Cumulative development would gradually increase population and therefore gradually increase the number of people exposed to potential geological hazards, including effects associated with seismic events such as ground rupture and strong shaking. However, conformance with the current CBC as well as other laws and regulations mentioned above, would ensure that project-specific impacts associated with geology and soils would be less than significant. Potential impacts associated with geology and soils would not be cumulatively considerable, and cumulative impacts related to geologic hazards would be less than significant.

Cumulative development includes residential, school, and commercial uses which do not typically involve the use or storage of large quantities of hazardous materials, other than those typically used for cleaning, maintenance, or landscaping. Therefore, no cumulative impacts related to the use transport, use, or disposal of hazardous materials would be less than significant. Overall, hazards and hazardous materials impacts associated with individual developments are site specific in nature and must be addressed on a case-by-case basis. Since hazards and hazardous materials are required to be examined as part of the permit application and environmental review process, it is anticipated that potential impacts associated with individual projects will be adequately addressed and mitigated prior to permit approval. With adherence to existing federal, State, and local regulations, no significant cumulative human health impacts are anticipated.

The proposed project would be consistent with the applicable zoning and goals and policies in the City's Comprehensive Plan and Zoning Code. All other pending and future projects in Palo Alto would be required to adhere to applicable City zoning and development regulations and Comprehensive Plan policies to mitigate environmental impacts where feasible. The project in combination with listed cumulative projects would not result in significant cumulative impacts with respect to consistency with land use plans.

The listed cumulative projects would generate temporary noise and vibration during construction and noise typical of their proposed use during operation. Although construction noise and vibration and operational noise are localized and rapidly attenuate in an urban environment, the proposed project could still potentially result in significant noise and vibration impacts. Therefore, cumulative impacts related to noise and vibration are potentially significant and will be further analyzed in the EIR.

The proposed project would involve new residential uses and would induce direct or indirect population growth. However, population increase associated with the proposed project would be well within the population forecast for the City. Therefore, the project would not significantly contribute to potential population increases throughout Palo Alto and the region.

The proposed project and cumulative development involve development on urban infill sites that are within the service areas for existing public services such as fire and police protection services. Although growth overall would contribute to the need for expanded public services, existing local regulations and policies ensure that capacity issues are addressed as they arise. It is not anticipated that cumulative development would increase the need for public services such that new or expanded facilities would be required resulting in significant environmental effects. No significant cumulative impacts would occur.

As discussed in Section 17, *Transportation*, the proposed project could result in potentially significant impacts related to VMT. Therefore, transportation impacts could be cumulatively considerable and will be further analyzed in the EIR.

Cumulative development in the city would continue to increase wastewater generation, water use, and solid waste generation which would affect City-provided utilities. As discussed in Section 19, *Utilities and Service Systems*, the City's UWMP estimates water supply and demand for the city to 2045 including cumulative future development in the city. Water demand would be adequate to meet the City's needs; therefore, no cumulative impact would occur. The project would require less than 0.05 percent of the existing unused capacity of the RWQCP and would contribute 0.15 tons of solid waste per day to the Kirby Canyon Landfill. These incremental increases would not be cumulatively considerable.

POTENTIALLY SIGNIFICANT IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, impacts to human beings are associated with air quality, geologic hazards, hazards and hazardous materials, noise, traffic safety, and wildfire impacts. As described in Section 3, *Air Quality*, Section 7, *Geology and Soils*, Section 9, *Hazards and Hazardous Materials*, and Section 20, *Wildfire*, impacts related to air quality, geology, hazards, and wildfire would be less than significant or less than significant with mitigation incorporated. However, as detailed in the preceding responses, the proposed project's effects on noise and traffic could be significant and will be analyzed further in an EIR.

POTENTIALLY SIGNIFICANT IMPACT

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LIST OF PREPARERS

Rincon Consultants, Inc. prepared this Initial Study under contract to the City of Palo Alto. Persons involved in data gathering analysis, project management, and quality control are listed below.

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Attachment B

Revised Arborist Reports (May 28, 2024)

ARBOR RESOURCES
professional consulting arborists and tree care

May 28, 2024 via: email

Boyd Smith
Smith Development
682 Villa Street
Mountain View, CA 94041

RE: Coast Live Oak #10 | 660 University Avenue, Palo Alto

Dear Mr. Smith:

In connection with the above-referenced tree and project, you have requested that I prepare this letter to address the proposed balconies adjacent to its canopy, and ongoing pruning to maintain balcony clearance.

As mentioned in my 12/20/23 report, the 30-foot building setback from #10's trunk considers that pruning 5 to 6 feet inside this distance is needed to establish clearances for constructing the building, installing construction scaffolding, and operating manlifts and shoring equipment. This cleared area will also provide space for the proposed balconies, which will have short sections projecting up to 6 feet beyond the building, and do not introduce additional impacts. The only potential issue would be if construction scaffolding was installed between the balconies and tree, but confirmation from the general contractor reveals this is unnecessary and balconies can be built without requiring additional clearance.

Regarding ongoing pruning to retain the useable space of balcony sections nearest the tree, regular pruning is planned to maintain clearances while avoiding large or adverse cuts. Measures to help address this include: annual inspections performed by the project arborist for 5 to 10 years following building occupancy, guidance by the project arborist regarding which branches can be cut, highly-selective and limited pruning to avoid significant cuts, pruning being supervised by the project arborist, and the pruning work performed by a tree service which has an ISA Certified Arborist in a supervisory role.

Sincerely,

David L. Babby
Registered Consulting Arborist® #399
Board-Certified Master Arborist® #WE-4001B
CA Licensed Tree Service Contractor #796763 (C61/D49)

ARBOR RESOURCES
professional consulting arborists and tree care

TREE PROTECTION REPORT

660 UNIVERSITY AVENUE

PALO ALTO, CALIFORNIA

(511 BYRON ST., 660 & 680 UNIVERSITY AVE.)

Submitted to:

Smith Development
682 Villa Street, Suite G
Mountain View, CA 94041

Prepared by:

David L. Babby
Registered Consulting Arborist® #399
Board-Certified Master Arborist® #WE-4001B

Prior: December 20, 2023
Current: February 7, 2024

p.o. box 25295, san mateo, california 94402 ▪ email: arborresources@comcast.net
office: 650.654.3351 ▪ cell: 650.274.3656 ▪ licensed contractor #796763

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EXHIBITS

EXHIBIT	TITLE
A	TREE INVENTORY TABLE (four sheets)
B	SITE MAP (one sheet)
C	PHOTOGRAPHS (five sheets)
D	LANDSCAPE PLANS - DECK BENEATH TREE #10 (two sheets)

1.0 INTRODUCTION

Smith Development is planning to construct a mixed-use, four-story building with two levels of underground parking on three properties[1] aligning the southeast side of University Avenue, between Middlefield Road and Byron Street; the project is titled 660 University Avenue. Two existing buildings and a surface parking lot currently occupy the site and will be demolished. As part of their planning submittal, Smith Development has retained me to prepare this *Tree Protection Report*, and specific tasks assigned to execute are as follows (this report serves to update my prior one, dated 12/20/23, prepared for this project):

- Visit the site on 1/16/21, 11/9/21 and 12/12/23 to identify 25 trees which have trunks located within the subject property, on adjoining properties within close proximity to the boundary, and along street frontages up to 30 feet from the boundary.
- Determine each tree's trunk diameter pursuant to the City of Palo Alto's (CPA) *Tree Technical Manual*[2] and the *Guide for Plant Appraisal, 10th Edition*;[3] all diameters represent inches and are rounded to the nearest whole number.
- Estimate each tree's height and average canopy spread (rounded to the nearest fifth).
- Ascertain each tree's health, structural integrity and form, and assign an overall condition rating (e.g. good, fair, poor or dead).
- Rate each tree's suitability for preservation (e.g. high, moderate or low).
- Obtain photographs; see Exhibit C (they represent those obtained in 2021).
- Assign numbers in a sequential pattern from #1 thru 25, and plot on the site map in Exhibit B (base map is a copy of the *Topographic & Boundary Survey* prepared by BKF, dated 2/17/21).
- Affix round metal tags with corresponding, engraved numbers onto the trunks of onsite and street trees (i.e. all but #10).
- Identify which are defined by the PAMC as protected and/or street trees.
- Ascertain the potential tree disposition and potential impacts by reviewing [1] the Planning Resubmittal #5 drawing set, dated 10/31/23, and [2] two landscape plans, dated 2/7/24, showing the proposed deck beneath #10's canopy.
- Provide design guidelines and protection measures to help avoid or mitigate potential impacts to retained trees, as well as conform with the CPA requirements.
- Prepare a written report presenting the above information, and submit via email as a PDF document.

[1] The three property addresses include 511 Byron Street, 660 and 680 University Avenue.
[2] Available for viewing at *www.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=6436*.
[3] Authored by the Council of Tree & Landscape Appraisers, and published by the ISA.

2.0 TREE DESCRIPTION

Twenty-five (25) trees of 11 various species were inventoried for this report. They are sequentially numbered as 1 thru 25, and the table below identifies their common names, assigned numbers, counts and overall percentages.

Table 1 - Tree Count and Composition

NAME	TREE NUMBER(S)	COUNT	% OF TOTAL
Chinese pistache	8	1	4%
Coast live oak	10	1	4%
Crape myrtle	19 thru 24	6	24%
European hackberry	1	1	4%
Glossy privet	4 & 5	2	8%
London plane tree	2, 3 & 6	3	12%
Olive tree	11	1	4%
Purple Robe locust	17 & 18	2	8%
Raywood ash	12 thru 16	5	20%
Southern magnolia	7 & 9	2	8%
Yew pine	25	1	4%
	Total	**25**	**100%**

Specific information regarding each tree is presented within the table in Exhibit A. The trees' assigned numbers and approximate locations can be viewed on the site map in Exhibit B, and photographs are presented in Exhibit C.

Nine (9) trees, #1 thru 9, have trunks within the public right-of-way and are defined and regulated by the PAMC as street trees. Tree #1 is along Middlefield Road, #2 thru 6 align University Avenue, and #7 thru 9 align Byron Street. Of these, #1 thru 8 are along the street frontage of the project site, whereas #9 is along the frontage of the neighboring southeastern property (and included to conform with CPA report standards).

Tree #10 is located offsite in close proximity to the property boundary. Trees #11 thru 25 have trunks situated within the property.

Two (2) trees, #9 and 19, are not shown on the topo survey used for Exhibit B. As such, consider their trunk locations represented in Exhibit B as being only roughly approximate locations and not surveyed by me.

Trees #1-9 and 11-25 are considered ornamentals and not native to the local region. Tree #10 is a coast live oak is native, and represents the largest, most visible tree inventoried for this project.

Tree #10 (coast live oak)

Tree #10 is defined by the CPA as a protected tree (refer to Section 3.0 in this report for additional information). Its trunk diameter is 50 inches[4] at 54 inches above soil grade, is around 60 feet tall, and has a mostly balanced canopy spreading nearly 90 feet across.

As part of the initial site study, Smith Development retained me in January 2021 to evaluate #10's condition, as well as provide development setbacks to adequately protect its root zone and canopy while achieving a reasonable assurance of survival, structural integrity and form. A summary of additional observations obtained on 1/16/21 follows (and confirmed to be the same on 12/12/23), and photos obtained on 1/16/21 then can be observed in Exhibit C (page C-3). Information regarding my recommended setbacks and review of potential impacts are presented in Section 5.0.

The oak appears viable and healthy, and exhibits no symptoms or signs of being infected or infested by harmful pathogens. Shoot growth, color and density appear typical for a coast live oak, and woundwood has favorably closed off the vast majority of prior wounds.

[4] The diameter represents an approximation using a Biltmore stick.

Existing features beneath its canopy and surrounding the trunk appear dated, and based on its generally healthy condition, I conclude the tree has adapted well to current site and growing conditions. Its base is buried by leaf debris, and is situated roughly 6 inches or less from a 2-foot tall wall. Northeast of its trunk is barren soil, surface roots, and a raised deck which nears 2 feet above grade and serves as a walkway. Towards the southwest, this walkway continues by nearly 30 feet from the trunk, steadily descending and serving as an ADA ramp leading to the neighbor's parking lot.

Beneath the section of canopy overhanging the project site is an asphalt parking lot elevated above original grade by roughly 2 feet. There are no signs of roots forming cracks or mounds of the asphalt surface; however, given the dated age of the wall and surrounding features, I suspect roots are present, but highly limited as compared to the more favorable root-growing conditions on the neighboring property. A parking lot medium, particularly elevated as this one, is quite unsuitable for root growth, and the retaining wall footing also contributes towards deflecting root growth away from the lot.

Its structure also appears intact and stable, consisting of a main trunk dividing into five leaders at 10 feet high; their unions are favorably spaced apart, although visual and manual examination of the junction should occur once neighboring site access can be obtained to identify the presence of any defects, or lack thereof. The section of trunk and root collar buried by leaf debris should also be examined at that time.

The canopy is highly elevated above the parking lot, and appears to have been regularly pruned over its many years. The elevated canopy, however, does unfavorably displace limb and branch weight towards the canopy's edges, and potentially increases the possibility of limb and branch failure (although the regular maintenance provided certainly helps minimize this risk).

Review of Arborist Reports

Two arborist reports were provided to the project team by the CPA; one authored by Arborist OnSite, dated 5/23/22, and the other by Walter Levison Consulting Arborist, dated 12/21/22. Following my review, I maintain that my analysis and recommendations for this project, as presented herein, are accurate.

3.0 REGULATED TREES

The PAMC regulates specific types of trees on public and private property for the purpose of avoiding their removal or disfigurement without first being reviewed and permitted by the CPA. Three categories within the status of regulated trees include protected trees (PAMC 8.10), street trees (PAMC 8.04.020) and designated trees. Additional Information regarding regulated trees can be viewed on page xiii of the CPA's *Tree Technical Manual*.

One tree, #10, is defined as a protected tree due to being a coast live oak with a trunk diameter of 50 inches (the threshold for coast live oaks is having a trunk diameters of ≥11.5 inches at 54 inches above grade). Note that although a new and expanded definition for protected trees was recently codified by the CPA on 7/21/22, the prior definition, presented herein, applies to this project as the planning application precedes 7/21/22.

Trees #1 thru 9 are situated within the public right-of-way and defined as street trees.

The designated tree category applies to existing trees planted on a commercial or planned development site, for either designated tree landscape or to mitigate tree removal. This category can be enacted by the CPA and applied to any specific tree associated with a proposed development.

4.0 SUITABILITY FOR TREE PRESERVATION

Each tree has been assigned either a high, moderate or low suitability for preservation rating as a means to cumulatively measure its health, structural integrity, anticipated life span, remaining life expectancy, location, size, particular species, tolerance to construction impacts, growing space, and safety to property and persons within striking distance. Descriptions of these ratings are presented below, and the high category comprises 1 tree (4%), the moderate category 15 (or 60%), and the low category 9 (or 36%).

High: Applies to #10.

This coast live oak appears healthy and structurally stable; has no obvious, significant health issues or structural defects; presents a good potential for contributing long-term to the site; and requires only periodic or regular care and monitoring to maintain its longevity and structural integrity.

Moderate: Applies to #1-3, 7, 8, 11 and 17-25.

These trees contribute to the site, but at levels less than those assigned a high suitability; might have health and/or structural issues which may or may not be reasonably addressed and properly mitigated; and frequent care is typically required for their remaining lifespan.

Low: Applies to #4-6, 9 and 12-16.

These trees have significant health and/or structural issues expected to worsen regardless of tree care measures employed (i.e. beyond likely recovery). As a general guideline, they should be removed regardless of future site improvements, and any which are retained require frequent monitoring and care throughout their remaining lifespans to minimize risk to any persons or property within striking distance.

5.0 IMPACT ANALYSIS

5.1 Tree Disposition Summary

My review of project plans reveals the following tree disposition:

- **Remove** (19 in total): #4-6, 8 and 11-25.
- **Retain in Place** (6 in total): #1-3, 7, 9 and 10.

Table 2 below, and continued on the next page, summarizes each tree's proposed disposition, and lists their name, trunk diameter, canopy spread, and suitability for preservation.

Table 2 - Tree Disposition Table

TREE #	COMMON NAME	DISPOSITION		DIAM (in.)	CAN (ft.)	SUITABILITY FOR PRESERVATION
		RETAIN	RMV			
1	European hackberry	X	-	20	40	Moderate
2	London plane tree	X	-	15	50	Moderate
3	London plane tree	X	-	14	40	Moderate
4	Glossy privet	-	X	6	15	Low
5	Glossy privet	-	X	13	20	Low
6	London plane tree	-	X	10	35	Low
7	Southern magnolia	X	-	21	35	Moderate
8	Chinese pistache	-	X	14	35	Moderate
9	Southern magnolia	X	-	20	35	Low
10	Coast live oak	X	-	50	90	High
11	Olive tree	-	X	8, 8	10	Moderate
12	Raywood ash	-	X	2	10	Low
13	Raywood ash	-	X	12	15	Low
14	Raywood ash	-	X	11	20	Low
15	Raywood ash	-	X	6	15	Low
16	Raywood ash	-	X	15	20	Low
17	Purple Robe locust	-	X	6	20	Moderate
18	Purple Robe locust	-	X	5	20	Moderate

Table continued:

TREE #	COMMON NAME	DISPOSITION		DIAM (in.)	CAN (ft.)	SUITABILITY FOR PRESERVATION
		RETAIN	RMV			
19	Crape myrtle	-	X	5	10	Moderate
20	Crape myrtle	-	X	3, 3, 2	5	Moderate
21	Crape myrtle	-	X	6	10	Moderate
22	Crape myrtle	-	X	6	10	Moderate
23	Crape myrtle	-	X	6	15	Moderate
24	Crape myrtle	-	X	4, 3, 2	10	Moderate
25	Yew pine	-	X	8	10	Moderate

LEGEND
RMV = Remove
DIAM = Diameter (trunk)
CAN = Canopy spread (average)

5.2 Proposed Removals

The 19 trees proposed for removal include #4-6, 8 and 11-25. Trees #4 thru 6 are street trees aligning University Avenue, and will be removed due to their poor condition and low suitability for preservation. Trees #4 and 5 are small privets with advanced and extensive decline and decay. Tree #6 is a London plane which has partially uprooted; leans towards the street; and opposite the lean, has formed a pronounced buttress root causing extensive and somewhat dramatic hardscape damage. Removing #4 thru 6 provides the opportunity to significantly improve the future, long-term tree landscape and site/public safety.

Tree #8 is a street tree of moderate suitability for preservation, and requires removal to accommodate the future drive aisle off Byron Street.

Trees #11 thru 25 are located onsite and within the proposed building and parking garage footprint. Each represents a relatively small, non-native assigned either a low or moderate suitability for preservation.

For replacement sizes, amounts and species, refer to the CPA's recommendations.

5.3 Retained Trees

Trees planned for retention include #1-3, 7, 9 and 10. This section provides my analysis for those exposed to impacts, to include all but #9, and discusses general recommendations to minimize described impacts.

Additional and more detailed mitigation measures are presented within the next section of this report. They should be incorporated into project plans; carefully followed throughout the entire demolition, grading and construction stages; and are subject to revision upon reviewing any revised plans.

Trees #1-3 and 7

These street trees align the project site, and their protection zones can be regarded as being from their trunks up to the existing back of sidewalks and street curbs, and 10 feet in all other directions. Each tree will sustain an estimated 15- to 20-percent canopy loss to achieve building construction. Shoring installation for the parking garage may require an additional 5- to 10-percent of additional canopy removal.

Overall, I find the trees will not be adversely impacted provided these items are followed: pruning is judiciously performed through limited and highly-selective cuts by a California State licensed tree-service company approved by the CPA; scaffolding is minimized in width, and manlifts are utilized, where needed, to avoid unnecessary limb removal; and the shoring methodology is carefully studied and locations for drilling or driving piles are strategically placed to minimize canopy loss. Protection for these trees should include what the CPA defines as Type III Protection (aka trunk wrap), plus plywood to cover unpaved ground (i.e. planters) within their TPZ.

Tree #10

The architectural design substantially conforms to my recommendations provided in January 2021, which stipulates a minimum 30-foot setback from the oak's trunk to construct the future building and parking garage, and a minimum setback of 20 feet from the trunk for all ground disturbance beneath the existing asphalt surface.

The CPA's Tree Protection Zone (TPZ) standard is a radial distance from the trunk equal to 10 times its diameter, which for oak #10, identifies a TPZ of 41 feet from the trunk. The proposed project establishes the TPZ to be 30 feet from the trunk, which equates to a multiplier of 7 times the trunk diameter (and 11 feet inside). Information regarding anticipated impacts to the canopy and roots are discussed on the next page.

Canopy

The 30-foot setback from #10's trunk considers an additional 5 to 6 feet towards the tree where pruning would occur to establish clearances from the building, scaffolding, manlifts, and any shoring equipment. The proposed balconies do encroach inside the 30-foot setback by 5 to 6 feet, but provided construction scaffolding does not need to be erected beyond the balconies' edges (i.e. between the balconies and tree's trunk), then the building remains in conformance with the setback. During construction of the parking garage, strategically placing shoring and highly-selective pruning can limit impacts.

The estimated total canopy loss to construct the proposed building is 15-percent, the extent of which will not adversely affect the oak's existing form. This considers removing a low, 17-inch diameter limb overhanging the lot (see page C-3 of Exhibit C for a photo); an 8-inch diameter branch emerging from a 14-inch diameter limb growing mostly upright at a slight westerly angle; and roughly a dozen smaller branches ranging in size from 1 to 6 inches in diameter. All cuts will be highly selective, occur beyond the main trunk, and performed under direct supervision of the project arborist.

Additional and minor sections of canopy may also require removal to facilitate shoring installation to build the underground parking garage; based on my site analysis, I estimate only 5- to 10-percent, provided the shoring methodology is carefully studied and locations for drilling or driving piles are strategically placed.

Roots

The 20-foot setback from #10's trunk for ground disturbance applies to any soil compaction, grading, subexcavation, overexcavation, trenching, drilling/auguring, storm drains, swales, etc. My review of proposed plans reveals this has been achieved, and a large section of existing asphalt within this area will be retained, a wood deck built on top, and section of existing retaining wall within the TPZ kept in place. Exhibit D includes both Sheet L1.1 and a detailed section of the proposed deck.

Based on my site analysis and plan review, I estimate implementing the proposed design will affect approximately 15- to 20-percent of its root zone, a level considered highly tolerable, particularly for inherently resilient species of coast live oaks.

Protection for #10 would consist of CPA Type I Protection (aka chain link mounted on driven posts).

6.0 TREE PROTECTION MEASURES

Recommendations presented within this section are based on my review of the 10/31/23 plan set, and serve as measures to help mitigate or avoid impacts to trees anticipated for retention. I (hereinafter, "project arborist") should be consulted in the event any cannot be feasibly implemented. Please note, unless otherwise stated, all referenced distances from trunks are intended to be from the closest edge, face of, their outer perimeter at soil grade.

6.1 Design Guidelines

1. Consider each Tree Protection Zone (TPZ) as those minimum distances specified within Section 5.0 of this report. The TPZ is the area where the following minimum activities should be avoided: trenching, soil scraping, compaction, mass and finish-grading, overexcavation, subexcavation, tilling, ripping, swales, bioswales, storm drains, dissipaters, equipment cleaning, removal of underground utilities and vaults, altering existing water/drainage flows, stockpiling and dumping of materials, and equipment and vehicle operation. Where an impact encroaches slightly within a setback, it can be reviewed on a case-by-case basis by the project arborist to determine appropriate mitigation measures.

2. The CPA requires all design changes occurring near retained trees are reviewed by the project arborist prior to resubmitting plans, for purposes of identifying potential impacts and any possible mitigation measures.

3. Per CPA requirements, incorporate this report into the project plan set, following the CPA T-1 sheet, and copying onto T-2, T-3, etc. until its entirety is shown (and in a manner which all report text can be clearly read on the plan sheets).

4. On all architectural, civil, landscape and electrical site-related plans, show the trunk locations, trunk diameters (as circles to scale), and assigned numbers of all inventoried trees (see map in Exhibit B). Also, add notes instructing contractors to comply with recommendations presented in this report and on Sheet T-1, and to contact the project arborist prior to permitted work being performed within a TPZ.

5. On L4.1 and SD1.0, include the following: the notes mentioned in item 4 (second sentence), identify which trees are proposed for removal by placing an "X" across their trunks, and identify the Tree Protection Zones and protection fencing types as shown on the map in Exhibit B.

6. On SD1.0, add a note specifying to abandon any underground portions of existing and unused lines, pipes and manholes, etc. within a TPZ (prescribe they are cut off at existing soil grade versus being dug up and causing root damage). Also, to comply with this, modify the utility demolition currently prescribed within #1's TPZ.

7. Route underground utilities and services beyond TPZs, and per CPA guidelines for street trees, establish at least 10 feet from their trunks. Where this is not feasible, consider the following alternative trenching or installation methods (listed in order of least to most impactful): directionally bore by at least 3.5 to 4 feet below grade, tunnel using a pneumatic air device (e.g. an AirSpade®), or manually dig with a shovel (i.e. no jackhammer); these assume pipe bursting, an optimal method, does not apply to this project. For boring, establish access pits and above-ground infrastructure (e.g. splice boxes, meters and vaults) beyond TPZs.

8. Where within 30 feet from #10's trunk, ensure specifications by the geotechnical, soils and structural engineers do not require compaction, overexcavation, subexcavation or fill beyond 2 feet from the parking garage wall (towards the tree) and 5 feet beyond the building's foundation. Shoring utilized to achieve these setbacks, such as a pile driver or drill rig, shall not be used where significant damage to a tree's canopy would occur (can be determined on a case-by-case basis).

9. The proposed sidewalks within the trees' TPZs should be designed and built entirely above existing soil grade and surface roots (i.e. a no-dig design), including for base material, edging and forms. Also, direct compaction of soil shall be avoided (levels comparable to foot-tamping are acceptable), and soil fill used to bevel the top of walk to existing grade should not exceed 18 to 24 inches from a walk's edge, not be compacted, nor placed closer than 10 feet from a tree's trunk. Tensar® BX Geogrid *(www.tensarcorp.com)* is a material which can help address these limited excavation and compaction requirements.

10. For any retaining or landscape wall within a TPZ, utilize a pier and above-grade beam system, establish the beam spanning between footings to be above-grade (i.e. a no-dig design except for footings), and avoid fill and compaction between footings.

11. Design any new bioswales, storm drains and swales well-beyond TPZs.

12. The permanent and temporary drainage design, including downspouts, should not require water being discharged beneath #10's canopy.

13. All electrical routes should be designed and represented on the electrical site plan to be beyond TPZs.

14. Any new light poles should be established beyond tree canopies, or at a minimum, only where minor branch clearance is needed. The proximity of tree trunks should also be considered, and placed as far from them as possible.

15. The future staging area and route(s) of access should be shown on the final site plan and avoided on unpaved areas beneath or near canopies.

16. The erosion control design should represent silt fence and/or straw rolls at locations beyond TPZs, and at a minimum, not against a tree's trunk. Where within a TPZ, the material should not be embedded into the ground by more than 2 inches, nor require the severance of surface or shallow roots.

17. Avoid specifying the use of herbicides use within a TPZ; where used on site, they should be labeled for safe use near trees. Also, liming shall not occur or be prescribed within 50 feet from a tree.

18. The landscape design should conform to the following additional guidelines:
    a. Tilling, ripping, surface scraping and compaction within TPZs should be avoided.
    b. Irrigation should not strike within 12 inches from trunks of existing trees, nor applied against trunks of new trees.
    c. Plant material installed beneath tree canopies should be >12 to 24 inches from their trunks.

d. New street tree(s) should be designed to be at least 10 feet from any existing or new utility (per CPA guidelines).
e. All new trees should be installed, including necessary irrigation, by an experienced California state-licensed landscape contractor (C-27) or tree service company (D-49), and performed to professional industry standards. Only if necessary to stand upright, they should be double-staked (no cross-brace) with rubber tree ties or equivalent, and the support stakes cut below the first main lateral branch. All nursery stakes shall be removed. Root crowns of new trees shall be visible and absent of encircling roots.
f. Irrigation and lighting features (e.g. main line, laterals, valve boxes, wiring and controllers) should not require trenching inside TPZs, including header/lateral lines. In the event this is not feasible, they may require being installed in a radial direction to, and terminate a specific distance from a trunk (versus crossing past it). In certain instances, a pneumatic air device may be needed to avoid root damage, and any Netafim tubing placed on grade.
g. Irrigation for new trees should be supplied through an automatic timer, separate from other plant material, and supplied by one to two bubblers (minimum two for a 48-inch box). The bubblers should be placed and staked on the rootball's surface (not against a trunk, in a sleeve or on mulch), at around 1/2 to 1/3 the distance between the trunk and rootball edge. Additionally, an 8-inch tall circular berm formed by soil should established around a rootball's perimeter, and a 3-inch layer of mulch spread over their tops, kept 1-inch from the trunks' bases.
h. Ground cover beneath canopies of existing trees should be comprised of a 3-inch layer of coarse wood chips or other high-quality mulch (gorilla hair, rock, stone, gravel, black plastic or other synthetic ground cover should be avoided). Mulch should kept off the trees' trunks or visible root collars.
i. Bender board or other edging material proposed beneath the canopies should be established on top of existing soil grade (such as by using vertical stakes).
j. Herbicides should be avoided within a TPZ, and where used on site, labeled for safe use near trees. Liming shall not occur within 50 feet from a trunk.

6.2 Before Demolition, Grading and Construction

19. Several weeks prior to mobilizing equipment for demolition, and again, prior to shoring, grading and utility work, conduct a site meeting between the general contractor, applicable subcontractors, and project arborist. The purpose for these meetings is to review tree protection, demolition procedures, shoring methodology and vertical clearances needed for the pile driver or drill rig, and excavation for the underground garage, trench routes, limits of grading, supplemental watering, mulching, pruning, routes of access, staging, and other items and protection measures presented in this report.

20. The project arborist must also regularly inspect the project site as outlined on page 2-14 of the *Tree Technical Manual* (Section 2.30 Inspection Schedule), and verify conformance to tree protection measures. Inspections shall occur at least once per month and continue through final inspection, and additional site visits are necessary to observe/advise regarding tree care and/or services. A summary of pertinent observations and recommendations shall coincide with each inspection.

21. Avoid interrupting any existing irrigation. In the event interruption does occur, supplemental with potable water, and discuss the methodology, frequency and amount with the project arborist beforehand.

22. Prior to mobilizing equipment to the site, install tree protection to enclose all unpaved sections of the TPZs. For tree #10, utilize Type I Protection, which include affixing 5- to 6-foot tall chain link onto 2-inch diameter steel posts spaced apart as needed to remain upright. For all street trees, utilize Modified Type III Protection, which consists of wrapping a single straw wattle horizontally around the trunk at roughly 10 feet high and another around its base (loosely); placing boards (2"x4") vertically around the outside, from ground to 10 feet high; then wrapping orange-plastic fencing around the boards two to three times and tying together. Additionally, lay 3/4- to 1-inch thick plywood over unpaved sections of the planters within the TPZs, or if better, chain link panels mounted on concrete blocks or metal stands. All protection shall remain in place until otherwise instructed by the project arborist, and Sheet T-1 for additional information. Note that should fencing for #10 require being temporarily opened, conduct work under supervision by the project arborist.

23. Affix warning signs every 10± feet of #10's fencing, and one onto the trunk wrap of each street tree. The signs shall be at least 8-½ by 11 inches in size, and refer to Sheet T-1 for a CPA template.

24. Prior to utility installation and grading, review the staked locations with the project arborist where within or near a TPZ. Also, identify the precise locations of where underground utilities within TPZs will be capped (i.e. where being abandoned).

25. All pruning shall be performed under the direction of the project arborist, conducted in accordance with the most recent ANSI A300 standards, and implemented by a California licensed tree-service contractor (D-49) with an ISA certified arborist in a supervisory role. All pruning work on oak #10 shall be supervised directly by the project arborist.

6.3 During Demolition, Grading and Construction

26. Where within the assigned TPZs, all work must performed under the presence of and direct supervision by the project arborist; by foot-traffic only without the travel or operation of heavy equipment, including small tractors; and any approved excavation manually conducted using hand tools only (no jackhammers) and/or utilizing a pneumatic air device operated by a tree service.

27. Great care is needed during demolition and construction to avoid excavating into the ground and disturbing roots within TPZs, and equipment shall not travel over newly exposed ground/roots during the process. Additionally, equipment and truck operators must also be aware of existing trees (both along the street and onsite) to avoid damaging limbs, branches and trunks, as well as the scorching of foliage. Contact the project arborist well in advance of a potential conflict (wrap protection around limbs may be necessary before potential damage occurs).

28. Removing existing asphalt and base material located beyond the proposed deck and within #10's TPZ shall be performed under direct supervision by the project arborist. Once work is completed, restrict heavy equipment from traveling over the newly exposed ground, manually spread a 4- to 6-inch layer of coarse wood chips (or as determined by the project arborist), and expand protection fencing.

29. The removal of any existing plant material within a TPZ must be manually performed, and the work reviewed with the project arborist beforehand.

30. Digging for any bollards or permanent fencing within a TPZ, such as for #10, shall be manually performed using a shovel or post-hole digger. For any root encountered during the process with a diameter ≥2 inches, shift the hole over by 12 inches and repeat the process.

31. Spoils generated during demolition, excavation and trenching must not be piled or spread over unpaved ground within a TPZ. If necessary, temporarily pile on existing concrete, plywood or a tarp.

32. Any authorized digging within a TPZ should retain and protect roots encountered with diameters of ≥2 inches. Once exposed, cover with wet burlap and keep continually moist until they can be assessed by the project arborist; note that roots of street trees must be evaluated by the CPA arborist prior to severing. If authorized by the project arborist and/or CPA arborist for cutting, cleanly severe at 90° to the angle of root growth against the cut line using a fine tooth saw, and then immediately after, bury the cut end with soil or keep continually moist by burlap until the dug area is backfilled. Roots encountered with diameters <2 inches can be cleanly severed at a 90° angle to the direction of root growth.

33. All electrical and irrigation routes shall be staked, reviewed and approved by the project arborist prior to trenching occurring within a TPZ.

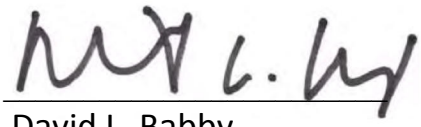
34. Avoid using tree trunks as winch supports for moving or lifting heavy loads, or for tying rope, cables, chains, signs or other items around.

35. Dust accumulating on trunks and canopies during dry weather periods may need to be periodically washed away (e.g. every three to four months).

36. Where beneath canopies, avoid disposing harmful products (such as cement, paint, chemicals, oil and gasoline) anywhere on site that allows drainage within or near TPZs; do not wash any equipment; and avoid applying herbicides (if applied, they should be labeled for safe use near trees). Avoid liming within 50 feet from a canopy.

7.0 ASSUMPTIONS AND LIMITING CONDITIONS

- All information presented herein covers only the inventoried trees listed in Exhibit A, and reflects their size, condition, and areas viewed from the project site, as well as adjoining streets and sidewalks on 1/16/21 and 12/12/23. I hold no opinion towards other trees on or surrounding the project area.
- The documented condition and suitability ratings of dormant trees are subject to change once they can be observed following their annual regrowth of leaves.
- Observations were performed visually from the ground without probing, coring, dissecting or excavating.
- I cannot provide a guarantee or warranty, expressed or implied, that deficiencies or problems of any trees or property in question may not arise in the future.
- No assurance can be offered that if all my recommendations and precautionary measures (verbal or in writing) are accepted and followed, that the desired results may be achieved.
- I cannot guarantee or be responsible for the accuracy of information provided by others.
- I assume no responsibility for the means and methods used by any person or company implementing the recommendations provided in this report.
- The information provided herein represents my opinion. Accordingly, my fee is in no way contingent upon the reporting of a specified finding, conclusion or value.
- Numbers shown on the site map in Exhibit B are solely intended to represent a tree's roughly approximate location and should not be construed as surveyed points.
- This report is proprietary to me and may not be copied or reproduced in whole or part without prior written consent. It has been prepared for the sole and exclusive use of the parties to who submitted for the purpose of contracting services provided by David L. Babby.
- If any part of this report or copy thereof be lost or altered, the entire evaluation shall be invalid.

Prepared By:  Date: February 7, 2024

David L. Babby
Registered Consulting Arborist® #399
Board-Certified Master Arborist® #WE-4001B
CA Licensed Tree Service Contractor #796763 (C61/D49)

ASCA RCA #399 Registered Consulting Arborist

EXHIBIT A:

TREE INVENTORY TABLE

(four sheets)

TREE INVENTORY TABLE

TREE/ TAG NO.	TREE NAME	SIZE			CONDITION				Suitability for Preservation (High/Moderate/Low)	Proposed for Removal	REGULATED	
		Trunk Diameter (in.)	Height (ft.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			Protected Tree	Street Tree
1	European hackberry (*Celtis australis*)	20	35	40	60%	40%	80%	Fair	Moderate	-	-	X

Comments: Within a 4' wide planter strip between street and sidewalk. Trunk's base abuts curb. Highly elevated canopy. Sidewalk is slightly raised, now and historically. Codominant leaders emerge at 8' high. Has three large, partial girdling roots, one of which grows over a buttress root and can be pruned away.

2	London plane tree (*Platanus × hispanica*)	15	55	50	60%	70%	60%	Fair	Moderate	-	-	X

Comments: Dormant. W/in a narrow, 3' wide by 4.5' long planter. Adjacent sidewalk is raised now and historically, and adjacent curb is cracked. Asymmetrical canopy with excessive limb weight, and lowest limb is elongated and grows towards the building. Surface root in lawn adjoining sidewalk.

3	London plane tree (*Platanus × hispanica*)	14	50	40	60%	70%	80%	Fair	Moderate	-	-	X

Comments: Dormant. Within a 3' wide by 15' long planter. Adjacent sidewalk is cracked at E corner of planter. Surface root in lawn adjoining sidewalk. Vertical form.

4	Glossy privet (*Ligustrum lucidum*)	6	15	15	30%	30%	30%	Poor	Low	X	-	X

Comments: Within a 2' wide by 3.5' long planter. Leans slightly NW. Significant decline, and top section is dead. Prior leader cut at 6' cut - the resulting wound is decaying. At light pole and adjacent concrete is raised.

5	Glossy privet (*Ligustrum lucidum*)	13	20	20	20%	20%	20%	Poor	Low	X	-	X

Comments: Within a 2' wide by 4' long planter. Adjacent curb is buckled and raised, and adjacent sidewalk has been historically raised at multiple locations. Significant decline, w/ 50%+ being dead. Large decaying wounds at 6' and 9' high. Asymmetrical canopy with multiple large dead limbs.

6	London plane tree (*Platanus × hispanica*)	10	45	35	70%	30%	60%	Poor	Low	X	-	X

Comments: Dormant. Within a 2.5' wide by 3.5' long planter. Has a 16° NW lean, and opposite the lean is a large buttress root. Sidewalk and curb have been historically raised at multiple locations. Codominant top. Asymmetrical canopy with an extended limb over street, as well as a low branch lying on top of #22. Deadwood, including a small dead branch suspended in canopy.

TREE INVENTORY TABLE

TREE/ TAG NO.	TREE NAME	SIZE			CONDITION				Suitability for Preservation (High/Moderate/Low)	Proposed for Removal	REGULATED	
		Trunk Diameter (in.)	Height (ft.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			Protected Tree	Street Tree
7	Southern magnolia (*Magnolia grandiflora*)	21	30	35	40%	50%	50%	Poor	Moderate	-	-	X

Comments: Within a 3.5' wide by 15' long planter. Root crown occupies entire planter width. Adjacent curb is buckled at multiple locations, including historically. Advanced and extensive decline. Canopy has been reduced sometime ago.

8	Chinese pistache (*Pistacia chinensis*)	14	30	35	60%	60%	70%	Fair	Moderate	X	-	X

Comments: At NW edge of a 2' wide by 9' long planter. Adjacent sidewalk historically raised at multiple locations. Large old wound at canopy's bottom. Low canopy over street and roof. Buried root collar.

9	Southern magnolia (*Magnolia grandiflora*)	20	35	35	30%	30%	30%	Poor	Low	-	-	X

Comments: Along frontage of adjoining SE property (offsite), its trunk being nearly 22' from the property's fence. Within a narrow 2.5' wide planter. Trunk is 4' from CPA electrical and PacBell vaults. Sidewalk bulbs out near trunk. Asymmetrical, highly elevated canopy, and a large amount of foliage within its lower canopy consists of watersprouts (rapidly-growing, weakly-attached shoots). Has several large girdling roots over a buttress root. Advanced, extensive decline, and prior deadwood from 2021 was removed.

10	Coast live oak (*Quercus agrifolia*)	50	60	90	70%	40%	50%	Fair	High	-	X	-

Comments: Offsite on the adjoining SE property. Its base is ~6" from a 2' tall wall and buried by leaf litter. Trunk divides into 5 leaders at 10' high and are favorably spaced apart. Canopy is highly elevated over the site (existing parking lot). Low branches overhang neighbor's roof. Dead branches in canopy's upper S side is very minor and from squirrel damage.

11	Olive tree (*Olea europaea*)	8, 8	15	10	70%	50%	40%	Poor	Moderate	X	-	-

Comments: Canopy is rounded. Sucker growth has creatively been formed into a shrub surrounding the lower trunk. Trunk bifurcates at 2.5' high and forms a narrow attachment.

12	Raywood ash (*Fraxinus a*. 'Raywood')	2	15	10	70%	30%	20%	Poor	Low	X	-	-

Comments: Dormant. Within a square planter in parking lot. Trunk curves, and has a mostly one-sided canopy due to being suppressed and growing out from beneath #10.

TREE INVENTORY TABLE

TREE/ TAG NO.	TREE NAME	SIZE			CONDITION				Suitability for Preservation (High/Moderate/Low)	Proposed for Removal	REGULATED	
		Trunk Diameter (in.)	Height (ft.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			Protected Tree	Street Tree
13	Raywood ash (*Fraxinus a* . 'Raywood')	12	25	20	30%	30%	30%	Poor	Low	X	-	-
	Comments: Within a square planter. Trunk bifurcates at 6' high. Significant dieback with deadwood. Adjacent asphalt is cracked and forms a short mound. Asymmetrical canopy an multiple tops.											
14	Raywood ash (*Fraxinus a* . 'Raywood')	11	20	20	40%	30%	30%	Poor	Low	X	-	-
	Comments: Within a square planter. Has many large decaying cuts. Deadwood. Adjacent asphalt is cracked and slightly raised. Has multiple tops.											
15	Raywood ash (*Fraxinus a* . 'Raywood')	6	15	10	20%	10%	20%	Poor	Low	X	-	-
	Comments: Small tree within a square planter. Has a large decay column along entire trunk, as well as a large decaying wound at 6' high where a prior leader was cut away. Advanced levels of dieback and deadwood. Asymmetrical canopy and multiple tops.											
16	Raywood ash (*Fraxinus a* . 'Raywood')	15	25	20	30%	20%	20%	Poor	Low	X	-	-
	Comments: Within a square planter. Has a pronounced E lean. Low limb overhangs adjacent parking space. Significant decay throughout. Deadwood. Adjacent asphalt forms a mound. Has multiple tops.											
17	Purple Robe locust (*Robinia* 'Purple Robe')	6	35	20	60%	40%	70%	Fair	Moderate	X	-	-
	Comments: Dormant. Single support stake should be removed. Overhangs adjacent building.											
18	Purple Robe locust (*Robinia* 'Purple Robe')	5	25	20	60%	40%	40%	Poor	Moderate	X	-	-
	Comments: Dormant. Excessive limb weight overhangs parking lot. Asymmetrical form away from #17 and the adjacent building.											
19	Crape myrtle (*Lagerstroemia indica*)	5	10	10	60%	40%	50%	Fair	Moderate	X	-	-
	Comments: Is of Tuscarora variety (as well as #20 thru 24). Within a 2' raised planter. Dormant. Multiple trunks originate 8" high. Canopy is slightly asymmetrical.											

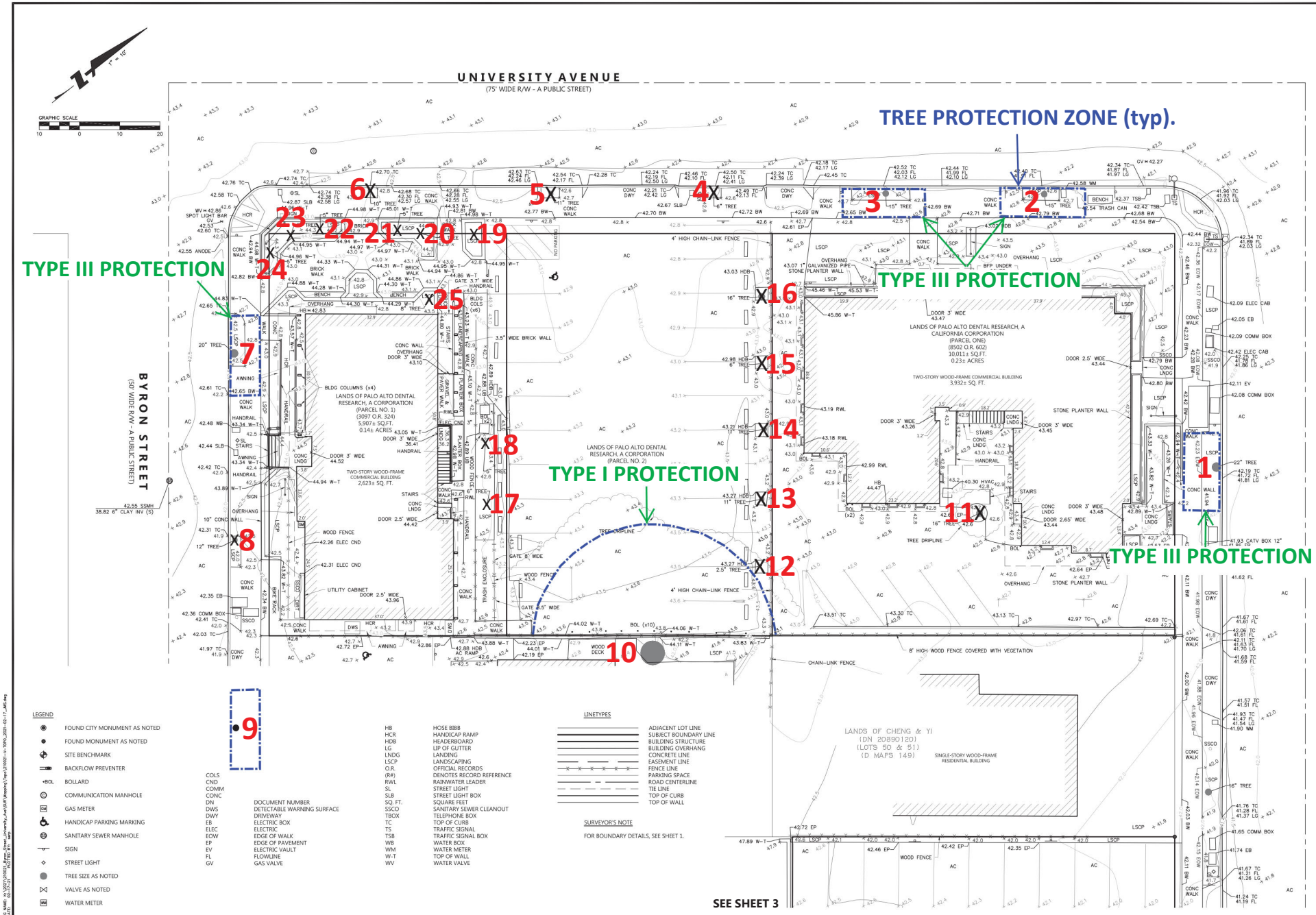
TREE INVENTORY TABLE

TREE/ TAG NO.	TREE NAME	SIZE			CONDITION				Suitability for Preservation (High/Moderate/Low)	Proposed for Removal	REGULATED	
		Trunk Diameter (in.)	Height (ft.)	Canopy Spread (ft.)	Health Condition (100%=Best, 0%=Worst)	Structural Integrity (100%=Best, 0%=Worst)	Form (100%=Best, 0%=Worst)	Overall Condition (Good/Fair/Poor/Dead)			Protected Tree	Street Tree
20	Crape myrtle (*Lagerstroemia indica*)	3, 3, 2	10	5	60%	40%	50%	Fair	Moderate	X	-	-
	Comments: Within a 2' raised planter. Dormant. Multiple trunks emerge at grade. Canopy is asymmetrical.											
21	Crape myrtle (*Lagerstroemia indica*)	6	15	10	60%	40%	50%	Fair	Moderate	X	-	-
	Comments: Within a 2' raised planter. Dormant. Multiple trunks originate 6" high. Canopy is slightly asymmetrical.											
22	Crape myrtle (*Lagerstroemia indica*)	6	15	10	60%	40%	50%	Fair	Moderate	X	-	-
	Comments: Within a 2' raised planter. Dormant. Multiple trunks originate 5" high. Canopy is slightly asymmetrical. A low limb of #6 is on top of its canopy.											
23	Crape myrtle (*Lagerstroemia indica*)	6	15	15	60%	40%	60%	Fair	Moderate	X	-	-
	Comments: Within a 2' raised planter. Dormant. Multiple trunks originate 5" high. Canopy is slightly asymmetrical.											
24	Crape myrtle (*Lagerstroemia indica*)	4, 3, 2	15	10	60%	40%	60%	Fair	Moderate	X	-	-
	Comments: Within a 2' raised planter. Dormant. Multiple trunks emerge at grade. Canopy is asymmetrical.											
25	Yew pine (*Podocarpus macrophyllus*)	8	10	10	70%	40%	30%	Poor	Moderate	X	-	-
	Comments: Adjacent to building. Shrub form and shaped into a cube. Trunk bifurcates at 3' high.											

EXHIBIT B:

SITE MAP

(one sheet)



LEGEND

- FOUND CITY MONUMENT AS NOTED
- FOUND MONUMENT AS NOTED
- SITE BENCHMARK
- BACKFLOW PREVENTER
- BOL BOLLARD
- COMMUNICATION MANHOLE
- GM GAS METER
- HANDICAP PARKING MARKING
- SS SANITARY SEWER MANHOLE
- SIGN
- STREET LIGHT
- TREE SIZE AS NOTED
- VALVE AS NOTED
- WM WATER METER

COLS	COLUMNS
CND	CONDUIT
COMM	COMMUNICATION
CONC	CONCRETE
DN	DOCUMENT NUMBER
DWS	DETECTABLE WARNING SURFACE
DWY	DRIVEWAY
EB	ELECTRIC BOX
ELEC	ELECTRIC
EOW	EDGE OF WALK
EP	EDGE OF PAVEMENT
EV	ELECTRIC VAULT
FL	FLOWLINE
GV	GAS VALVE
HB	HOSE BIBB
HCR	HANDICAP RAMP
HDB	HEADERBOARD
LG	LIP OF GUTTER
LNDG	LANDING
LSCP	LANDSCAPING
O.R.	OFFICIAL RECORDS
(R#)	DENOTES RECORD REFERENCE
RWL	RAINWATER LEADER
SL	STREET LIGHT
SLB	STREET LIGHT BOX
SQ. FT.	SQUARE FEET
SSCO	SANITARY SEWER CLEANOUT
TBOX	TELEPHONE BOX
TC	TOP OF CURB
TS	TRAFFIC SIGNAL
TSB	TRAFFIC SIGNAL BOX
WB	WATER BOX
WM	WATER METER
W-T	TOP OF WALL
WV	WATER VALVE

LINETYPES

- ADJACENT LOT LINE
- SUBJECT BOUNDARY LINE
- BUILDING STRUCTURE
- BUILDING OVERHANG
- CONCRETE LINE
- EASEMENT LINE
- FENCE LINE
- PARKING SPACE
- ROAD CENTERLINE
- TIE LINE
- TOP OF CURB
- TOP OF WALL

SURVEYOR'S NOTE

FOR BOUNDARY DETAILS, SEE SHEET 1.

BKF Engineers
255 SHORELINE DR., SUITE 200
REDWOOD CITY, CA 94065
(650) 482-6300
www.bkf.com

TOPOGRAPHIC & BOUNDARY SURVEY
511 BYRON STREET, 660 & 680 UNIVERSITY AVENUE & APN: 120-03-046
COUNTY OF SANTA CLARA
CALIFORNIA
PALO ALTO

Revisions

No.	
Date:	2021-02-17
Scale:	1" = 10'
Design:	
Drawn:	MS
Approved:	DCJ
Job No:	20210021-50

Drawing Number: 210021

EXHIBIT C:

PHOTOGRAPHS

(five sheets)

Photo Index

Page C-1: Trees #1 thru 6

Page C-2: Trees #7 thru 9

Page C-3: Tree #10

Page C-4: Trees #11 thru 18

Page C-5: Trees #19 thru 25


#1
SPEED LIMIT
25


#2


#3
PATIENTS ONLY


#4


#5


#6


#7


#7


#8


#9


#10


#10
location for pruning cut
17" limb


#10


#10


#11


#12


#13


#14


#15


#16


#17
#18


#19
#20
#21


#22
#23
#24


#25

EXHIBIT D:

LANDSCAPE PLANS - DECK BENEATH TREE #10

(two sheets)

Plan Index

Sheet L1.1 (one page)

Landscape Section at Wood Deck (one page)

UNIVERSITY AVE

BYRON STREET

MIDDLEFIELD ROAD

TWO SHORT-TERM BIKE RACKS IN 5'X14' INDENT IN PLANTER SEE L2.1 FOR IMAGE

4 x 6' TREE WELL WITH DECOMPOSED GRANITE AND NEW STREET TREE

4 x 6' TREE WELL WITH DECOMPOSED GRANITE AND NEW STREET TREE

ACCENT PAVING

RAMP WITH HANDRAIL

4 x 6' TREE WELL WITH DECOMPOSED GRANITE AND NEW STREET TREE

EXISTING TREE TO REMAIN, WITH DECOMPOSED GRANITE AT BASE,TYP.

ACCENT PAVING

DASHED LINE INDICATES BUILDING OVERHANG ABOVE,TYP.

EXISTING TREE TO REMAIN, WITH DECOMPOSED GRANITE AT BASE,TYP.

RAISED CONCRETE TREATMENT PLANTER, TYP. SEE L2.1 FOR IMAGE

EXISTING BENCH AT BUS STOP TO REMAIN

RAISED CONCRETE TREATMENT PLANTER, TYP. SEE L2.1 FOR IMAGE

EXISTING TREE TO REMAIN, WITH DECOMPOSED GRANITE AT BASE, TYP.

FLOOD PROTECTION WALL

RESIDENTIAL LOBBY

6" THICK FLOOD PROTECTION CURB BETWEEN RAMP AND BUILDING, TYP.

DASHED LINE INDICATES BUILDING OVERHANG ABOVE,TYP.

OFFICE ENTRY

ONE SHORT-TERM BIKE RACK IN 5'X7' INDENT IN PLANTER SEE L2.1 FOR IMAGE; SEE ENLARGEMENT BELOW

A

A

SEE SECTION AA BELOW

FLOOD PROTECTION WALL

GARAGE OUTLINE BELOW

EXISTING ASPHALT TO REMAIN(RED DASH LINE)

PRECAST RECTANGULAR PLANTER

BOLLARD LIGHT, TYP.

WOOD DECK ON PEDESTALS BUILT ON TOP OF THE EXISTING ASPHALT. DO NOT REMOVE ASPHALT AT DECK

PRECAST RECTANGULAR PLANTER

PLANTERS ON DECORATIVE GRAVEL, TYP.

GARAGE OUTLINE BELOW

ACCENT PAVING

LOW HEIGHT RAISED CONCRETE PLANTER WITH A BACK WALL 6" ABOVE UPPER LANDING IN HEIGHT

FLOOD PROTECTION WALL

GARAGE STAIRS

EXISTING TREE TO REMAIN, WITH DECOMPOSED GRANITE AT BASE,TYP.

GRAVEL TURF BLOCK, DRIVABLE SURFACE IN FRONT OF TRANSFORMERS

RES. TRASH COMPACTOR ROOM

4 x 4' TREE WELL WITH DECOMPOSED GRANITE AND NEW STREET TREE

GARAGE ENTRY RAMP

TRANSFORMER PAD

TRANSFORMER PAD

1 L1.1 HORIZONTAL WOOD SLAT SCREEN ON OPERABLE GATES IN FRONT OF TRANSFORMERS. SEE DETAIL

PLANTED TURF BLOCK, DRIVABLE SURFACE IN FRONT OF TRANSFORMERS

1 L1.1 HORIZONTAL WOOD SLAT SCREEN ON OPERABLE GATES IN FRONT OF TRANSFORMERS. SEE DETAIL

PLANTING ON GRADE

NEW TREES

PROPOSED CONCRETE WALL, PAINTED WHITE, SMOOTH FINISH

6' TALL OMEGA OPEN WIRE FENCE

PRECAST POTS ON DECORATIVE GRAVEL OVER EXISTING ASPHALT, TYP.

SECTION AT WOOD DECK

7' TALL, PROPOSED HORIZONTAL WOOD SLAT SCREEN FENCE MOUNTED ON EXISTING CONCRETE WALL (TO REMAIN WITHIN ENTIRE TPZ)

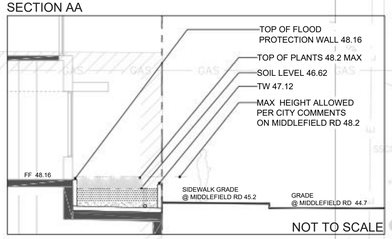
EXISTING OAK TREE ON ADJACENT PROPERTY TO REMAIN , TYP.

SLOPED CONCRETE WALKWAY

RETAINING WALL ON STRUCTURE

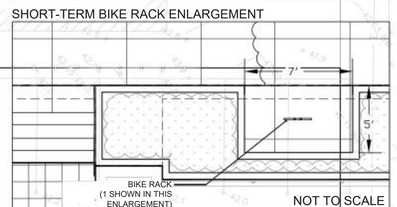
MOUNTED PLANTING AREA WITH NEW TREES ON STRUCTURE

SECTION AA

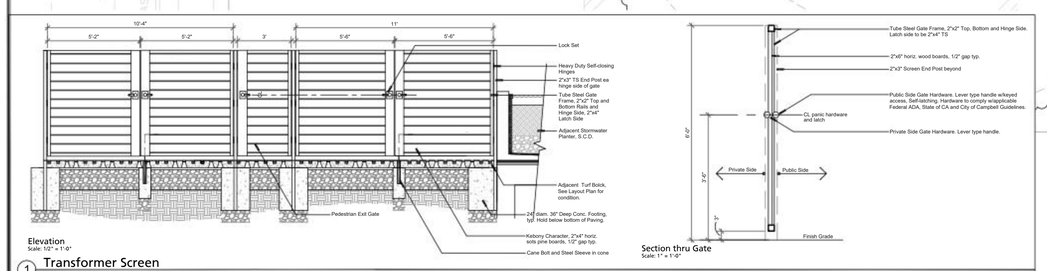


NOT TO SCALE

SHORT-TERM BIKE RACK ENLARGEMENT



NOT TO SCALE



SMITH DEVELOPMENT

660 UNIVERSITY
PALO ALTO, CA 94301

THE Guzzardo Partnership, INC.
Landscape Architects | Land Planners
Pier 9, The Embarcadero, Suite 115
San Francisco, CA 94111 | www.tgp-inc.com

ISSUES AND REVISIONS

NO.	DATE	DESCRIPTION
	12.01.21	PLANNING SUBMITTAL
	05.13.22	PLANNING RESUBMITTAL #1
	08.15.22	PLANNING RESUBMITTAL #2
	11.02.22	PLANNING RESUBMITTAL #3
	08.28.23	PLANNING RESUBMITTAL #4
	10.31.23	PLANNING RESUBMITTAL #5
	12.21.23	PLANNING RESUBMITTAL #6
	02.07.24	PLANNING RESUBMITTAL #7

PROJECT NUMBER
21003

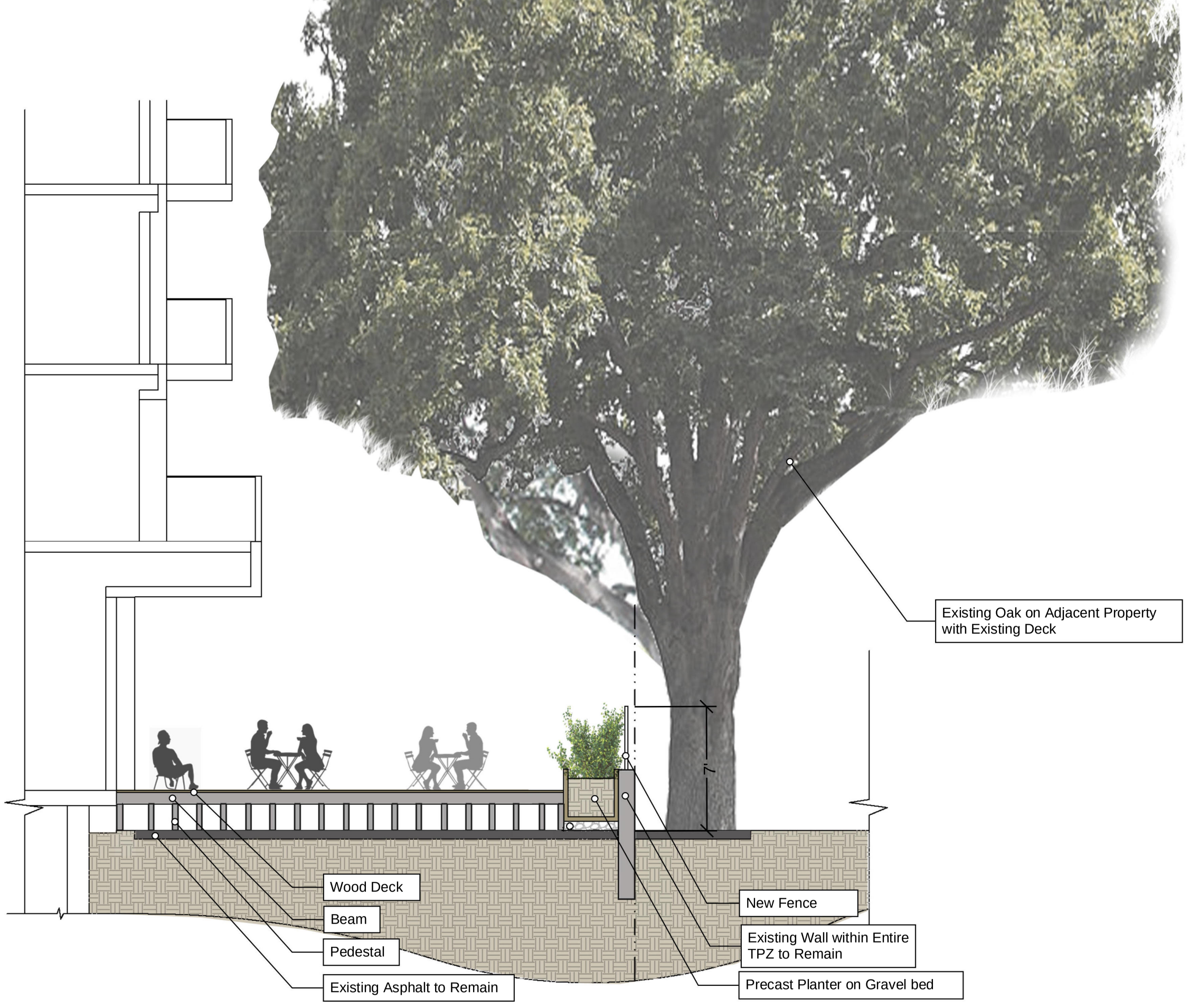
SHEET TITLE
LANDSCAPE PLAN - GROUND FLOOR

SCALE

PROJ NORTH
TN

SCALE: 1" = 10'-0"
0' 5' 10' 20'

SHEET NUMBER
L 1.1



Landscape Section at Wood Deck

.

Arborist OnSite®

Horticultural Consulting, Inc.

ISA Certified Arborist Report

Submitted To:

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

Project Location:

660 University Avenue
Palo Alto, California

Submitted By:

Robert Booty, Registered Member # 487
ISA Qualified Tree Risk Assessor
The American Society of Consulting Arborists
ISA Certified Arborist WC-4286
May 23, 2022

Limits of Assignment

This assignment is limited to one Coast Live Oak #1572 (*Quercus agrifolia*) my investigation involves a root study as part of a tree protection plan. Ground penetrating radar can not identify the presence of structural defects in roots located below ground, such as cracks, girdling or roots weakened by decay that can be associated with tree failures. GPR can evaluate both depth, location and estimate root diameters. Since trees can fail during unpredictable weather events this GPR study and its recommendations are invalid during those abnormal times. Because trees continually change, this evaluation is valid only for the date of this inspection.

Disclaimer[1]

Although studies have shown ground penetrating radar to have a high degree of accuracy[2] for below-ground root identification, these are not photographs but images of predicted root targets or changes in wood composition as in the case of trunk imaging or Sonic Tomography . Arborist OnSite endeavors to use equipment that generates useful information to prepare reports that will reflect its best judgment in light of the facts as it knows them.

Assignment

I have been retained by Katherine Green who is a project manager for Rincon Consultants, Inc. Katherine has a project at 660 University Avenue in Palo Alto, California. This property will be redeveloped and will include an underground parking structure. A heritage oak tree is near the property line on an adjoining property. Because the tree is protected, it's important to understand where the root system of the tree is located to determine the best location for the parking garage. I have been requested to utilize ground penetrating radar to identify and provide a root study identifying tree roots within the proposed excavation area as part of a tree protection plan.

Observations

I visited the site on two occasions May 5 and 8, 2022. The Oak tree #1572 (*Quercus agrifolia*) is located on a neighboring property and appears to be in good health. It has a trunk diameter measured from grade to a height of 4.5 feet of 45.5 inches. The tree has a height[3] of 53.9 feet. The natural soil grade of the oak is 3 feet lower than the height of the parking lot, fill soil was brought in during the construction of the parking lot to raise the grade. The two properties are separated by a brick retaining wall with the oak about 28 inches away from the wall.

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[2] Nina Bassuk, "Ground-Penetrating Radar Accurately Locates Tree Roots in Two Soil Media Under Pavement" Arboriculture & Urban Forestry, International Society of Arboricultural 2011.

[3] Height measurement was obtained by using a Nikon Forestry PRO II Laser Rangefinder/Hypsometer.

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Conclusions

I utilized a 400MHz radar antenna to obtain the depth necessary to reach the root system of the oak tree which was 3 feet below the asphalt parking lot. We set the radar computer to penetrate the soil 7 feet to reach the root system of the oak tree. Fill soil does at times create issues with GPR systems since the fill may contain materials other than soil that may have been discarded during previous construction that can affect radio signals. We decided to design a scan layout over the parking lot to provide us two types of information. First we laid out a grid using 12 half circles. This we could use, with the help of special software to create a conceptual 3D image of the below-ground root structure out to a distance of 51 feet. This will help to visualize where the excavation of the below-grade garage placement will be, with the least amount of root loss involved.

The second grid set-up on the pavement for root scanning involves straight lines, 12 lines from one side of the asphalt to the other parallel with the tree. These can be viewed as virtual trench plates found on pages 15-41. These will provide information regarding root location, height, depth and estimated sizes. All the scanning whether half-circle or straight lines were conducted the same distances from the tree.

As a note keep in mind that these scans are very long. Because of that the predicted root hits on those virtual trench scans look dense. This is an optical illusion on the paper, look at the scan distances and mentally spread those root hits out to the distance of the actual scan. Radar identifies roots by reflecting from the moisture within them.

Root Pruning and protection

1. Prune the larger roots using a fine tooth saw.

2. Smaller roots use a hand lopper.

3. If roots are to be left exposed for long periods of time, especially in warm weather whey must be covered in burlap cloth and kept wet.

4. During any root pruning the project arborist must be on site overseeing the activity.

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Methodology

How does it work?

Ground-Penetrating Radar (GPR) is an established technology that has been used worldwide for over 60 years. Radar is an object-detection system that uses *electromagnetic waves* – specifically *radio waves* – to identify the range, altitude, direction, or speed of both moving and fixed objects. When an electromagnetic wave[4] emitted from a small surface transmit antenna / receiver encounters a boundary between objects with different electromagnetic properties, it will reflect, refract, and or diffract from the boundary in a predictable manner. Radar waves or signals are reflected especially well by materials of considerable *electrical conductivity.*

The radar signals that are reflected back towards the antenna are the desirable ones that create the image and make radar work. The radar signal detects water in the root system of the tree and can distinguish this water from water in the surrounding soil matrix. An air-filled tree trunk (*with a decayed hollow*) or a partially air-filled incipient (early stage) decay zone inside a cell wall within a tree are excellent reflectors for detection by GPR systems. Use of GPR instrumentation for internal tree trunk decay detection and below ground root locating is one of its latest uses in the field of tree risk assessment.

Its uses today seem endless. When you look at the weather report, you are looking at a weather radar scan; it will tell you where the heaviest amounts of rain will fall in your area. It works like this, the radar signal, as it passes through the clouds is reflected back to a transmit receiver antenna that measures the density of the moisture in them and the speed they are traveling. You can then determine approximately when it will start raining and how much rain will fall in a given area. Radar is used in aviation, automobiles, law enforcement and locating objects below ground.

[4] Daniels, D.J. 1996, Surface-Penetrating Radar. The Institute of Electrical Engineers, ISBN 0-85296-0.

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These chalk lines represent the locations of half circle scans. Scan #8 represents the edge of the canopy drip-line. Scan #7 represents the edge of the proposed excavation for the below ground garage about 30 feet away from the Oak tree.

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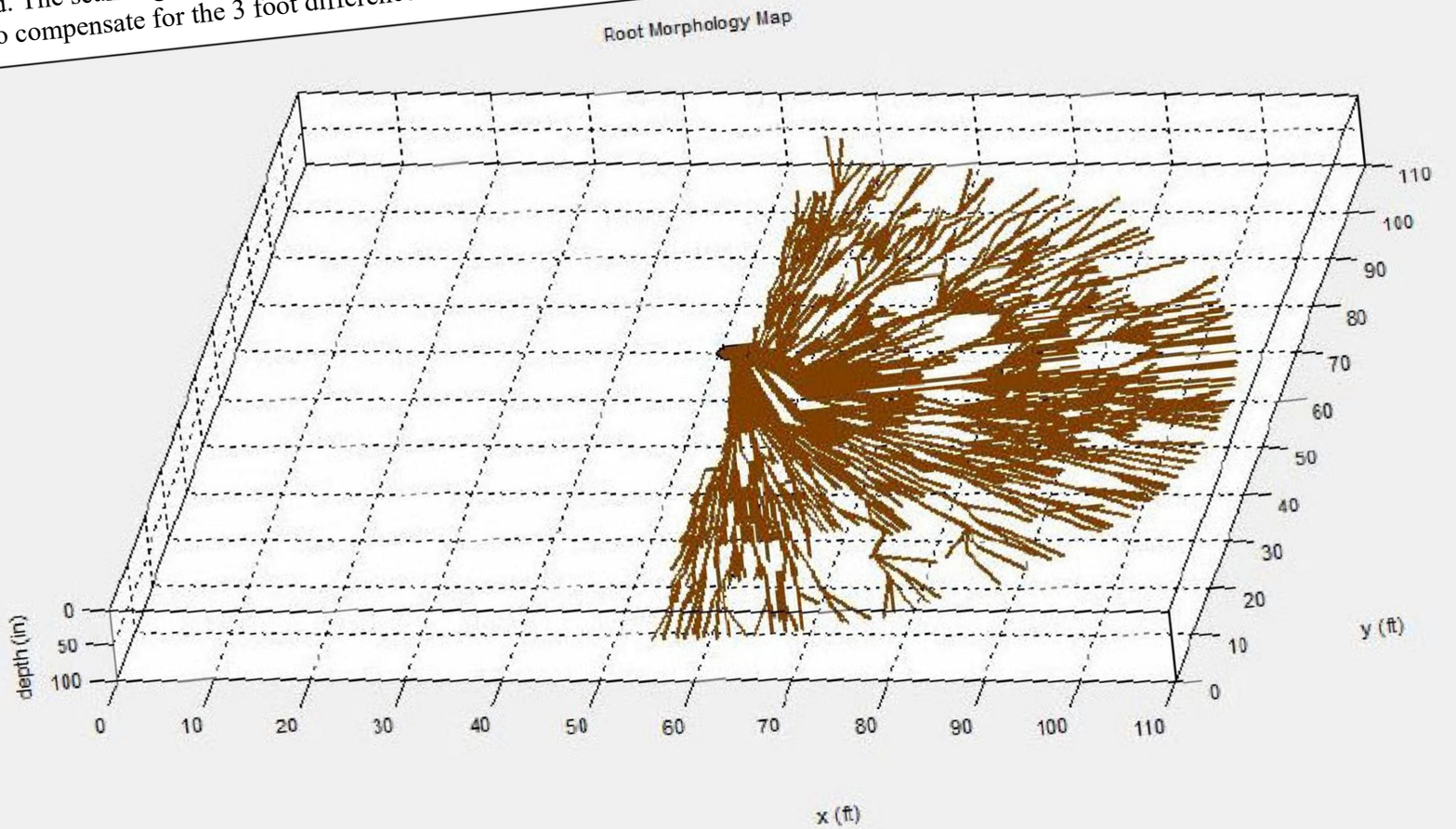
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This is a conceptual 3D Top-Down diagram of what the root structure may look like below the ground of Oak Tree #1572 on University Avenue. It is obtained from the root data collected from the 12 half circle scans performed over the asphalt parking lot.

The software uses the results of the predicted root locations from the 12 half circle scans generated from the virtual trench data on the following pages and connects the predicted root hits, creating what you see on this page. This provides a visualization concept of what the root structure may look like below ground. The scan begins from a distance of 7ft. from the tree and ends at a distance of 51ft. The scanning depth was set to penetrate to 7 feet, in an effort to compensate for the 3 foot difference of the lower grade the tree is actually growing in.

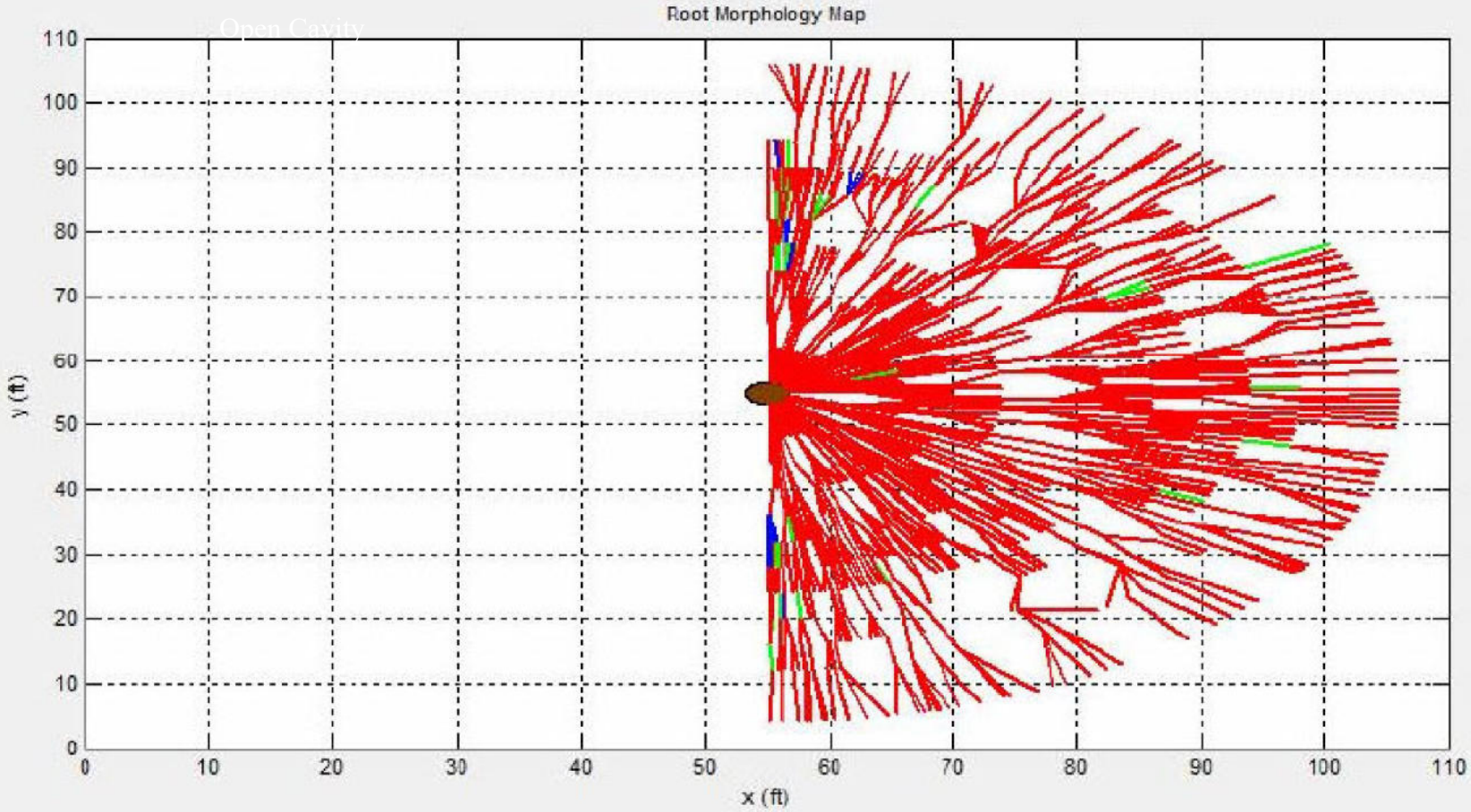


Robert Booty Registered Consulting Arborist 487
ISA Qualified Tree Risk Assessor
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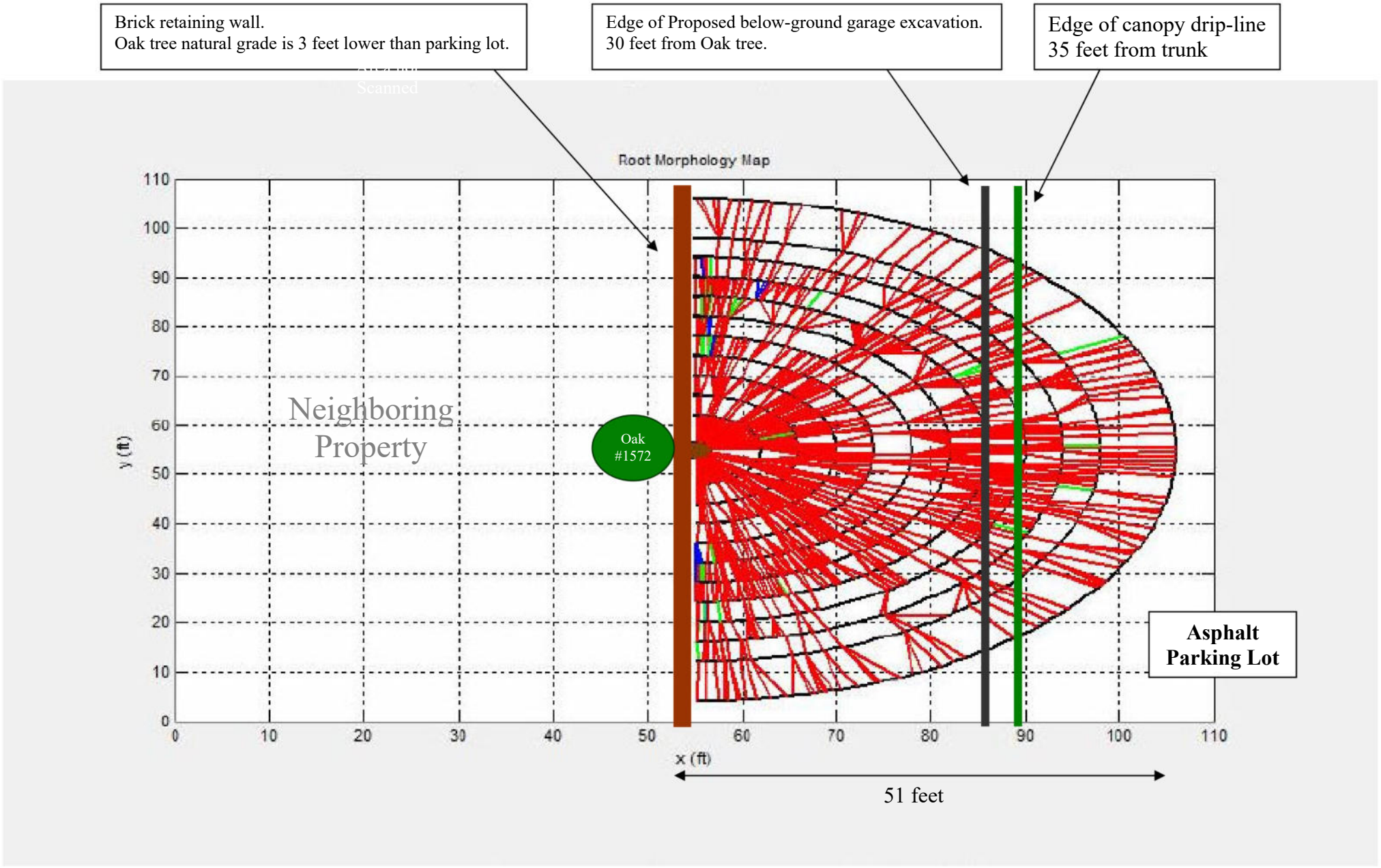
Estimated root sizes are indicated by the colors red, green and blue

Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.

Top-down view of the root system



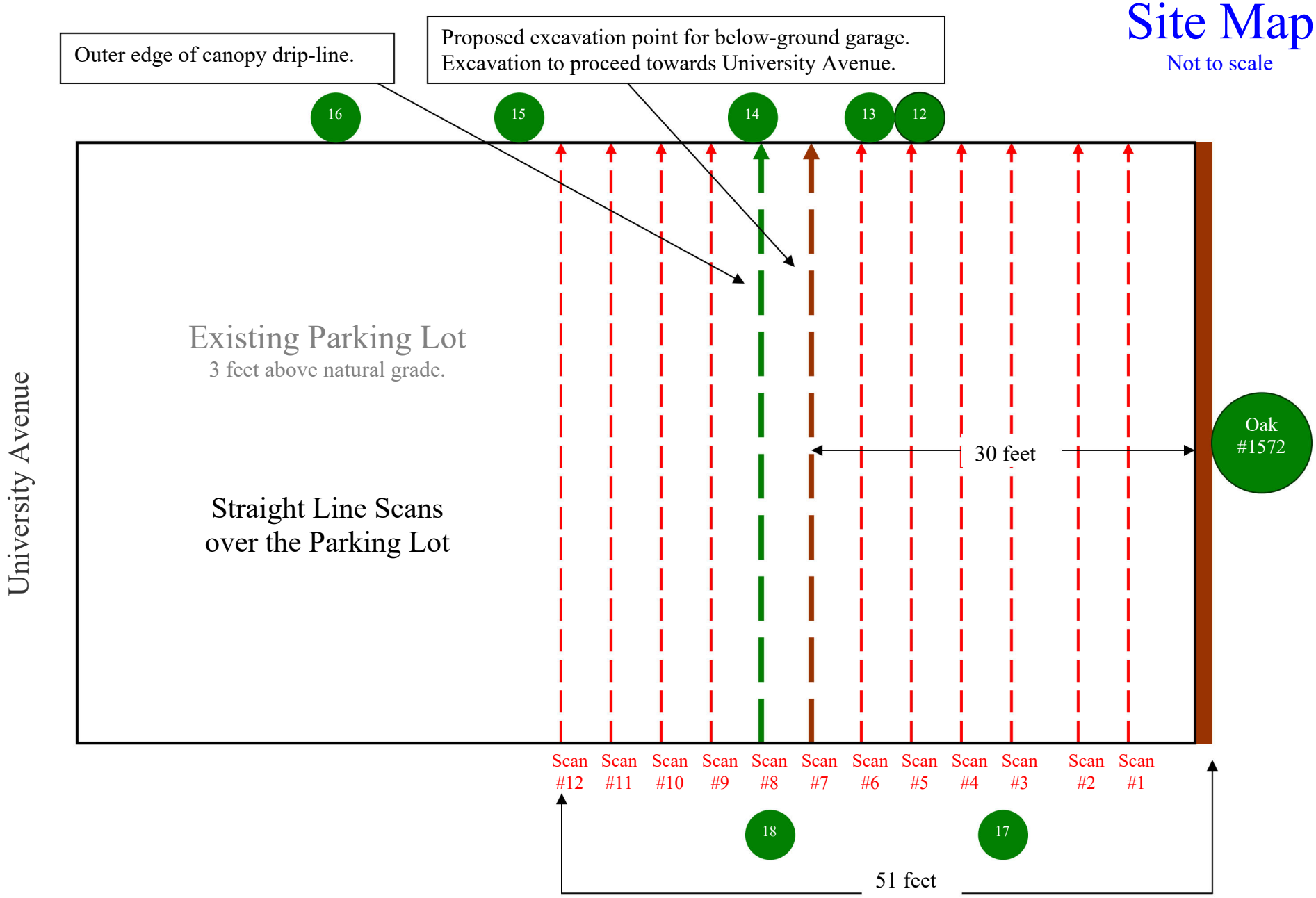
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Site Map

Not to scale



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Root Mapping

An Introduction to Below-Ground Tree Root Mapping using Ground – Penetrating Radar (GPR)

Ground-Penetrating Radar used as a method of mapping tree roots has several of the following advantages over other methods of root locating,

1. It is capable of scanning the root systems of multiple trees under field conditions in a short time.
2. It is completely non-invasive and does not disturb the soils or damage the trees being examined, and causes no harm to the environment.
3. Being non-invasive, it allows repeated measurements that reveal long-term root system development.
4. It allows observation of root distribution beneath hard surfaces (concrete, asphalt, and bricks) roads and buildings.

It's accuracy is sufficient to resolve structural roots with diameters from less than 1 cm (0.4 in.) to 3 cm (1.2 in.) or more. It can characterize roots at both the individual tree and stand levels, facilitating correlations with tree and stand level measurements of physiological processes in complex ecological studies.

This is how the radar looks at the existing roots, as the antenna is moved along the ground every 2/10ths of an inch a radar signal is released into the soil at a predetermined depth.

As this signal encounters a root it is reflected off its top and back to a receiver inside the antenna. This returned signal is displayed as an x in the final report indicating the presence of a root, the colored x indicates the depth of the root.

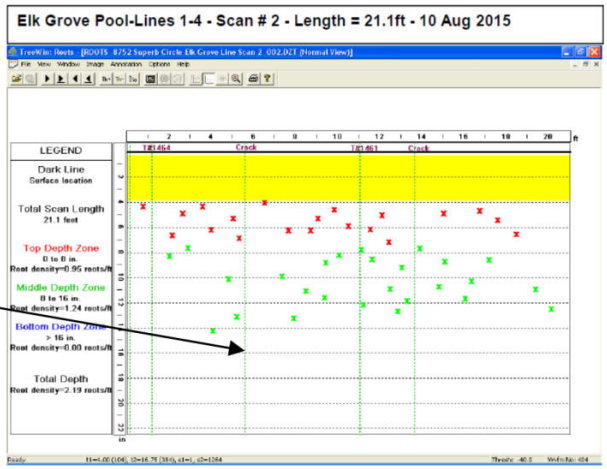
Secondly one can observe all roots within a given soil profile depth, on the following pages you will notice 3 soil profiles depicted. When looking at the virtual trench view of maps keep in mind that each x marks the presence of a root. These roots are connected to the tree or root flare as they grow into the soil and then grow out ward in all directions, some have indicated roots that have no obstructions can travel laterally twice the height of the tree; this is what gives the tree stability.

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The use of green markers

During the scan markers are placed on the field computer by the technician. These markers are used to identify points of interest along the scan line such as in this case, passing of object landmarks such as a numbered tree. These manually placed markers show up in the final root analysis and can then be used to compare roots found below ground in relation to a physical concrete crack or landmark such as a tree located above ground.

Green dotted lines are markers physically placed on the field computer by the technician during the scanning.



Virtual Trench View

A way of viewing the root data is as a virtual trench. The following virtual trench panels represent each of the twelve individual radar line scans from the site as if they were the walls of a trench. Think of this as if you were excavating a deep trench with a back-hoe. As you dig, tree roots will be encountered at various levels in the soil profile, after you have completed your trench you then are able to walk down and stand in the bottom.

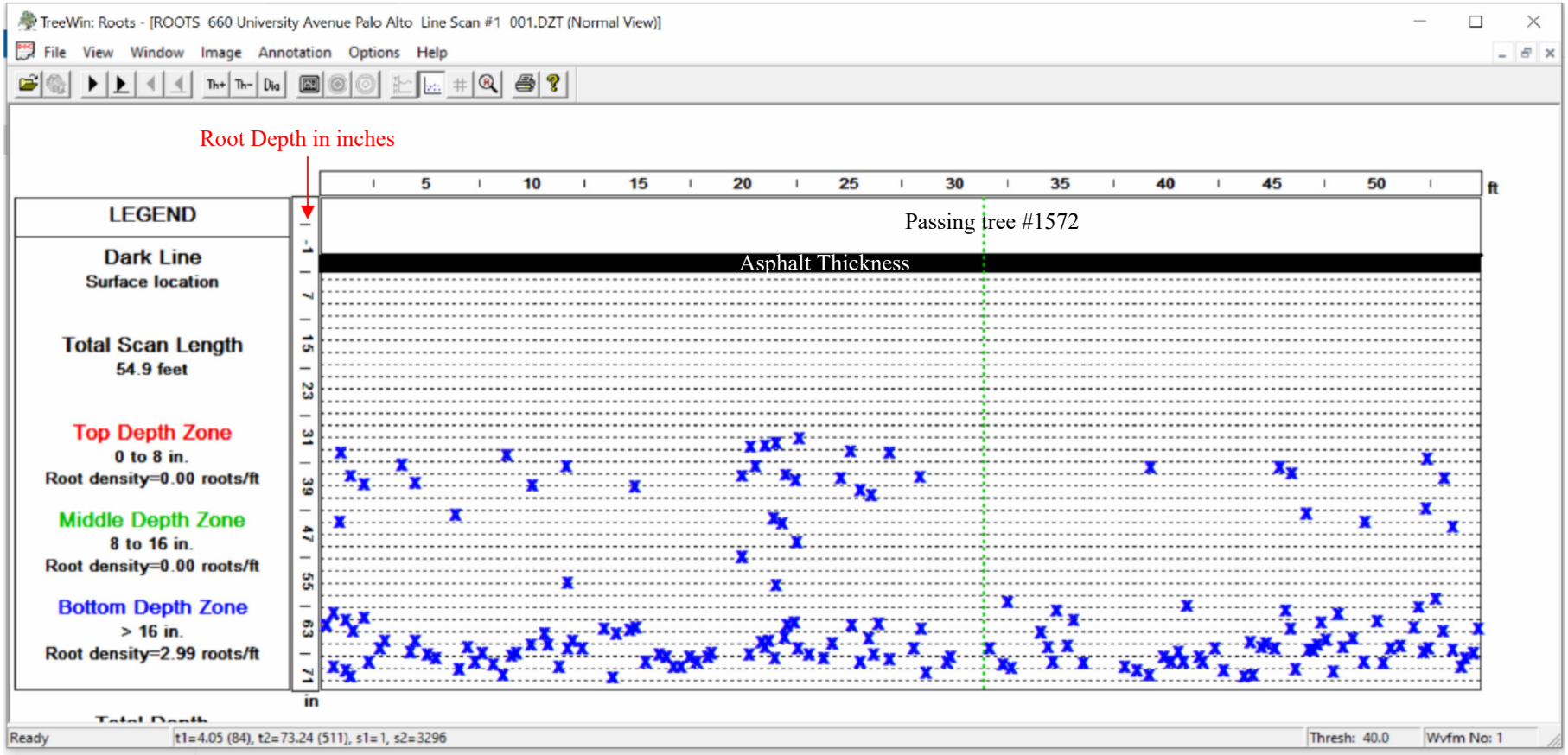
Looking up at the earthen wall you are able to see the severed tree roots from your trenching protruding from the soil at the various depths of your trench. As you look at the following individual 12 virtual trench scans each x on the wall represents a severed root. Each colored x represents a different depth where the root is located.

One advantage of the trench view is that one can look at individual roots within their 3 represented depth zones and see the actual depth of each individual root and their estimated sizes.

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May 8, 2022 660 University Avenue Palo Alto, California.

Scan #1 Line scan over parking lot 7 feet away from Oak tree #1572



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Estimating Root Diameter Size

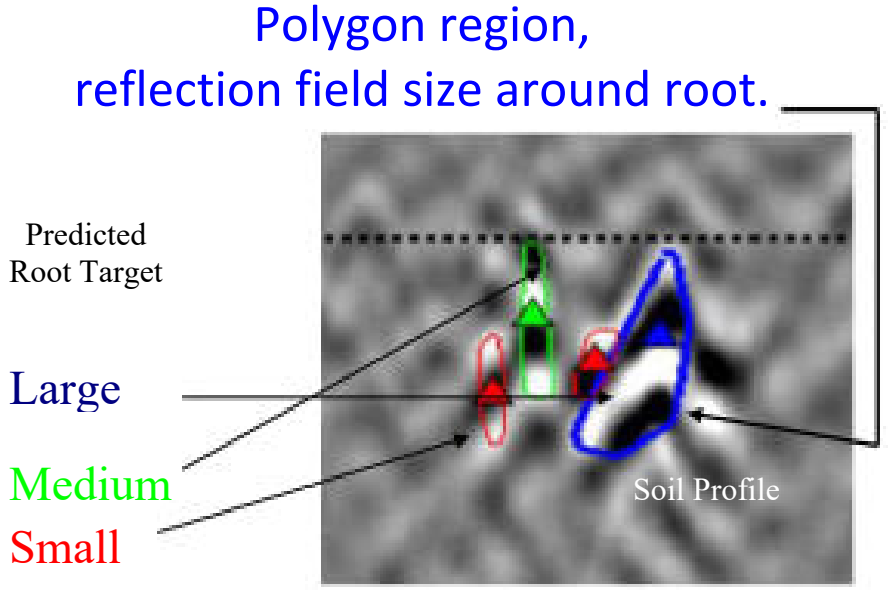
Estimating root diameter is a challenge. TreeRadar® has devoted years of research into developing the ability to provide this type of information. Early Ground truth studies began at Fresno State University, U.S.A. these studies were also conducted by groups using the same protocol in Europe. The studies involved numerous locations and soil types. First ground penetrating radar was used to identify below ground root systems. These areas were then excavated, studied and root diameters measured. Algorithms were created for the software based on these ground truth studies in an effort to estimate root size. Root studies and software sizing algorithm up-grades will continue as new information is brought to the fore.

The following are the results of current studies that now can, to a reasonable degree estimate root diameters.

•This approach attempts to label detections into three size categories: **SMALL** 2.5 inches and smaller, **MEDIUM** 2.5 - 5 inches, **LARGE** 5 inches and larger.

•These category labels are estimated based on each detection's reflection field size –this is measured by the number of pixels contained within each polygon region identified during a ground penetrating radar scan over the soil.

•Recent research[5] has shown that this metric has a reasonable correlation to root biomass, which in turn is correlated to the root's diameter



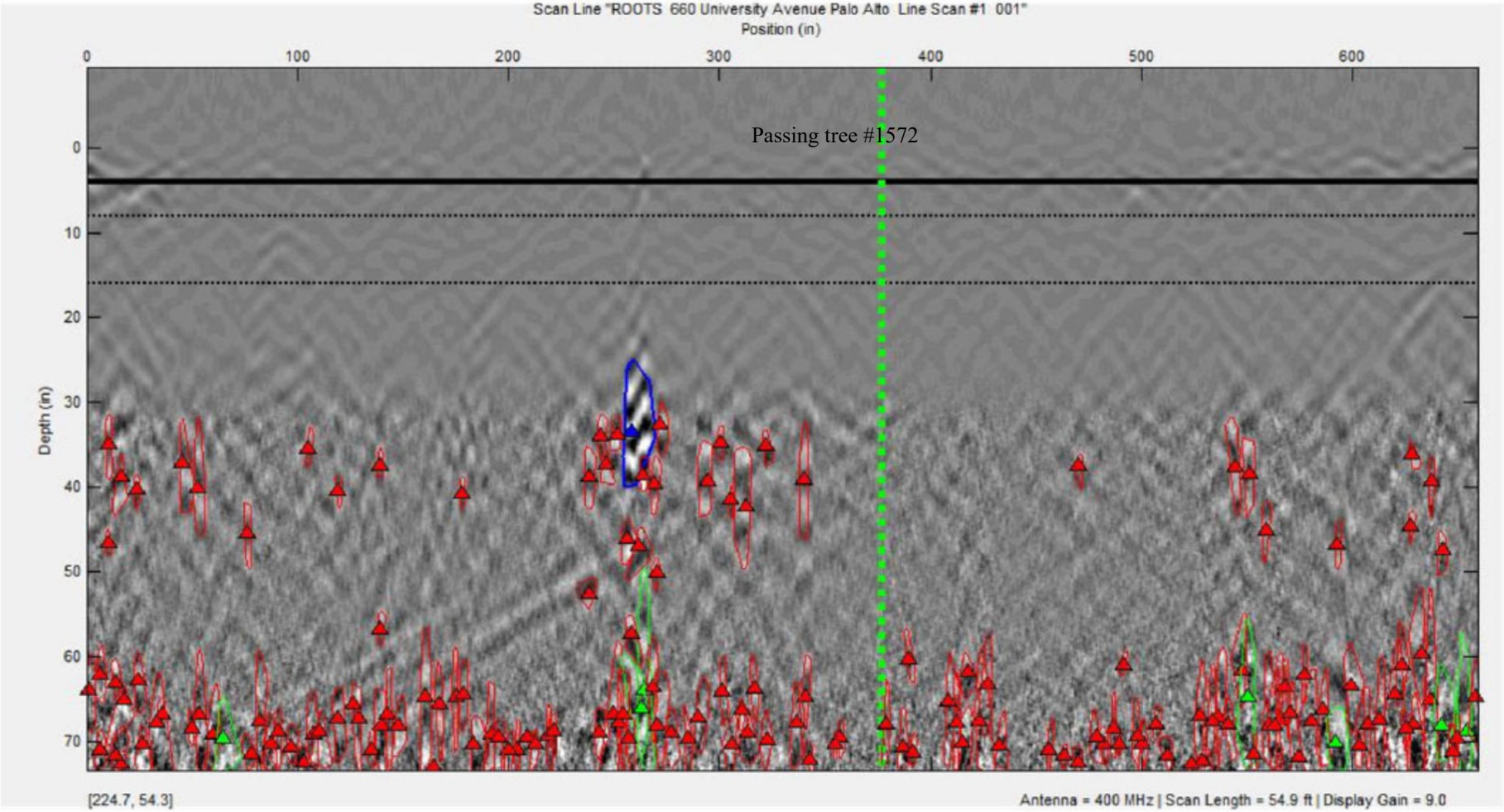
[5] *Hirano et al., "Detection frequency of Pinusthunbergiiroots by ground-penetrating radar is related to root biomass", Plant Science 2012*

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Scan #1 Root size estimate using Polygon region, reflection field size around root.

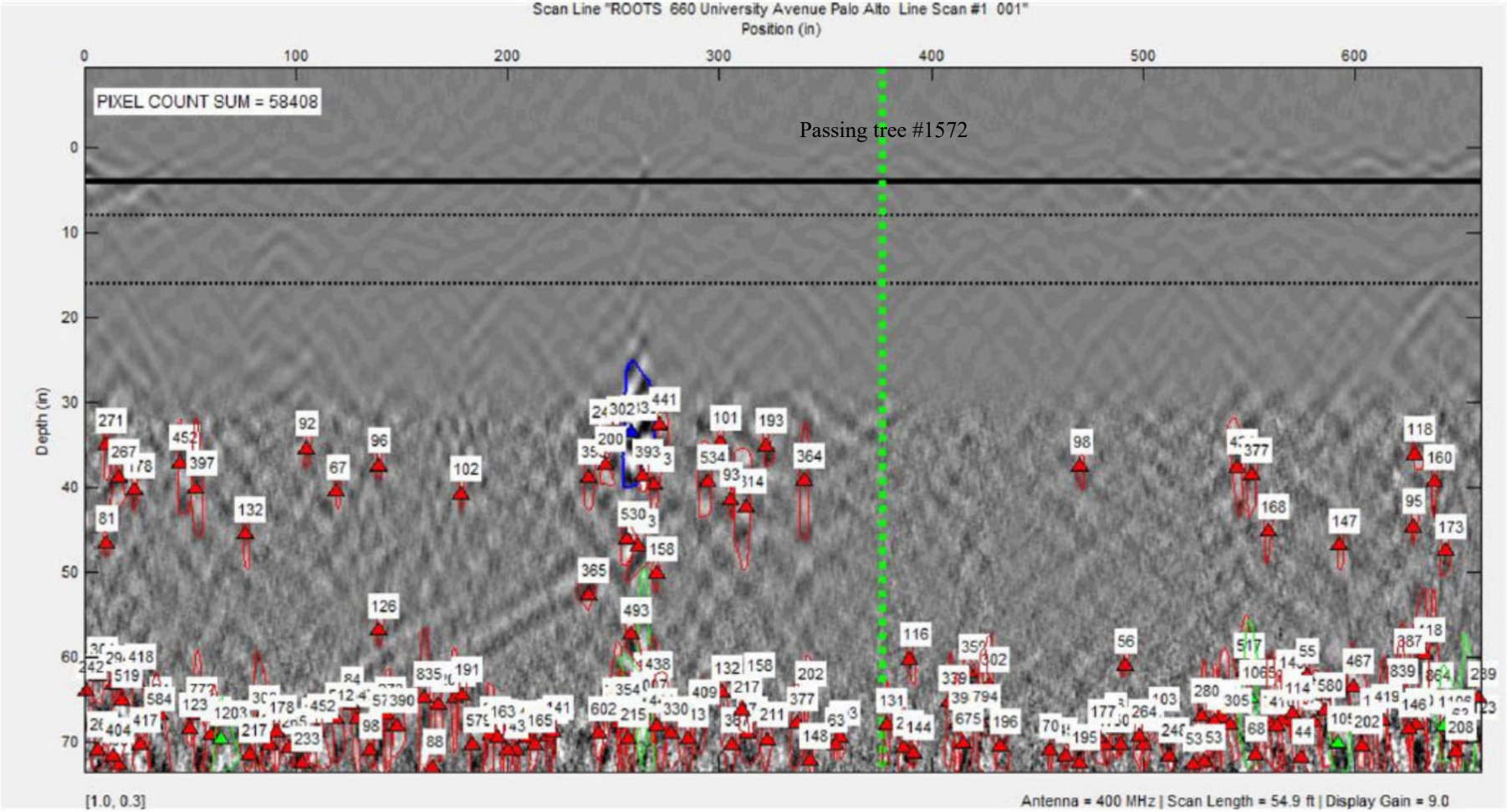
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #1 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

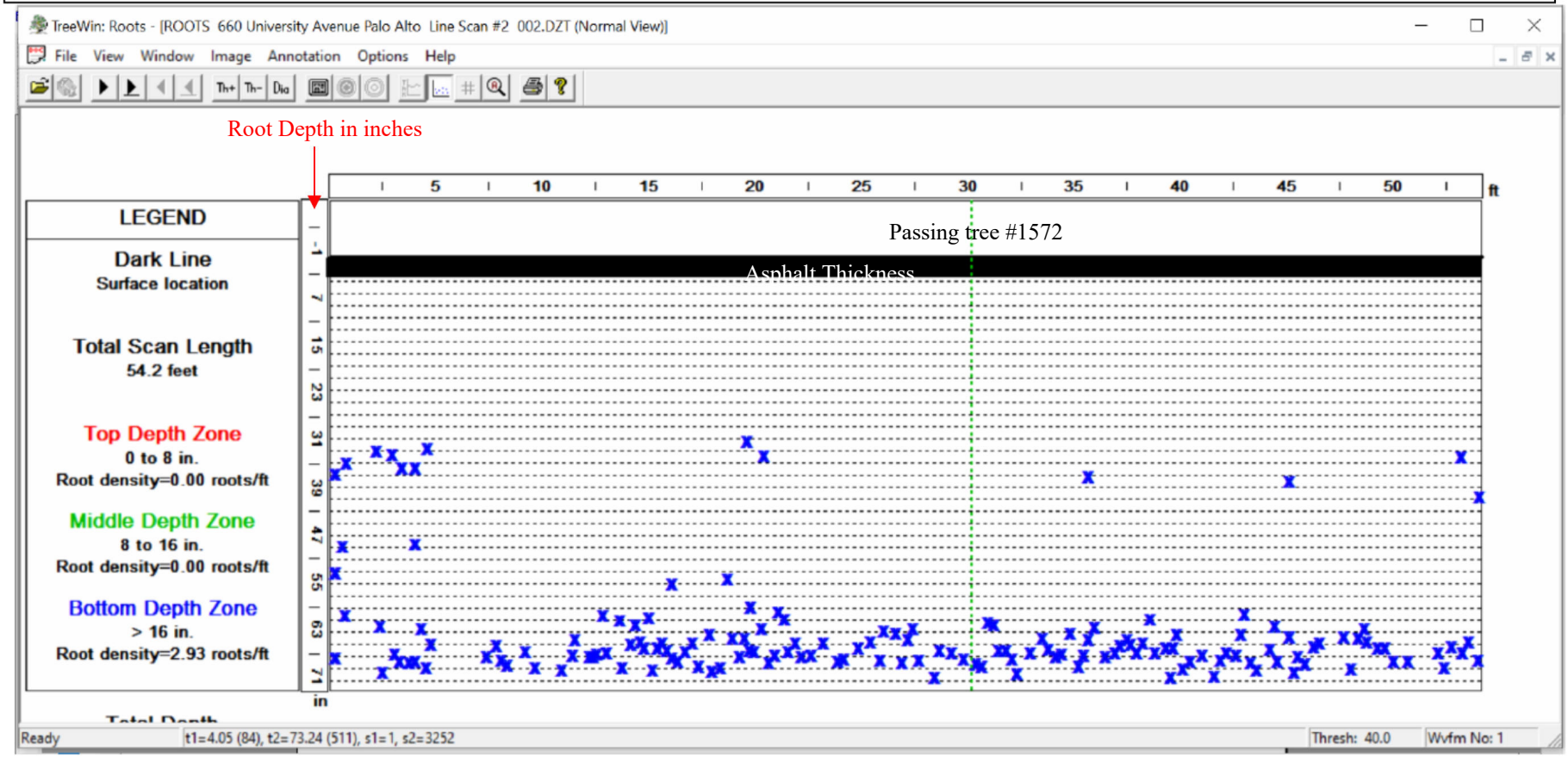
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #2 Line scan over parking lot 11 feet away from Oak tree #1572

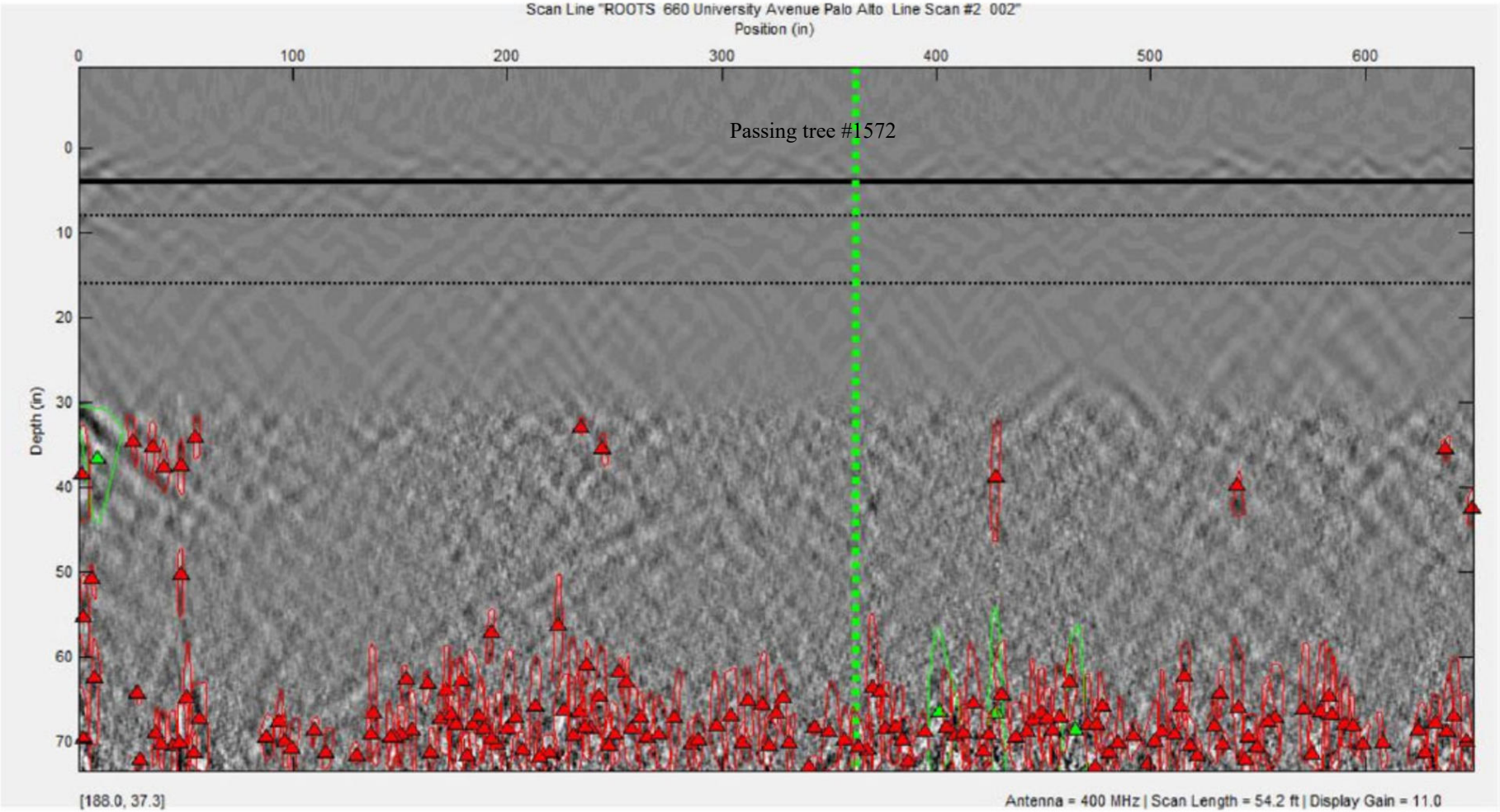


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Scan #2 Root size estimate using Polygon region, reflection field size around root.

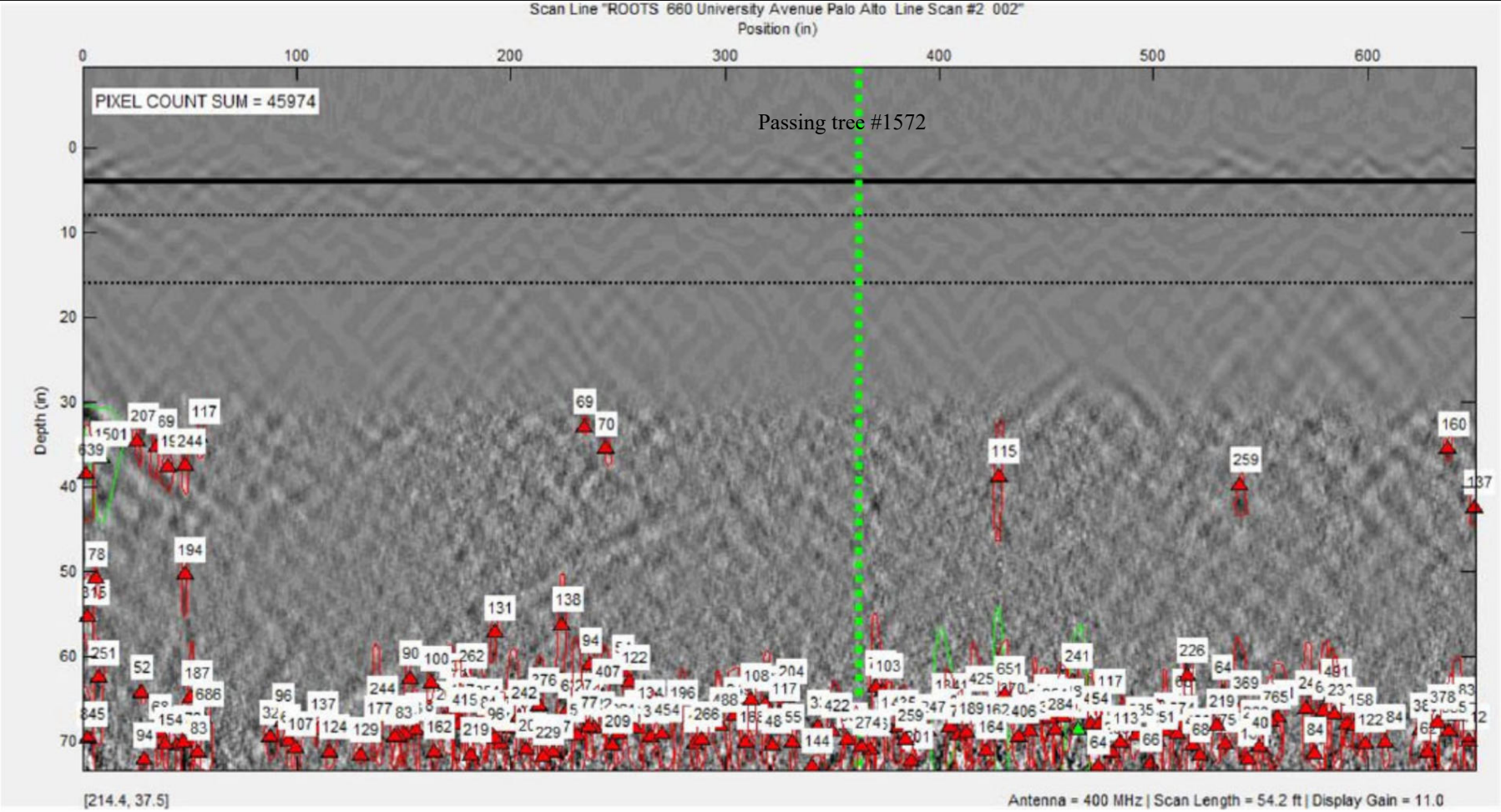
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #2 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

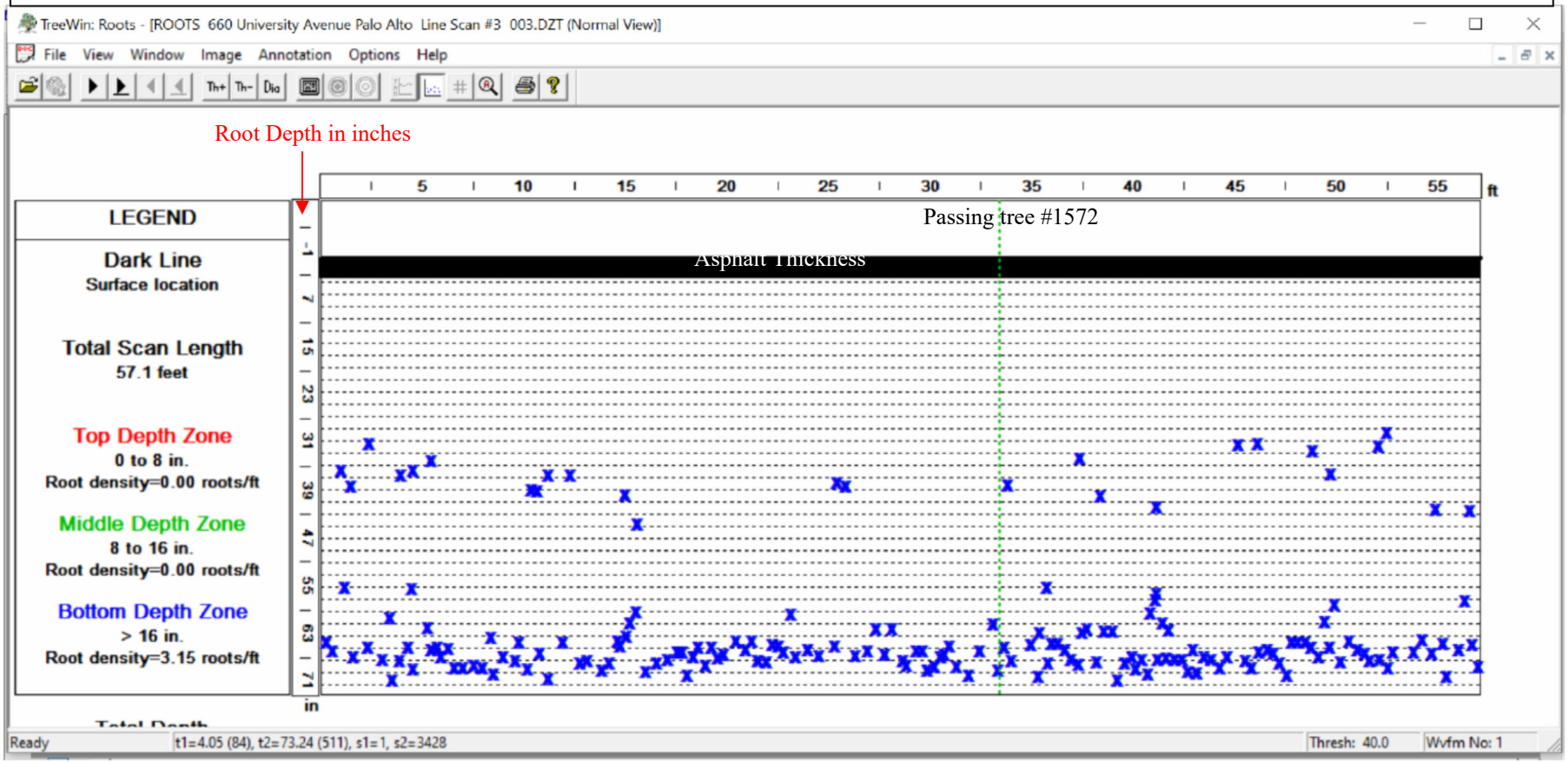
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #3 Line scan over parking lot 15 feet away from Oak tree #1572

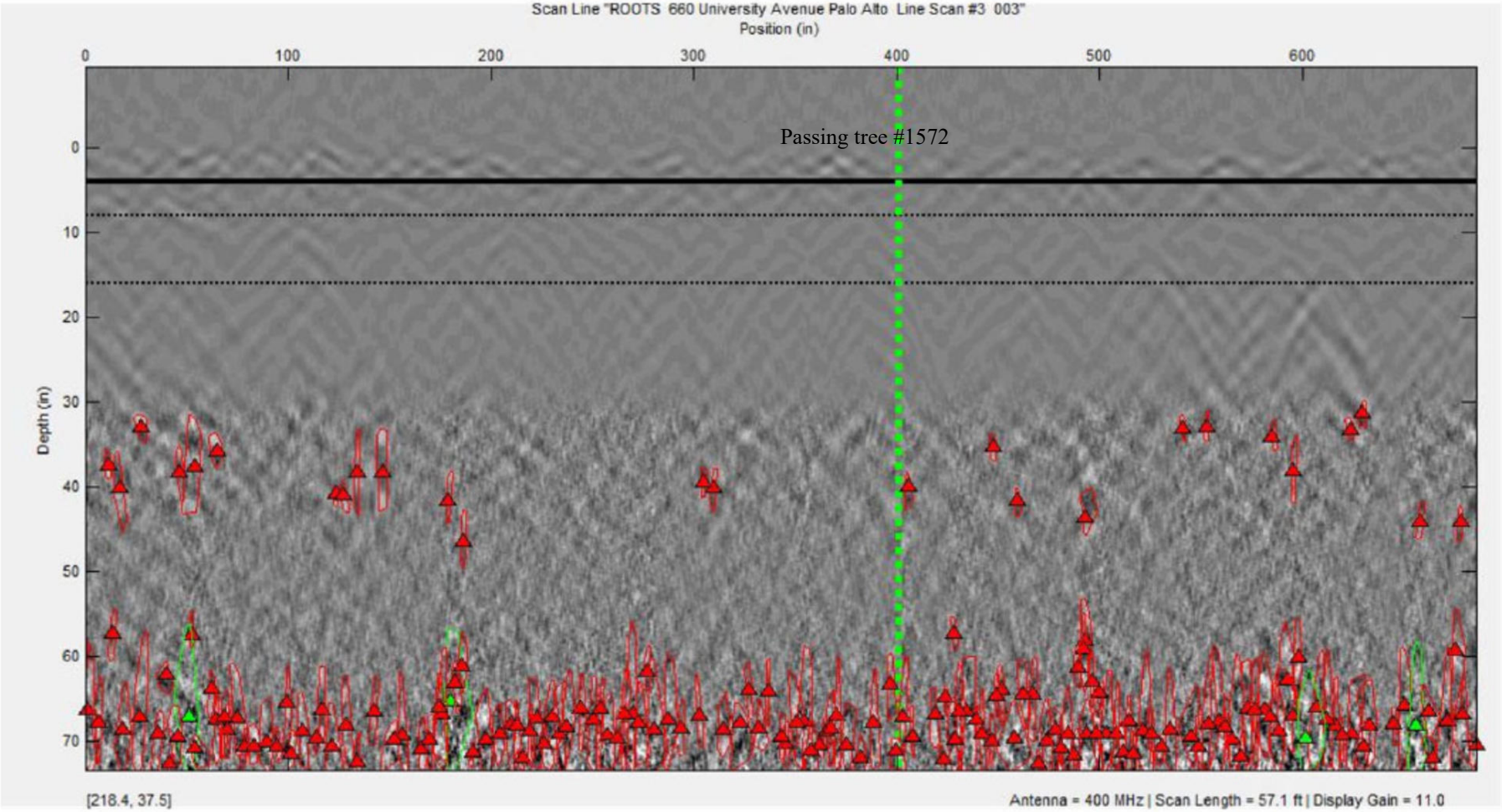


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Scan #3 Root size estimate using Polygon region, reflection field size around root.

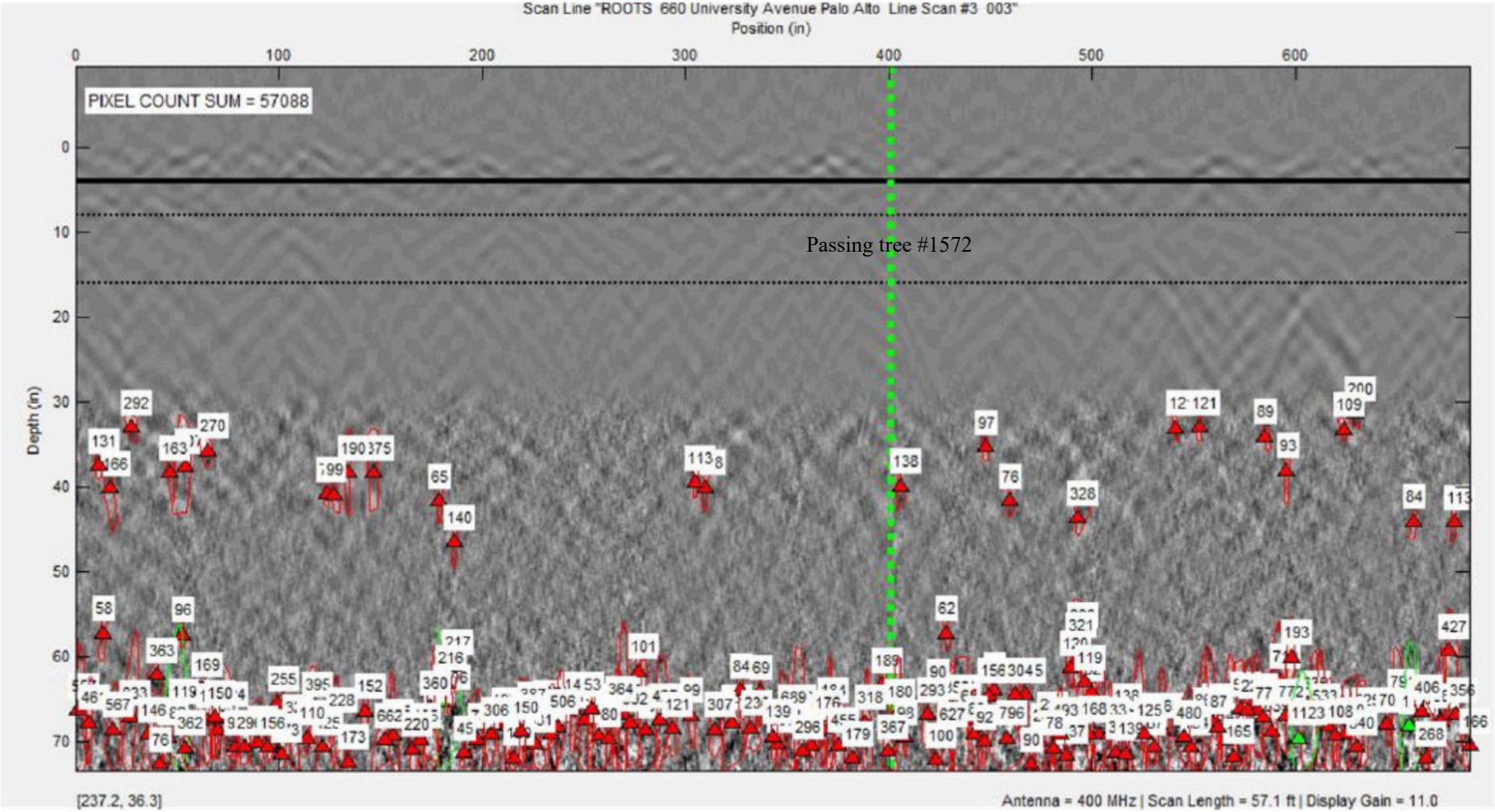
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #3 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

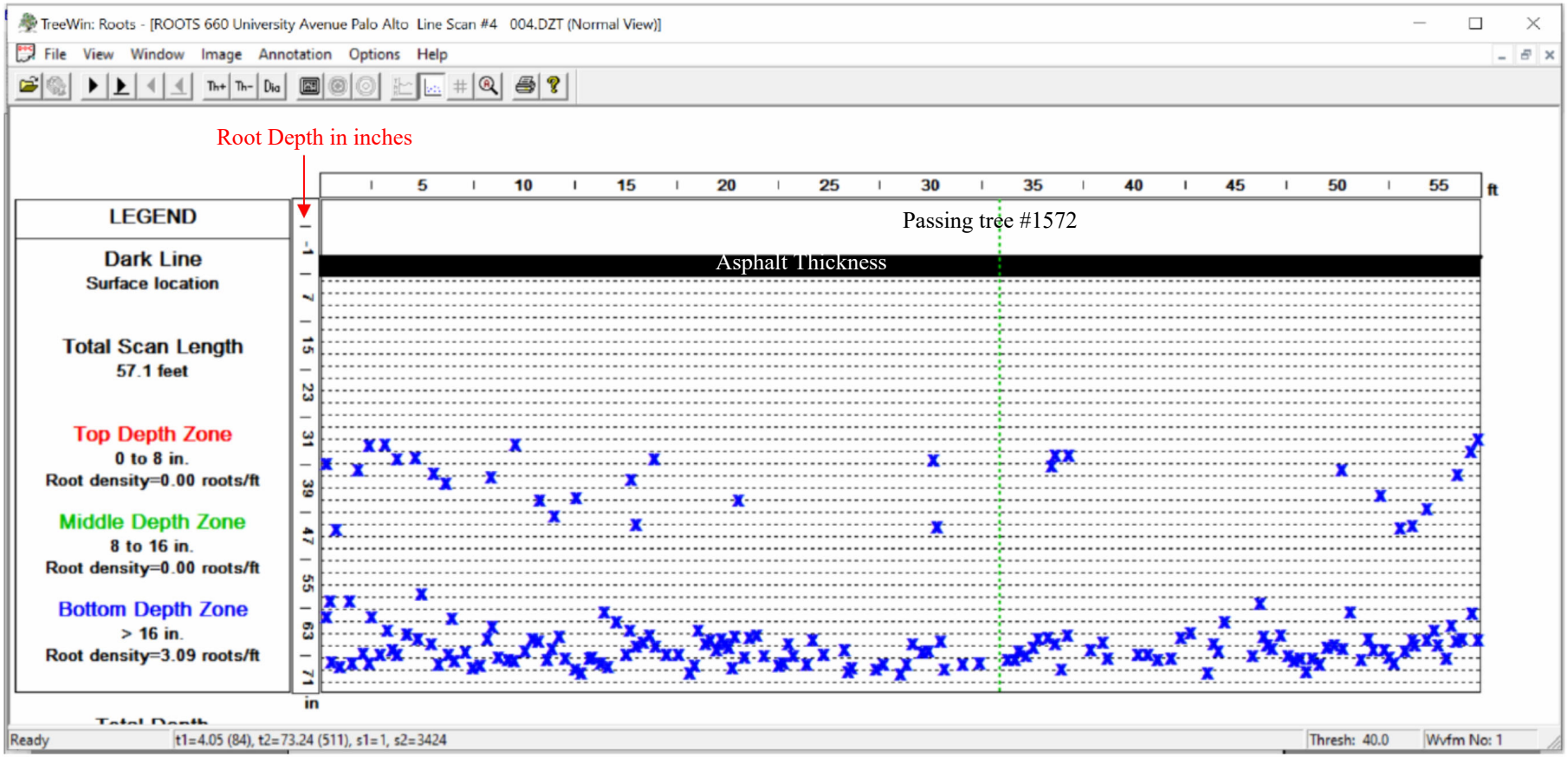
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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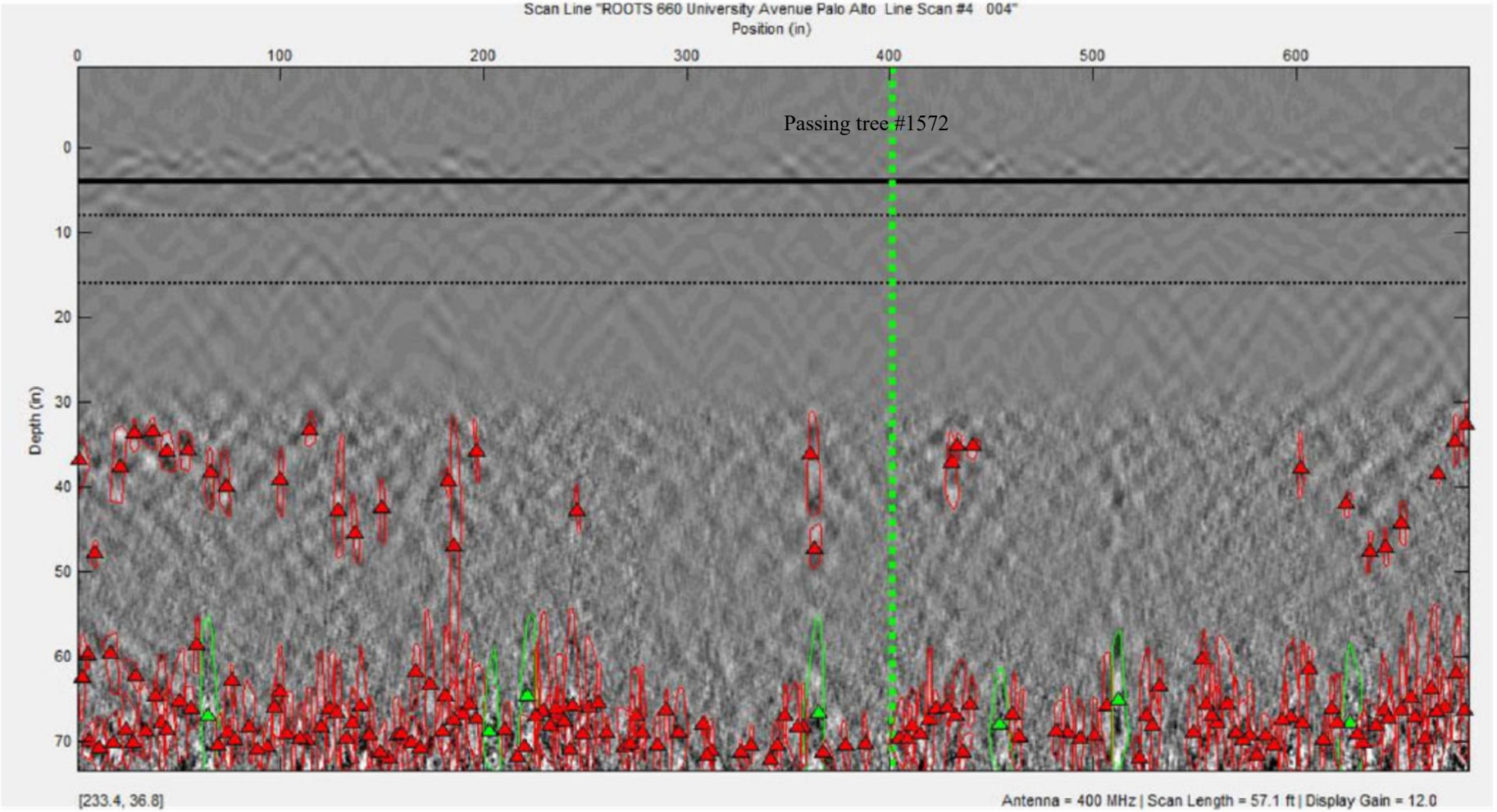
Scan #4 Line scan over parking lot 19 feet away from Oak tree #1572



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Scan #4 Root size estimate using Polygon region, reflection field size around root.

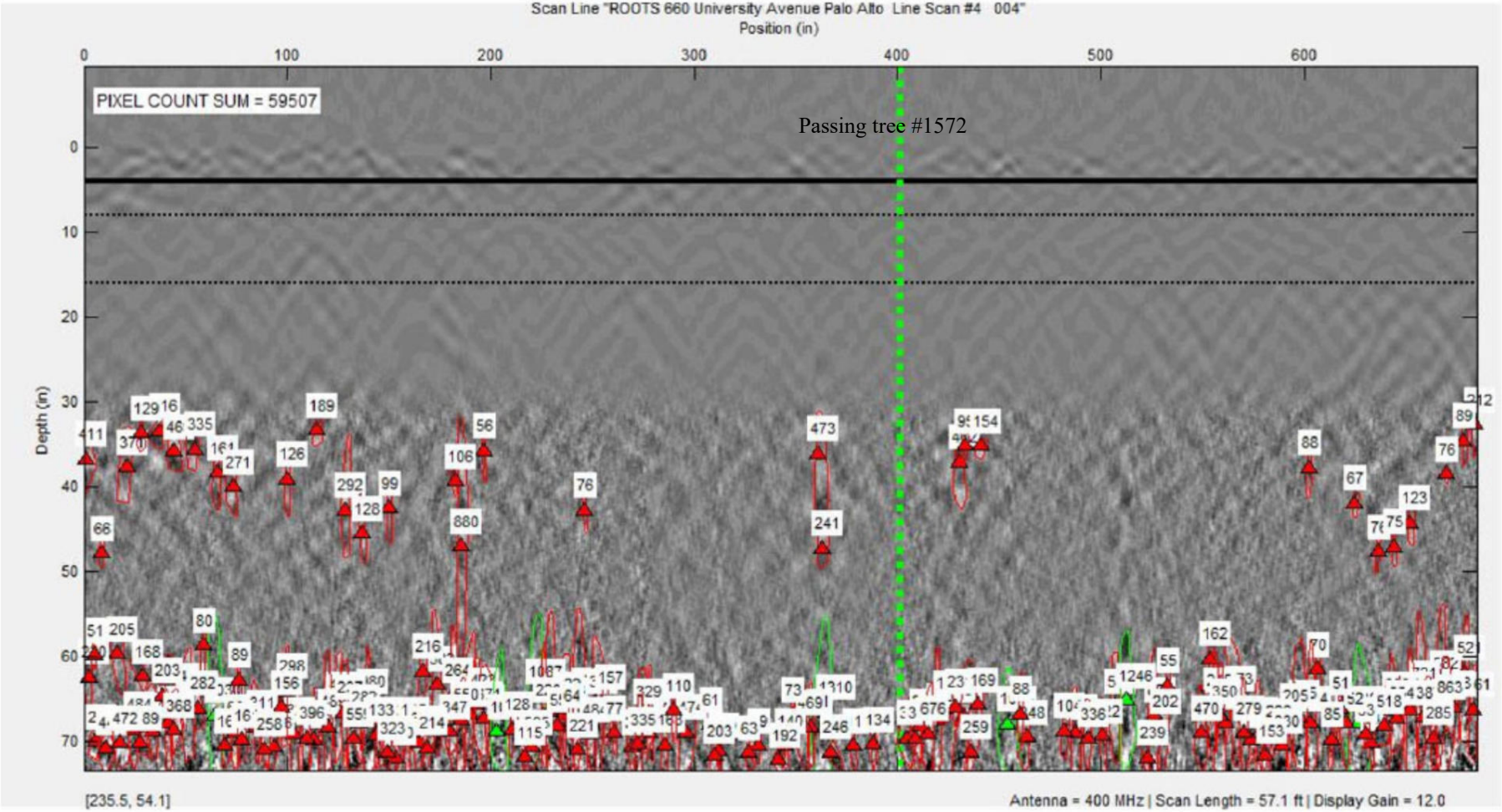
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #4 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

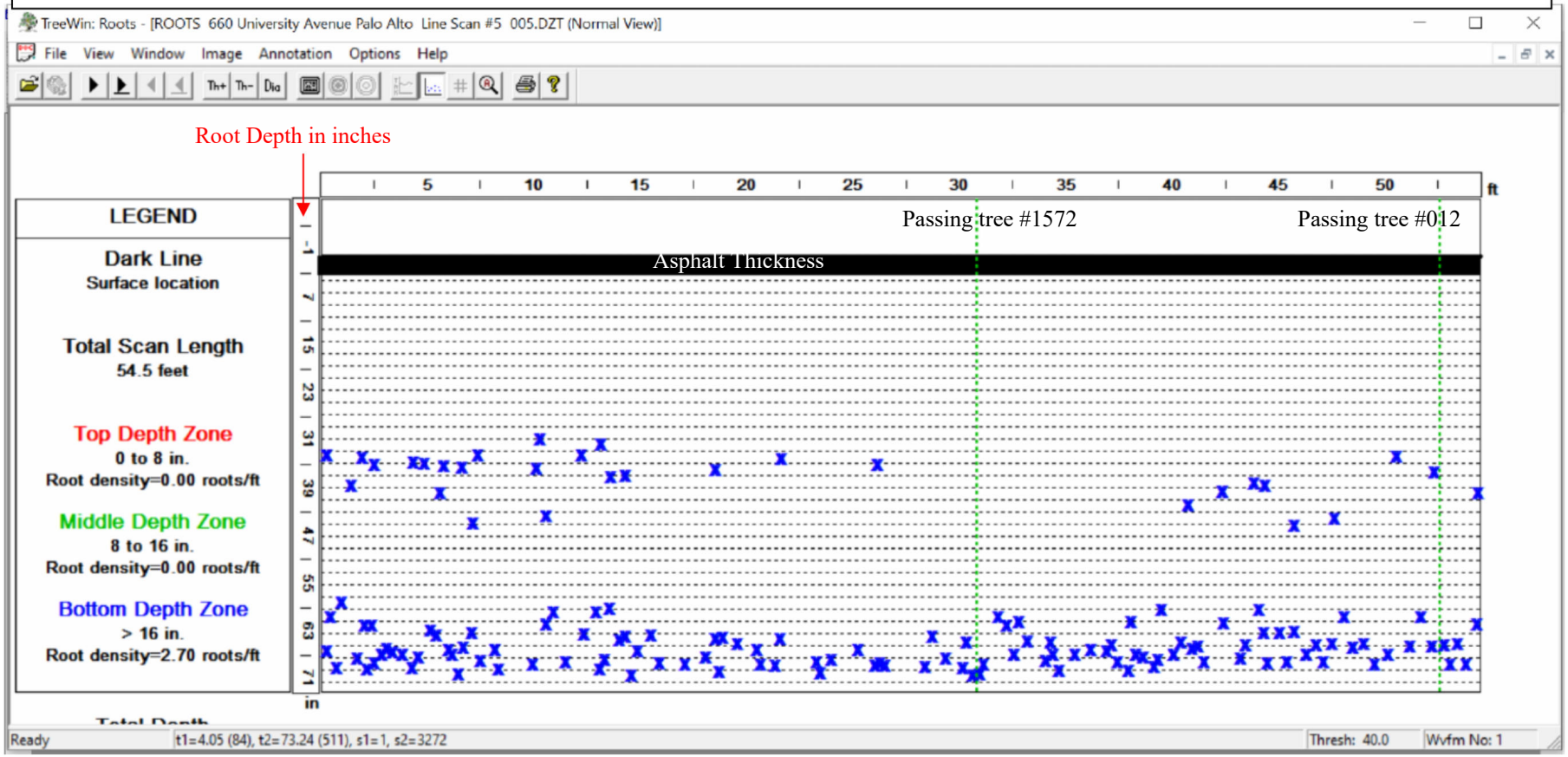
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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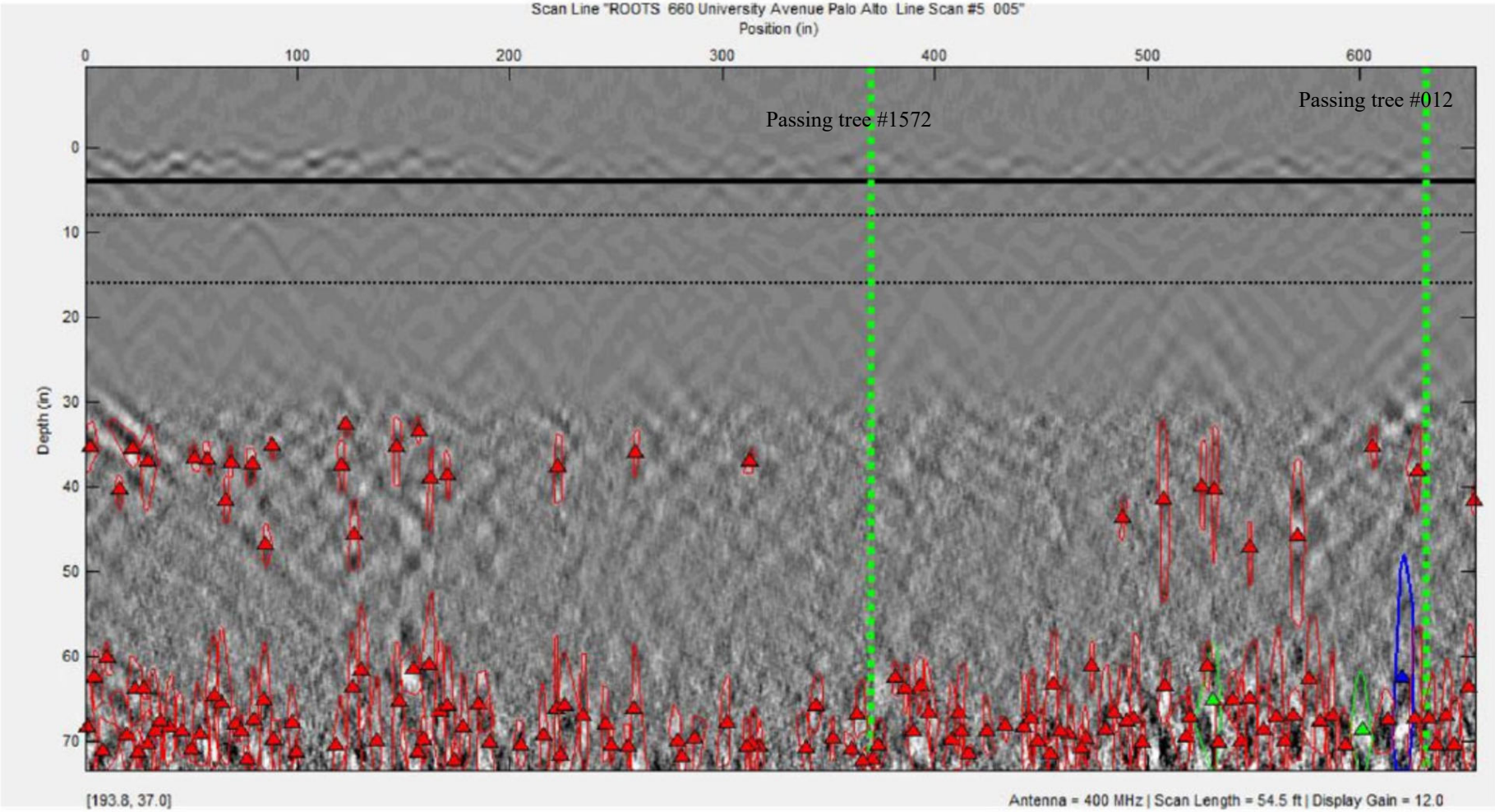
Scan #5 Line scan over parking lot 23 feet away from Oak tree #1572



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Scan #5 Root size estimate using Polygon region, reflection field size around root.

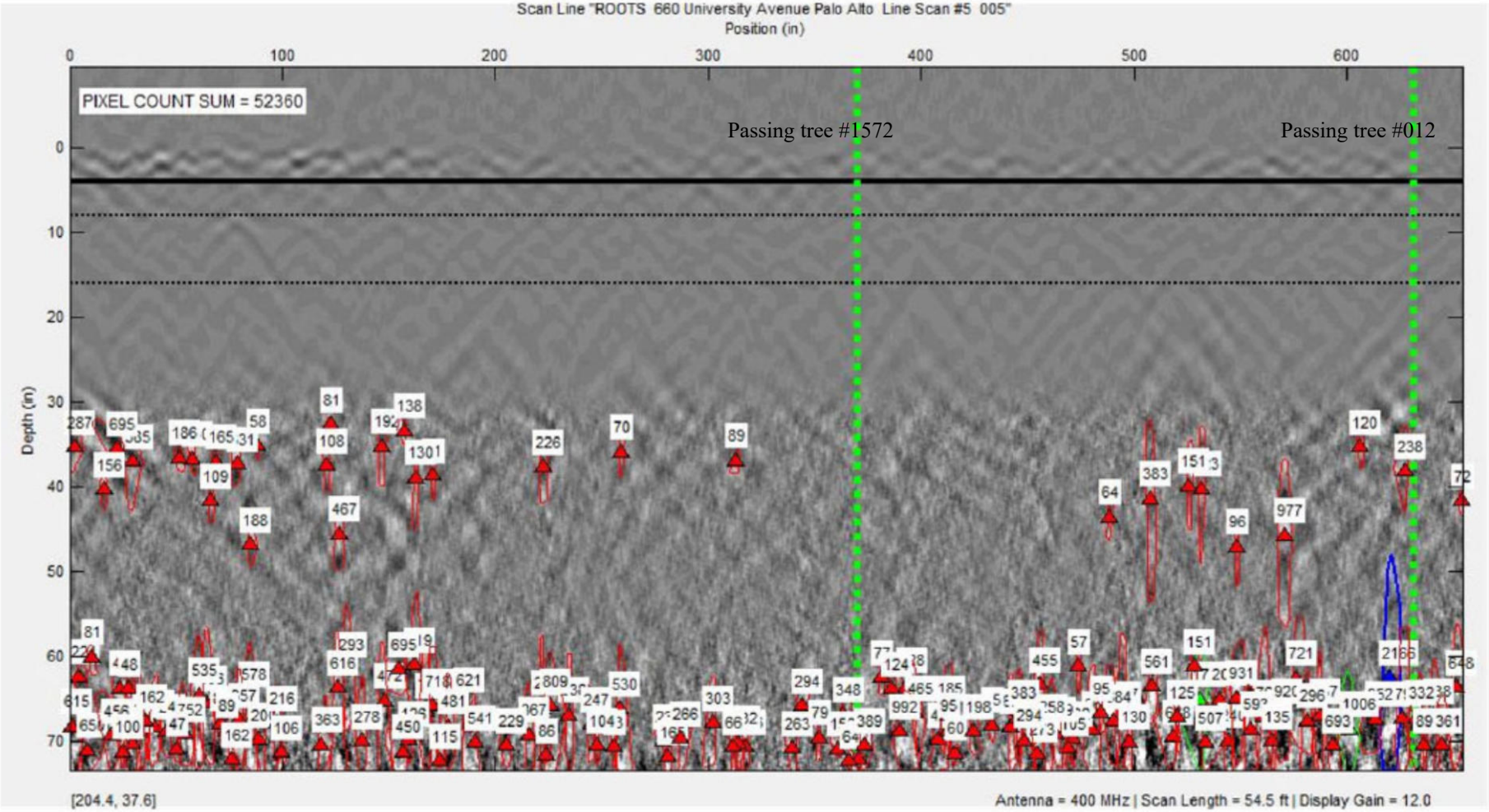
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #5 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

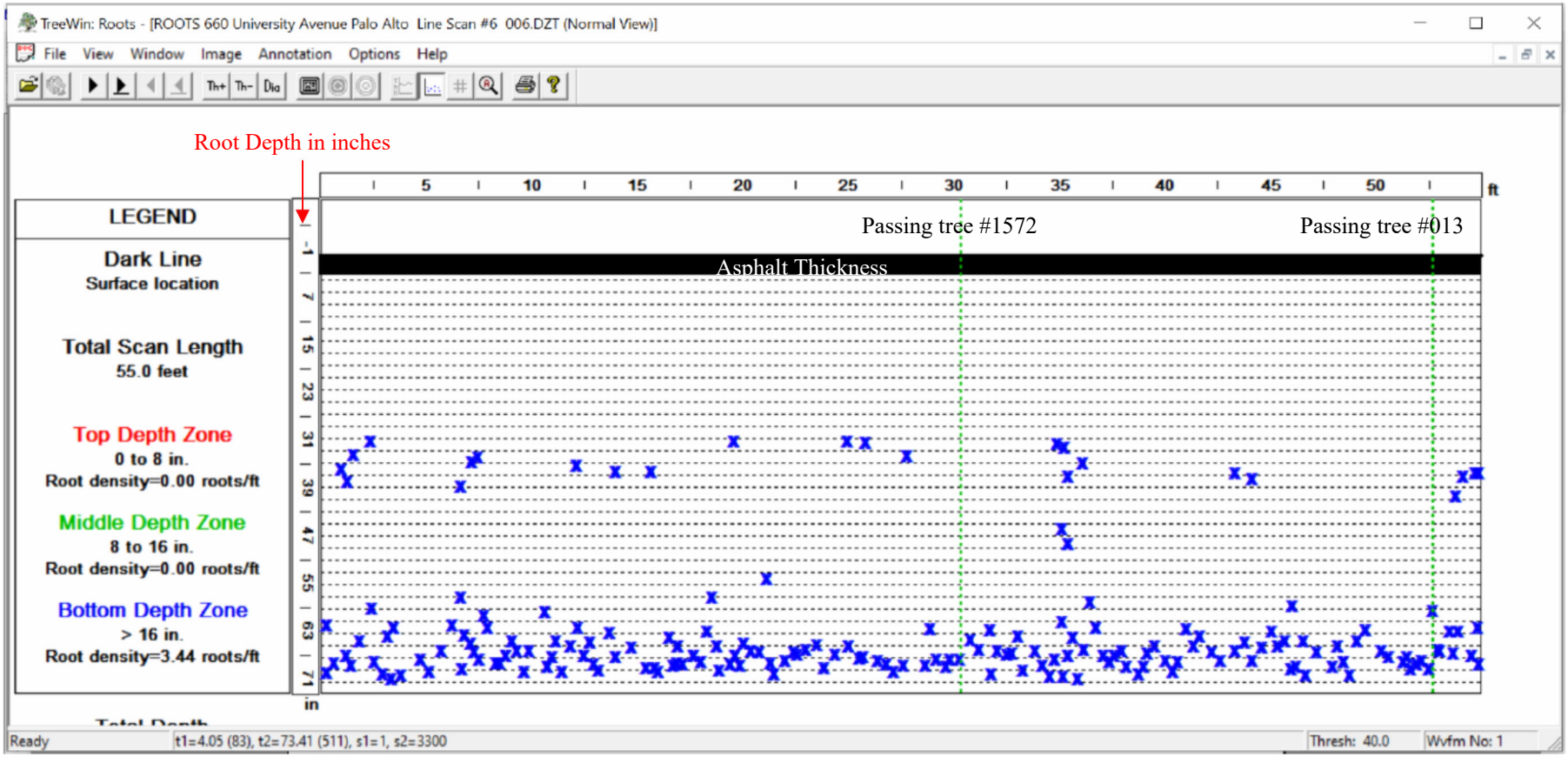
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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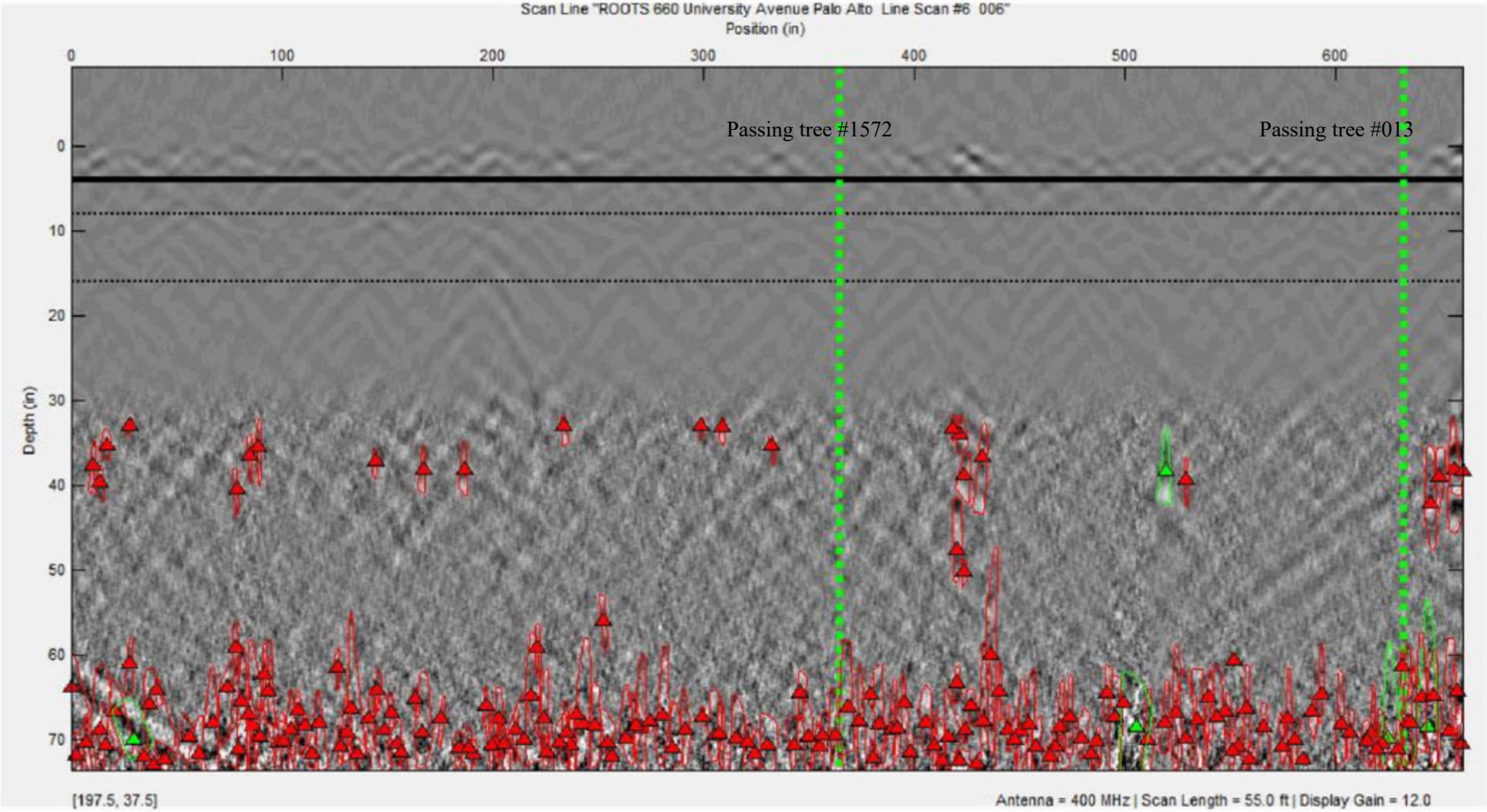
Scan #6 Line scan over parking lot 27 feet away from Oak tree #1572



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Scan #6 Root size estimate using Polygon region, reflection field size around root.

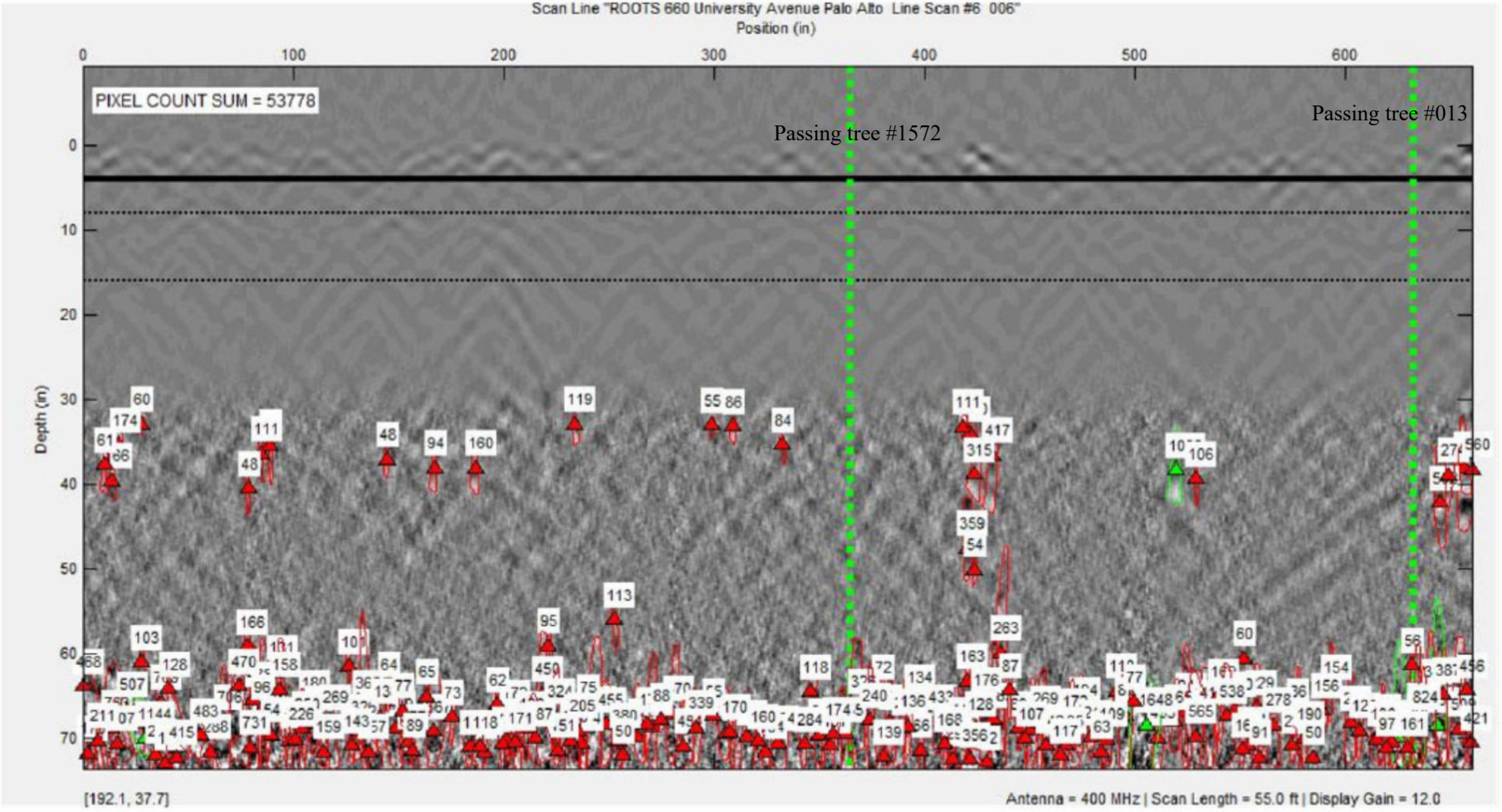
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #6 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



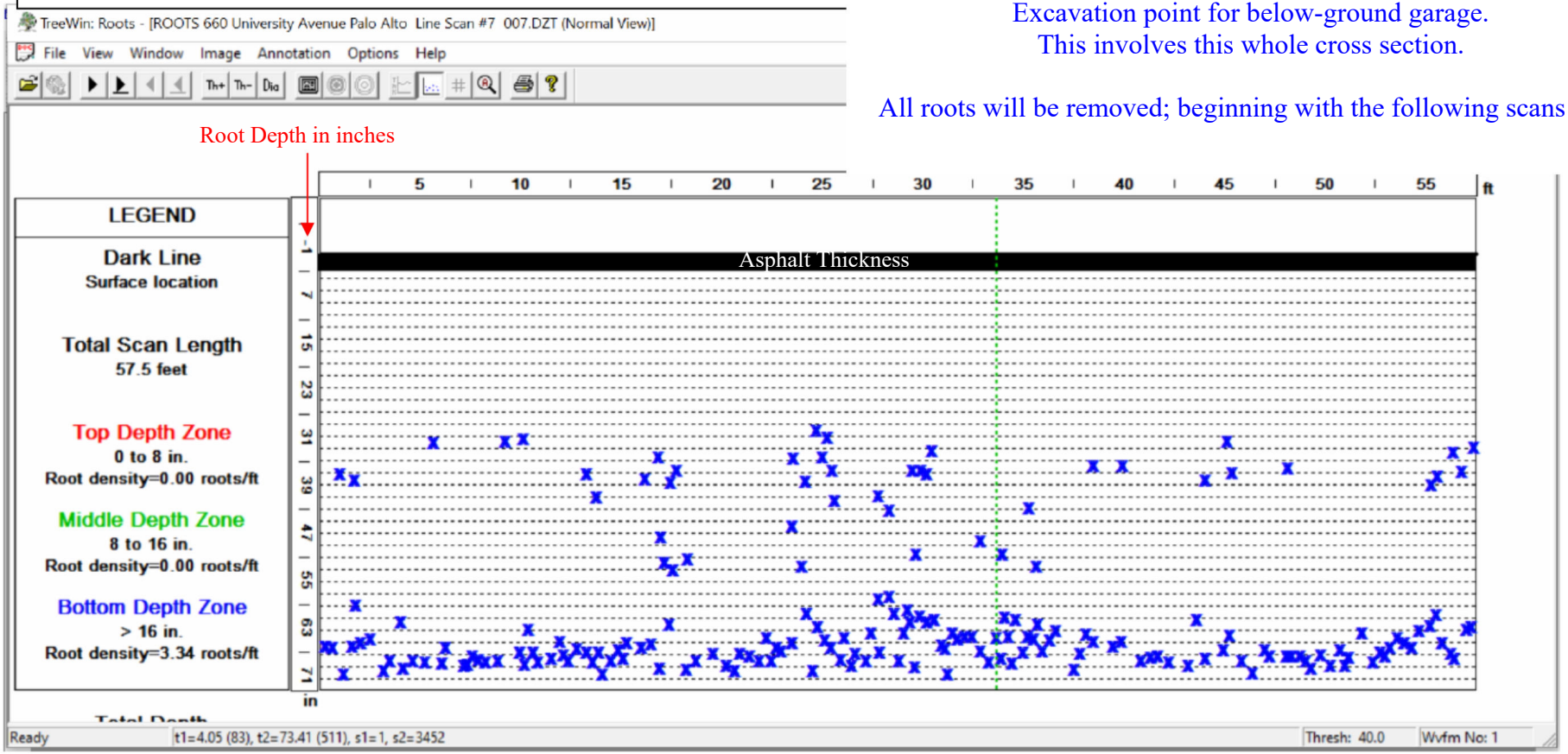
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Scan #7 Line scan over parking lot 31 feet away from Oak tree #1572

Excavation point for below-ground garage.
This involves this whole cross section.

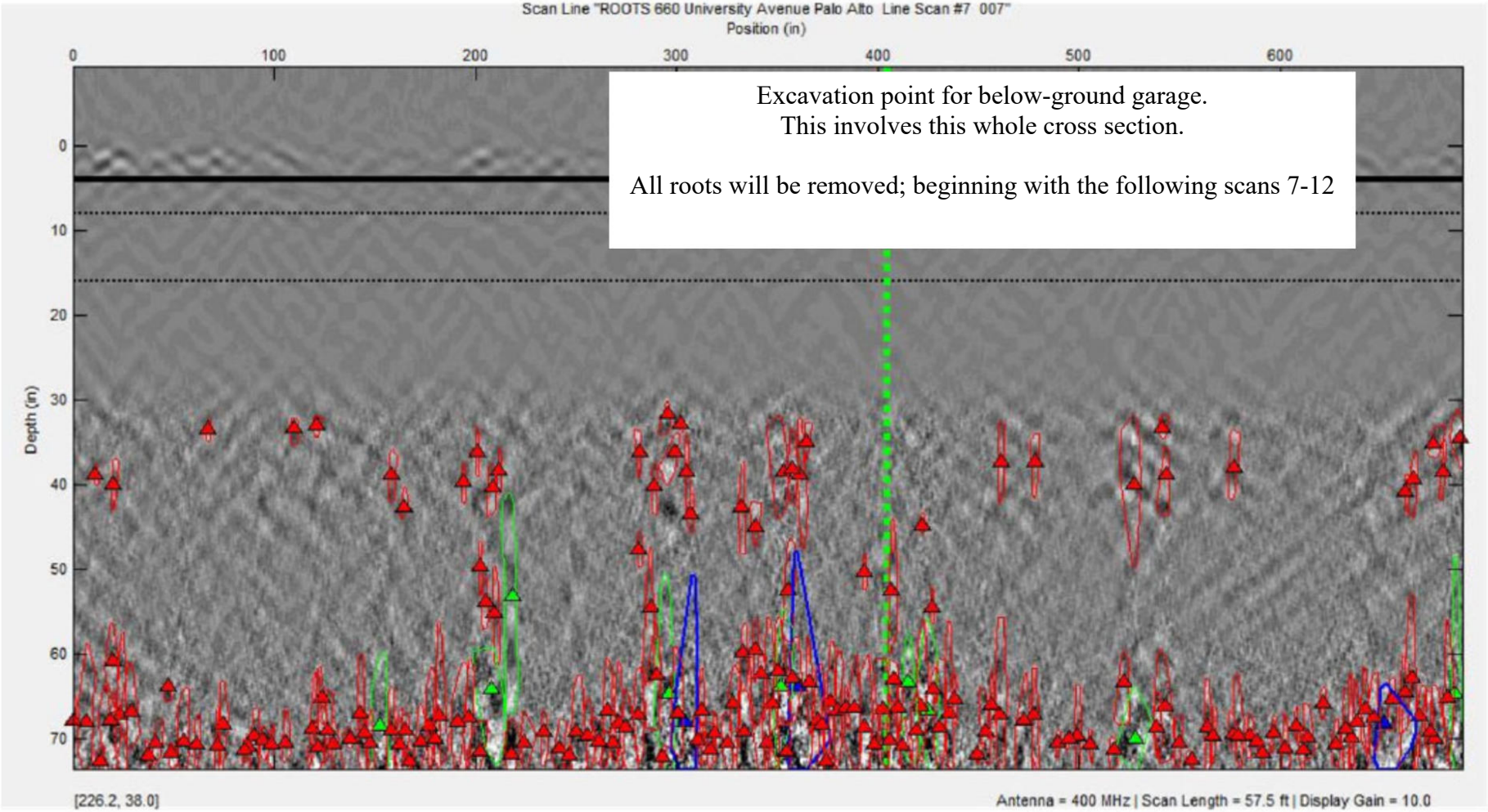
All roots will be removed; beginning with the following scans 7-12



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Scan #7 Root size estimate using Polygon region, reflection field size around root.

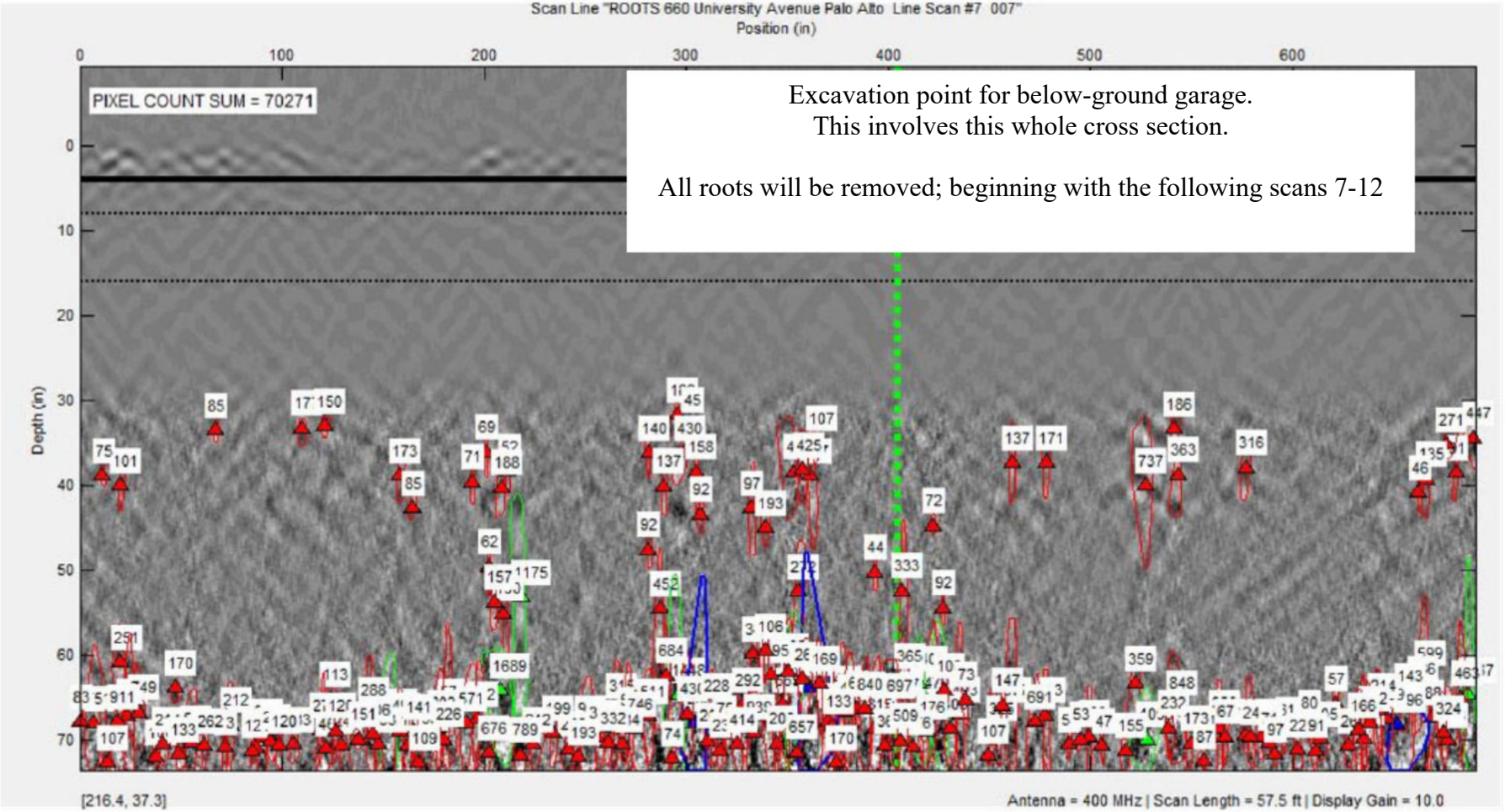
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #7 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

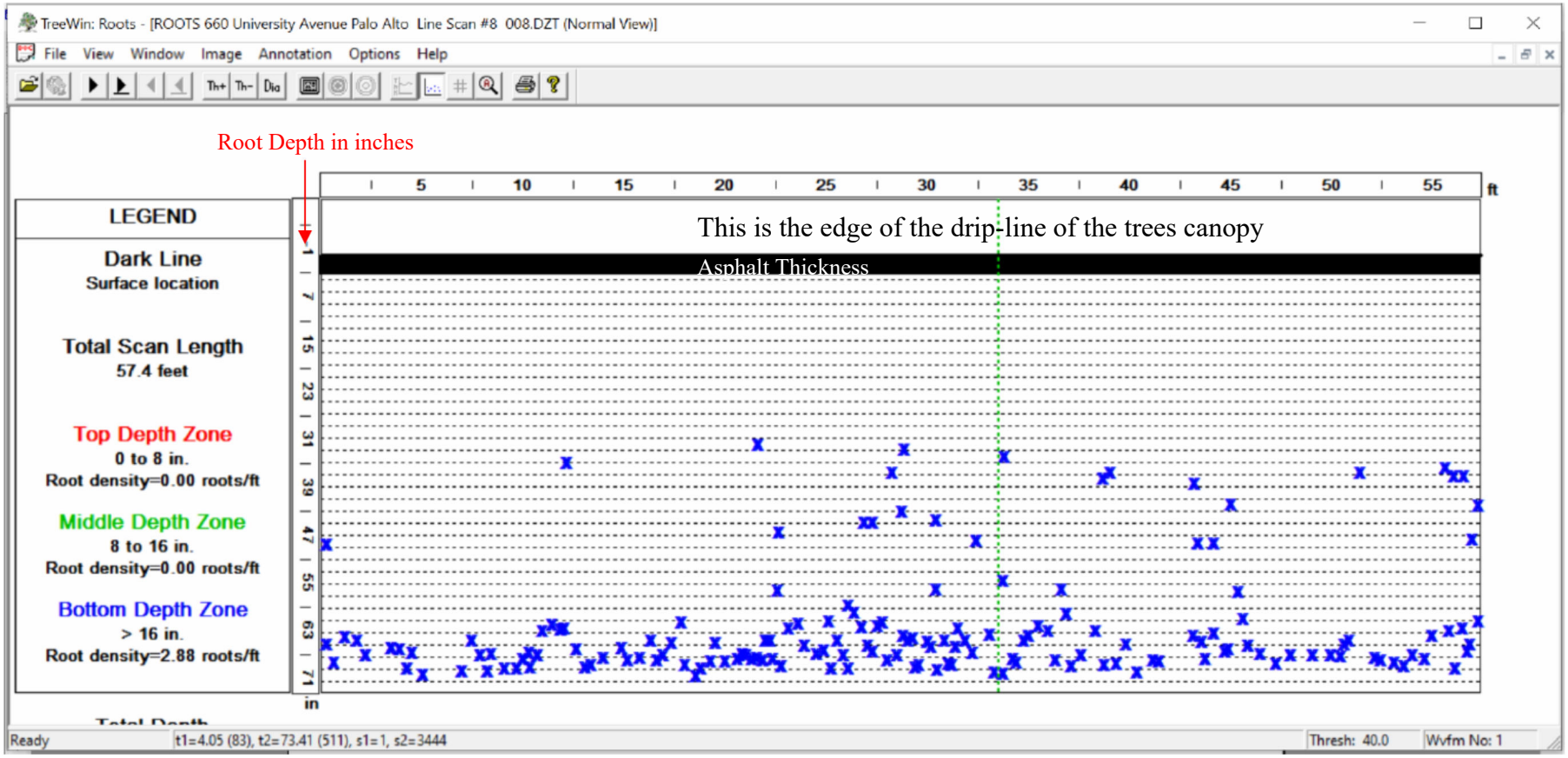
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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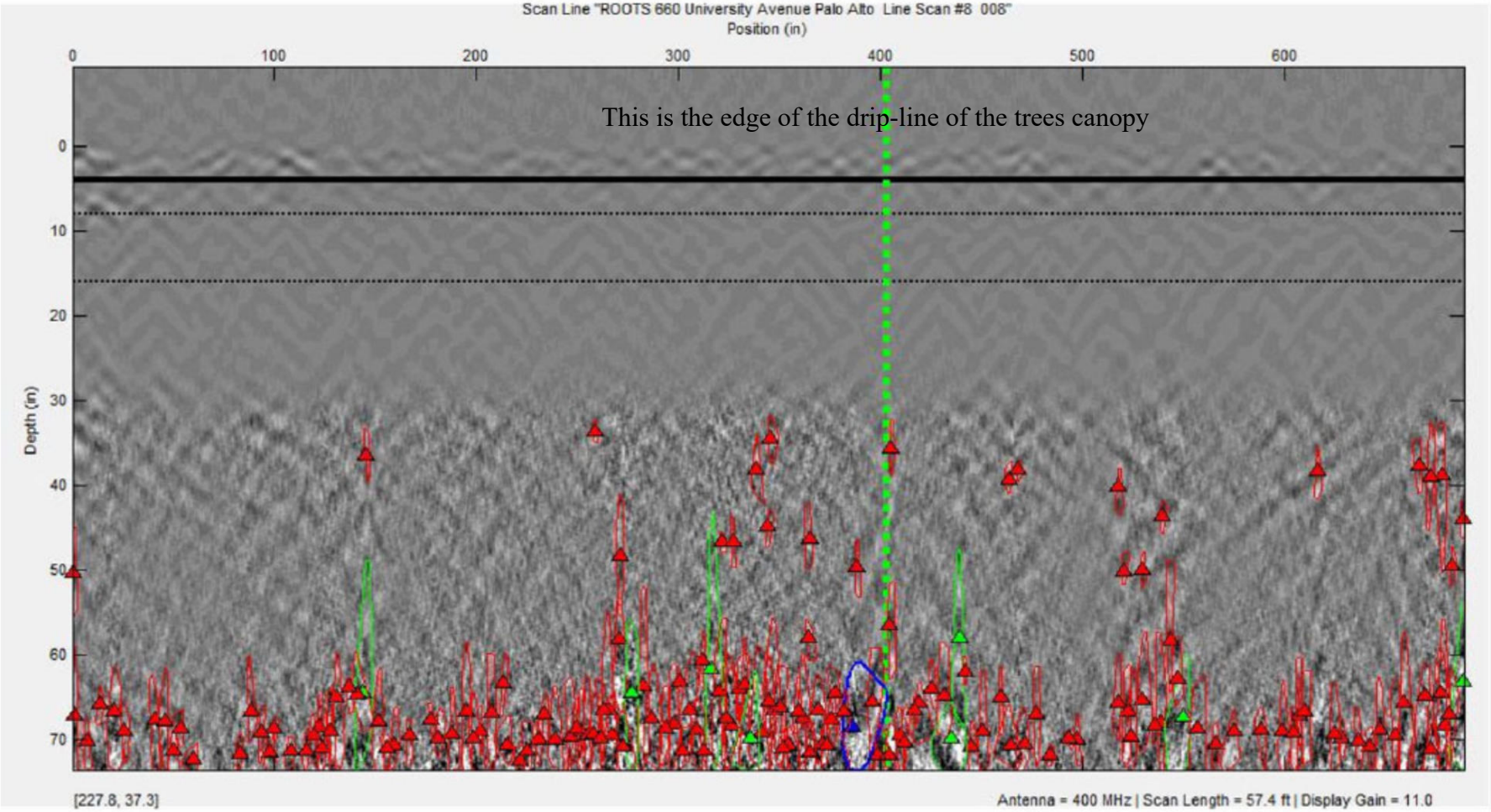
Scan #8 Line scan over parking lot 35 feet away from Oak tree #1572



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Scan #8 Root size estimate using Polygon region, reflection field size around root.

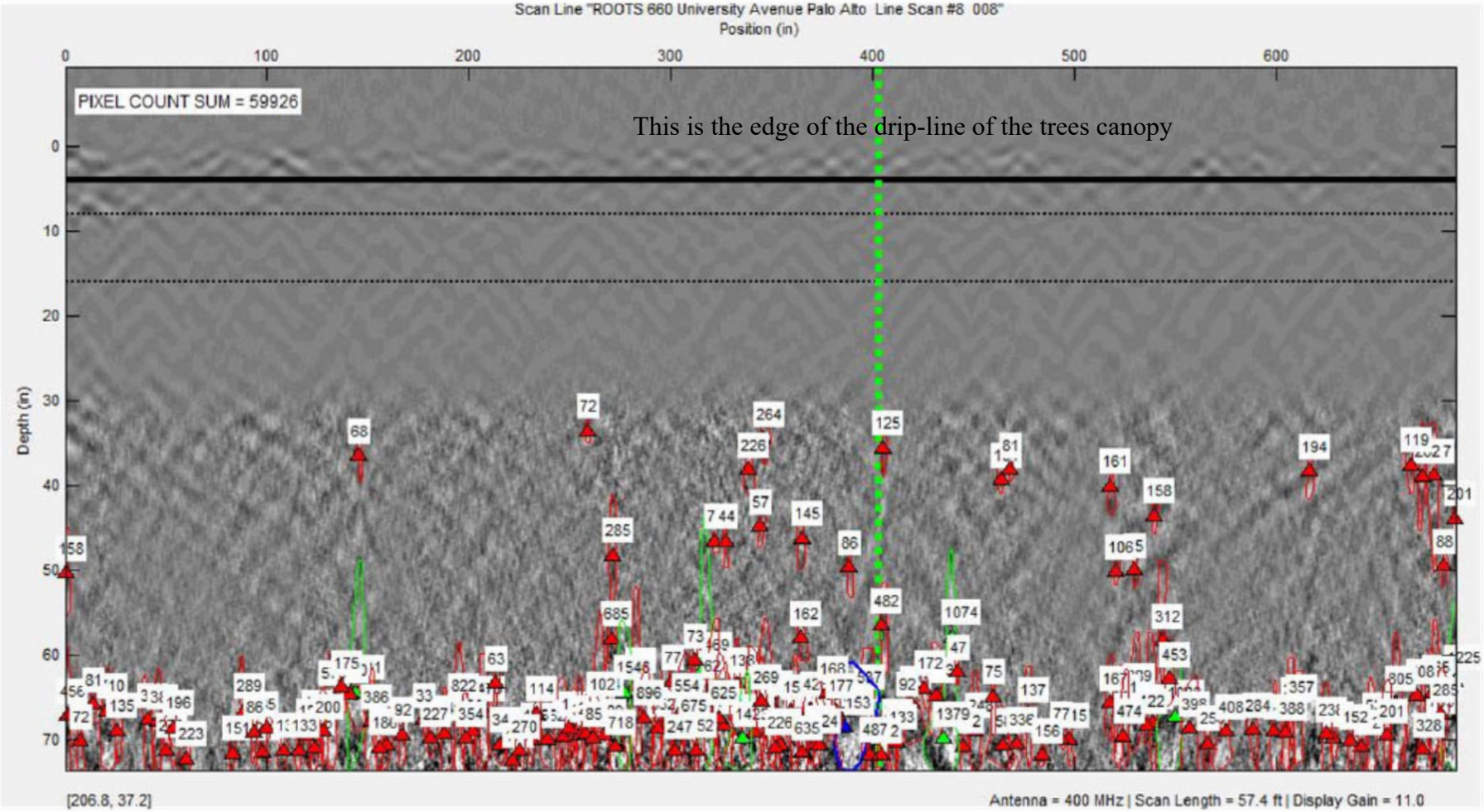
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #8 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

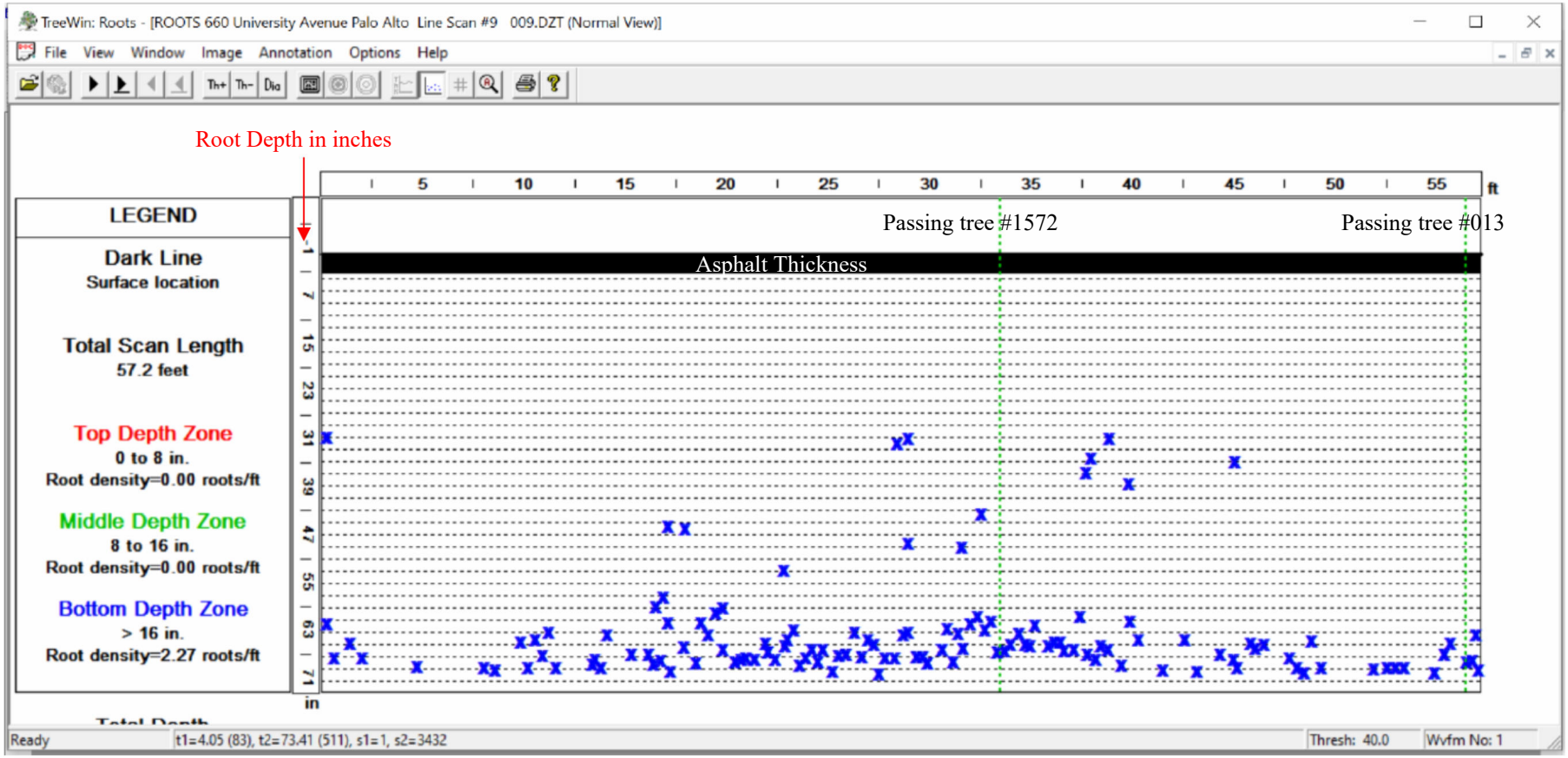
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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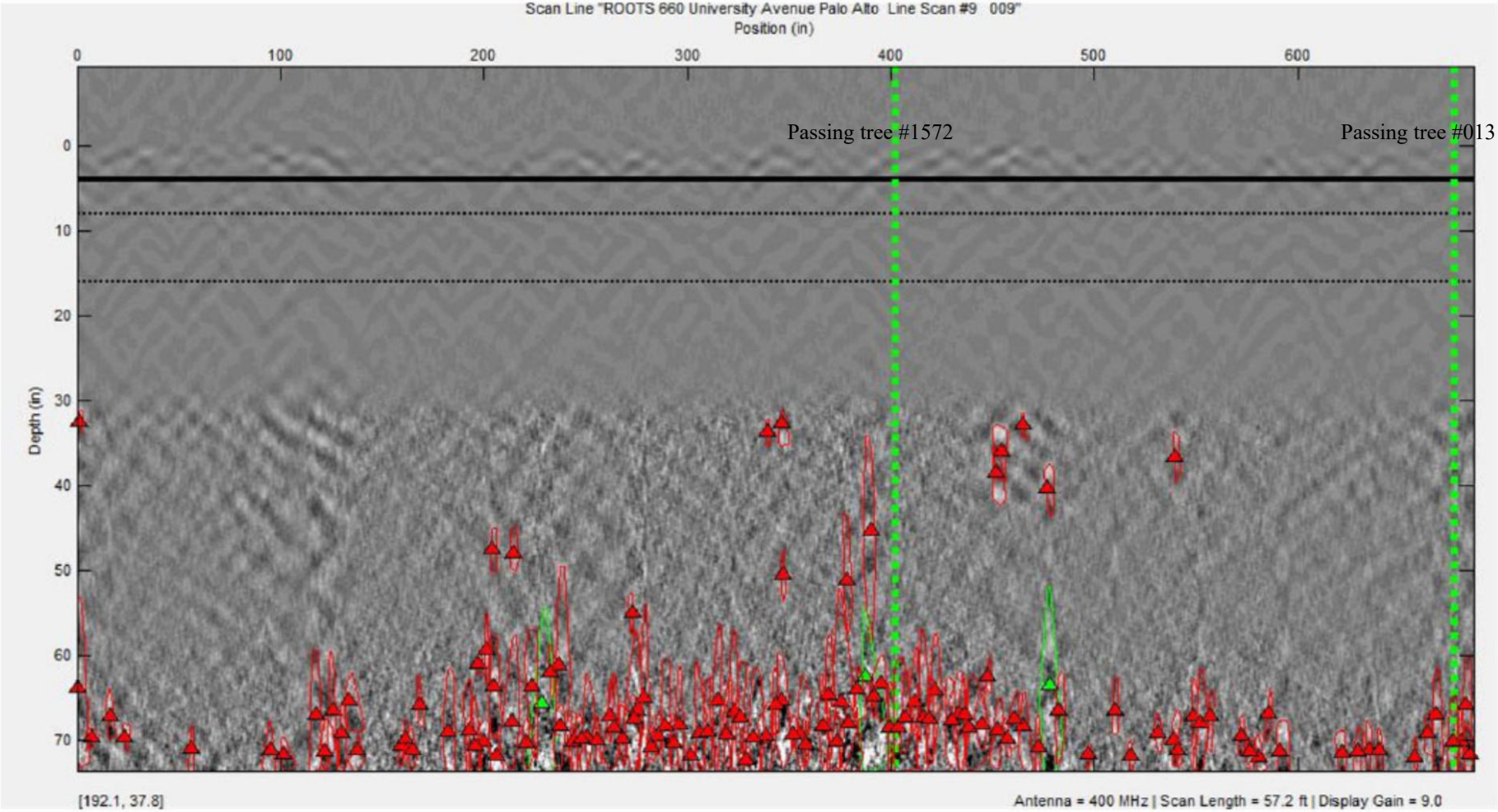
Scan #9 Line scan over parking lot 39 feet away from Oak tree #1572



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Scan #9 Root size estimate using Polygon region, reflection field size around root.

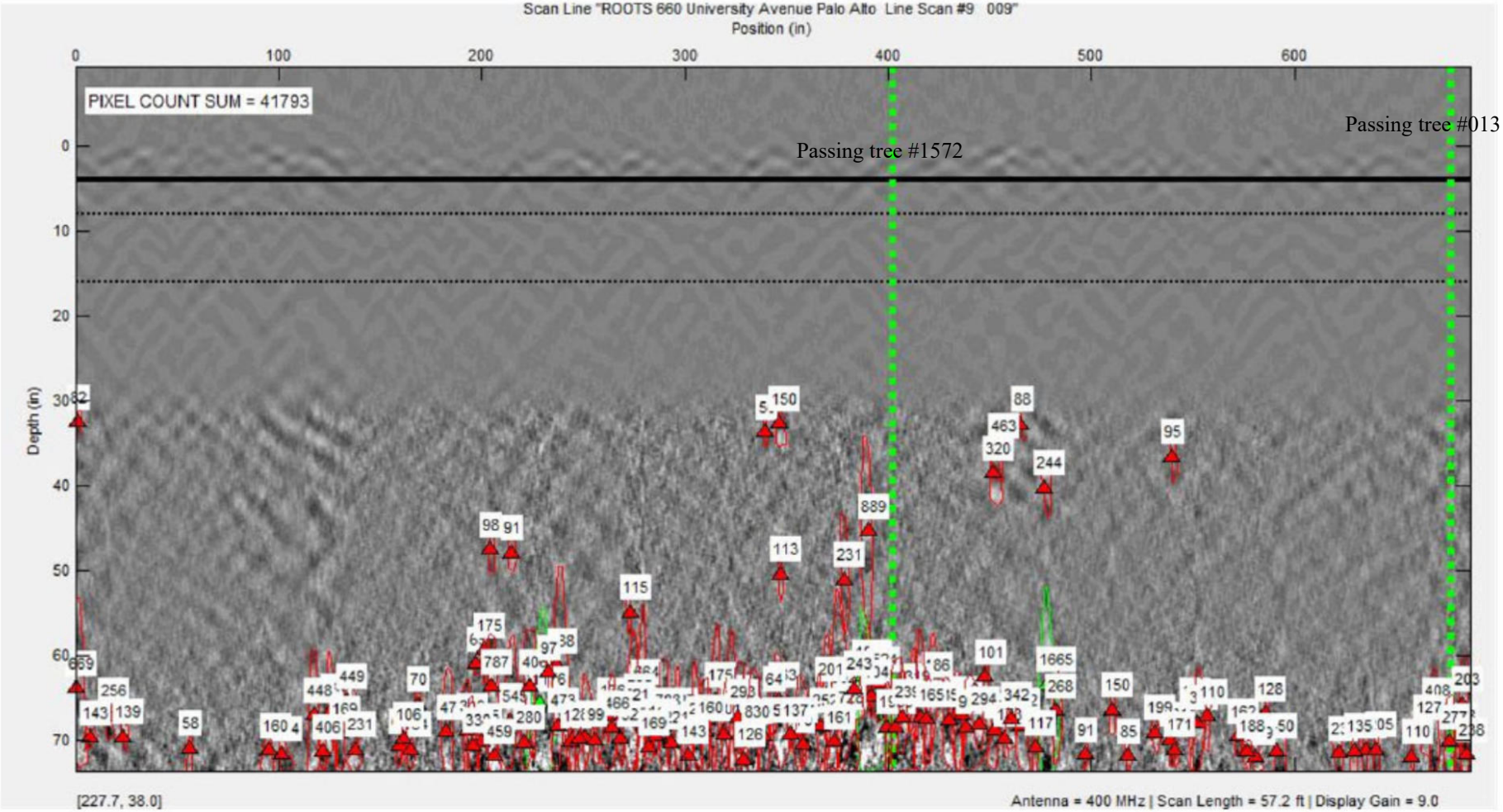
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #9 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

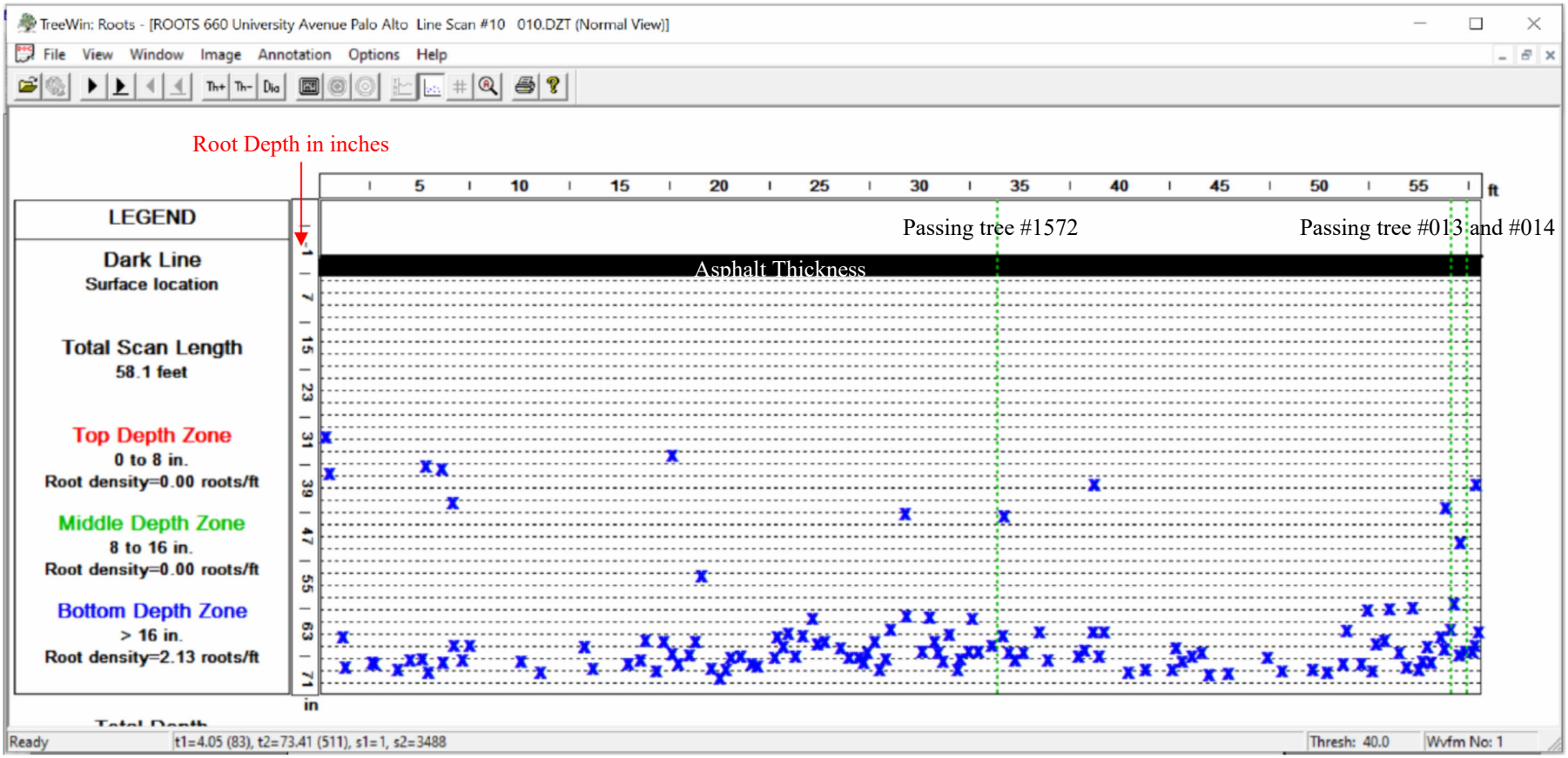
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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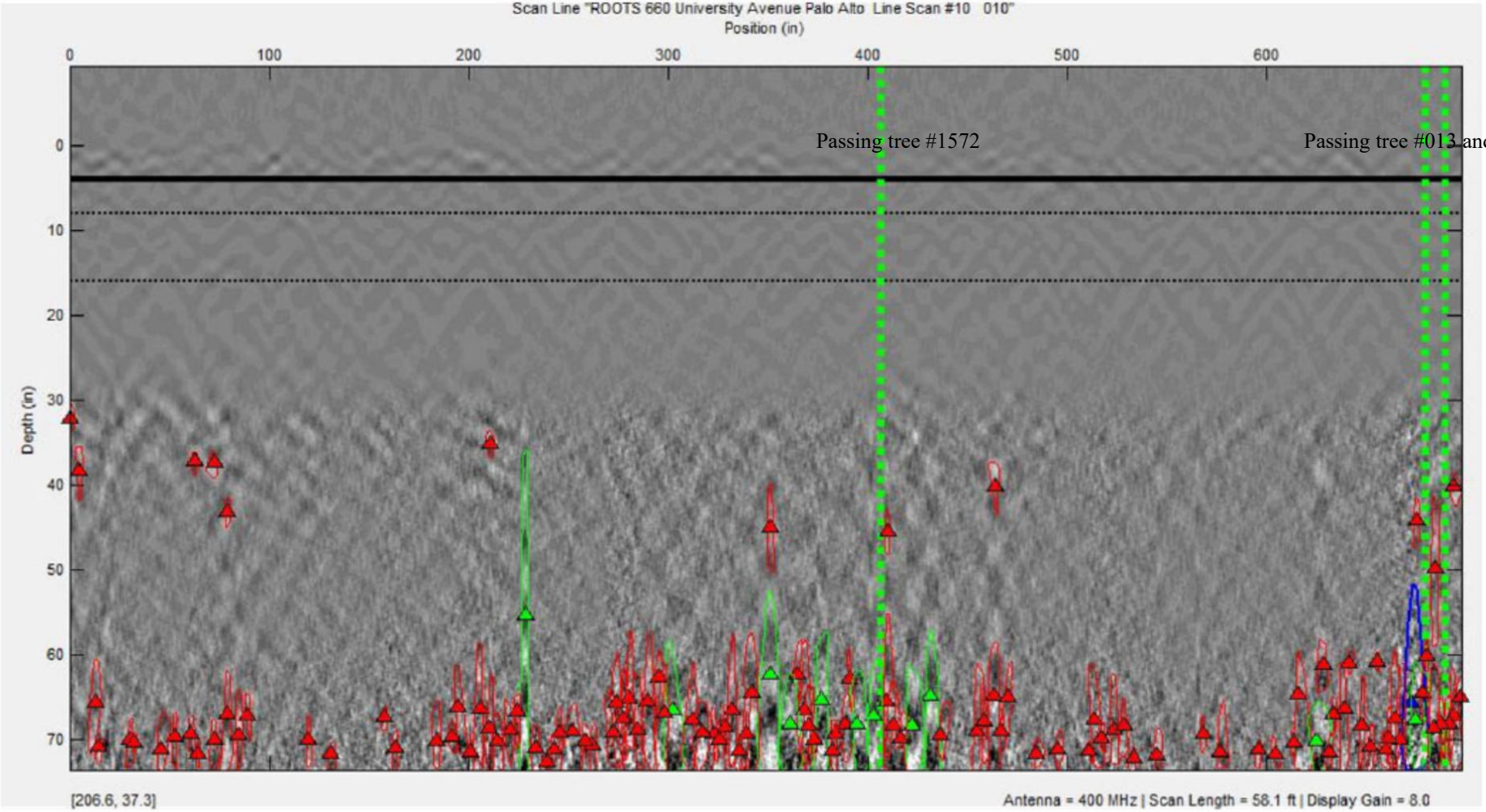
Scan #10 Line scan over parking lot 43 feet away from Oak tree #1572



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Scan #10 Root size estimate using Polygon region, reflection field size around root.

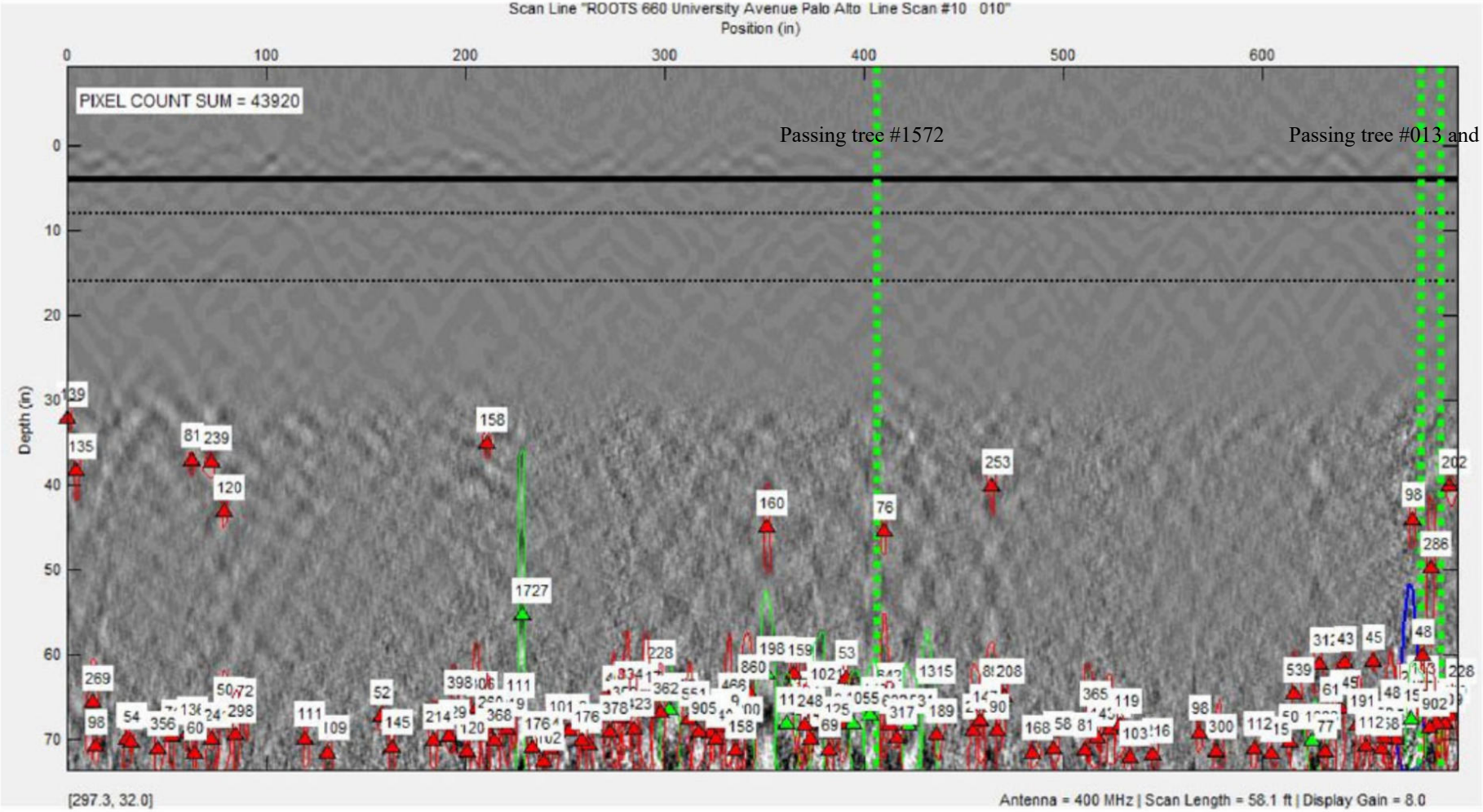
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #10 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

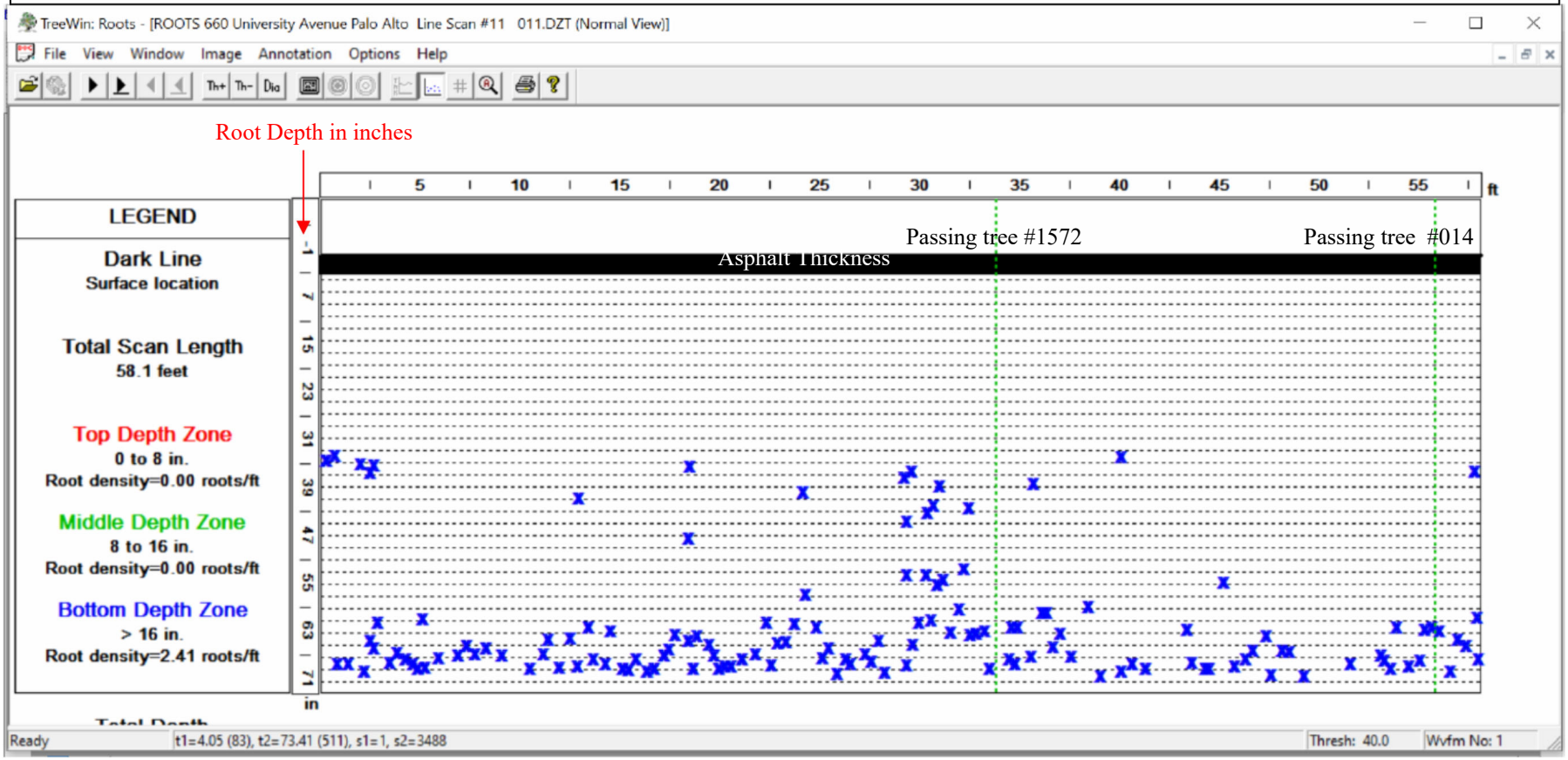
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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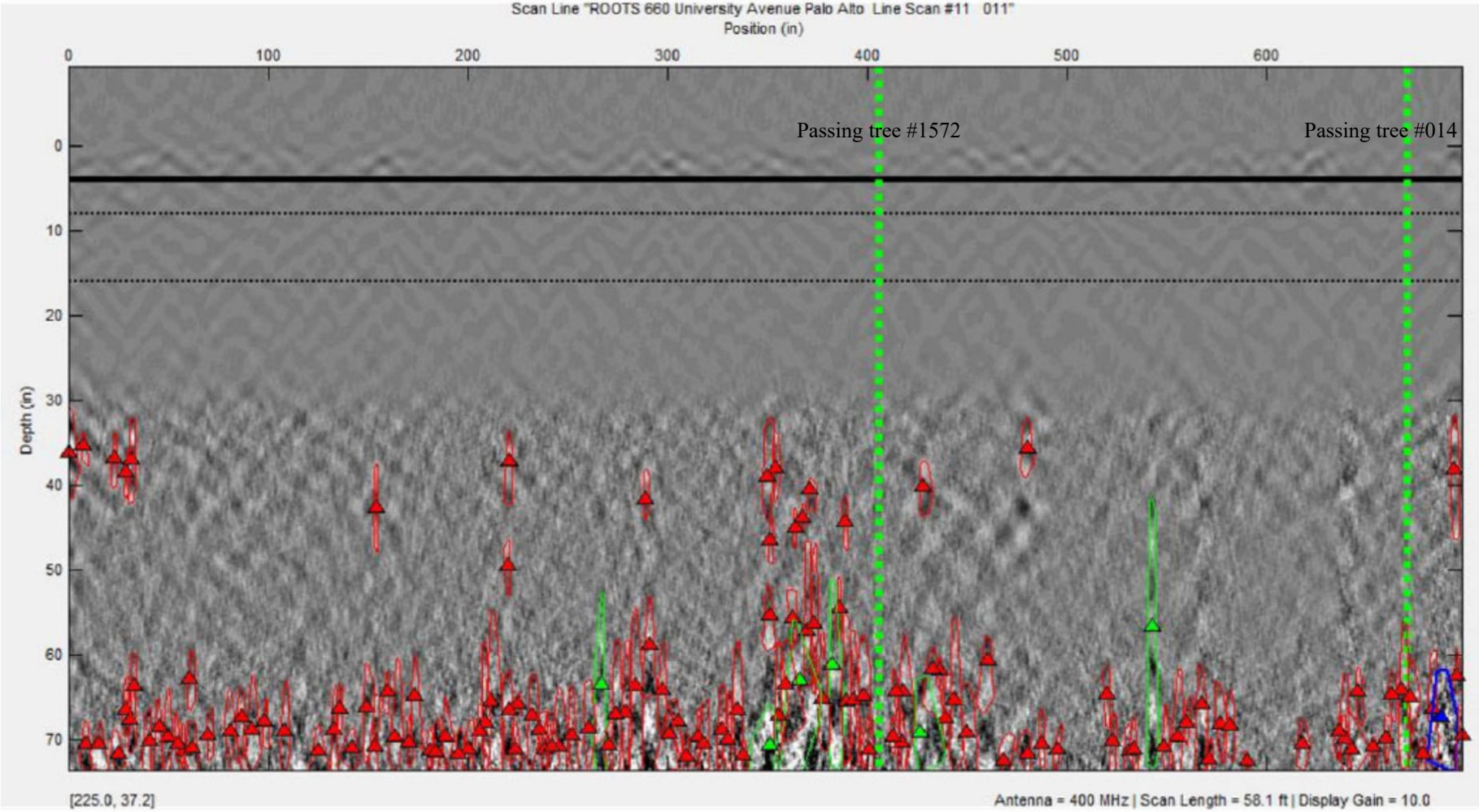
Scan #11 Line scan over parking lot 47 feet away from Oak tree #1572



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Scan #11 Root size estimate using Polygon region, reflection field size around root.

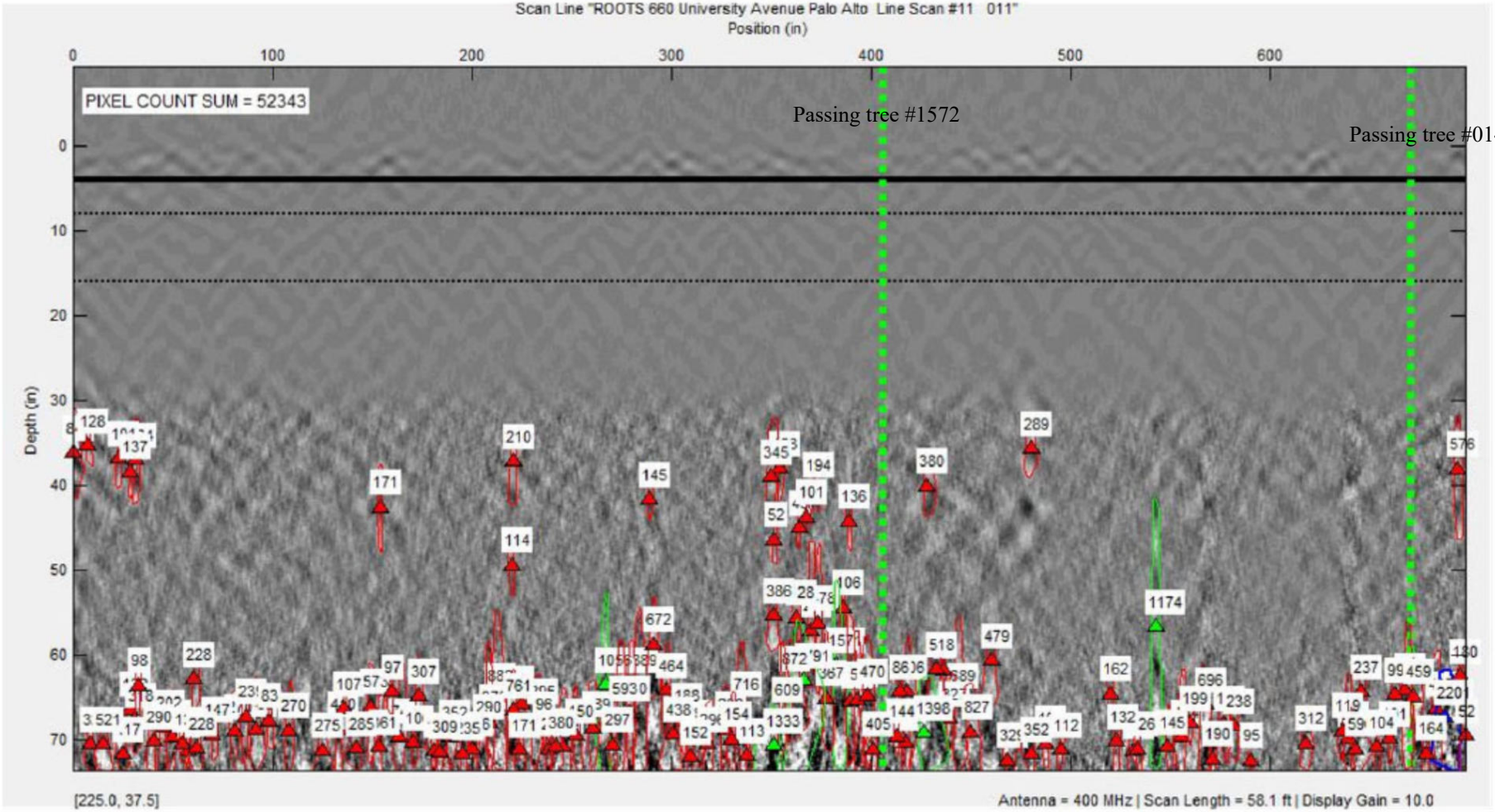
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #11 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

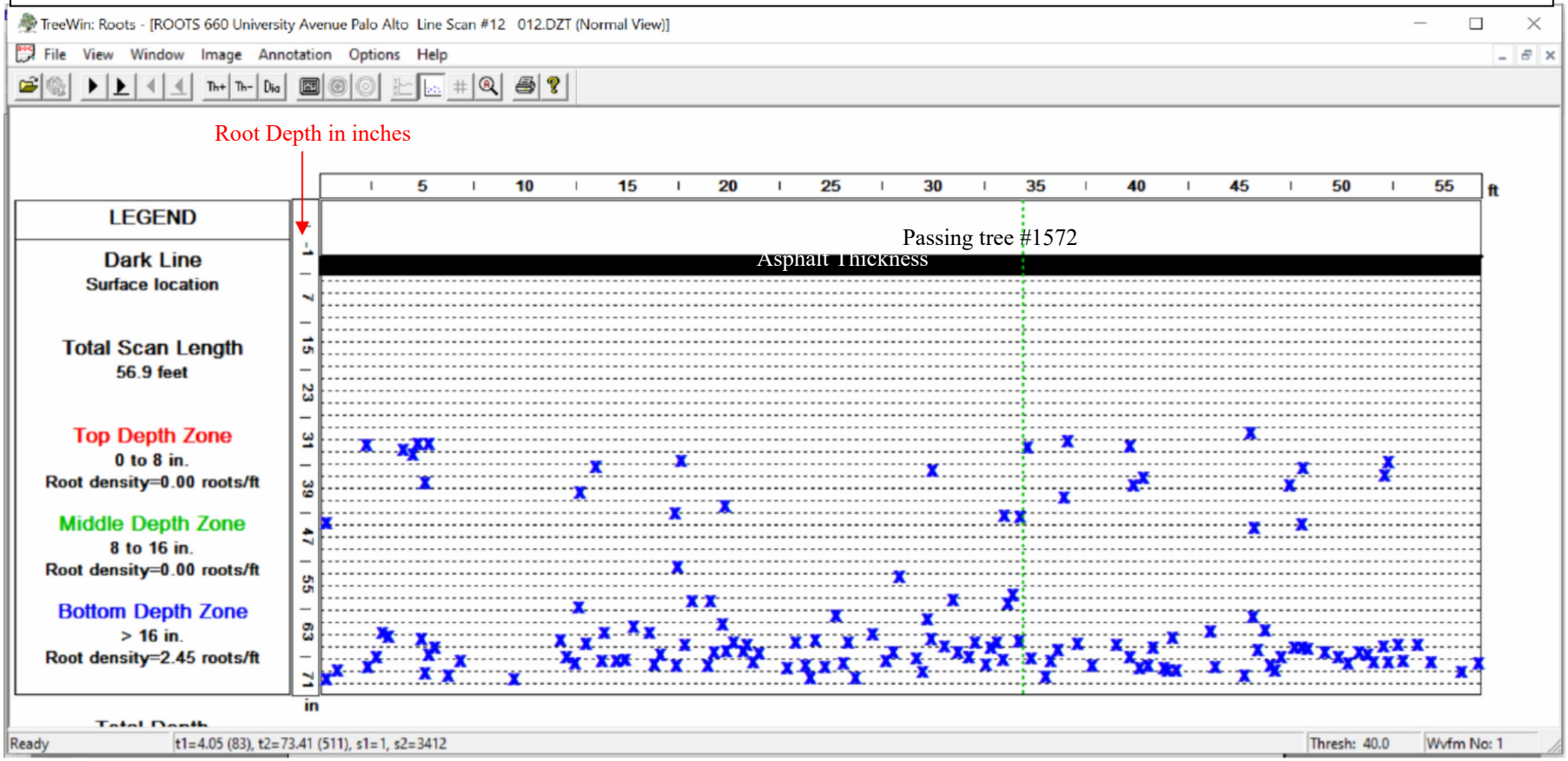
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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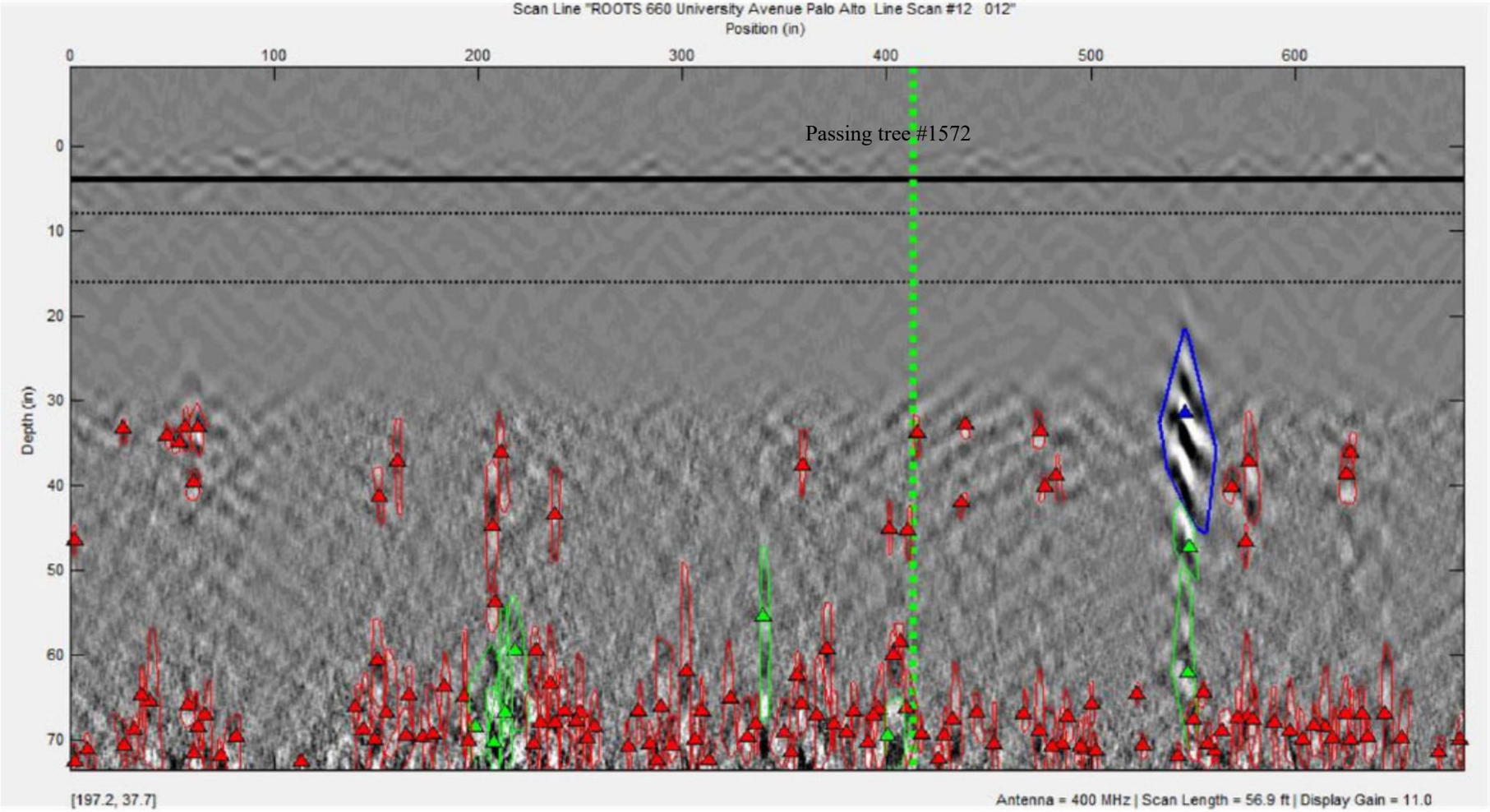
Scan #12 Line scan over parking lot 51 feet away from Oak tree #1572



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Scan #12 Root size estimate using Polygon region, reflection field size around root.

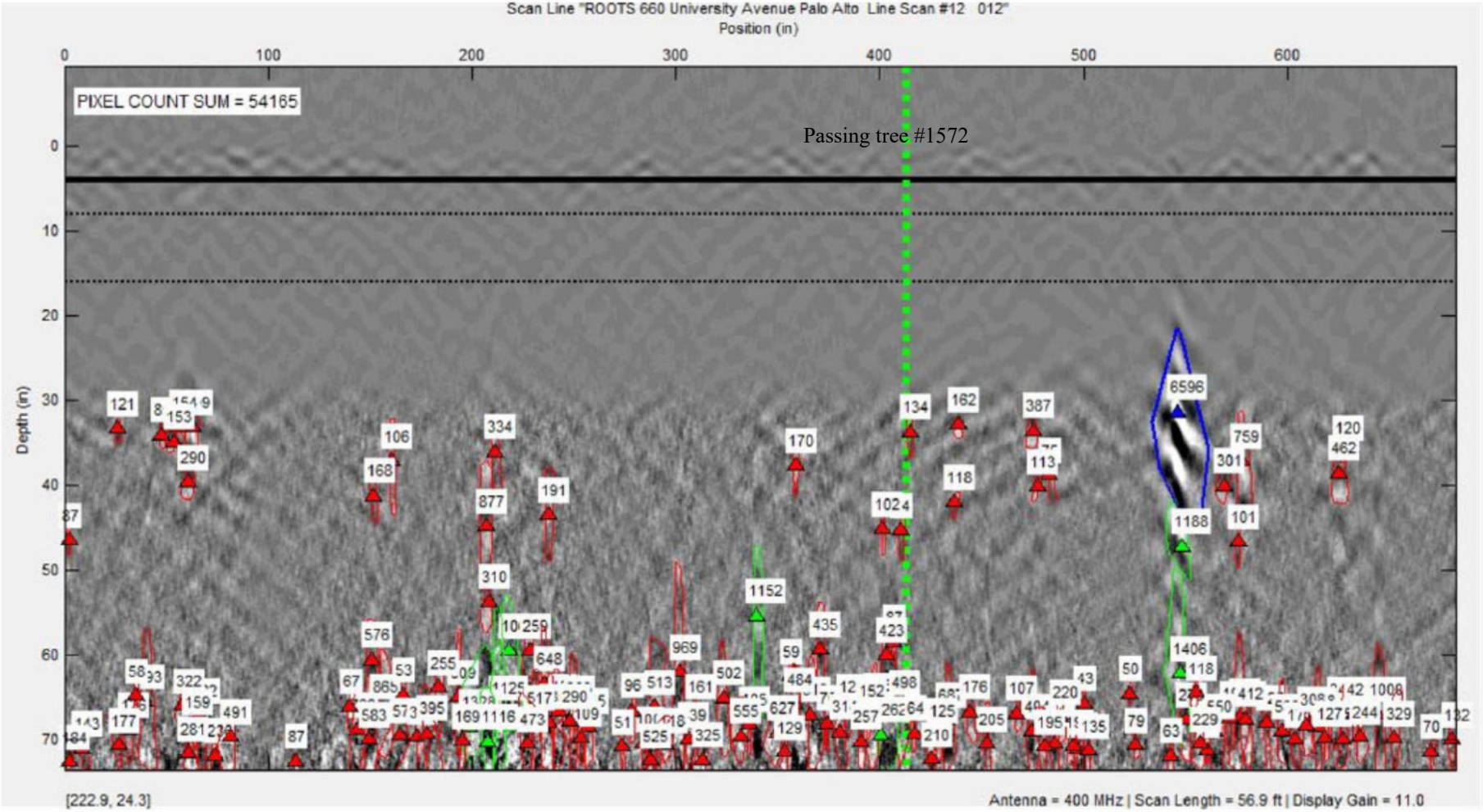
Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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Scan #12 Root size estimate, Pixel count. The area inside each Area Shape Polygon reflection field, is determined by the number of pixels (related to root size) printed inside each white box. This will provide more insight as to individual root size estimates within each of the 3 size categories below.

Small Red 2.5 inches or less **Medium** Green 2.5 – 5 inches. **Large** Blue 5 inches and larger.



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1. Disclosure. Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of the trees and attempt to reduce the risk of living near trees. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree.

Since trees are living organisms, conditions are often hidden within the tree and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specific period of time. Likewise, remedial treatments cannot be guaranteed. Trees can be managed but they cannot be controlled. To live near trees is to accept some degree of risk and the only way to eliminate all risk associated with trees is to eliminate all trees.

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1. Use at Customer's Risk. TreeRadar™ and Arborist OnSite® endeavors to use equipment that generates useful information and, when provided, to prepare reports that will reflect its best judgment in light of the facts as it knows them, TreeRadar™ or Arborist OnSite® does not guarantee the outcome of its efforts or the structural integrity of any tree. Any report prepared by Arborist OnSite® or equipment and data analysis services provided by TreeRadar™ is used strictly at your sole risk

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1. Any legal description provided to the consultant is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as to the quality of any title.
2. The consultant can neither guarantee nor be responsible for accuracy of information provided by others, information not provided or disclosed.
3. The consultant shall not be required to give testimony or to attend court by reason of this consultation/reports unless subsequent written arrangements are made, including payment of an additional fee for services.
4. Loss or removal of any part of this report invalidates the entire report/evaluation.
5. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the persons(s) to whom it is addressed without written consent of this consultant.
6. This report represents the opinion of consultant, and the consultant's fee is in no way contingent upon the reporting upon any pre-determined findings.
7. Sketches, diagrams, graphs, photos, ect., in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys.
8. This report has been made in conformity with acceptable evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.
9. No tree described in this report was climbed, unless otherwise stated. Arborist OnSite® cannot assume responsibility for any defects which could only have been discovered by climbing. A full root collar or root crown inspection, consisting of excavating the soil around the tree to uncover hidden defects or disease involving the root collar and major buttress roots, was not performed, unless otherwise stated. Arborist OnSite® cannot accept responsibility for any root defects which could only have been discovered by such an inspection.

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Certification of Performance

I, Robert Booty, certify:

- That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and or appraisal is stated in the attached report and the terms and conditions;

- That I have no current interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;

- That the analysis, opinions and conclusions stated herein are my own, and are based on current scientific procedures and facts;

- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events;
- That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices;

- That no one provided significant professional assistance to the consultant, except as indicated within the report.

I further certify that I am a Registered Member of the American Society of Consulting Arborists, and I am an International Society of Arboriculture Certified Arborist. I have been involved in the practice of arboriculture and the care and study of trees for over 50 years.

Signed: Robert Booty

Date: May 23, 2022

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Attachment C

Revised Air Quality Modeling Results for the Modified Project (September 12, 2025)

660 University Avenue Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	660 University Avenue
Construction Start Date	10/6/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.20
Precipitation (days)	18.8
Location	660 University Ave, Palo Alto, CA 94301, USA
County	Santa Clara
City	Palo Alto
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1724
EDFZ	1
Electric Utility	City of Palo Alto
Gas Utility	City of Palo Alto Ultilities
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	70.0	Dwelling Unit	0.50	59,121	3,447	0.00	174	—

General Office Building	1.98	1000sqft	0.00	1,984	0.00	0.00	—	—
Enclosed Parking with Elevator	36.6	1000sqft	0.00	36,581	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.3	16.9	16.0	20.8	0.04	0.47	0.76	1.22	0.43	0.18	0.61	—	3,923	3,923	0.15	0.10	3.00	3,960
Mit.	17.3	16.9	16.0	20.8	0.04	0.47	0.76	1.22	0.43	0.18	0.61	—	3,923	3,923	0.15	0.10	3.00	3,960
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.3	16.9	16.0	20.4	0.04	0.47	1.26	1.58	0.43	0.34	0.61	—	5,907	5,907	0.41	0.69	0.25	6,123
Mit.	17.3	16.9	16.0	20.4	0.04	0.47	1.23	1.55	0.43	0.33	0.61	—	5,907	5,907	0.41	0.69	0.25	6,123
% Reduced	—	—	—	—	—	—	2%	2%	—	1%	—	—	—	—	—	—	—	—

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.29	3.14	7.69	10.4	0.02	0.22	0.50	0.72	0.20	0.12	0.33	—	2,039	2,039	0.09	0.11	1.11	2,075
Mit.	3.29	3.14	7.69	10.4	0.02	0.22	0.50	0.72	0.20	0.12	0.33	—	2,039	2,039	0.09	0.11	1.11	2,075
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.60	0.57	1.40	1.89	< 0.005	0.04	0.09	0.13	0.04	0.02	0.06	—	338	338	0.02	0.02	0.18	344
Mit.	0.60	0.57	1.40	1.89	< 0.005	0.04	0.09	0.13	0.04	0.02	0.06	—	338	338	0.02	0.02	0.18	344
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.90	1.59	11.1	15.5	0.02	0.32	0.65	0.97	0.30	0.16	0.45	—	2,559	2,559	0.10	0.09	2.93	2,590
2027	17.3	16.9	16.0	20.8	0.04	0.47	0.76	1.22	0.43	0.18	0.61	—	3,923	3,923	0.15	0.10	3.00	3,960
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.27	1.00	10.7	12.2	0.04	0.32	1.26	1.58	0.28	0.34	0.61	—	5,907	5,907	0.41	0.69	0.25	6,123
2026	1.90	1.56	11.1	15.2	0.04	0.32	1.26	1.52	0.30	0.34	0.58	—	5,820	5,820	0.38	0.69	0.24	6,035
2027	17.3	16.9	16.0	20.4	0.04	0.47	0.76	1.22	0.43	0.18	0.61	—	3,875	3,875	0.15	0.10	0.08	3,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.17	0.12	1.20	1.44	< 0.005	0.04	0.11	0.15	0.04	0.03	0.06	—	557	557	0.03	0.04	0.27	572
2026	1.27	1.03	7.69	10.4	0.02	0.22	0.50	0.72	0.20	0.12	0.33	—	2,039	2,039	0.09	0.11	1.11	2,075

2027	3.29	3.14	5.49	7.35	0.01	0.16	0.23	0.38	0.14	0.05	0.20	—	1,271	1,271	0.05	0.03	0.38	1,282
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.03	0.02	0.22	0.26	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	92.3	92.3	0.01	0.01	0.05	94.6
2026	0.23	0.19	1.40	1.89	< 0.005	0.04	0.09	0.13	0.04	0.02	0.06	—	338	338	0.02	0.02	0.18	344
2027	0.60	0.57	1.00	1.34	< 0.005	0.03	0.04	0.07	0.03	0.01	0.04	—	210	210	0.01	< 0.005	0.06	212

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.90	1.59	11.1	15.5	0.02	0.32	0.65	0.97	0.30	0.16	0.45	—	2,559	2,559	0.10	0.09	2.93	2,590
2027	17.3	16.9	16.0	20.8	0.04	0.47	0.76	1.22	0.43	0.18	0.61	—	3,923	3,923	0.15	0.10	3.00	3,960
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.27	1.00	10.7	12.2	0.04	0.32	1.23	1.55	0.28	0.33	0.61	—	5,907	5,907	0.41	0.69	0.25	6,123
2026	1.90	1.56	11.1	15.2	0.04	0.32	1.23	1.50	0.30	0.33	0.58	—	5,820	5,820	0.38	0.69	0.24	6,035
2027	17.3	16.9	16.0	20.4	0.04	0.47	0.76	1.22	0.43	0.18	0.61	—	3,875	3,875	0.15	0.10	0.08	3,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.17	0.12	1.20	1.44	< 0.005	0.04	0.11	0.15	0.04	0.03	0.06	—	557	557	0.03	0.04	0.27	572
2026	1.27	1.03	7.69	10.4	0.02	0.22	0.50	0.72	0.20	0.12	0.33	—	2,039	2,039	0.09	0.11	1.11	2,075
2027	3.29	3.14	5.49	7.35	0.01	0.16	0.23	0.38	0.14	0.05	0.20	—	1,271	1,271	0.05	0.03	0.38	1,282
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.03	0.02	0.22	0.26	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	92.3	92.3	0.01	0.01	0.05	94.6
2026	0.23	0.19	1.40	1.89	< 0.005	0.04	0.09	0.13	0.04	0.02	0.06	—	338	338	0.02	0.02	0.18	344
2027	0.60	0.57	1.00	1.34	< 0.005	0.03	0.04	0.07	0.03	0.01	0.04	—	210	210	0.01	< 0.005	0.06	212

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.90	2.82	0.48	10.4	0.01	0.01	1.10	1.11	0.01	0.28	0.29	32.7	1,194	1,227	2.50	0.07	4.21	1,313
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.21	2.16	0.50	4.55	0.01	0.01	1.10	1.11	0.01	0.28	0.29	32.7	1,107	1,139	2.50	0.07	0.53	1,223
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.53	2.46	0.50	7.19	0.01	0.01	1.09	1.10	0.01	0.28	0.29	32.7	1,125	1,158	2.50	0.07	2.06	1,243
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.46	0.45	0.09	1.31	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	5.41	186	192	0.41	0.01	0.34	206

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.69	0.64	0.42	4.78	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,175	1,175	0.05	0.05	3.78	1,194
Area	2.22	2.17	0.05	5.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	17.5	17.5	< 0.005	< 0.005	—	17.6
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Waste	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43

Stationa	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	2.90	2.82	0.48	10.4	0.01	0.01	1.10	1.11	0.01	0.28	0.29	32.7	1,194	1,227	2.50	0.07	4.21	1,313
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.66	0.61	0.49	4.54	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,105	1,105	0.06	0.05	0.10	1,122
Area	1.55	1.55	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Waste	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Stationary	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	2.21	2.16	0.50	4.55	0.01	0.01	1.10	1.11	0.01	0.28	0.29	32.7	1,107	1,139	2.50	0.07	0.53	1,223
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.65	0.60	0.46	4.39	0.01	0.01	1.09	1.10	0.01	0.28	0.28	—	1,115	1,115	0.05	0.05	1.63	1,132
Area	1.88	1.86	0.03	2.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.64	8.64	< 0.005	< 0.005	—	8.67
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Waste	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Stationary	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.78	1.78	< 0.005	< 0.005	0.00	1.78
Total	2.53	2.46	0.50	7.19	0.01	0.01	1.09	1.10	0.01	0.28	0.29	32.7	1,125	1,158	2.50	0.07	2.06	1,243
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.12	0.11	0.08	0.80	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	—	185	185	0.01	0.01	0.27	187
Area	0.34	0.34	< 0.005	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	< 0.005	< 0.005	—	2.44

Waste	—	—	—	—	—	—	—	—	—	—	—	4.00	0.00	4.00	0.40	0.00	—	14.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.29	0.29	< 0.005	< 0.005	0.00	0.30
Total	0.46	0.45	0.09	1.31	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	5.41	186	192	0.41	0.01	0.34	206

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.69	0.64	0.42	4.78	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,175	1,175	0.05	0.05	3.78	1,194
Area	2.22	2.17	0.05	5.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	17.5	17.5	< 0.005	< 0.005	—	17.6
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Waste	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Stationary	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	2.90	2.82	0.48	10.4	0.01	0.01	1.10	1.11	0.01	0.28	0.29	32.7	1,194	1,227	2.50	0.07	4.21	1,313
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.66	0.61	0.49	4.54	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,105	1,105	0.06	0.05	0.10	1,122
Area	1.55	1.55	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Waste	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43

Stationa	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	2.21	2.16	0.50	4.55	0.01	0.01	1.10	1.11	0.01	0.28	0.29	32.7	1,107	1,139	2.50	0.07	0.53	1,223
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.65	0.60	0.46	4.39	0.01	0.01	1.09	1.10	0.01	0.28	0.28	—	1,115	1,115	0.05	0.05	1.63	1,132
Area	1.88	1.86	0.03	2.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.64	8.64	< 0.005	< 0.005	—	8.67
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Waste	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Stationary	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.78	1.78	< 0.005	< 0.005	0.00	1.78
Total	2.53	2.46	0.50	7.19	0.01	0.01	1.09	1.10	0.01	0.28	0.29	32.7	1,125	1,158	2.50	0.07	2.06	1,243
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.12	0.11	0.08	0.80	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	—	185	185	0.01	0.01	0.27	187
Area	0.34	0.34	< 0.005	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	< 0.005	< 0.005	—	2.44
Waste	—	—	—	—	—	—	—	—	—	—	—	4.00	0.00	4.00	0.40	0.00	—	14.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.29	0.29	< 0.005	< 0.005	0.00	0.30
Total	0.46	0.45	0.09	1.31	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	5.41	186	192	0.41	0.01	0.34	206

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	6.90	9.06	0.02	0.28	—	0.28	0.26	—	0.26	—	2,290	2,290	0.09	0.02	—	2,298
Demolition	—	—	—	—	—	—	0.48	0.48	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.38	0.50	< 0.005	0.02	—	0.02	0.01	—	0.01	—	125	125	0.01	< 0.005	—	126
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.8	20.8	< 0.005	< 0.005	—	20.8
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.2	99.2	< 0.005	< 0.005	0.01	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.01	0.71	0.32	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	565	565	0.05	0.09	0.03	593
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.0	31.0	< 0.005	< 0.005	0.03	32.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.13	5.13	< 0.005	< 0.005	< 0.005	5.38

3.2. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.05	0.88	6.90	9.06	0.02	0.28	—	0.28	0.26	—	0.26	—	2,290	2,290	0.09	0.02	—	2,298
Demolition	—	—	—	—	—	—	0.48	0.48	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.38	0.50	< 0.005	0.02	—	0.02	0.01	—	0.01	—	125	125	0.01	< 0.005	—	126
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.8	20.8	< 0.005	< 0.005	—	20.8
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.2	99.2	< 0.005	< 0.005	0.01	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.06	0.01	0.71	0.32	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	565	565	0.05	0.09	0.03	593
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.0	31.0	< 0.005	< 0.005	0.03	32.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.13	5.13	< 0.005	< 0.005	< 0.005	5.38

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	0.97	7.26	8.34	0.02	0.29	—	0.29	0.27	—	0.27	—	2,557	2,557	0.10	0.02	—	2,565
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.03	0.03	0.20	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	70.0	70.0	< 0.005	< 0.005	—	70.3
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.6	11.6	< 0.005	< 0.005	—	11.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.5	59.5	< 0.005	< 0.005	0.01	60.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	0.97	7.26	8.34	0.02	0.29	—	0.29	0.27	—	0.27	—	2,557	2,557	0.10	0.02	—	2,565
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.20	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	70.0	70.0	< 0.005	< 0.005	—	70.3
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.6	11.6	< 0.005	< 0.005	—	11.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.5	59.5	< 0.005	< 0.005	0.01	60.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	5.29	9.28	0.02	0.24	—	0.24	0.22	—	0.22	—	1,542	1,542	0.06	0.01	—	1,547
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.29	0.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.5	84.5	< 0.005	< 0.005	—	84.8
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.05	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.0
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.2	99.2	< 0.005	< 0.005	0.01	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.42	0.08	5.35	2.44	0.03	0.08	1.11	1.19	0.05	0.30	0.36	—	4,265	4,265	0.35	0.67	0.24	4,475
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	< 0.005	0.29	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	234	234	0.02	0.04	0.22	245
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.7	38.7	< 0.005	0.01	0.04	40.6

3.6. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	5.29	9.28	0.02	0.24	—	0.24	0.22	—	0.22	—	1,542	1,542	0.06	0.01	—	1,547
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.29	0.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84.5	84.5	< 0.005	< 0.005	—	84.8
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.0

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.2	99.2	< 0.005	< 0.005	0.01	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.42	0.08	5.35	2.44	0.03	0.08	1.11	1.19	0.05	0.30	0.36	—	4,265	4,265	0.35	0.67	0.24	4,475
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	< 0.005	0.29	0.13	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	234	234	0.02	0.04	0.22	245
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.7	38.7	< 0.005	0.01	0.04	40.6

3.7. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.64	4.85	9.28	0.02	0.21	—	0.21	0.20	—	0.20	—	1,542	1,542	0.06	0.01	—	1,547
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.40	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	127	127	0.01	< 0.005	—	127
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.0	21.0	< 0.005	< 0.005	—	21.1
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.4	97.4	< 0.005	< 0.005	0.01	98.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.40	0.08	5.16	2.36	0.03	0.05	1.11	1.17	0.05	0.30	0.36	—	4,180	4,180	0.32	0.67	0.23	4,389
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.09	8.09	< 0.005	< 0.005	0.01	8.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.01	0.42	0.19	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	344	344	0.03	0.06	0.31	361
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.34	1.34	< 0.005	< 0.005	< 0.005	1.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	56.9	56.9	< 0.005	0.01	0.05	59.8

3.8. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.77	0.64	4.85	9.28	0.02	0.21	—	0.21	0.20	—	0.20	—	1,542	1,542	0.06	0.01	—	1,547
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.06	0.05	0.40	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	127	127	0.01	< 0.005	—	127
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.01	0.01	0.07	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.0	21.0	< 0.005	< 0.005	—	21.1
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.4	97.4	< 0.005	< 0.005	0.01	98.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.40	0.08	5.16	2.36	0.03	0.05	1.11	1.17	0.05	0.30	0.36	—	4,180	4,180	0.32	0.67	0.23	4,389
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.09	8.09	< 0.005	< 0.005	0.01	8.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.01	0.42	0.19	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	344	344	0.03	0.06	0.31	361
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.34	1.34	< 0.005	< 0.005	< 0.005	1.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	56.9	56.9	< 0.005	0.01	0.05	59.8

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	1.37	10.5	12.8	0.02	0.32	—	0.32	0.29	—	0.29	—	1,634	1,634	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.65	1.37	10.5	12.8	0.02	0.32	—	0.32	0.29	—	0.29	—	1,634	1,634	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.02	0.85	6.48	7.91	0.01	0.20	—	0.20	0.18	—	0.18	—	1,011	1,011	0.04	0.01	—	1,014
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.15	1.18	1.44	< 0.005	0.04	—	0.04	0.03	—	0.03	—	167	167	0.01	< 0.005	—	168
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.14	2.53	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	558	558	0.01	0.02	2.04	567
Vendor	0.03	0.01	0.45	0.22	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	366	366	0.02	0.05	0.89	383
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.18	2.16	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	517	517	0.01	0.02	0.05	524
Vendor	0.03	0.01	0.48	0.23	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	366	366	0.02	0.05	0.02	383
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.13	0.11	0.10	1.32	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	323	323	0.01	0.01	0.54	328
Vendor	0.02	0.01	0.29	0.14	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	226	226	0.01	0.03	0.24	237
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	53.5	53.5	< 0.005	< 0.005	0.09	54.3
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.5	37.5	< 0.005	0.01	0.04	39.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	1.37	10.5	12.8	0.02	0.32	—	0.32	0.29	—	0.29	—	1,634	1,634	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.65	1.37	10.5	12.8	0.02	0.32	—	0.32	0.29	—	0.29	—	1,634	1,634	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	1.02	0.85	6.48	7.91	0.01	0.20	—	0.20	0.18	—	0.18	—	1,011	1,011	0.04	0.01	—	1,014
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.15	1.18	1.44	< 0.005	0.04	—	0.04	0.03	—	0.03	—	167	167	0.01	< 0.005	—	168
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.14	2.53	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	558	558	0.01	0.02	2.04	567
Vendor	0.03	0.01	0.45	0.22	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	366	366	0.02	0.05	0.89	383
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.18	2.16	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	517	517	0.01	0.02	0.05	524
Vendor	0.03	0.01	0.48	0.23	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	366	366	0.02	0.05	0.02	383
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.10	1.32	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	323	323	0.01	0.01	0.54	328
Vendor	0.02	0.01	0.29	0.14	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	226	226	0.01	0.03	0.24	237
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	53.5	53.5	< 0.005	< 0.005	0.09	54.3
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.5	37.5	< 0.005	0.01	0.04	39.2

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.29	10.2	12.7	0.02	0.27	—	0.27	0.25	—	0.25	—	1,635	1,635	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.29	10.2	12.7	0.02	0.27	—	0.27	0.25	—	0.25	—	1,635	1,635	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.33	2.63	3.28	0.01	0.07	—	0.07	0.06	—	0.06	—	422	422	0.02	< 0.005	—	424
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.07	0.06	0.48	0.60	< 0.005	0.01	—	0.01	0.01	—	0.01	—	69.9	69.9	< 0.005	< 0.005	—	70.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.14	2.37	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	548	548	0.01	0.02	1.84	557
Vendor	0.03	0.01	0.43	0.21	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	358	358	0.02	0.05	0.79	376
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.16	2.02	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	508	508	0.01	0.02	0.05	515
Vendor	0.03	0.01	0.46	0.22	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	359	359	0.02	0.05	0.02	375
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.52	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	< 0.005	0.01	0.20	135
Vendor	0.01	< 0.005	0.12	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	92.6	92.6	0.01	0.01	0.09	97.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.01	16.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.29	10.2	12.7	0.02	0.27	—	0.27	0.25	—	0.25	—	1,635	1,635	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.29	10.2	12.7	0.02	0.27	—	0.27	0.25	—	0.25	—	1,635	1,635	0.07	0.01	—	1,640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.33	2.63	3.28	0.01	0.07	—	0.07	0.06	—	0.06	—	422	422	0.02	< 0.005	—	424
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.48	0.60	< 0.005	0.01	—	0.01	0.01	—	0.01	—	69.9	69.9	< 0.005	< 0.005	—	70.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.14	2.37	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	548	548	0.01	0.02	1.84	557
Vendor	0.03	0.01	0.43	0.21	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	358	358	0.02	0.05	0.79	376
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.16	2.02	0.00	0.00	0.55	0.55	0.00	0.13	0.13	—	508	508	0.01	0.02	0.05	515
Vendor	0.03	0.01	0.46	0.22	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	359	359	0.02	0.05	0.02	375
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.52	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	< 0.005	0.01	0.20	135
Vendor	0.01	< 0.005	0.12	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	92.6	92.6	0.01	0.01	0.09	97.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.01	16.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.46	0.38	3.20	3.76	0.01	0.12	—	0.12	0.11	—	0.11	—	600	600	0.02	< 0.005	—	602
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	0.38	3.20	3.76	0.01	0.12	—	0.12	0.11	—	0.11	—	600	600	0.02	< 0.005	—	602
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	24.7	24.7	< 0.005	< 0.005	—	24.8
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.08	4.08	< 0.005	< 0.005	—	4.10
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.5	82.5	< 0.005	< 0.005	0.28	83.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	76.5	76.5	< 0.005	< 0.005	0.01	77.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.18	3.18	< 0.005	< 0.005	< 0.005	3.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Paving (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.46	0.38	3.20	3.76	0.01	0.12	—	0.12	0.11	—	0.11	—	600	600	0.02	< 0.005	—	602
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	0.38	3.20	3.76	0.01	0.12	—	0.12	0.11	—	0.11	—	600	600	0.02	< 0.005	—	602
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	24.7	24.7	< 0.005	< 0.005	—	24.8
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.08	4.08	< 0.005	< 0.005	—	4.10
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.5	82.5	< 0.005	< 0.005	0.28	83.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	76.5	76.5	< 0.005	< 0.005	0.01	77.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.18	3.18	< 0.005	< 0.005	< 0.005	3.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.74	0.61	5.18	5.08	0.01	0.19	—	0.19	0.18	—	0.18	—	1,272	1,272	0.05	0.01	—	1,276
Architectural Coatings	14.7	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.61	5.18	5.08	0.01	0.19	—	0.19	0.18	—	0.18	—	1,272	1,272	0.05	0.01	—	1,276
Architectural Coatings	14.7	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.85	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	209	209	0.01	< 0.005	—	210
Architectural Coatings	2.42	2.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.16	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.6	34.6	< 0.005	< 0.005	—	34.7
Architectural Coatings	0.44	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.47	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	< 0.005	< 0.005	0.37	111
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.40	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.79	2.79	< 0.005	< 0.005	< 0.005	2.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.61	5.18	5.08	0.01	0.19	—	0.19	0.18	—	0.18	—	1,272	1,272	0.05	0.01	—	1,276
Architectural Coatings	14.7	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.61	5.18	5.08	0.01	0.19	—	0.19	0.18	—	0.18	—	1,272	1,272	0.05	0.01	—	1,276
Architectural Coatings	14.7	14.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.85	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	209	209	0.01	< 0.005	—	210

Architect Coatings	2.42	2.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.6	34.6	< 0.005	< 0.005	—	34.7
Architectural Coatings	0.44	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.47	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	< 0.005	< 0.005	0.37	111
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.40	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	0.03	17.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.79	2.79	< 0.005	< 0.005	< 0.005	2.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Site Utilities and Sitework (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.82	7.08	9.48	0.02	0.20	—	0.20	0.19	—	0.19	—	1,379	1,379	0.06	0.01	—	1,384
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.71	2.28	< 0.005	0.05	—	0.05	0.05	—	0.05	—	332	332	0.01	< 0.005	—	334
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	0.42	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.0	55.0	< 0.005	< 0.005	—	55.2

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.71	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	165	165	< 0.005	0.01	0.55	168
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.3	37.3	< 0.005	< 0.005	0.06	37.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.17	6.17	< 0.005	< 0.005	0.01	6.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.18. Site Utilities and Sitework (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.99	0.82	7.08	9.48	0.02	0.20	—	0.20	0.19	—	0.19	—	1,379	1,379	0.06	0.01	—	1,384
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.71	2.28	< 0.005	0.05	—	0.05	0.05	—	0.05	—	332	332	0.01	< 0.005	—	334
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	0.42	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.0	55.0	< 0.005	< 0.005	—	55.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.71	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	165	165	< 0.005	0.01	0.55	168
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.3	37.3	< 0.005	< 0.005	0.06	37.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.17	6.17	< 0.005	< 0.005	0.01	6.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.62	0.58	0.37	4.25	0.01	0.01	0.97	0.98	0.01	0.25	0.25	—	1,036	1,036	0.04	0.04	3.33	1,052
General Office Building	0.06	0.06	0.04	0.53	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	139	139	< 0.005	0.01	0.45	142
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.69	0.64	0.42	4.78	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,175	1,175	0.05	0.05	3.78	1,194

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.60	0.56	0.44	4.06	0.01	0.01	0.97	0.98	0.01	0.25	0.25	—	974	974	0.05	0.05	0.09	989
General Office Building	0.06	0.05	0.05	0.48	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	131	131	0.01	0.01	0.01	133
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.66	0.61	0.49	4.54	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,105	1,105	0.06	0.05	0.10	1,122
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.11	0.10	0.08	0.72	< 0.005	< 0.005	0.17	0.18	< 0.005	0.04	0.05	—	163	163	0.01	0.01	0.24	165
General Office Building	0.01	0.01	0.01	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	21.9	21.9	< 0.005	< 0.005	0.03	22.2
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.12	0.11	0.08	0.80	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	—	185	185	0.01	0.01	0.27	187

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartme Mid Rise	0.62	0.58	0.37	4.25	0.01	0.01	0.97	0.98	0.01	0.25	0.25	—	1,036	1,036	0.04	0.04	3.33	1,052
General Office Building	0.06	0.06	0.04	0.53	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	139	139	< 0.005	0.01	0.45	142
Enclose d Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.69	0.64	0.42	4.78	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,175	1,175	0.05	0.05	3.78	1,194
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	0.60	0.56	0.44	4.06	0.01	0.01	0.97	0.98	0.01	0.25	0.25	—	974	974	0.05	0.05	0.09	989
General Office Building	0.06	0.05	0.05	0.48	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	131	131	0.01	0.01	0.01	133
Enclose d Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.66	0.61	0.49	4.54	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,105	1,105	0.06	0.05	0.10	1,122
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	0.11	0.10	0.08	0.72	< 0.005	< 0.005	0.17	0.18	< 0.005	0.04	0.05	—	163	163	0.01	0.01	0.24	165
General Office Building	0.01	0.01	0.01	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	21.9	21.9	< 0.005	< 0.005	0.03	22.2
Enclose d Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.12	0.11	0.08	0.80	< 0.005	< 0.005	0.20	0.20	< 0.005	0.05	0.05	—	185	185	0.01	0.01	0.27	187

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Consumer Products	1.31	1.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.24	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.67	0.62	0.05	5.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.5	17.5	< 0.005	< 0.005	—	17.6
Total	2.22	2.17	0.05	5.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	17.5	17.5	< 0.005	< 0.005	—	17.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	1.31	1.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.24	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.55	1.55	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.24	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.06	0.06	< 0.005	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.34	0.34	< 0.005	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.43	1.43	< 0.005	< 0.005	—	1.44

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	1.31	1.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.24	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.67	0.62	0.05	5.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.5	17.5	< 0.005	< 0.005	—	17.6
Total	2.22	2.17	0.05	5.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	17.5	17.5	< 0.005	< 0.005	—	17.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	1.31	1.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.24	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	1.55	1.55	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.24	0.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.06	< 0.005	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.34	0.34	< 0.005	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.43	1.43	< 0.005	< 0.005	—	1.44

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	5.04	0.00	5.04	0.02	0.01	—	8.75
General Office Building	—	—	—	—	—	—	—	—	—	—	—	3.46	0.00	3.46	0.01	0.01	—	6.02

Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	5.04	0.00	5.04	0.02	0.01	—	8.75
General Office Building	—	—	—	—	—	—	—	—	—	—	—	3.46	0.00	3.46	0.01	0.01	—	6.02
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	< 0.005	< 0.005	—	1.45
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.57	0.00	0.57	< 0.005	< 0.005	—	1.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	< 0.005	< 0.005	—	2.44

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	5.04	0.00	5.04	0.02	0.01	—	8.75
General Office Building	—	—	—	—	—	—	—	—	—	—	—	3.46	0.00	3.46	0.01	0.01	—	6.02
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	5.04	0.00	5.04	0.02	0.01	—	8.75
General Office Building	—	—	—	—	—	—	—	—	—	—	—	3.46	0.00	3.46	0.01	0.01	—	6.02
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.50	0.00	8.50	0.03	0.02	—	14.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	< 0.005	< 0.005	—	1.45

General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.57	0.00	0.57	< 0.005	< 0.005	—	1.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.41	0.00	1.41	< 0.005	< 0.005	—	2.44

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	23.2	0.00	23.2	2.32	0.00	—	81.1
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.99	0.00	0.99	0.10	0.00	—	3.48
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	23.2	0.00	23.2	2.32	0.00	—	81.1
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.99	0.00	0.99	0.10	0.00	—	3.48
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	3.84	0.00	3.84	0.38	0.00	—	13.4
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.16	0.00	0.16	0.02	0.00	—	0.58
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.00	0.00	4.00	0.40	0.00	—	14.0

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	23.2	0.00	23.2	2.32	0.00	—	81.1

General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.99	0.00	0.99	0.10	0.00	—	3.48
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	23.2	0.00	23.2	2.32	0.00	—	81.1
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.99	0.00	0.99	0.10	0.00	—	3.48
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	24.2	0.00	24.2	2.42	0.00	—	84.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	3.84	0.00	3.84	0.38	0.00	—	13.4
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.16	0.00	0.16	0.02	0.00	—	0.58
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.00	0.00	4.00	0.40	0.00	—	14.0

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.42	0.42
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.42	0.42
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.42	0.42
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.42	0.42
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.29	0.29	< 0.005	< 0.005	0.00	0.30
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.29	0.29	< 0.005	< 0.005	0.00	0.30

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	1.30	1.30	< 0.005	< 0.005	0.00	1.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.29	0.29	< 0.005	< 0.005	0.00	0.30
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.29	0.29	< 0.005	< 0.005	0.00	0.30

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/9/2025	11/5/2025	5.00	20.0	—
Site Preparation	Site Preparation	11/6/2025	11/19/2025	5.00	10.0	—
Grading	Grading	12/4/2025	2/11/2026	5.00	50.0	—
Building Construction	Building Construction	2/19/2026	5/12/2027	5.00	320	—
Paving	Paving	9/16/2027	10/6/2027	5.00	15.0	—
Architectural Coating	Architectural Coating	3/3/2027	5/25/2027	5.00	60.0	—
Site Utilities and Sitework	Trenching	5/18/2027	9/16/2027	5.00	88.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	1.00	8.00	367	0.40
Demolition	Rubber Tired Loaders	Diesel	Average	1.00	8.00	84.0	0.37

Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Demolition	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Preparation	Excavators	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Grading	Excavators	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Grading	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Grading	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Air Compressors	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Cranes	Diesel	Average	1.00	8.00	82.0	0.20
Building Construction	Forklifts	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Pumps	Diesel	Average	1.00	8.00	84.0	0.37
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Architectural Coating	Cranes	Diesel	Average	1.00	8.00	367	0.29
Architectural Coating	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Utilities and Sitework	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Utilities and Sitework	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Utilities and Sitework	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

Site Utilities and Sitework	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Utilities and Sitework	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Site Utilities and Sitework	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Site Utilities and Sitework	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Site Utilities and Sitework	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	1.00	8.00	367	0.40
Demolition	Rubber Tired Loaders	Diesel	Average	1.00	8.00	84.0	0.37
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Demolition	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Preparation	Excavators	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Grading	Excavators	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Grading	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Grading	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Air Compressors	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Cranes	Diesel	Average	1.00	8.00	82.0	0.20

Building Construction	Forklifts	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Pumps	Diesel	Average	1.00	8.00	84.0	0.37
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Paving	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Architectural Coating	Cranes	Diesel	Average	1.00	8.00	367	0.29
Architectural Coating	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Utilities and Sitework	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Utilities and Sitework	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Site Utilities and Sitework	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Utilities and Sitework	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Utilities and Sitework	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Site Utilities and Sitework	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Site Utilities and Sitework	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Site Utilities and Sitework	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	12.5	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	5.30	30.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	30.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	40.0	30.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	66.4	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	13.8	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	32.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	30.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	13.3	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT

Architectural Coating	Hauling	0.00	30.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Site Utilities and Sitework	—	—	—	—
Site Utilities and Sitework	Worker	20.0	11.7	LDA,LDT1,LDT2
Site Utilities and Sitework	Vendor	—	8.40	HHDT,MHDT
Site Utilities and Sitework	Hauling	0.00	30.0	HHDT
Site Utilities and Sitework	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	5.30	30.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	30.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	40.0	30.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	66.4	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	13.8	8.40	HHDT,MHDT

Building Construction	Hauling	0.00	32.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	10.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	30.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	13.3	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	30.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Site Utilities and Sitework	—	—	—	—
Site Utilities and Sitework	Worker	20.0	11.7	LDA,LDT1,LDT2
Site Utilities and Sitework	Vendor	—	8.40	HHDT,MHDT
Site Utilities and Sitework	Hauling	0.00	30.0	HHDT
Site Utilities and Sitework	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	126,360	42,120	15,376	4,748	2,261

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	9,216	—
Site Preparation	—	—	0.00	0.00	—
Grading	100	20,000	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
General Office Building	0.00	0%
Enclosed Parking with Elevator	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	0.00	0.00	0.00
2026	0.00	0.00	0.00	0.00
2027	0.00	0.00	0.00	0.00

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

Apartments Mid Rise	196	196	196	71,540	1,376	1,376	1,376	502,072
General Office Building	17.1	17.1	17.1	6,228	187	187	187	68,383
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	196	196	196	71,540	1,376	1,376	1,376	502,072
General Office Building	17.1	17.1	17.1	6,228	187	187	187	68,383
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0

Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
126360	42,120	15,376	4,748	2,261

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	377,475	0.00	0.0000	0.0000	0.00
General Office Building	256,397	0.00	0.0000	0.0000	0.00
Enclosed Parking with Elevator	135,036	0.00	0.0000	0.0000	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	377,475	0.00	0.0000	0.0000	0.00
General Office Building	256,397	0.00	0.0000	0.0000	0.00
Enclosed Parking with Elevator	135,036	0.00	0.0000	0.0000	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	2,357,316	48,867
General Office Building	1,620,932	0.00
Enclosed Parking with Elevator	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	2,357,316	48,867
General Office Building	1,620,932	0.00
Enclosed Parking with Elevator	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	43.0	—
General Office Building	1.85	—
Enclosed Parking with Elevator	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	43.0	—
General Office Building	1.85	—
Enclosed Parking with Elevator	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.01	4.00	403	0.35

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	11.8	annual days of extreme heat
Extreme Precipitation	4.05	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	10.7	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	15.1
AQ-DPM	72.3
Drinking Water	38.1
Lead Risk Housing	32.2
Pesticides	0.00
Toxic Releases	28.2
Traffic	33.7
Effect Indicators	—
CleanUp Sites	78.3
Groundwater	50.9
Haz Waste Facilities/Generators	83.8
Impaired Water Bodies	33.2
Solid Waste	0.00
Sensitive Population	—
Asthma	0.34

Cardio-vascular	5.75
Low Birth Weights	22.2
Socioeconomic Factor Indicators	—
Education	12.0
Housing	26.7
Linguistic	77.9
Poverty	31.7
Unemployment	48.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	74.57975106
Employed	94.00744258
Median HI	86.30822533
Education	—
Bachelor's or higher	97.8570512
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	4.837674836
Active commuting	97.70306685
Social	—
2-parent households	95.75259849
Voting	85.74361607
Neighborhood	—
Alcohol availability	19.87681252

Park access	81.35506224
Retail density	99.31990248
Supermarket access	94.25125112
Tree canopy	91.53086103
Housing	—
Homeownership	11.34351341
Housing habitability	56.01180547
Low-inc homeowner severe housing cost burden	89.54189657
Low-inc renter severe housing cost burden	90.81226742
Uncrowded housing	62.10701912
Health Outcomes	—
Insured adults	99.60220711
Arthritis	0.0
Asthma ER Admissions	96.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	82.6
Cognitively Disabled	41.3
Physically Disabled	57.4
Heart Attack ER Admissions	92.2
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	77.1

Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	61.0
Elderly	7.3
English Speaking	25.7
Foreign-born	71.8
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	49.3
Traffic Density	31.8
Traffic Access	87.4
Other Indices	—
Hardship	3.7
Other Decision Support	—
2016 Voting	89.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	15.0
Healthy Places Index Score for Project Location (b)	98.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Square footages based on applicant provided information.
Construction: Construction Phases	Based applicant provided schedule 5 days a week
Construction: Off-Road Equipment	Based on applicant provided list of construction equipment. Included generators for each phase of construction since the size or type of generators is unknown at this time.
Construction: Architectural Coatings	BAAQMD Regulation 8 Rule 3, Nonflat Coating used
Operations: Vehicle Data	Trip generation rate from Hexagon's TIA used.
Operations: Hearths	BAAQMD Regulation 6 Rule 3, No woodburning devices
Operations: Architectural Coatings	BAAQMD Regulation 8 Rule 3, Nonflat Coating used
Operations: Energy Use	Converted KBTU to KWhr and added to existing electrical intensity to account for an all electric development.
Operations: Water and Waste Water	The Regional Water Quality Control Plant is 100 percent aerobic, no septic tank or facultative lagoons on site or on wastewater treatment plant.
Construction: Trips and VMT	Pursuant to applicant provided data request

Attachment D

Revised Energy Calculations for the Modified Project (September 12, 2025)

660 University Avenue Mixed-Use Project

Last Updated: 9/12/25

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Concrete/Industrial Saws	1	8	81	0.73	Demolition Phase	556
Excavators	1	8	158	0.38	Demolition Phase	508
Generator Sets	1	8	84	0.74	Demolition Phase	584
Rubber Tired Loaders	1	8	203	0.36	Demolition Phase	618
Tractors/Loaders/Backhoes	1	8	97	0.37	Demolition Phase	337
Excavators	1	8	158	0.38	Site Preparation Phase	254
Generator Sets	1	8	84	0.74	Site Preparation Phase	292
Rubber Tired Loaders	1	8	203	0.36	Site Preparation Phase	309
Excavators	1	8	158	0.38	Grading Phase	1,269
Pumps	1	8	84	0.74	Grading Phase	1,461
Generator Sets	1	8	84	0.74	Grading Phase	1,461
Rubber Tired Loaders	1	8	203	0.36	Grading Phase	1,545
Tractors/Loaders/Backhoes	1	8	97	0.37	Grading Phase	844
Air Compressors	1	8	78	0.48	Building Construction Phase	5,632
Cranes	1	8	231	0.29	Building Construction Phase	9,065
Generator Sets	1	8	84	0.74	Building Construction Phase	9,351
Forklifts	1	8	89	0.2	Building Construction Phase	2,678
Pumps	1	8	84	0.74	Building Construction Phase	9,351
Tractors/Loaders/Backhoes	1	8	97	0.37	Site Utilities and Sitework Phase	5,399
Concrete/Industrial Saws	1	8	81	0.73	Site Utilities and Sitework Phase	8,895
Plate Compactors	1	8	8	0.43	Site Utilities and Sitework Phase	518
Rollers	1	8	80	0.38	Site Utilities and Sitework Phase	4,573
Skid Steer Loaders	1	8	65	0.37	Site Utilities and Sitework Phase	3,618
Excavators	1	8	158	0.38	Site Utilities and Sitework Phase	8,125
Air Compressors	1	8	78	0.48	Site Utilities and Sitework Phase	5,632
Generator Sets	1	8	84	0.74	Site Utilities and Sitework Phase	9,351
Air Compressors	1	8	78	0.48	Architectural Coating Phase	1,056
Generator Sets	1	8	84	0.74	Architectural Coating Phase	1,753
Cranes	1	8	231	0.29	Architectural Coating Phase	1,700
Cement and Mortar Mixers	1	8	9	0.56	Paving Phase	36
Paving Equipment	1	8	132	0.36	Paving Phase	301
Generator Sets	1	8	84	0.74	Paving Phase	438
Rollers	1	8	80	0.38	Paving Phase	214
					Total Fuel Used	**97,727 (Gallons)**

Construction Phase	Days of Operation
Demolition Phase	20
Site Preparation Phase	10
Grading Phase	50
Building Construction Phase	320
Site Utilities and Sitework	88
Paving Phase	15
Architectural Coating Phase	60
Total Days	563

WORKER TRIPS

Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Demolition Phase	24.1	13	11.7	126.22
Site Preparation Phase	24.1	8	11.7	38.84
Grading Phase	24.1	13	11.7	315.56
Building Construction Phase	24.1	66	11.7	10253.28
Site Utilities and Sitework	24.1	20	11.7	854.44
Paving Phase	24.1	10	11.7	72.82
Architectural Coating Phase	24.1	13	11.7	378.67
			Total	**12,039.83**

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Demolition Phase	7.5	5	30.0	20.00
Site Preparation Phase	7.5	0	30.0	0.00
Grading Phase	7.5	40	30.0	160.00
Building Construction Phase	7.5	0	30.0	0.00
Site Utilities and Sitework	7.5	0	30.0	0.00
Paving Phase	7.5	0	30.0	0.00
Architectural Coating Phase	7.5	0	30.0	0.00
			Total	**180.00**
VENDOR TRIPS				
Demolition Phase	7.5	0	8.4	0.00
Site Preparation Phase	7.5	0	8.4	0.00
Grading Phase	7.5	0	8.4	0.00
Building Construction Phase	7.5	14	8.4	5017.60
Site Utilities and Sitework	7.5	0	8.4	0.00
Paving Phase	7.5	0	8.4	0.00
Architectural Coating Phase	7.5	0	8.4	0.00
			Total	**5,017.60**

Total Gasoline Consumption (gallons)	**12,040**
Total Diesel Consumption (gallons)	**102,924**

Sources:

[1] United States Environmental Protection Agency. 2021. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2* . September. Available at: https://www.epa.gov/system/files/documents/2021-08/420r21021.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2021. *National Transportation Statistics* . Available at: https://www.bts.gov/topics/national-transportation-statistics.

660 University Avenue Mixed-Use Project

Last Updated: 9/12/25

Populate one of the following tables (Leave the other blank):

Annual VMT		OR	Daily Vehicle Trips	
Annual VMT:	570,455		Daily Vehicle Trips:	
			Average Trip Distance:	

Fleet Class	Fleet Mix
Light Duty Auto (LDA)	0.522644
Light Duty Truck 1 (LDT1)	0.038170
Light Duty Truck 2 (LDT2)	0.234287
Medium Duty Vehicle (MDV)	0.131556
Light Heavy Duty 1 (LHD1)	0.023622
Light Heavy Duty 2 (LHD2)	0.005919
Medium Heavy Duty (MHD)	0.009530
Heavy Heavy Duty (HHD)	0.007639
Other Bus (OBUS)	0.001062
Urban Bus (UBUS)	0.000406
Motorcycle (MCY)	0.022036
School Bus (SBUS)	0.000684
Motorhome (MH)	0.002442

Fuel Economy (MPG) [1]	
Passenger Vehicles	24.1
Light-Med Duty Trucks	17.6
Heavy Trucks/Other	7.5
Motorcycles	44

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT: VMT	Vehicle Trips: VMT	Fuel Consumption (Gallons)
Passenger Vehicles	*52.26%*	*Gasoline*	298,145	0.00	12,371
Light-Medium Duty Trucks	*40.40%*	*Gasoline*	230,471	0.00	13,095
Heavy Trucks/Other	*5.13%*	*Diesel*	29,267	0.00	3,902
Motorcycle	*2.20%*	*Gasoline*	12,571	0.00	286

Total Gasoline Consumption (gallons)	**25,752**
Total Diesel Consumption (gallons)	**3,902**

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2021. National Transportation Statistics. Available at: https://www.bts.gov/topics/national-transportation-statistics.

Energy Unit Conversion Sheet

Gasoline

Gallons (gal.)	25,752	Barrels (bbl.)	1.00	Btu	1.00
25752.00	gal.	42.00	gal.	0.00	gal.
25.75	Thousand gallons	0.04	Thousand gallons	0.00	Thousand gallons
0.03	Million gallons	0.00	Million gallons	0.00	Million gallons
613.14	bbl.	1.00	bbl.	0.02	bbl.
0.61	Thousand bbl.	0.00	Thousand bbl.	0.00	Thousand bbl.
0.00	Million bbl.	0.00	Million bbl.	0.00	Million bbl.
30408.65	U.S. Therms	49.59	U.S. Therms	0.00	U.S. Therms
2827213870.89	British thermal units (Btu)	4611019.83	British thermal units (Btu)	1.00	British thermal units (Btu)
2827.21	Million Btu (MMBtu)	4.61	Million Btu (MMBtu)	0.00	Million Btu (MMBtu)

Diesel

Gallons (gal.)	3,902	Barrels (bbl.)	1.00	Btu	1.00
3,902.00	gal.	42.00	gal.	0.00	gal.
3.90	Thousand gallons	0.04	Thousand gallons	0.00	Thousand gallons
0.00	Million gallons	0.00	Million gallons	0.00	Million gallons
92.90	bbl.	1.00	bbl.	0.02	bbl.
0.09	Thousand bbl.	0.00	Thousand bbl.	0.00	Thousand bbl.
0.00	Million bbl.	0.00	Million bbl.	0.00	Million bbl.
5,349.33	U.S. Therms	57.58	U.S. Therms	0.00	U.S. Therms
497,348,920.00	British thermal units (Btu)	5,353,320.00	British thermal units (Btu)	1.00	British thermal units (Btu)
497.35	Million Btu (MMBtu)	5.35	Million Btu (MMBtu)	0.00	Million Btu (MMBtu)

Electricity

Kilowatt-Hours (kWh)	768,908	U.S. Therm	1.00	Btu	25,050,690,000.00
768,908.00	Kilowatt-Hours	27.25	Kilowatt-Hours	7,341,937.28	Kilowatt-Hours
768.91	Megawatt-Hours	0.03	Megawatt-Hours	7,341.94	Megawatt-Hours
0.77	Gigawatt-Hours	0.00	Gigawatt-Hours	7.34	Gigawatt-Hours
28,217.72	U.S. Therms	1.00	U.S. Therms	269,437.58	U.S. Therms
2,623,514,096.00	British thermal units (Btu)	92,974.00	British thermal units (Btu)	25,050,690,000.00	British thermal units (Btu)
2,623.51	Million Btu (MMBtu)	0.09	Million Btu (MMBtu)	25,050.69	Million Btu (MMBtu)

Natural Gas

Thousand Cubic Feet (Mcf)	1.00	U.S. Therm	1.00	Btu	
1,000.00	Cubic Feet (cf)	89.66	Cubic Feet (cf)	-	Cubic Feet (cf)
1.00	Thousand Cubic Feet (Mcf)	0.09	Thousand Cubic Feet (Mcf)	-	Thousand Cubic Feet (Mcf)
0.00	Million Cubic Feet (MMcf)	0.00	Million Cubic Feet (MMcf)	-	Million Cubic Feet (MMcf)
11.15	U.S. Therms	1.00	U.S. Therms	-	U.S. Therms
1,037,000.00	British thermal units (Btu)	92,974.00	British thermal units (Btu)	-	British thermal units (Btu)
1.04	Million Btu (MMBtu)	0.09	Million Btu (MMBtu)	-	Million Btu (MMBtu)

Sources:

U.S. Energy Information Administration (EIA). May 2017. "Frequently Asked Questions: What are Ccf, Mcf, Btu, and therms? How do I convert natural gas prices in dollars per Ccf or Mcf to dollars per Btu or therm?" https://www.eia.gov/tools/faqs/faq.php?id=45&t=8. (accessed February 5, 2018).

Schremp, Gordon. 2017. Senior Fuels Specialist, California Energy Commission. Personal communication via phone and email regarding fuel consumption in California by County and by source with Lance Park, Associate Planner, Rincon Consultants, Inc. August 22, 2017.

Attachment E

Revised Transportation Impact Analysis for the Modified Project (September 10, 2025)

Hexagon Transportation Consultants, Inc.

Memorandum

Date:	September 10, 2025
To:	Ms. Emily Foley, AICP City of Palo Alto
From:	Eric Tse, P.E., PTOE
Subject:	Transportation Impact Analysis for Mixed-Use Development at 660 University Avenue in Palo Alto, CA

Introduction

Hexagon Transportation Consultants, Inc. has completed this transportation impact analysis for the proposed mixed-use development at 660 University Avenue in Palo Alto, California (see Figure 1). The project would demolish the existing buildings (9,216 SF office) and parking lots for the construction of a new six-story building with 1,984 SF of office space on the ground and sixth floors and multi-family residential on the second through fifth floors. There are 70 planned residential units, of which 20 percent (14 units) will be affordable and inclusionary across the three income levels. Access to the underground parking garage would be provided from Byron Street.

Scope of Study

Senate Bill (SB) 743 has changed the primary metric for identifying transportation impacts under the California Environmental Quality Act (CEQA) from vehicle level of service (LOS) to daily vehicle miles traveled (VMT). A VMT analysis was conducted to assess the potential impacts caused by the proposed project. The study also includes an analysis of site access and circulation, as well as a qualitative analysis of the project's effect on bicycle, pedestrian and transit facilities.

Because the project is expected to generate fewer than 50 net AM or PM peak hour trips, an offsite intersection level of service analysis was not required as per the City of Palo Alto's LOS Policy.

Vehicle Miles Traveled (VMT) Analysis

The evaluation of VMT for this project is based on the City's VMT Policy adopted in June 2020.

The Palo Alto VMT Policy establishes screening criteria for projects that are expected to cause a less-than-significant transportation impact under CEQA based on the land use and/or location. Projects that meet the screening criteria are not required to prepare further VMT analysis. For a project that does not meet the screening criteria, a project's VMT impact is determined by comparing the project VMT to the appropriate thresholds of significance based on the type of development.

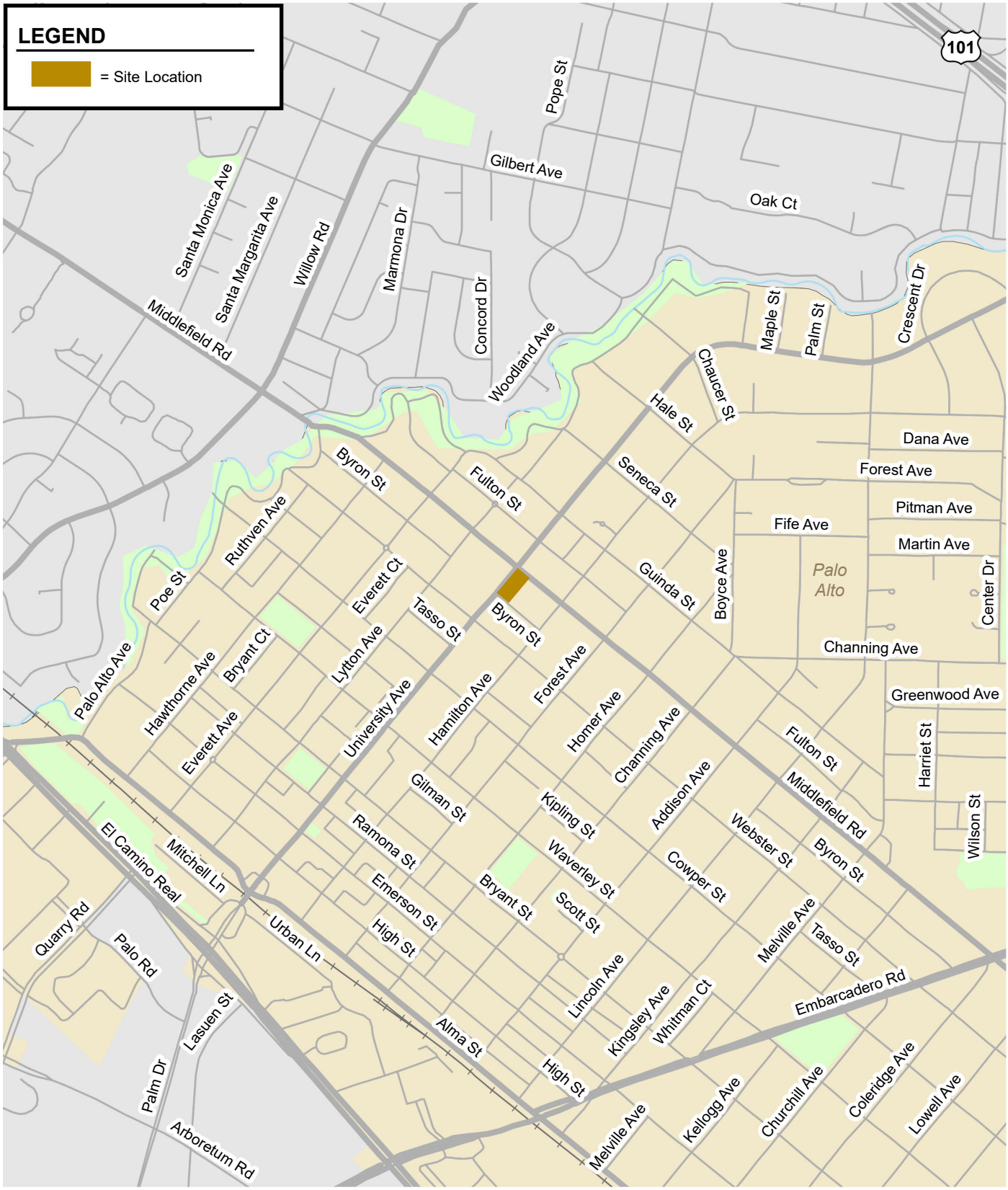


Figure 1
Site Location

NORTH
Not to Scale

The project would not meet all applicable VMT screening criteria as per the City VMT Policy for all the project components. Therefore, a VMT analysis was conducted using the Santa Clara Countywide VMT Evaluation Tool that evaluates the project's CEQA impact on VMT and is described below.

According to the City TIA Guidelines, the impact threshold for the residential project component is 15 percent below the County home-based VMT per resident. The County average daily VMT for residential uses is 13.33 per resident. Therefore, the impact threshold for residential uses is 11.33 (13.33 x 0.85) daily VMT per resident.

The project is located in a TAZ (Transportation Analysis Zone) where the daily VMT per County resident is 9.38, which is below the threshold of 11.33. Therefore, the project would have less-than-significant VMT impact for the residential component. The residential VMT calculation sheets for the proposed project from the Santa Clara Countywide VMT Evaluation Tool are included in Appendix A.

For the office component, because of a net reduction of office space from 9,216 SF to 1,984 SF under project conditions, there would be a net decrease in VMT. Therefore, the office component would have a less-than-significant VMT impact.

Existing Transportation Setting

Regional access to the project site is provided by US 101. Local access to the project site is provided via University Avenue and Middlefield Road.

For the purposes of this study, US 101 is considered to run north-south, as are the parallel streets: Middlefield Road, Byron Street, Guinda Street, and Webster Street. University Avenue is considered to run east-west.

US 101 is a north-south freeway that extends through and beyond the Bay Area, connecting San Francisco to San Jose. US 101 is ten lanes wide with three mixed-flow lanes and two high-occupancy vehicle (HOV) lanes in each direction in the vicinity of the project site. US 101 provides access to the study area via the interchange at University Avenue.

Middlefield Road is a north-south arterial that runs parallel to US 101. It begins at the intersection of Central Expressway in Mountain View and traverses through Redwood City. Within the vicinity of the project site, Middlefield Road is four lanes wide, with sidewalks on both sides of the street. It has a posted speed limit of 25 mph. There are no bike facilities on Middlefield Road, and on-street parking is prohibited on both sides of Middlefield Road in the project vicinity. Middlefield Road runs along the eastern boundary of the project site.

University Avenue is an east-west arterial that begins east at State Route 84 and extends west, passing the interchange at US 101, towards the intersection with El Camino Real, at which point it transitions to Palm Drive. University Avenue has one lane in each direction except between Fulton Street and Middlefield Road where it has two lanes in the westbound direction. In the project vicinity, sidewalks are present on both sides of the street. University Avenue has a posted speed limit of 25 mph. On-street parking is prohibited between Fulton Street and Byron Street, which includes the project frontage. There are Class II bike lanes on University Avenue to the east of Fulton Street.

Lytton Avenue is an east-west residential street that extends eastward from Alma Street and terminates at Palo Alto Avenue. Lytton Avenue has one lane in each direction in the project vicinity. Lytton Avenue has a posted speed limit of 25 mph. In the project vicinity, sidewalks are present on both sides of the street. There are no existing bike facilities on

Lytton Avenue except west of Tasso Street. On-street parking is prohibited in the project vicinity, except east of Middlefield Road.

Hamilton Avenue is an east-west residential street that extends eastward from Alma Street and terminates at Greer Road. Hamilton Avenue has one lane in each direction in the project vicinity. Hamilton Avenue has a posted speed limit of 25 mph. In the project vicinity, sidewalks are present on both sides of the street. There are no existing bike facilities on Hamilton Avenue, and on-street parking is allowed in the project vicinity.

Byron Street is a north-south street that extends between University Avenue to the north and Hamilton Avenue to the south. Byron Street has a prima facie speed limit of 25 mph. Sidewalks are present on both sides of the street. There are no existing bike facilities on Byron Street. On-street parking is permitted on both sides of the street. Byron Street runs along the western boundary of the project site and provides direct access to the site via one full access driveway.

Guinda Street is a north-south residential street that extends southward from Palo Alto Avenue to Melville Avenue. Guinda Street has a prima facie speed limit of 25 mph. In the project vicinity, sidewalks are present on both sides of the street. There are no existing bike facilities on Guinda Street. On-street parking is permitted on both sides of the street.

Webster Street is a north-south residential street that extends southward from Palo Alto Avenue to Oregon Expressway. Webster Street has a prima facie speed limit of 25 mph. In the project vicinity, sidewalks are present on both sides of the street. There are no existing bike facilities on Webster Street. On-street parking is permitted on both sides of the street.

Bicycle and Pedestrian Facilities

There are no bike lanes on University Avenue along the project frontage. Bike lanes exist east of Fulton Street. According to the City of Palo Alto Pedestrian and Bicycle Master Plan, the City envisions installing Class III bike routes on Middlefield Road, Webster Street, and on University Avenue west of Fulton Street. Class II bike lanes are also planned on Lytton Avenue between Fulton Street and Alma Street.

Existing pedestrian facilities in the project area consist of sidewalks and crosswalks found along all previously described roadways near the site. All intersections have pedestrian crosswalks and curb ramps. All signalized intersections have pedestrian-actuated signals.

Transit Service

Existing transit service in the project vicinity is provided primarily by SamTrans and the Dumbarton Express bus service. The transit services are described in Table 1. All transit services described in Table 1 stop within walking distance of the project site.

Commuter rail service between San Francisco and Gilroy is provided by Caltrain. The project site is located approximately 0.6 miles northeast of the Palo Alto Caltrain station. Caltrain provides service with approximately 15-minute headways during the weekday AM and PM commute hours and 30-minute headways midday, at nights and on weekends. Sidewalks exist on the route between the project site and the Caltrain station. All the bus routes described in Table 1 also provide connection between the project site and the Caltrain station.

Table 1
Existing Transit Facilities

Bus Route	Route Description	Bus Stop Location	Within Project Vicinity	Weekday		Weekend
				Operating Hours	Headway [1]	Service Provided?
Route 280	Palo Alto Transit Center to Purdue Avenue/Fordham Street	At University Avenue and Middlefield Road	University Avenue, Webster Street, Lytton Avenue	5:29 AM - 10:49 PM	70 min	Yes 60-min headways
Route 281	Stanford University Oval to Onetta Harris Center	At University Avenue and Middlefield Road	University Avenue, Webster Street, Lytton Avenue	5:55 AM - 10:53 PM	20 min	Yes 30-min headways
Route 296O	Redwood City Transit Center to Palo Alto Transit Center	At University Avenue and Middlefield Road	University Avenue, Webster Street, Lytton Avenue	10:00 PM - 5:18 AM	30 - 60 min	Yes 60-min headways
Route 397O	San Francisco to Palo Alto Transit Center	At University Avenue and Middlefield Road	University Avenue, Webster Street, Lytton Avenue	1:04 AM - 6:50 AM	60 min	Yes 60-min headways
DumbartonExpress (DB)	Stanford University Oval to Union City BART Station	At University Avenue and Byron Street	Unversity Avenue, Middlefield Road, Lytton Avenue	5:25 AM - 8:21 PM	30 - 40 min	No

Notes:
1. Approximate headways during peak commute periods.

Project Traffic Estimates

Through empirical research, data have been collected that quantify the amount of traffic produced by many types of land uses. This research is compiled in the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The rates published for Multifamily Housing (Mid-Rise) (Land Use 221) and Small Office (Land Use 712) were used to estimate the vehicle trips generated by the proposed project (see Table 2). Mid-rise multifamily housing includes apartments and condominiums located in a building that has four to 10 floors of living space. A small office building is defined as a general office building but with less than or equal to 10,000 square feet of gross floor area. Trips generated by the current office building use were estimated using ITE trip generation rates and then subtracted from the total project trips to estimate the net new trips generated by the project. Based on ITE rates and after applying the trip credits due to existing use, the proposed project is estimated to generate a total of 213 net daily trips, with net 15 and 11 project trips occurring during the AM and PM peak hours, respectively.

Table 2
Project Trip Generation Estimates

Land Use	Size		Daily Rate	Daily Trips	AM Peak Hour Pk-Hr Rate	AM In	AM Out	AM Total	PM Peak Hour Pk-Hr Rate	PM In	PM Out	PM Total
Proposed Use												
Multifamily Housing (Mid-Rise) [1]	70	du	4.54	318	0.37	6	20	26	0.39	16	11	27
Small Office Building [2]	1,984	sf	14.39	29	1.67	3	1	4	2.16	1	3	4
Subtotal				346		9	21	30		17	14	31
Existing Use												
Small Office Building [2]	9,216	sf	14.39	-133	1.67	-12	-3	-15	2.16	-7	-13	-20
Net New Trips:				**213**		**-3**	**18**	**15**		**10**	**1**	**11**

Notes:
[1] Trip generation based on average rates contained in the *ITE Trip Generation Manual, 11th Edition*, for Multifamily Housing (Mid-Rise) (Land Use Code 221). Average rates were used.
[2] Trip generation based on average rates contained in the *ITE Trip Generation Manual, 11th Edition*, for Small Office Building (Land Use Code 712). Average rates were used.

Site Access and On-Site Circulation

This section describes the site access and on-site circulation for the proposed project. This review is based on the project site plan dated June 20, 2025 (See Figures 2 through 4).

Site Access and Project Driveway

Access to the project site would be provided via one full-access driveway on Byron Street, approximately 100 feet south of University Avenue. The site driveway is projected to accommodate 30 AM (9 inbound/21 outbound) and 31 PM (17 inbound/14 outbound) peak hour trips.

The width of the ramp between the driveway opening on Byron Street and the garage entrance is shown to be 22 feet, which meets the City Code Standards. Based on a turning template analysis using a standard passenger vehicle, the 90-degree turn between the driveway opening on Byron Street and the garage entrance is wide enough to accommodate simultaneous turning movements of inbound and outbound vehicles.

Per City municipal code standards, a distance of 5 feet shall be maintained at the same slope as the sidewalk from the back edge of the sidewalk to the starting point of the ramp into the garage. Its purpose is to allow exiting vehicles to be able to see approaching pedestrians on the sidewalk. The project will provide a 5-foot landing for the garage ramp approaching the sidewalk on Byron Street.

The sight distance at the project driveway was checked and determined to be adequate. On-street parking is permitted on both sides of Byron Street along the project frontage. There is an existing driveway to the immediate south of the proposed project driveway on Byron Street, which would provide adequate visibility of northbound traffic on Byron Street for vehicles exiting the project site. Vehicles leaving the project site would egress in two stages. First, vehicles would stop at the back of the sidewalk to look for pedestrians on the sidewalk, and then pull forward into the parking lane to assess gaps in traffic.

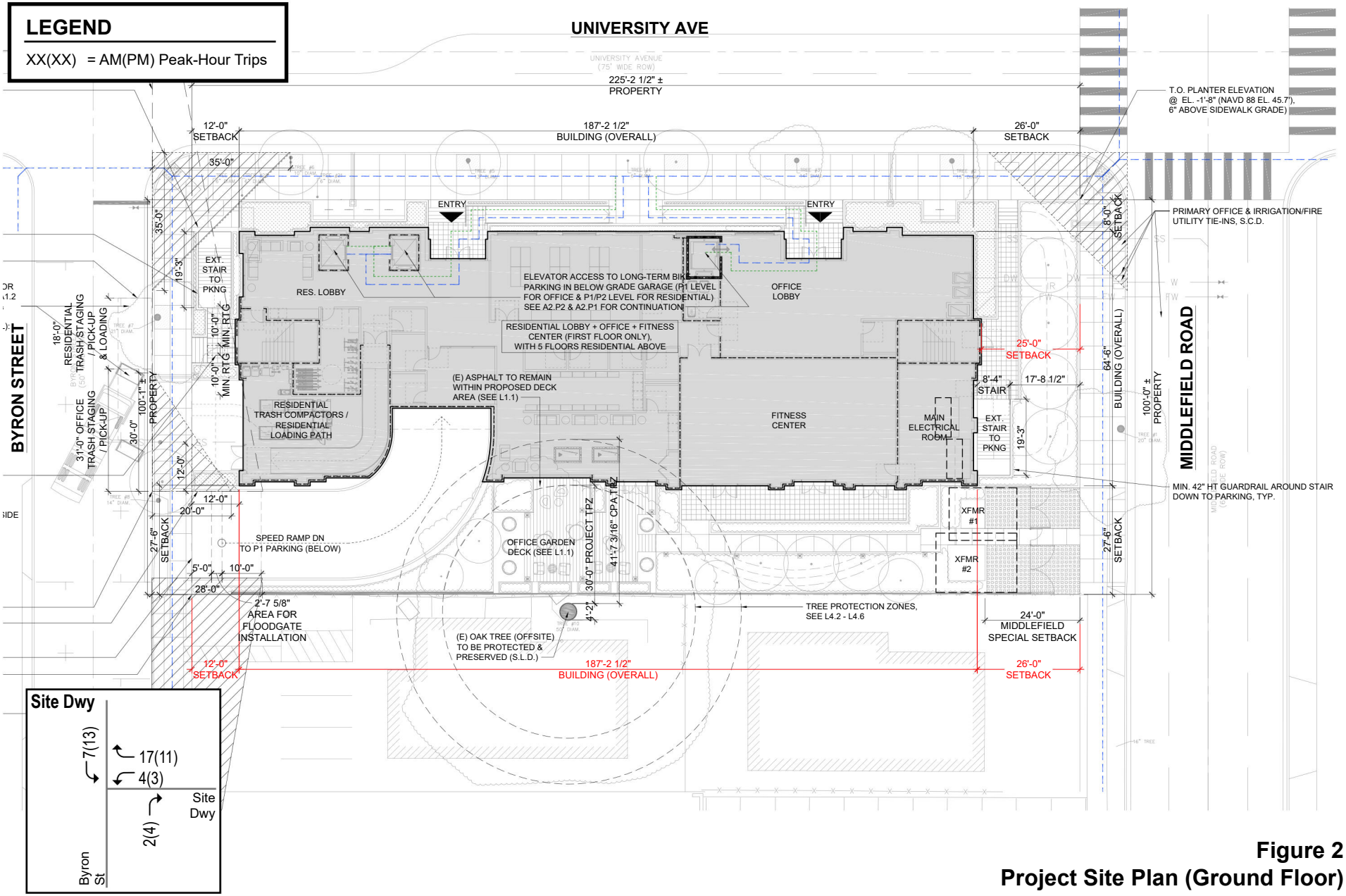


Figure 2
Project Site Plan (Ground Floor)

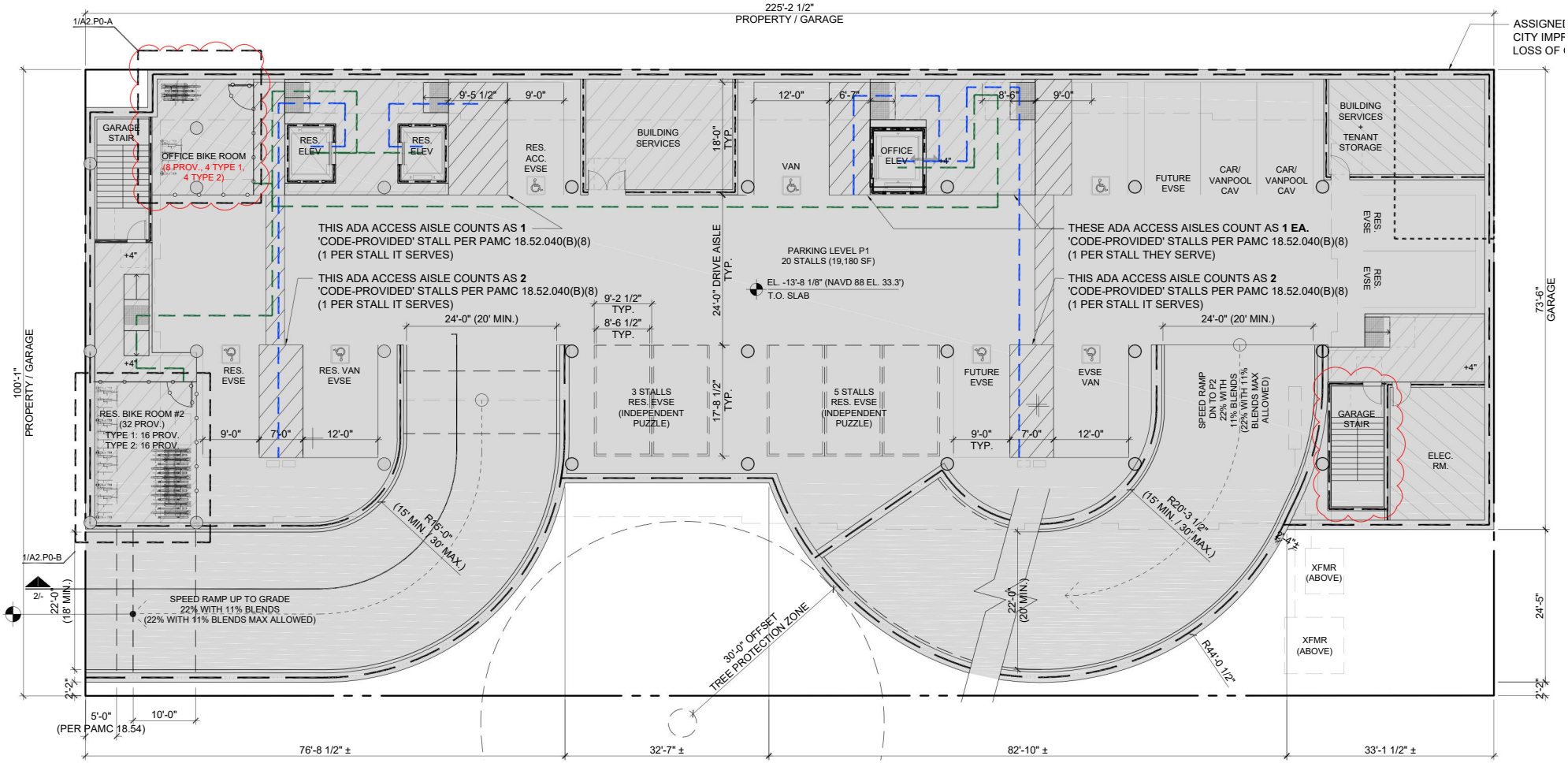


Figure 3
Project Site Plan (Below Grade Parking Level P1)

NORTH
Not to Scale

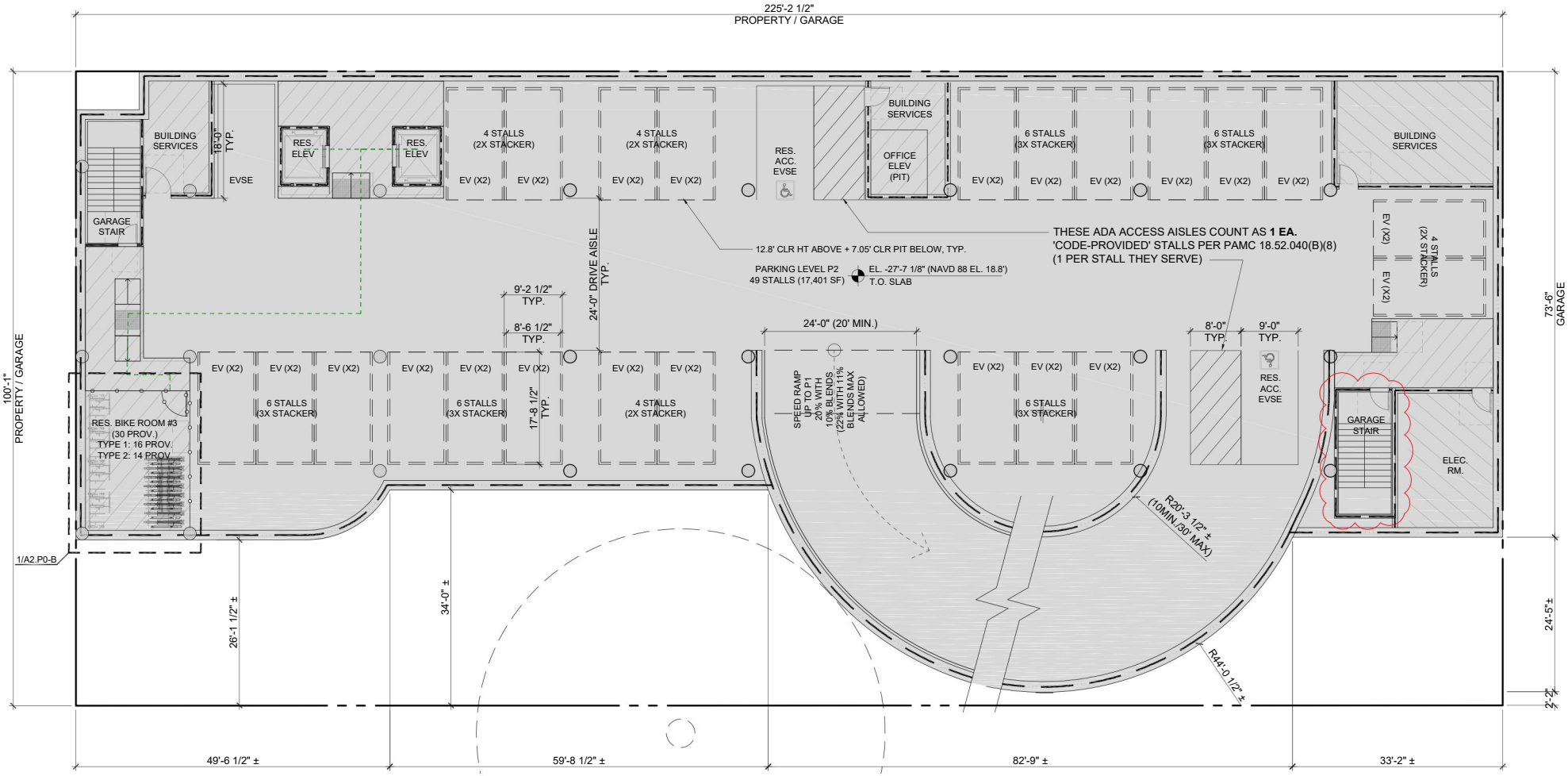


Figure 4
Project Site Plan (Below Grade Parking Level P2)

NORTH
Not to Scale

On-Site Circulation

The on-site circulation was reviewed in accordance with generally accepted traffic engineering standards.

The project site plan includes an underground parking garage with two levels (P1 and P2). The parking garage would be accessed by the driveway on Byron Street. The parking garage follows a standard 90-degree parking layout. The parking aisles are 24 feet wide, which meets the City's standard for 90-degree parking. The dimensions of the regular parking spaces are 9 feet by 18 feet, which meet the minimum City standards.

Upon entering the project property from the site driveway, vehicles would start descending into the P1 level of the parking garage along the main drive aisle and then make a 90-degree left hand turn before entering the parking garage. Parking at P1 primarily would be reserved for office use except for three ADA parking spaces reserved for residential use across from and adjacent to the residential elevators. At the P1 parking level, vehicles would park on either side of the drive aisle or continue straight along the main drive aisle and descend to the lowest level (P2 parking level). Eight parking spaces would be provided by a 2-level "stacker". At the P1 level, the parking aisle would terminate at both ends but with a space designed for vehicle turnarounds.

Parking at P2 would be reserved for residents and would be provided by a 2-level "stacker" parking lift system with a pit. The parking lift system would increase the capacity of onsite parking by stacking the parked vehicles vertically and would allow independent access to vehicles. The site plan shows that the parking lift system would have a clearance height of 13 feet 8 inches (13'8") above and 5 feet 11 inches (5'11") clearance pit below. The proposed dimensions would accommodate 90% of SUVs and taller SUVs can park on the top. Similar to the P1 level, the parking aisle would terminate at both ends but space would be provided for vehicle turnarounds.

The site plan shows a slope of 22% for the driveway ramp to the parking garage, with transition grades of 11%, which meet the maximum allowable grade of 22% as required by the City's municipal code. It should be noted that although the ramp would be adequate for vehicles, pedestrians and bicyclists are not expected to be using the ramp given that the slope's grade would be difficult for pedestrians and bicyclists to traverse. The vertical clearance to the P1 parking level is shown to be ten feet six inches (10'6"), which exceeds the minimum vertical clearance requirement of eight feet two inches (8'2") required for access to accessible parking stalls. The site plan does not show the vertical clearance for parking level P2.

> **Recommendation #1:** Because the site plan does not specify the vertical clearance of all garage ramps, the design and layout of the parking ramps should be reviewed by Public Works staff prior to final design.

There are altogether 78 parking spaces provided in the project parking garage: 27 spaces (8 spaces via parking stackers, 5 standard office spaces, 7 ADA parking spaces (4 spaces for office use and 3 spaces for residential use), and 7 "code-provided" spaces per Section 18.52.040(B)(8) of the Palo Alto Municipal Code) on the P1 level and 51 spaces (46 spaces via parking stackers, 1 standard residential space, 2 ADA parking spaces for the residential use, and 2 "code-provided spaces") on the P2 level. Accessible parking spaces would be located near the elevators on the P1 and P2 parking levels with clearly marked pathways. Detailed discussion of onsite parking is included in the subsequent "Parking" section.

The site plan shows that the existing parking zone along the project frontage on Byron Street will be designated for an onsite loading area for passengers, delivery and garbage trucks. A residential trash collection/compactor room is shown at ground level near the Byron Street project frontage. Trash chute shafts are shown inside the trash room that would allow trash to be

collected from different floors of the building. The office trash room is shown adjacent to the elevator inside the office space. There is a door next to the office trash room that would allow access from the office trash room to the residential trash collection room within the building. Because garbage trucks would not be able to enter the parking garage, trash bins would have to be wheeled out to the curbside along Byron Street where garbage trucks would perform their operations on the street.

Pedestrian access to the project site would be provided at locations along the frontages on University Avenue, Middlefield Road, and Byron Street. There would be a total of four entry doors for the development on the ground floor: three entrances from the University Avenue frontage, including two entry doors that would provide dedicated access to the residential and the office lobbies and a pathway that would provide access to the building staircase fronting Middlefield Road, and one other entry door that would provide access to the building staircase fronting Byron Street. All entry doors would be connected to existing sidewalks on University Avenue and Byron Street.

Pedestrian circulation within the site would provide adequate connectivity between the vehicle parking, off-site pedestrian facilities, and on-site amenities. There are two stairwells and three elevators shown on the site plan, with access to the front lobby and parking garage.

Parking

Parking requirements are included in the City of Palo Alto Parking Ordinance (18.52.040) as discussed below.

Multi-family Residential

- Studio – one space per unit.
- One-bedroom unit - one space per unit.
- Two-bedroom unit - two spaces per unit.

Office

- One space per 250 sq.ft. of gross floor area.

The proposed project has a total of 70 dwelling units including 28 studios, 33 one-bedroom units, and 9 two-bedroom units. Based on these requirements, the project would be required to provide 81 parking spaces. For the 1,984 sq.ft. office component, the project would be required to provide 8 parking spaces. Altogether, the project would be required to provide a total of 89 parking spaces. According to the municipal code, the number of required automobile parking spaces may be adjusted by the director in the following instances and in accordance with the prescribed limitations in Table 4, Section 18.52.050 of the municipal code.

- Housing Near Transit Facilities – Given the project's location and its proximity to bus stops (served by SamTrans Routes 280, 281 and 397 and the Dumbarton Express) and the Caltrain station (0.6 mile from the project site), it is expected that many residents would use public transportation and would not need to own a car for transportation.
- Transportation and Parking Alternatives – The project will implement a comprehensive TDM program to encourage residents to use alternative modes of transportation.
- Affordable Housing – 20% (14 units) of the 70 planned residential units will be affordable and inclusionary across three income levels (1 very-low-income, 1 low-income, and 12 moderate-income housing units).

- Combined Parking Adjustments – Parking reductions may be granted for the combination of the above circumstances (maximum 30% reduction of the total parking demand).

Based on the site plan, the proposed number of parking spaces is 78 (27 spaces in P1 level and 51 spaces in P2 level), 13% less than the required number of spaces but is within the maximum reduction allowed (30% for combined parking adjustments. The project will implement a robust Transportation Demand Management (TDM) program to encourage residents and office tenants to utilize alternative modes of transportation so that people can get around more easily without a car.

The City parking code specifies a long-term bike parking requirement of 1 space per dwelling unit and 1 space per 2,500 square feet for office space (80% for long-term bike parking and 20% for short-term bike parking). Therefore, 70 long-term bike spaces and 7 short-term bike spaces would be needed for the residential component. For the office component, 1 long-term bike space and 1 short-term bike space would be needed. The project site plan shows 88 long-term bicycle spaces in three bicycle storage rooms on the P1 and P2 parking levels (30 for residential in level P2, 32 for residential and 8 for office in level P1, and 18 for residential on the first floor) and 10 short-term bicycle spaces adjacent to the sidewalk near the main residential and office lobbies (8 adjacent to the residential lobby entrance and 2 adjacent to the office lobby entrance). Therefore, the project's long-term and short-term bicycle parking provision would meet the City's parking code standards.

Impacts to Transit, Bikes, and Pedestrians

According to the VTA Congestion Management Program (CMP) Transportation Impact Analysis Technical Guidelines, a project would create an adverse effect on pedestrian and bike circulation if: (1) its vehicle trips would present a barrier to bikes/pedestrians safely crossing roadways, or (2) it would reduce or sever existing or planned bike/pedestrian circulation in the area.

The proposed project would generate pedestrian trips to and from transit stops and commercial areas in the project vicinity. As described previously, all of the streets in the project vicinity have sidewalks and crosswalks at intersections. Existing observations on University Avenue and Middlefield Road showed light pedestrian and bicycle activity in the area. Overall, the volume of pedestrian trips generated by the project is not expected to exceed the carrying capacity of the sidewalks and crosswalks in the vicinity of the site, and the existing pedestrian and bicycle facilities provide adequate access to the project site.

The addition of the project would not remove any existing bike/pedestrian facilities, nor would it preclude any future planned improvements. The addition of project traffic would have a negligible effect on walking and biking in the project vicinity. In addition, the project would improve pedestrian safety by removing the two driveways on University Avenue and one driveway on Middlefield Road. Therefore, based on the CMP criteria, the proposed project would not create an adverse effect to bike/pedestrian circulation in the area.

According to the VTA CMP Transportation Impact Analysis Technical Guidelines, a project would create an adverse effect on transit service if it: (1) causes vehicular congestion that would significantly degrade transit operations, (2) cause a ridership increase that would exceed existing transit capacity, or (3) conflict with existing transit service plans or preclude future transit service to the project area.

Existing bus service in the project vicinity is provided by SamTrans. According to the U.S. Census data for Palo Alto, approximately five (5) percent of the proposed project's commuters could be expected to use transit to and from the project site. For the proposed project, this would equate to approximately 2 new transit trips during the AM and PM peak hours, respectively. Based on field observations, this volume of riders generated by the project would not exceed the

carrying capacity of the existing bus service near the project site. No improvements to existing bus service frequencies would be necessary in conjunction with the proposed project. In addition, the project would not conflict with any existing transit facilities, create significant congestion for buses, nor preclude any future transit service to the area. Therefore, the proposed project would not cause a significant impact to transit operations in the study area.

Conclusions

The impacts of the proposed project were evaluated in accordance with the procedures and guidelines specified by the City of Palo Alto. The analysis resulted in the following key findings:

- Based on the City of Palo Alto VMT Policy, the project would have less-than-significant VMT impact for its residential and office components.
- The project would not create any impacts on pedestrian, bike, or transit facilities.

The analysis also produced the following recommendation:

- Because the site plan does not specify the vertical clearance of all garage ramps, the design and layout of the parking ramps should be reviewed by Public Works staff prior to final design.

Appendix A

Santa Clara Countywide VMT Evaluation Tool
Residential VMT Worksheets

Santa Clara Countywide VMT Evaluation Tool - Version 2.1 - Report

Project Details

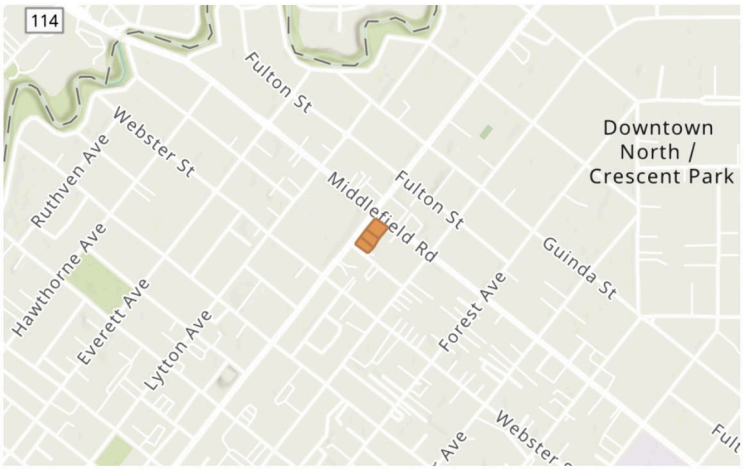
Timestamp of Analysis	August 08, 2025, 11:31:08 AM
Project Name	660 University Avenue
Project Description	Construction of a new six-story building with 1,984 SF of office space and 70 multi-family residential units, of which 20 percent (14 units) will be affordable.

Project Location Map

Jurisdiction:

Palo Alto

APN	TAZ
12003043	437
12003044	437
12003042	437



Analysis Details

Data Version	VTA Countywide Model December 2019
Analysis Methodology	TAZ
Baseline Year	2015

Project Land Use

Residential:

Single Family DU:	
Multifamily DU:	70
Total DUs:	70

Non-Residential:

Office KSF:	1984
Local Serving Retail KSF:	
Industrial KSF:	

Residential Affordability (percent of all units):

Extremely Low Income:	2 %
Very Low Income:	2 %
Low Income:	16 %

Parking:

Motor Vehicle Parking:	78
Bicycle Parking:	90

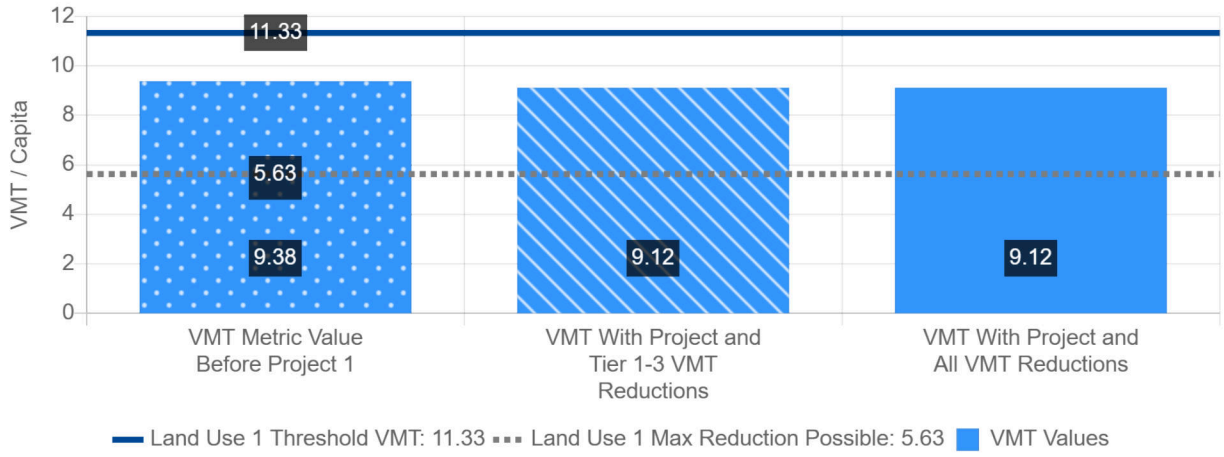
Proximity to Transit Screening

Inside a transit priority area? No (Fail)

Residential Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Residential
VMT Metric 1:	Home-based VMT per Capita
VMT Baseline Description 1:	County Average
VMT Baseline Value 1:	13.33
VMT Threshold Description 1 / Threshold Value 1:	-15% / 11.33
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	9.38	9.12	9.12
Low VMT Screening Analysis	Yes (Pass)	Yes (Pass)	Yes (Pass)



Tier 1 Project Characteristics

PC03 Affordable Housing

Extremely Low Income:	2 %
Very Low Income:	2 %
Low Income:	16 %