INITIAL STUDY and ENVIRONMENTAL CHECKLIST

FOR

CITY OF COLUSA WASTEWATER CONTROL PLANT ANNEXATION AND COLUSA TRIPLE CROWN DEVELOPEMNT

December 2025

Lead Agency:
City of Colusa

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I. PROJECT SUMMARY

Date:

Project Title: City of Colusa Wastewater Pollution Control Plant Annexation and Triple Crown Development

Lead Agency: City of Colusa

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Location: The project site is generally located on the southern boundary of the City of Colusa, abutting Colusa High School along the northern property and continuing south and then abutting the City's Wastewater Treatment Plant on the western edge of the boundary. The eastern side abuts portions of Westcott Road. The site is accessible from the north off Will S. Green Road which has direct access to Highway 20.

Coastal Zone: No

Affected Parcel(s): 017-020-024, -025, -026, -027; 017-030-079, -080; 015-130-128, -129, -068, and -082;

Existing Land Use Designations and Zoning

City of Colusa General Plan Land Use Designations:

Brookins Ranch Parcels: 015-130-068, 015-130-082, 015-130-128, 015-130-129, - Low Density Residential (LDR)

City Owned - Wastewater Treatment Plant Parcels: 017-020-024, 017-020-025, 017-020-026, 017-020-027, 017-030-079 and 017-030-080 – None Currently

City of Colusa Zoning Designation:

Brookins Ranch Parcels: 015-130-068, 015-130-082, 015-130-128, 015-130-129, R1 - Single Family Residential District (Pre-zoned)

City Owned - Wastewater Treatment Plant Parcels: 017-020-024, 017-020-025, 017-020-026, 017-020-027, 017-030-079 and 017-030-080– None Currently

Proposed General Plan Designations and Zoning

Brookins Ranch Parcels: 015-130-068, 015-130-082, 015-130-128, 015-130-129, : Low Density Residential General Plan Designation and R-1 Single Family Residential Zoning District.

City Owned - Wastewater Treatment Plan Parcels: 017-020-024, 017-020-025, 017-020-026, 017-020-027, 017-030-079, and 017-030-080 - Agricultural General Plan Designation and an A-G Agricultural Zoning District.

Anticipated Permits and Approvals:

1) City of Colusa approval of:
    a. Annexation
    b. Development Agreement (Special Use Permit – Cannabis Operation)
    c. Colusa Triple Crown Development Proposal – Site Plan Review
    d. General Plan Amendment and Rezone of City Owned Land to a General Plan Land Use Designation of Agricultural and zoning of A-G Agricultural.
    e. Colusa Municipal Code – Appendix A adding Section 17.5 A-G Agricultural zoning regulations
    f. Colusa Municipal Code amendment to Appendix A Section 21.5.01 to permit Cannabis operations subject to a Special Use Permit.
    g. Proposed Tentative Subdivision Map (Figure 4).

2) Local Agency Formation Commission (LAFCo) approval of:
    a. Annexation
        i. Detachment from the Sacramento River Fire Protection District

3) Colusa County Airport Land Use Commission
    a. Consistency Determination with the Colusa County Airport Land Use Plan

CEQA Requirement:

The proposed project is subject to the requirements of the California Environmental Quality Act (CEQA). The Lead Agency is the City of Colusa. The Initial Study (IS) has been prepared to identify and assess the anticipated environmental impacts of the Colusa Triple Crown cannabis operation (Project or Proposed Project) and the annexation of the Brookins Ranch and City owned properties. The purpose of the IS is to provide a basis for determining whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration (ND) or a Mitigated Negative Declaration (MND). This document has been prepared to satisfy CEQA (Pub. Res. Code, Section 21000 et seq.) and State CEQA Guidelines (14 CCR 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. CEQA also encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts (CEQA Section 20180(c)(2) and State CEQA Guidelines Section 15070(b)(2)).

CEQA - Tiered Analysis

Agencies are encouraged to tier the environmental analyses that they prepare for separate but related projects to eliminate repetitive discussions of the same issues and focus the later document on the actual issues ripe for decision at each level of environmental review (State CEQA Guidelines Sections 15152, 15168).

Section 15168(c) of the State CEQA Guidelines states that a program environmental impact report (EIR) may be used with later activities:

Use with Later Activities: Subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared.

1. If a later activity would have effects that were not examined in the program EIR, a new initial study would need to be prepared leading to either an EIR or a negative declaration.

2. If the agency finds that pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required.

3. An agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into subsequent actions in the program.

4. Where the subsequent activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operations were covered in the program EIR.

5. A program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many subsequent activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents could be required.

Section 15168(d) of the State CEQA Guidelines states that a program EIR may be used with subsequent EIRs and negative declarations:

> A program EIR can be used to simplify the task of preparing environmental documents on later parts of the program EIR can:
>
> 1. Provide the basis in an initial study for determining whether the later activity may have any significant effects.
>
> 2. Be incorporated by reference to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole.
>
> 3. Focus EIR on a subsequent project to permit discussion sole on the new effects which had not been considered before.

Section 15152 of the State CEQA Guidelines allows an EIR to tier from the environmental analysis of an earlier EIR. Section 15152(a) of the CEQA Guidelines explains the concept of tiering:

> Tiering refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.

Section 15152(d) of the State CEQA Guidelines states that the lead agency for a later project pursuant to or consistent with the program should limit the subsequent analysis as follows:

Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:

1. Were not examined as significant effects on the environment to the prior EIR;

2. Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means.

In considering approval of the various activities identified in Chapter 2 - Project Description of this IS/MND, the City of Colusa is proposing to carry out and approve a discretionary project subject to CEQA, portions of which (i.e., commercial cannabis cultivation) were previously evaluated in a program EIR adopted by the California Department of Food and Agriculture's (CDFA's) CalCannabis Licensing Program and a Master EIR for the City of Colusa General Plan Update (2007). Accordingly, this IS/MND is tiered from the CDFA CalCannabis Program EIR and the City of Colusa Master EIR, in accordance with State CEQA Guidelines Sections 15168 and 15152.

This IS/MND was prepared to disclose the potential significant effects of the Proposed Project on the environment that were not examined in the CDFA Program EIR or the City of Colusa General Plan Update Master EIR. This document is tiered from the CDFA Program EIR and the General Plan Update Master EIR and incorporates by reference, and all applicable mitigation measures. The City will use the analysis presented in the CDFA Program EIR and the General Plan Master EIR, this IS/MND, public comments on the IS/MND and the whole of the administrative record to evaluate the Proposed Project's environmental impacts and to modify, approve, or deny the Proposed Project.

2.1. PROJECT DESCRIPTION

The City of Colusa is proposing an annexation of both city-owned and private property that abut the City's Wastewater Treatment Plant (WWTP) and extend to the northeast to City limits and detachment of this area from the Sacramento River Fire Protection District (SRFPD). As part of the annexation, the City, in a coordinated effort with a Colusa Triple Crown Cannabis (CTC) are looking to enter a property exchange. Currently, CTC owns approximately 83.66 vacant acres of land (APNs 002-270-002, 002-270-003, 002-270-004, 002-270-005, 002-270-006, 002-270-007, 002-270-008) on the northeastern side of Colusa, just north of East Clay Street. The East Clay Street property is currently designated Industrial on the General Plan and located in the M-1 Light Industrial zoning district. The City of Colusa owns approximately 509 acres of active agricultural land immediately east of the WWCP. In exchange for the 77.16 acres on East Clay Street the City would convey approximately 88.97 acres (Portion of APN 017-020-026) of its 509 acres to CTC. CTC would improve the newly acquired parcel with a cannabis operation facility. The City is considering future development of the 83.66 acres as a regional sports venue with organized play fields and supporting improvements and facilities. There is currently no proposed development plan or details sufficient to provide a meaningful analysis of a sports venue. Therefore, the Project does not include the potential sports venue, which would be subject to future environmental review under CEQA.

The Project also includes a General Plan Amendment and Rezone to the properties within the annexation boundaries. The property known as Brookins Ranch, is pre-zoned as R-1 Single Family with a General Plan Designation of Low Density. While the 509 acres of land owned by the City will receive a new General Plan designation of Agricultural and zoning of A-G – Agricultural. As part of the Project, a A-G Agricultural zoning code will also be adopted. This A-G – Agricultural zoning code will mirror the existing E-A – Exclusive Agricultural as found in the County of Colusa.

2.2 City-Owned Property and Colusa Triple Crown Cannabis (Analyzed Project Site)

The 88.97-acre (portion of APN 017-020-026) site that Colusa Triple Crown Cannabis (CTC) will acquire is located immediately east of the City's Wastewater Treatment Plan (WWTP) facility (See Location Aerial - Figure 1). CTC intends to develop the site into a 2,130,000 square feet cannabis research and development facility. The facility will be an energy-efficient indoor space for cannabis cultivation, plant processing, facilities for creating and infusing products, a testing laboratory for internal product monitoring and quality control, research and development, a training center and distribution center, a non-storefront dispensary and corporate office. The facility will be developed over 5 phases and is anticipated to be constructed over a 3-to-8-year period. The site will be developed with other features, including parking, trash enclosures, storage areas, and utility improvements. The maximum height of the structures will be 40 feet.

The 88.97 acres conveyed to CTC and the remaining 509 acres owned by the City receive a General Plan designation of Agricultural and a zoning of A-G - Agricultural. The Colusa Municipal Code, Appendix A - will also be updated to correspond with the new land use and development standards.

The CTC site will also be subdivided into 10 parcels, each parcel ranging in size from 9.70 acres to 7.33 acres with an average lot size of 8.897 acres. No other division of land is proposed within the annexation boundary, on either the remaining City owned land or in Brookins Ranch.

The CTC site has been historically farmed with seasonal crops including rice, tomato, corn and alfalfa etc. At one time it also was utilized for grazing cattle. To farm the site, heavy equipment is utilized to plough, till, disk the grounds which are utilized to turnover the soil, maximize nutrient mixing and prevent compaction. Recently, the City completed a project at the WWTP, which included underground improvements to be placed on the 88.97 acres that will be conveyed to CTC. That construction involved additional heavy equipment to rip portions of the site and place underground water infrastructure. Such infrastructure included purple pipe, which is reclaimed water from the WWTP to be reutilized in the City-

owned agricultural fields as well as within the CTC facility (discussed further below in Section 10 – Hydrology and Water Quality).

Photographs from the Purple Pipe project on the future CTC Site:



2.3 – Brookins Ranch

Brookins Ranch is an active agricultural property with a single-family home and supporting accessory structures. This property is identified in the 2007 General Plan as a future development. As noted in the

General Plan, Brookins Ranch Estates is identified as a Special Planning Area consisting of 161.4 acres site adjacent to the City. The Master Environmental Impact Report (EIR) for the 2007 General Plan analyzed build out of this property with a development of 127 acres dedicated to single family homes (600 lots), 20.2 acres of parks and greenway project that consisted of 3.9 acres dedicated to parking for the high school and a new fire station property. The 2007 EIR concluded that the future development of the Brookins Ranch property would be required to be processed with either a Specific Plan or Planned Development application.

At this time, no application has been received to develop this land, other than to annex it to the City. Brookins Ranch will retain its low-density zoning designation on the General Plan. In 2008 to 2009, an application was received by the City to annex and develop Brookins Ranch. That now expired application contains not just single-family homes, but a General Plan Amendment and rezone to accommodate additional land uses (multi-family, open space and public/quasi-public). For purposes of this IS/MND any unknown future buildout of the Brookins Ranch property is not being analyzed in this initial study. However pursuant to CEQA Guidelines Section 15114 – forecasting, buildout of Brookins Ranch was incorporated into the Traffic Modeling. Any future buildout of Brookins Ranch, road layout, parcel sizes, and overall scope of the project is unknown and would be a separate project from the CTC with independent utility. Any future development proposal for Brookins Ranch would be subject to separate environmental review under CEQA, as applicable.

2.4 CTC – Project Purpose and Objectives

The Proposed Project includes the construction and operation of a cannabis research and development business park. It would encompass approximately 2,130,000 square feet on 88.97 acres. It would include energy-efficient indoor space for cannabis cultivation, plant processing spaces, facilities for creating infused products, a testing laboratory for internal product testing, research/development and training centers, a distribution center, a non-storefront dispensary, and corporate offices. Space may be sold or leased to other cannabis businesses adequately licensed by California.

Specific project objectives are as follows:

- Develop the Proposed Project area into a state-of-the-art cannabis research and development facility.
- Construct a facility that meets all state and local requirements for cannabis cultivation and business activities, including security and environmental standards required by the State of California.
- Construct a facility that meets all local laws, regulations, and ordinances that apply to site development and building standards (e.g., building codes, local ordinances).
- Build a facility that employs up to 310 full-time employees.

2.5 CTC – Square Footage Allotment and Details

Research and Development:
The Proposed Project would include approximately 21,200 square feet of research and development (R&D) space, with separate areas dedicated to manufacturing facilities for creating infused products, control equipment, testing laboratories (for internal testing only), R&D laboratories, a training center, a warehouse, and corporate administration. The R&D building also would include an 11,200 square feet employee lounge, break facility, and food service facilities

Distribution and Warehousing:
Once CTC's products have been tested by an off-site, third-party laboratory in accordance with California Department of Cannabis Control (DCC) regulations and are deemed ready for sale, they will be moved from the processing facilities to an approximately 304,000-square-foot distribution and warehouse facility. This facility may be operated by Pomona Rio Properties LLC or by a separate, fully licensed distribution company.

The distribution and warehouse facilities would consist of 304,000 square feet of space for distribution and warehousing activities across all 10 structures, 71,600 square feet for administration, and additional employee lounge/food service facilities. This facility would serve as a distribution center where orders would be filled, packed, and shipped. Orders would be pre-sorted based on delivery location to minimize the need for multiple truck pick-ups throughout the day and reduce traffic congestion. The distribution center would rely on local staffing and provide employment opportunities throughout the city and county. The facility would initially operate on a single 8-hour shift, possibly extending to three shifts if required.

Any products not sold directly to the consumer would be made available to the regulated market and sold in bulk to distributors with the required local and state permits to purchase and transport cannabis products.

Manufacturing Facility:
The manufacturing facility would consist of approximately 42,400 square feet of manufacturing equipment, an internal testing laboratory, control equipment areas, and distribution activities. A portion of this facility would also contain administration space (record keeping, storage, office, break area, security etc.).

Nursery Facilities:
Ten metal structures would house nursery operations. They would include approximately 23,600 square feet of production and plant genetics R&D. The metal structures would provide space for plant incubation and strain/varietal development. A portion of this facility would also contain administration space (record keeping, storage, office, break area, security etc.).

Non-Storefront Retail (Delivery only) Facility:
The non-storefront retail (delivery only) facility would consist of 2,000 square feet. The non-storefront retail dispensary would be designed to meet the growing demand for convenient access to cannabis products while maintaining compliance with state and local regulations. This aspect of the Proposed Project aligns with the overall objectives of creating a comprehensive cannabis research and development facility that meets diverse market needs. A portion of this facility would also contain administration space (record keeping, storage, office, break area, security etc.).

The purpose of the non-storefront delivery operation is to provide a secure and efficient method for distributing cannabis products directly to consumers. The specific objectives include:

- **Customer Convenience:** Enhance accessibility for customers who prefer home delivery of cannabis products, particularly in underserved areas.

- **Compliance and Security:** Operate within the framework of California's cannabis delivery regulations, including robust security measures to ensure product safety and legal compliance.

- **Economic Contribution:** Generate additional revenue streams for the Proposed Project and create employment opportunities, contributing to the project's goal of employing up to 310 full-time employees.

The non-storefront delivery component will, feature the following:

- **Secure Storage:** A controlled-access area for storing inventory, compliant with state regulations regarding the storage of cannabis products.

- **Order Fulfillment**: A dedicated space for processing online and phone orders, including picking, packaging, and preparing products for delivery.

- **Delivery Dispatch Center**: A centralized dispatch area for managing delivery schedules and tracking delivery vehicles in real-time.

- **Fleet Management:** A fleet of vehicles equipped with GPS tracking, secure storage compartments, and real-time monitoring to ensure compliance and security during transit.

To minimize environmental impacts, the delivery operation will incorporate sustainable practices such as utilizing fuel-efficient or electric vehicles to reduce greenhouse gas emissions, implementing efficient routing software to optimize delivery routes and reduce vehicle miles traveled (VMT), and recycling packaging materials used for delivery orders to reduce waste.

The non-storefront delivery operation is expected to provide many community benefits. It will increase accessibility for customers with mobility challenges or those living in remote areas. It will reduce traffic and congestion compared to traditional retail storefronts. It will enhance tax revenue for the city through cannabis sales, which will benefit public services and infrastructure

Administration:
As indicated above, the administration facilities would be divided amongst ten structures: the manufacturing facility, the R&D facility, nursery facility, and the distribution/warehouse facility. Tables 2-1 provide estimated square footage associated with each specific operation.

Table 2.1

Total Net Useable Square Footage	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total Square Footage
Un-Usable Square ft. (Hallways/Bathrooms)	35,200	35,200	35,200	32,000	32,000	169,600
Cultivation	260,000	274,000	286,000	240,000	240,000	1,306,000
Processing/Trim	26,400	35,200	31,200	24,000	24,000	140,080
Administration	8,800	8,800	8,800	8,800	8,000	42,400
Manufacturing	8,800	8,800	8,800	8,800	8,000	42,400
Nursey	6,800	4,400	4,400	4,000	4,000	23,600
Sales/Marketing	6,800	8,800	8,800	8,000	8,000	40,400
Warehouse	39,200	34,000	22,000	32,000	32,000	159,200
Distribution	332,00	22,000	26,000	32,000	32,000	145,200
R&D	4,000	4,400	4,400	4,000	4,000	21,200
Foodservice	4,000	4,400	4,400	8,000	8,000	29,200
Totals	**440,000**	**440,000**	**440,000**	**400,000**	**400,000**	**2,120,000**

2.5.1 General Description of Regulated Cannabis Cultivation Process

This section provides an overview of the activities commonly associated with cannabis cultivation, regulated under the DCC. The DCC is the agency that licenses and regulates all commercial cannabis activity in California, including, but not limited to, commercial medical and adult-use cannabis cultivation and cannabis nursery cultivation and processing activities, which include trimming, drying, packaging, and labeling cannabis flowers.

The environmental impact assessment in Chapter 3, "Environmental Analysis," of this Initial Study/Mitigated Negative Declaration (IS/MND) evaluates these activities as they pertain to the Proposed Project unless stated otherwise. If the City approves the Proposed Project, the Colusa Triple Crown (CTC) will be required to obtain one or more cultivation licenses from the DCC to operate its cultivation facilities

2.5.2 Overview of Cultivation

Cannabis cultivation begins with selecting and planting cannabis cuttings or seeds. If possible, male seeds are separated from female seeds. If the male plants are not identified at the seed stage, they are typically removed later in the cultivation process before they mature. The cuttings or seeds are usually planted in pots filled with a growing medium, soil, or an inert substance used in hydroponics. Cultivators often prefer cuttings over seeds when they want to guarantee the plant's genetics and ensure the consistency of the cannabis product. After the plants have developed their first leaves and a root system that extends through the bottom of the growth medium, the cannabis plants are transplanted or repotted to larger pots, where they continue to grow in a vegetative stage (i.e., the period of growth between germination and flowering during which the plant has no observable flowers or buds).

During this stage, the plants receive both water and nutrients through compost teas made by steeping compost material in water, along with other amendments. They are exposed to natural or artificial light to maintain the vegetative stage, typically with 18 hours of daylight and 6 hours of darkness. Additionally, other climate conditions, such as temperature, humidity, and airflow, are often controlled to meet the plants' growth needs.

Once the plants develop a healthy root system, older leaves—identified by their pale green or yellow color—can be selectively pruned. This helps improve airflow, reduce shading, increase light penetration, and allow the plants to focus their energy on new leaves rather than the removed older ones. Pest monitoring and, if necessary, pest management activities occur throughout the cultivation period. The DCC and the California Department of Pesticide Regulation (CDPR) regulate the types of pesticides, rodenticides, and herbicides that may be applied to cannabis plants in the cultivation process and regulate the methods by which these chemicals are used.

Once plants reach a desirable size, they are transitioned to the flowering phase either as a result of natural changes in the period of light (photoperiod) for outdoor cultivation or by altering the light pattern so that the plants are exposed to 12 hours of light and 12 hours of darkness (for indoor or mixed-light cultivation). In approximately 6-14 weeks, the flowers will ripen and be ready for harvesting

2.5.3 – Nursey Cultivation

Nurseries produce only clones, immature plants, seeds, and other agricultural products used specifically for the propagation and cultivation of cannabis. Nurseries maintain plants in their vegetative stage, the period of growth between germination and flowering, during which the plant has no observable flowers or buds. During this stage, plants focus on photosynthesis and accumulating resources needed for flowering and reproduction. While some nurseries propagate from seed, most create clones by taking cuttings from "mother plants." Nurseries may also produce seeds from mature plants. Nursery operations may be entirely indoors or use a combination of outdoor, indoor, and mixed-light techniques; for the Proposed Project, nursery operations would occur entirely indoors in processing facilities under mixed-light conditions.

The nursery cultivation process generally involves the following steps:

1. **Preparing cutting materials and growth medium** includes sterilizing the tools used to remove the cuttings (e.g., razors, or sharp scissors) to reduce the possibility of fungi, viruses, or diseases affecting the cuttings and presoaking the growing medium in pH-balanced water.

2. **Taking cuttings from the mother plant** involves selecting branch tips that have at least three nodes (areas where the leaves come out of an individual stem), cutting off one or two leaves at the nodes (farthest from the branch tip), and making a cut at an approximately 45-degree angle (approximately 0.25 inch below the last node). Branch tips selected typically range from 2 to 6 inches in length.

3. **Treating and planting the cuttings** may involve applying a rooting product (gel or powder) to the cutting tip to stimulate root growth. The cutting is then gently placed in the growth medium (typically rock wool cubes, but possibly other media such as a mix of perlite and peat moss), and multiple cuttings are placed in a plastic tray. Some cultivators may use a layer of perlite between the tray and the growing medium to allow space for roots to grow once they emerge from the growth medium. Metal shelving units can be used to hold multiple trays at one time.

4. **Growing the cuttings until roots are well established** involves daily adjustments to lighting, temperature, and moisture. Once all cuttings and their growth medium have been placed on a tray, the cuttings and (when used) the inside of a humidity dome are misted with water, and the humidity dome is placed over the tray. To ensure ideal climate conditions for the cuttings, they are kept at a temperature range of approximately 72-80 degrees Fahrenheit and remain covered, apart from removing the humidity dome temporarily two to three times each day to mist the cuttings and allow fresh air under the dome. The cuttings are watered to prevent the growth medium from drying out. For faster root development, heating pads can be placed underneath the trays as long as the temperatures are maintained in the ideal range. The cuttings are typically exposed to bright, but not intense, light for approximately 18-24 hours daily. Fluorescent lighting can be placed within a few inches of the cannabis plants, or more intense lighting can be used if placed farther away from the plants (2-6 feet, depending on bulb wattage).

5. **Preparing the rooted cuttings for transport and distribution** is the final step in the cultivation process. Once the cuttings have established roots, a quality assurance/quality control check is completed to verify the plant's health, check for the presence of established roots, and inspect for pests. The checked final cuttings are then placed in transport containers for distribution. Nurseries typically distribute plants within two to three days of roots becoming established, although some facilities have reported holding plants for several weeks to meet client needs. Once plants are available for distribution, they are generally provided to retail dispensaries or directly to cannabis cultivators.

The total length of time between planting cutting and distribution of a rooted cannabis plant is approximately 10 days to 3 weeks. Seed production would take a duration similar to the length of time used to cultivate for flowers, which varies based on the technique (as discussed above). In addition to the plant propagation activities described above, nurseries within the Proposed Project may research cannabis

plants. As an example, researchers may conduct projects and tests related to developing plant types with specific genetic properties.

2.5.4 – Applicable State and Local Regulations

Cannabis cultivation is regulated by the DCC, under the authority of the Medicinal and Adult Use Cannabis Regulation and Safety Act (MAUCRSA). The DCC last updated MAUCRSA as of July 2024. In July 2021, the three previously existing state cannabis regulatory agencies, the Bureau of Cannabis Control, California Department of Food and Agriculture's CalCannabis Cultivation Licensing Division, and California Department of Public Health's Manufactured Cannabis Safety Branch, merged and formed Department of Cannabis Control (DCC). DCC now licenses, inspects, and regulates all cannabis activity in California. DCC is no longer accepting provisional license applications. As of June 30, 2022, DCC only accepts annual license applications. All annual license applications must provide the adequate CEQA documents as required by DCC. If the City approves the Proposed Project, CTC would be required to obtain one or more cultivation licenses from DCC to operate cultivation facilities.

In November 2017, CDFA certified a Program EIR (PEIR) for the CalCannabis Cultivation Licensing Program (CDFA 2017). The CalCannabis Cultivation Licensing is now part of the merged cannabis license agency, the DCC. The PEIR analyzed the environmental impacts of approving cannabis cultivation licenses in accordance with the emergency regulations. As described in Chapter 1, Introduction, this IS/MND is tiered from the PEIR and evaluates only those environmental impacts not fully addressed in that document.

On May 16, 2017, the City of Colusa passed Ordinance 519, adding Chapter 12F to the City of Colusa Municipal Code and amending the city zoning code to permit and regulate certain cannabis businesses. Ordinance 519 allows cannabis manufacturing businesses to operate within specific zoning districts following City approval of a Special Use Permit, a Regulatory Permit, and all other required state licenses. Cannabis manufacturing facilities, under the City's ordinance, may manufacture cannabis products, cultivate cannabis, and test, distribute, and transport cannabis and cannabis products. Before conducting cultivation activities, CTC would be required to obtain a cannabis manufacturing facility regulatory permit and a cannabis manufacturing particular use permit from the City.

2.6 General Description of Regulated Cannabis Distribution and Manufacturing Operations

This section provides an overview of the types of activities typically associated with cannabis business operations as regulated by the DCC. Cannabis distribution includes storing, labeling, transporting, and ensuring the testing of cannabis and manufactured cannabis products. Cannabis manufacturing activities include the extraction or infusion of cannabis compounds and the manufacture of such extractions or infusions into consumer products. The DCC must license cannabis distributors and cannabis manufacturers. The environmental impact evaluation in Chapter 3, Environmental Analysis, of this IS/MND addresses these activities as they apply to the Proposed Project unless otherwise indicated.

2.6.1 Distribution

Under MAUCRSA, licensed cannabis cultivators and manufacturers are required to send cannabis and cannabis products to a licensed distributor before retail sale. The distributor is responsible for ensuring the testing of representative samples of the products by a licensed third-party testing laboratory. Distributors must store batches of cannabis or cannabis products while samples from those batches are being tested. Distributors may also store, destroy, and label or relabel cannabis and cannabis products at their licensed facilities, act as product wholesalers, and transport cannabis and cannabis products to or from other licensed cannabis businesses. If the City approves the Proposed Project, CTC will be required to obtain one or more distribution licenses from DCC to operate distribution facilities.

2.6.2 Manufacturing

Manufacturing cannabis products requires cannabis compounds to be extracted from the cannabis plant. Extraction is a process by which cannabinoids are separated from cannabis plant material through chemical or physical means. Extraction may include using volatile solvents, nonvolatile solvents, other nonvolatile substances, or mechanical extractions (e.g., pressure, agitation, or sifting techniques). Some of these processes are described below.

Carbon dioxide (CO2) extractions. Manufacturers are required to use professional closed-loop extraction systems for all CO2 extractions. The closed-loop system is required because CO2 can also build up, posing a risk of asphyxiation to personnel and bystanders. Closed-loop systems are designed to mitigate these risks.

- **Fractional distillation.** Using heat to vaporize cannabinoids, bringing the vapor into a cooling system for consolidation and eventual collection into beakers.

- **Mechanical extractions**. This may include sifting cannabis products with a screen or pressing them in a press. Mechanical extractions may produce consumable products such as kief, hash, or rosin.

- **Chemical extraction using a nonvolatile solvent.** This technique involves water, vegetable glycerin, vegetable oils, animal fats, or food-grade glycerin.

- **Infusion.** Infusion is a process by which cannabis, cannabinoids, cannabis concentrates, or manufactured cannabis are directly incorporated into a product formulation to produce a cannabis product.

Manufacturing activities may also include the formulation of consumer products using cannabis extractions or infusions described above. Such products may consist of the following:

- **Vape Pens.** Vaporizer pens, or vape pens, are similar to electronic cigarettes. These devices contain a battery-powered heating element that vaporizes a liquid form of concentrated cannabis oil.

- **Edible Products**. Cannabis can be used in various food products or edibles, such as candies, cookies, pretzels, pasta, butter, soda, infused juices, salad dressing, barbecue sauce, and corn chips. Large-scale manufacturers often use steam distillers and/or supercritical CO2 extractors to produce edible oil. Small- and medium-scale producers of edibles, especially bakers, usually infuse butter, coconut oil, olive oil, or other common cooking fats with cannabis.

- **Tinctures.** Tinctures are made from cannabis trim, leaves, and/or flowers soaked in alcohol and/or glycol or vegetable glycerin. Carbon filters are often used to remove chlorophyll from the finished product. Home and commercial-grade distillation units use water or alcohol to remove cannabinoids, producing concentrated cannabis oil. Many tinctures are infused with common herbs (e.g. lavender, basil, rose petals, and mint) and are sold in small bottles.

- **Topical Products.** Topical products, or topicals, are cannabis-infused lotions, salves, sprays, balms, and oils applied to the skin. They can be made similarly to edibles. Manufacturers infuse cannabis into olive, canola, grapeseed, or coconut oil and blend it with other ingredients, such as botanical extracts and essential oils, to create the final product.

Cannabis manufacturing activities may also include research and development related to the manufacture of cannabis products. Employees may test different extraction processes, such as shifting, pressing, or agitation techniques. In addition, the facility would be used to develop infused product types, including

topical and edible products. A testing laboratory would conduct internal testing for product composition and potency. If the City approves the Proposed Project, CTC would be required to obtain one or more manufacturing licenses from DCC to operate the manufacturing facilities.

2.6.3 Applicable State and Local Regulations

The DCC regulates cannabis distribution under the provisions of MAUCRSA. If the City approves the Proposed Project, CTC must obtain a distributor license from DCCBCC. As stated above, CTC must obtain one or more cultivation licenses from CDFA to operate cultivation facilities.

In November 2017, BCC certified an initial study/negative declaration (IS/ND) for its regulations (BCC 2017). That IS/ND analyzed the environmental impacts of approving cannabis business licenses under the emergency regulations. This IS/MND incorporates relevant portions of the analysis from that document.

As specified in MAUCRSA, DCC regulates cannabis manufacturing activities. If the City approves the Proposed Project, CTC would be required to obtain a manufacturing license from DCC.

CTC must obtain a cannabis manufacturing regulatory permit and a special use permit from the city before operating a cannabis manufacturing facility.

2.7 CTCC – Other Site-Specific Improvements

The project site has established access to utilities, including water, sewer, electricity, and communication infrastructure. The proposed project facilities will connect underground high-pressure natural gas lines at the end of Wills Green. Overhead electrical lines on the site are linked to the existing power grid and will provide electricity for the site. A list of anticipated utility service agencies supporting the proposed project are noted below.

Table 2.2

Utility Services	Provider
Water Supply	City of Colusa
Sanitary Sewer	City of Colusa
Electrical Services	Pacific Gas & Electric (PG&E)
Natural Gas	PG&E
Fire Protection Services	City of Colusa
Police Protection Services	City of Colusa

Water System: The proposed project will rely on three water sources: an existing agricultural well for agricultural water supply, city water from an 8-inch water line on the site, and Title 24 effluent water from the city's wastewater plant for irrigation purposes (purple pipe). The well has a capacity of 2,450 gallons per minute. Based on water use estimates (discussed below), operating the well for approximately 5 to 6 hours daily will meet the Proposed Project's needs. Before use, the irrigation water will be treated with a UV (RO) disinfection system. Dissolved fertilizers will be mixed with the irrigation water before being applied to crops. Any excess irrigation water will be reclaimed and recycled using UV disinfection. Cannabis operations will utilize purple pipe water, which will be provided to the site at 1,500 to 2,000 gallons per minute from the abutting WWTP. Water for restrooms, sinks, drinking etc. will utilize city domestic water supplies.

The Proposed Project will utilize the City's domestic water supply system for various purposes, including cafeteria and restroom facilities. It will connect to the existing 8-inch main line on the site's north side. A new 4-inch water main will be installed from Will S. Green Road to the project site to ensure a reliable

domestic water supply for all operations. All domestic water services will be metered, with water meters installed on each service, meeting the approval of the City Engineer. Fire hydrants will be installed per applicable regulations. Furthermore, in compliance with the City of Colusa's Cross Connection Control Program, the applicant must maintain an approved backflow prevention assembly that adheres to the City of Colusa's Public Improvement Standards and Construction Standards.

Water Use: The irrigation system will be supplied by one of three sources: an existing agricultural well on the site, an 8-inch connection, or recycled water from the City's Title 24 effluent. A comprehensive water recycling system will be installed to capture and reuse water from cultivation and nursery operations. Table 2.3 provides estimated peak water usage for cultivation (organized by phase) and nursery operations. Once water capacity for the cannabis operation is reached, the hydroponic systems will utilize reverse osmosis (RO), which is a purified water that has been passed through a semipermeable membrane, removing most dissolved materials, salts and other impurities. The RO system results in limited ongoing water demand for the plants and results in highly purified water, which is beneficial for hydroponic systems as it allows growers to precisely control the nutrients solution's composition leading to optimal plant growth.

Table 2.3

Facility/Phase	Cultivation Square Footage including Nursery	Number of Plants	Average Water-Use Per Plant (gpd)	Daily Water Requirements (gpd) NO reverse Osmosis	Daily Water Requirements (gpd) Reverse osmosis	Daily Discharge Per Plant (gpd)	Daily Water Discharge (gpd)
Building One	148,000	74,400	0.6	44,640	133,920	0.015	670
Building Two	124,000	62,000	0.6	37,200	111,600	0.015	558
Building Three	158,400	79,200	0.6	47,520	142,560	0.015	713
Building Four	132,000	66,000	0.6	39,600	118,800	0.015	594
Building Five	158,400	79,200	0.6	47,520	142,560	0.015	713
Building Six	132,000	66,000	0.6	39,600	118,800	0.015	594
Building Seven	122,000	61,000	0.6	36,600	109,800	0.015	549
Building Eight	122,000	61,000	0.6	36,600	109,800	0.015	549
Building Nine	122,000	61,000	0.6	36,600	109,800	0.015	549
Building Ten	120,000	60,000	0.6	36,000	109,800	0.015	549
Total Cultivation	1,341,600	670,800	-	402,480	1,207,440	-	6,037

For building number one, the startup operations and the cultivation facility, including the nursery, would require approximately 44,640 gallons utilizing the City's affluent available water. Once these facilities are operational, the daily water requirements for the cultivation facility, including the nursery, would be around 44,640 gallons. The recycled water system is expected to reclaim about 98% of this daily usage, amounting to 43,740 gallons and 670 gallons, respectively. Discharge will go to the abutting WWTP to the east.

At complete build-out and during peak water consumption, especially in the summer months, the cultivation facility, including the nursery, is expected to use 402,480 gallons per day. Additionally, domestic water usage is projected to be approximately 8,500 gallons daily.

Plants in production will be watered using a closed-loop fertigation drip irrigation system, which integrates plant nutrients into the watering process. Recycled water will undergo pretreatment with ultraviolet (UV)

disinfection to prevent the spread of pathogens. The bicarbonate content will be monitored to maintain stable pH levels, ensuring plants can efficiently absorb the fertilizer.

Sewer System: The Proposed Project will include installing and maintaining a pressure sewer system connected to the City's existing sewer infrastructure. Small-diameter pipes and grinder pumps will be installed at each connection location. The grinder pump station will collect all wastewater from the facility and grind it into a slurry. This slurry will then be pumped to the existing main at the site's north end. Communication lines (i.e., for telephone, cable, and Internet) would be installed underground along Wills Green Road and tie into the site and the City of Colusa wastewater plant.

Stormwater Drainage: The site plan includes approximately 45.61 acres (1,986,646 square feet) of impervious surfaces. The remaining 40.4 acres (1,760,256 square feet) will be pervious, featuring graveled parking areas and landscaping. The proposed drainage system for the Project will connect to the City's existing 10-inch line, which runs along both the west and east sides of the site. The Project will be linked to the existing city drainage system, designed to serve the spray fields for discharging effluent water. These spray fields are the 509 acres owned by the City that immediately surround the Project site to the south and east.

CTC will rely on the City's existing drainage system. A drainage plan must be prepared by a registered civil engineer and approved by the city engineer. This plan will outline the ultimate buildout of the development, and any interim drainage plans that serve the entire project area or portions of it related to the phased development improvements. The drainage plan will identify specific storm drainage design features to manage increased runoff from the project site. The drainage plan will be developed at the same time as improvement plans (grading, infrastructure, building submittal documents/plans, energy calculations, etc.) as it is industry practice that such details are provided after approval and before construction. Such stormwater drainage plans must also demonstrate how the proposed storm drainage system effectively prevents adverse impacts on existing downstream facilities and mitigates flooding at off-site locations. Additionally, considerations for site access and circulation must be addressed.

The main entrance and exit for the CTC business park for all employees and deliveries would be on Will S. Green Road via a connection from Highway 20. The Proposed Project would improve the existing road section by adding a 2-inch overlay of asphalt 24 ft wide to control dust.

All roads within the CTC business park would be private and maintained by the property owners. The Proposed Project would provide an emergency access road for local public service providers extending through the site from the main site entrance off Will S. Green Road and circulating the site.

The parking area would be all-weather, graveled, and permeable. It would be 226,646 square feet, or sufficient space to provide approximately 220 standard parking spaces to accommodate the largest shift of employees. The proposed project would provide sufficient parking to accommodate the buildout of 310 employees plus visitors.

Operational Elements: Other site elements of the Proposed Project that would support the operations of the CTC business park are described as follows:

Staffing: The Proposed Project will employ up to 310 individuals. To ensure adequate security and operational support, the facilities will be staffed 24 hours a day, 7 days a week, with employees working in shifts. The CTC business park will follow a three-shift schedule, with a higher staff concentration between 7 a.m. and 6 p.m. During these hours, administration, research staff, delivery workers, operations staff, and security personnel will be on-site. The shift schedule and the number of employees will be as follows

- Morning shift: 6 a.m.-2 p.m. with 210-240 employees.
- Afternoon shift: 2 p.m.-10 p.m. with 60-80 employees
- Night shift: 10 p.m.-7 a.m. with 20-40 employees.

Deliveries: The Proposed Project's operation will require regular shipments of cultivation, manufacturing, and maintenance equipment and materials. This includes items such as soil and soil amendments, fertilizers, chemicals, fuel, office supplies, and other necessary equipment. Additionally, hazardous materials generated on-site will be disposed of on-site. The facility will also dispatch regular deliveries of its products.

Hazardous materials stored on-sitesuch as used oils, fuels, pesticides, and chemicals used for testing and research—will be transported to a local hazardous waste facility for disposal or recycling approximately every three months.

Hazardous Materials Storage: Hazardous materials, including fertilizers, pesticides, and fuels, would be stored in dedicated hazardous materials storage rooms within each building. Each room would be about 1,000 square feet per building.

Loading Bays: The site plan designates four areas for loading and unloading materials. The loading areas would be all-weather gravel, unpaved, and permeable.

Emergency Backup Generators: Each cultivation greenhouse/processing building would be powered with electric power via a connection to overhead power lines operated by Pacific Gas & Electric Company (PG&E). Each building would have an electrical room measuring 150 square feet, containing a transfer switch for a hookup to an emergency generator..

Photovoltaic System: Each structure will contain a photovoltaic (PV) solar system and battery energy storage system (BESS) to help offset energy demands. The California Energy Commission, through the California Building Code, requires PV solar energy systems to have a minimum design to offset the annual electrical consumption of the proposed building. The system size is determined by several factors including each buildings conditioned floor area, Solar Access Roof Area (SARA), which is the available roof area that receives at least 70% solar throughout the year and not obstructed by shade or roof equipment.
Landscaping and Irrigation: The Proposed Project would include landscaping that requires minimal maintenance and an automatic irrigation system. The landscaping would meet the state's definition of water-efficient landscaping, as defined in Title 23 (23 CCR Section 490 et seq.).

Ancillary Improvements

Fencing: The entire perimeter of the project area would be surrounded by security fencing, which may include one or more strands of barbed wire or steel spikes at the top. Secure, passcode-protected steel sliding gates would be installed at vehicle and pedestrian entrances to the site to prevent unauthorized entry into the facility.

Security Lighting: Exterior lighting will be installed throughout the site for safety and security purposes. Lighting would be located around the site and along the site perimeter under state and local security protocols but would be directed downward to minimize off-site glare. Lighting will be placed both on the structures and on 50-foot-tall poles.

Security Cameras: Security cameras would be mounted around the facility's perimeter to monitor all activity in and around it, prevent unauthorized entry, and deter potential criminal activity.

Levee System: A man-made flood control structure (an earthen embankment) would be constructed around the perimeter of the project site that would be designed to contain, control or overall reduce flood risk.. Will S. Green Road, which accesses the site from the north, will slowly rise in elevation, starting approximately at the abandoned railroad tracks which cross the road in a north-south manner. As this gravel road heads south, its elevation will increase to the levee height. As Will S. Green Road turns to the west towards the WWTP, it will be at final levee height and connect to the existing levee that currently surrounds the WWTP. This portion of the levee system will be jointly owned and maintained by the City and the CTC operator, pursuant to a future maintenance agreement. CTC will then connect a new levee along the eastern and southern property around it's project site. The southwest conner will then connect to the WWTP site, allowing the entire CTC property to be fully surrounded by a levee system. The system would be designed in a manner to allow rainwater to drain in compliance with the California State Water Resources Control Board (pre- and post-construction requirements).

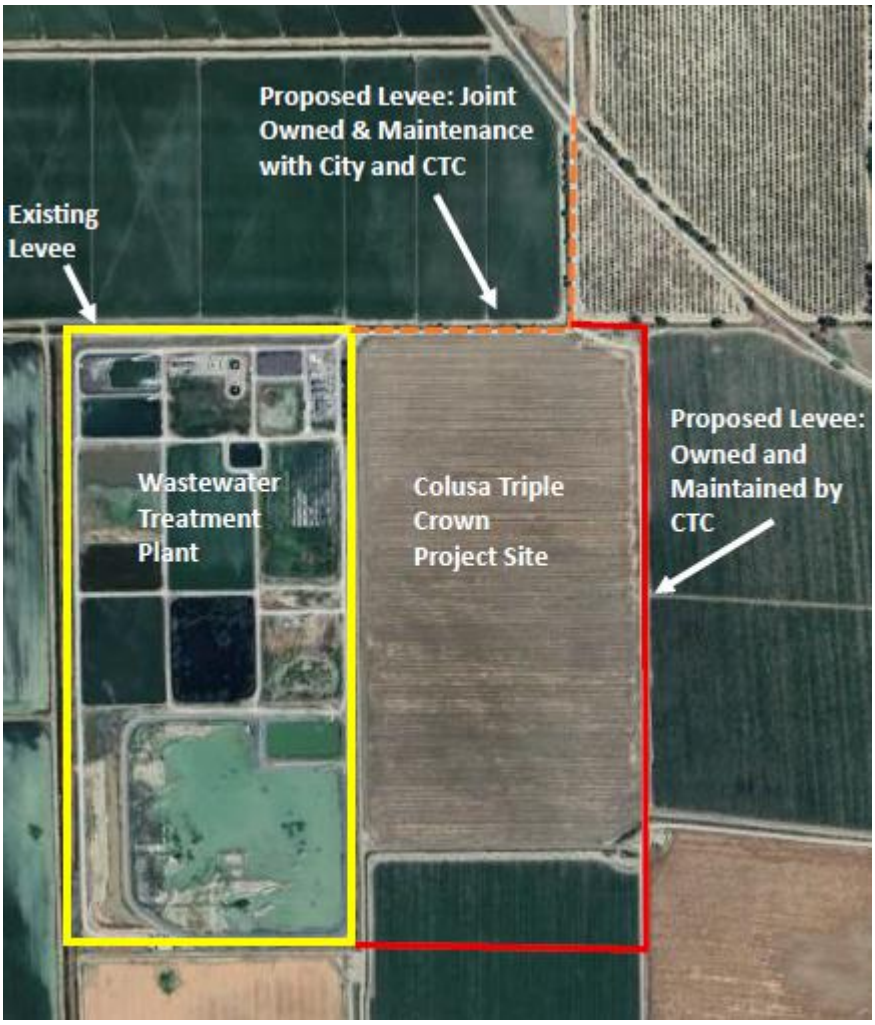
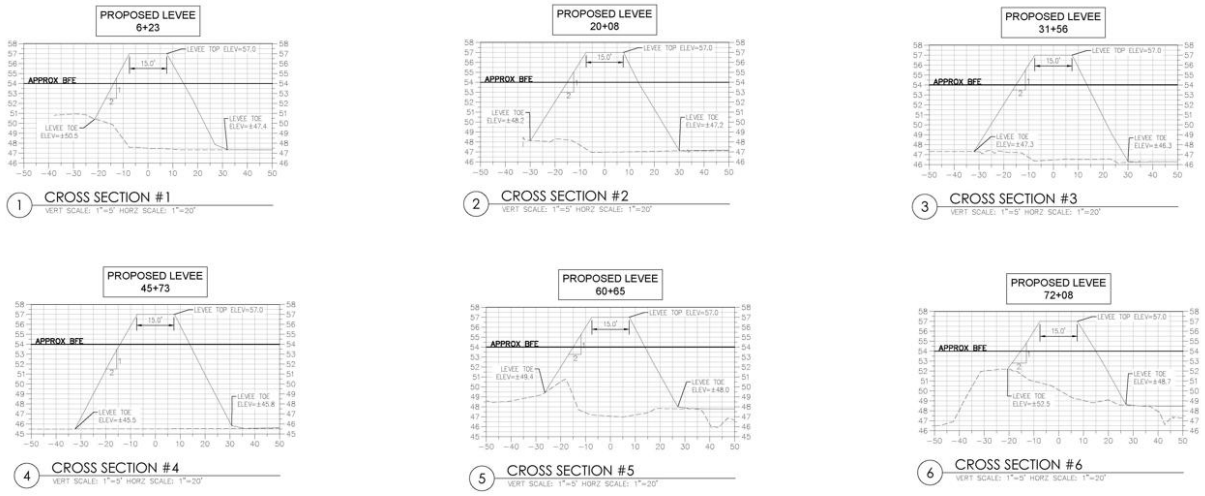


Illustration of existing levee systems around the WWTP and new areas of levee systems which also illustrate ownership and maintenance responsibilities.



Levee Cross Sections: Illustrating Base Flood Elevations (BFE) and the proposed finish height of the levee.

2.8 Construction Activities

Construction activities pertain to the physical altering and modification of the land. It includes staging, site preparation, and earthwork. The activities also include the physical construction of improvements, including those placed underground (power, sewer, storm drain) as well as structures and support facilities.

2.8.1 Construction Methods

Site Preparation and Earthwork: Site preparation would include clearing and grubbing; grading, excavation, import, and placement of fill; and compaction. Clearing and grubbing would be conducted with standard excavators, scrapers, graders, bulldozers, and hand labor.

Excavated soil may be reused on-site whenever feasible. It is anticipated that approximately thirty trips will occur daily during the construction of the parking areas and other gravel sections. The site will be designed to balance cut and fill, and no soil will be imported for fill purposes. Instead, materials will be delivered as needed for backfilling utility trenches, and gravel will also be brought to the site.

Most initial sitework for all phases will occur in Phase 1, including mass grading, utility installation, and the initial road improvements and paving. All building pads and roads will be cut and compacted throughout the site during this phase. This phase will involve the extensive use of heavy equipment, such as scrapers, graders, compactors, water trucks, excavators, and transfer trucks for sand, gravel, and asphalt.

Buildings, Structures, and Utilities: The ten structures will be premanufactured off-site, delivered, and assembled on-site. Construction of buildings and structures would include the following activities:

- delivery and assembly of premanufactured structures;
- installation of electrical/instrumentation equipment; and
- installation of mechanical equipment and piping.

Construction would consist of assembling the buildings on site over approximately eight months during each phase. Construction equipment would include concrete trucks for pad construction, flat-bed trucks with a truss crane for delivery, and small trucks and forklifts for assembly and finishing. Drainage, water supply, and wastewater pipelines would be installed in open trenches, typically using conventional cut-and-cover construction techniques. Power lines would remain above ground

2.8.2 Construction Equipment

For phase one, it is anticipated that approximately 15 construction workers would commute to and from the project site daily over the a 6-month period. Full buildout will span between 5 and 8 years, depending upon market conditions. The main pieces of equipment that may be used are:

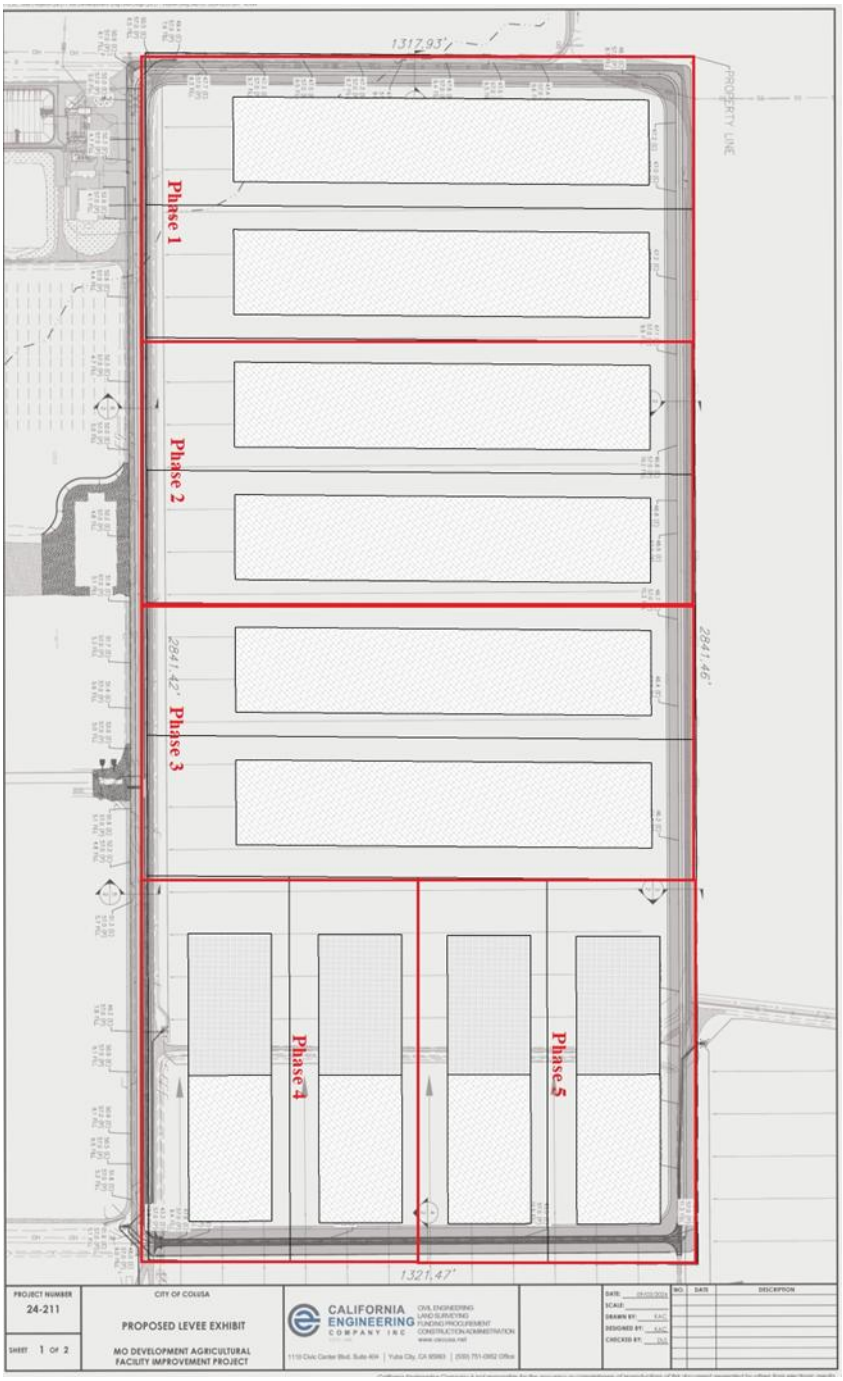
Track mounted excavator
Small crane
End dump truck
Scrapers
Flat bed delivery truck
Concrete truck
Grader
Bulldozer
Backhoe
Compactor
Front-end loader
Water truck
Forklift
Compressor/jackhammer
Mowing equipment (weed eater, lawnmower)

Table 2.3 Construction Equipment by Stage

Stage	Construction Equipment		Duration
Demolition	2 truck (off-hauling, 8 to 12 round trips per day)		2 Weeks
Site Preparation	3 Scrapers 2 Graders 2 Dozers	2 Loaders 2 Water Trucks Several small work trucks	30 Days
Road Construction and Graveling	2 Graders 2 Dozers	2 Water Trucks	2 Months
	6 - 8 round trips per day (truck transferring material to site)		30 Days
Paving	1 Paver 2 Rollers 6 - 8 round trips per day (trucks transferring material to site)	1 Oil Truck	1 Week
Utilities	2 Excavators 2 Backhoes	1 Water Truck	30 Days
	6 - 8 round trips per day (trucks transferring material to site)		

2.8.3 Construction Scheduling and Phasing

Construction of the Proposed Project is anticipated to take place in phases lasting approximately ten months each over approximately eight years, once all necessary approvals and permits have been secured. Construction phasing is described and depicted below:



Construction activities would occur Monday through Friday between 7:00 a.m. and 7:00 p.m. The city may permit work on Saturdays, Sundays, and state holidays in accordance with their Municipal Code.

2.9 Permit and Approvals

CEQA defines a responsible agency as "a public agency, other than the lead agency, which has responsibility for carrying out or approving a project" (Public Resources Code Section 21069). A trustee agency is "a state agency that has jurisdiction by law over natural resources affected by a project, that are held in trust for the people of the State of California" (Pub. Res. Code Section 21070). The California

Department of Fish and Wildlife, North Central Region, is considered a trustee agency for the Proposed Project. The agencies responsible for the proposed project are the Department of Cannabis Control (DCC), California Department of Transportation (Caltrans), Central Valley Regional Water Quality Control Board, Colusa County Air Pollution Control District, and Colusa County.

The Proposed Project would require permits and/or approval from several state and local regulatory agencies. The permitting agency describes the licenses and regulatory compliance requirements for the Proposed Project in Table 2 4.

Table 2-4 Applicable Permit and Regulatory Requirements

Regulatory Agency	Law/Regulations	Purpose	Permit/Authorization Type
Department of Cannabis Control	Medical and Adult-Use Cannabis Regulations and Safety Act (MAUCRSA)	State licensing of commercial cannabis cultivation	Cannabis Cultivation License
Department of Cannabis Control	MAUCRSA	State licensing of commercial cannabis distribution and transportation	Cannabis Distribution License
Department of Cannabis Control	MAUCRSA	State licensing of commercial cannabis manufacturing	Cannabis Manufacturing License
California Department of Fish and Wildlife	1602 Lake and Streambed Alteration Agreement	State licensing of commercial cannabis manufacturing	Cannabis operators must provide documentation of compliance1602 Lake and Streambed Alternation
Central Valley Regional Water Quality Control Board	Clean Water Act Section 402	National Pollutant Discharge Elimination System (NPDES) program regulates discharge of pollutants	NPDES General Permit Construction Permit
Central Valley Regional Water Quality Control Board	Nonpoint Source Pollution Control Program	Regulates discharge of pollutants into surface waters	Section 401 water quality certification
California Department of Fish and Wildlife – North Central Region	California Endangered Species Act (CESA) (Fish and Game Code Section 2081 [b])	Regulates “take” of species listed under CESA as threatened or endangered	Incidental Take Permit, if necessary
Colusa County Air Pollution Control District	Regulations 3, Permits, Rule 3.1, Permits Required	Stationary Source Permit for Emergency Generator, Refueling Station, Storage Tanks	Permit to Construct and Permit to Operate (for generators or pumps if larger than 50 horsepower)
California Department of Transportation	N/A	Potential encroachment into right-of-way	Encroachment Permit, if necessary

City of Colusa	Tentative Map, Development Agreement, General Plan Amendment, Rezone and Annexation	Establish requirements related to building, landscaping, and other construction- and design-related activities; establish sewer connections and drainage plans; establish water supply	Special Use Permit; Building (including grading), Electrical, Plumbing, and Mechanical Permits; Landscaping and Erosion Control Requirements; construction permits
Colusa County Local Area Formation Commission (LAFCo)	Annexation	Regulatory agency that oversees boundaries and is responsible for their changes, including annexations, detachments, incorporations and consolidations.	Annexation to City of Colusa and detachment from Sacramento River Fire Protection District
Colusa County Airport Land Use Commission	Colusa County Airport Land Use Compatibility Plan (ALUCP)	A responsible agency that governs the land around airports to ensure safety and compatibility between the airport and proposed development.	Consistency review was completed and the project was found consistent by the ALUC on November 17th, 2025

3. PROJECT SETTING AND LOCATION

Wastewater Treatment Plant
This location consists of two distinct subsections, one being the Brookins Ranch (161.73± acres) and the other being active agricultural property owned (509.92± acres) by the City of Colusa that abuts the Wastewater Control Plant. These properties total 12 parcels and consist of an additional 17.78± acres of public right-of-way which are also proposed to be annexed as part of these project.

Brookins Ranch is a vacant site located on the southwest boundary of the City of Colusa. It is bounded on the west by Will S. Green Avenue, on the north by Colusa high School, on the east by Tennant Estate Subdivision (approximately one-quarter mile west of Wescott Road), and on the south by the old railroad right-of-way Pursuant to the General Plan, the site contains farm buildings along with a single-family residence and an active orchard.

The topography of the site is flat at an elevation of 47± feet above mean sea level. Most of the property has been farmed in the past. All existing structures and associated improvements, such as well heads are proposed to stay on site at this time. No demolition nor build-out are proposed currently. The property is designated Low Density on the General Plan diagram and is prezoned R-1 Single Family Residential.

Wastewater Treatment Plant (WWTP) is property directly east and south of the existing WWTP that is owned by the City of Colusa. This property is bound by the WWTP on the west, agricultural lands on the south, a section of Wescott Road that is currently gravel and the Brookins Ranch property to the north.

The topography of the site is flat at an elevation that ranges from 41 to 47± feet above mean sea level. The property is currently farmed via a lease agreement with the City. The site is routinely tilled, mowed and harvested. Irrigation ditches are located throughout the City property, typically located along the edges of and in between parcels. The boundaries of all the city owned land will be designated Agricultural on the General Plan diagram and will be in the AG – Agricultural Land zoning district.

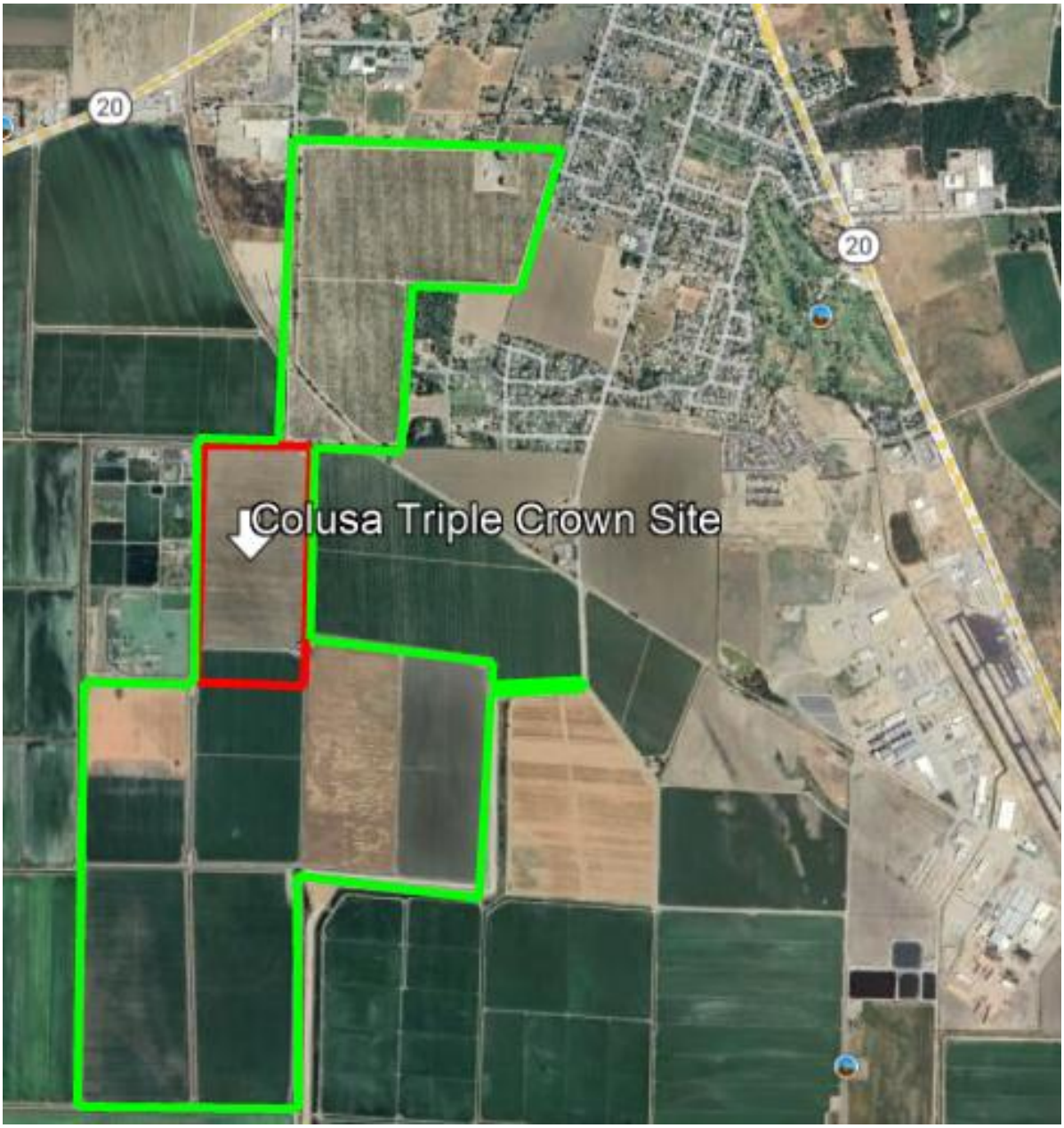
The subject parcel identified as Assessor Parcel Number 017-020-026, which abuts the WWTP directly to the west is the subject site in which CTC facility and operation is proposed to occupy. This parcel is approximately 116.98 acres in size. CTC is proposing to operate on the northern 88.97± acres.

Both the Brookins Ranch and the city owned lands are located in a FEMA Flood zone (Panel 06011C0535G and 06011C0550G, effective 3/27/2024) without a Base Flood Elevation.

Existing Parcels:

017-020-024	64.59
017-020-025	83.94
017-020-026	116.98
017-020-027	116.07
017-030-079	57.08
017-030-080	70.04
015-130-128	4.34
015-130-129	155.49
015-130-068	0.33
015-130-082	0.22
Total	669.07

FIGURE 1 – LOCATION AERIAL



Annexation Boundary highlighted in Green. Colusa Triple Crown project Site Highlighted in Red

FIGURE 2 – COLUSA TRIPLE CROWN ELEVATIONS



FIGURE 3 – COLUSA TRIPLE CROWN SITE PLAN

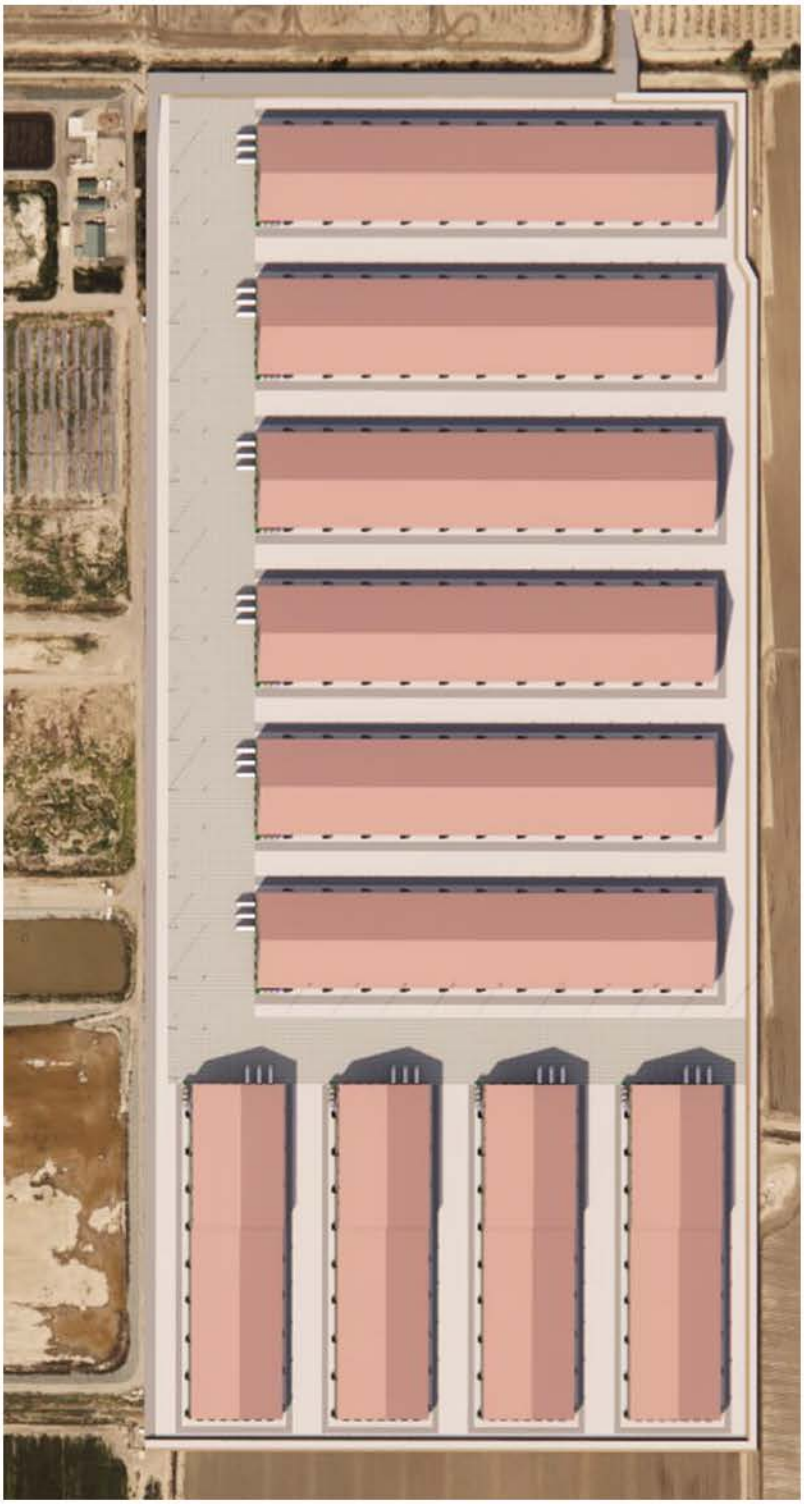


FIGURE 4 – ADDITIONAL POINTS OF ACCESS

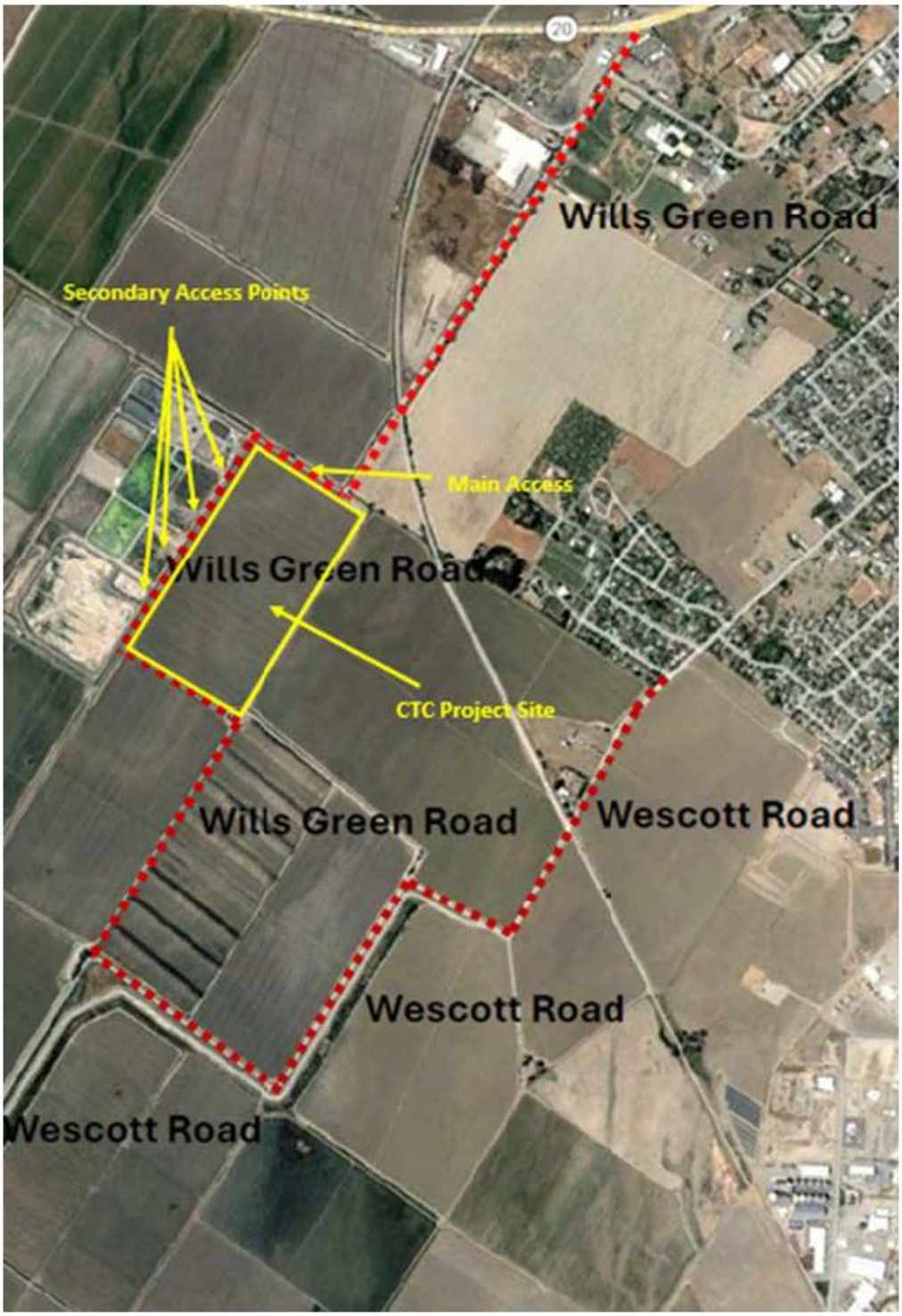


FIGURE 5 - PROPOSED TENTATAIVE SUBDIVSION MAP

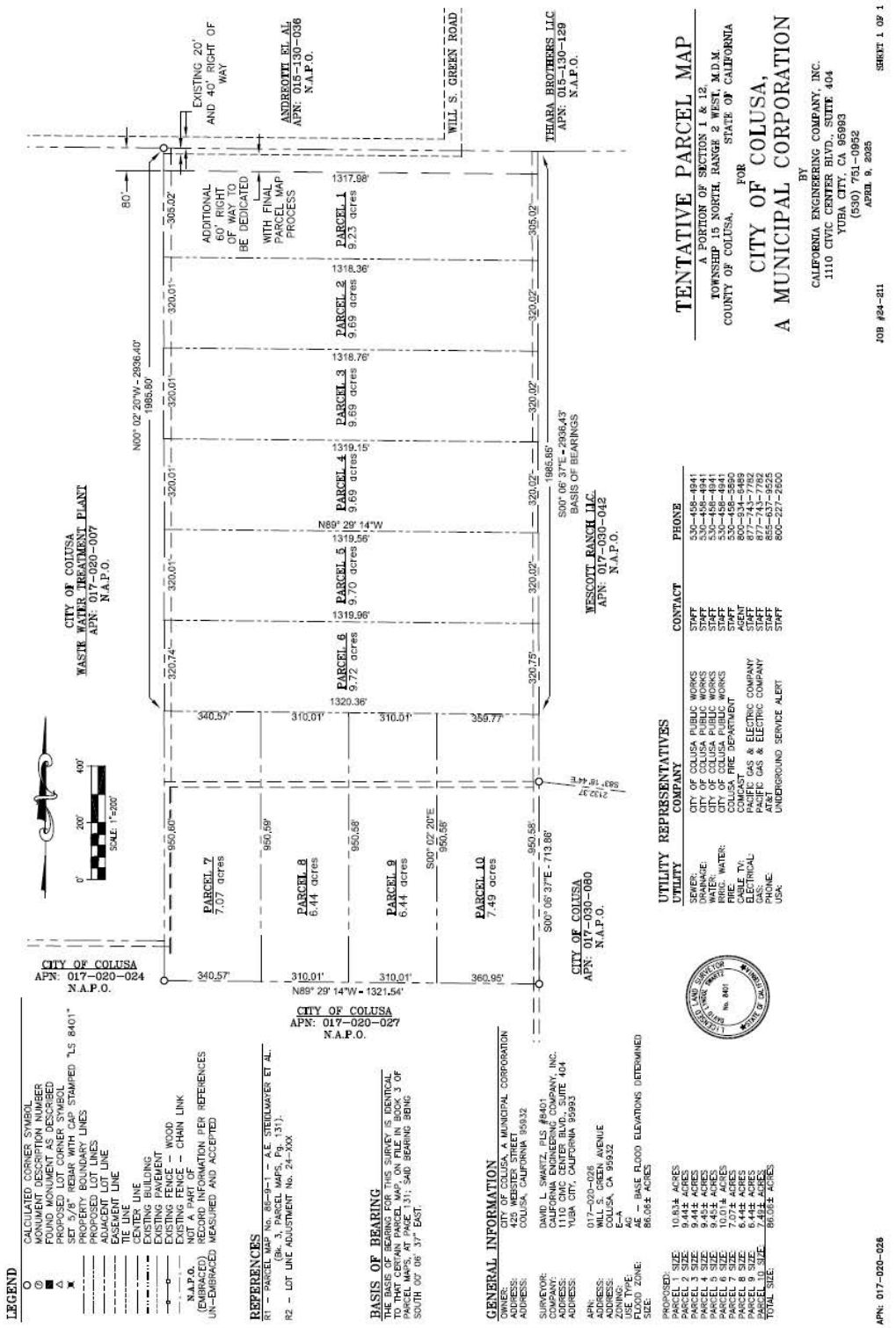
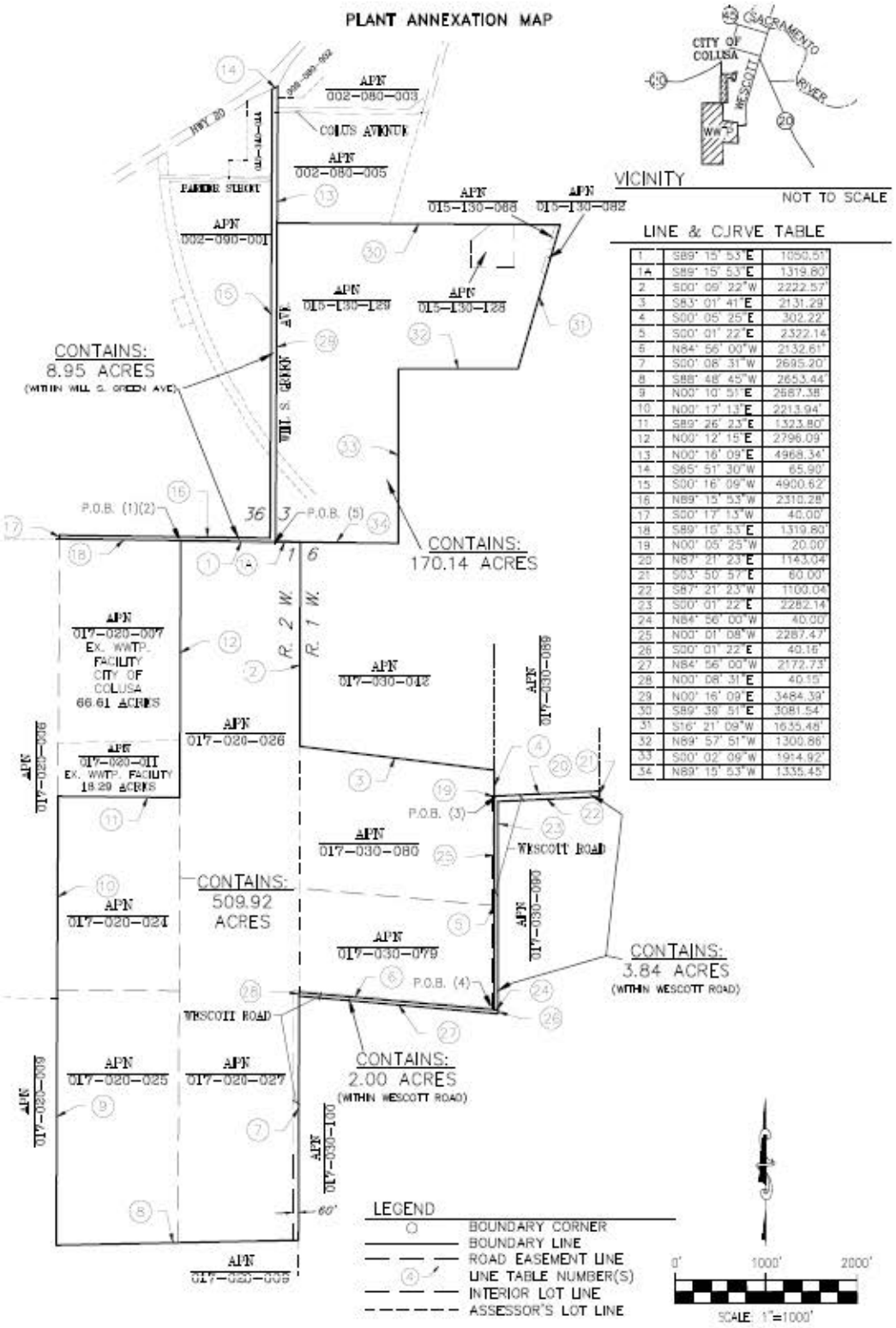


FIGURE 6 - PROPOSED ANNEXATION PLAT



1	S89° 15' 53"E	1050.51'
1A	S89° 15' 53"E	1319.80'
2	S00° 09' 22"W	2222.57'
3	S83° 01' 41"E	2131.29'
4	S00° 05' 25"E	302.22'
5	S00° 01' 22"E	2322.14'
6	N84° 56' 00"W	2132.61'
7	S00° 08' 31"W	2695.20'
8	S88° 48' 45"W	2653.44'
9	N00° 10' 51"E	2687.38'
10	N00° 17' 13"E	2213.94'
11	S89° 26' 23"E	1323.80'
12	N00° 12' 15"E	2796.09'
13	N00° 16' 09"E	4968.34'
14	S65° 51' 30"W	65.90'
15	S00° 16' 09"W	4900.62'
16	N89° 15' 53"W	2310.28'
17	S00° 17' 13"W	40.00'
18	S89° 15' 53"E	1319.80'
19	N00° 05' 25"W	20.00'
20	N87° 21' 23"E	1143.04'
21	S03° 50' 57"E	80.00'
22	S87° 21' 23"W	1100.04'
23	S00° 01' 22"E	2282.14'
24	N84° 56' 00"W	40.00'
25	N00° 01' 08"W	2287.47'
26	S00° 01' 22"E	40.16'
27	N84° 56' 00"W	2172.73'
28	N00° 08' 31"E	40.15'
29	N00° 16' 09"E	3484.39'
30	S89° 39' 51"E	3081.54'
31	S16° 21' 09"W	1635.48'
32	N89° 57' 51"W	1300.86'
33	S00° 02' 09"W	1914.92'
34	N89° 15' 53"W	1335.45'

FIGURE 7 – BROOKINS RANCH EXISTING GENERAL PLAN AND PRE-ZONING PLAT

Brookins Ranch Property - General Plan Plat:

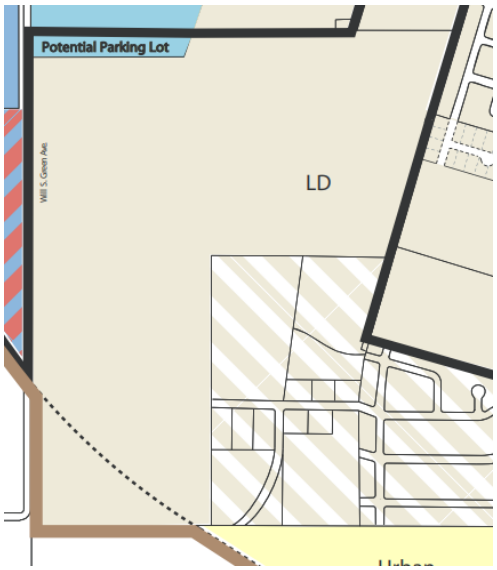
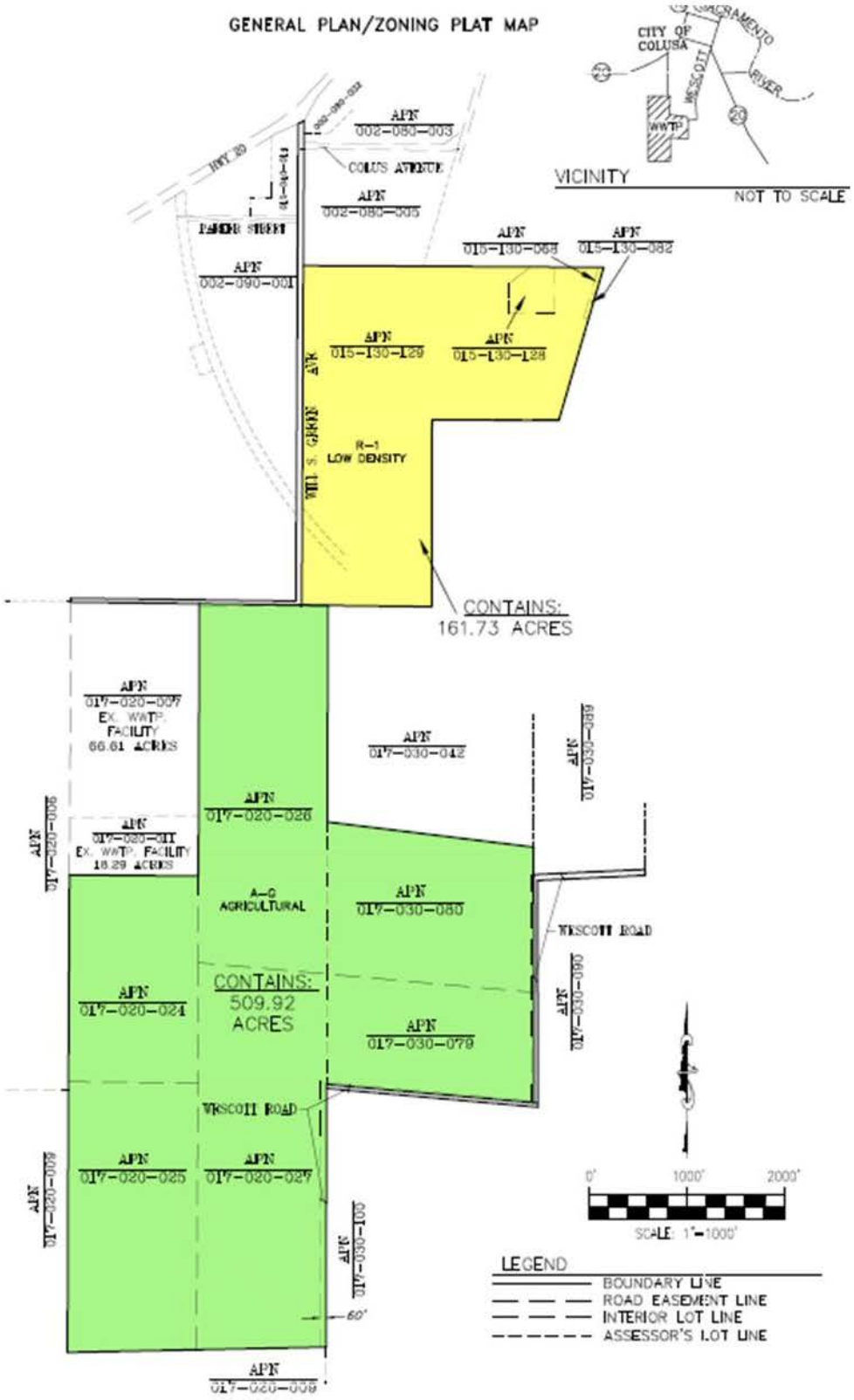


FIGURE 8 – PROPOSED GENERAL PLAN AND ZONING PLAT



4. ENVIRONMENTAL EFFECTS

An environmental checklist follows this section and addresses all potential adverse effects resulting from the Proposed Project. Impacts related to the Proposed Project, are reduce to less than significant with the inclusion of Mitigation Measures.

5. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a **"Potentially Significant Impact"** or **"Potentially Significant Unless Mitigation Incorporated"** as indicated by the checklists on the following pages.

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

In the checklist the following definitions are used:

> **"Potentially Significant Impact"** means there is substantial evidence that an effect may be significant.
>
> **"Potentially Significant Unless Mitigation Incorporated"** means the incorporation of one or more mitigation measures can reduce the effect from potentially significant to a less than significant level.
>
> **"Less Than Significant Impact"** means that the effect is less than significant and no mitigation is necessary to reduce the impact to a lesser level.
>
> **"No Impact"** means that the effect does not apply to the proposed project, or clearly will not impact nor be impacted by the proposed project.

DETERMINATION: (To be completed by the Lead Agency on the basis of 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 in 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 "potentially significant unless mitigated" 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 potentially 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

_____

Jesse Cain, City Manager

1. **AESTHETICS**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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, which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Regulatory Setting

Federal Laws, Regulations, and Policies
No federal regulations are applicable to aesthetics in relation to the Proposed Project.

State Laws, Regulations, and Policies
Medical and Adult Use Cannabis Regulation and Safety Act ("MAUCRSA")

MAUCRSA governs cannabis business operations on the state level. Under state law, CDFA is responsible for regulating and issuing licenses for commercial cannabis cultivation activities. BCC, a division of the California Department of Consumer Affairs (CDA) is responsible for regulating and issuing license to cannabis businesses that distribute, test, transport, or sell cannabis. Manufactured Cannabis Safety Branch (MCSB), a division of California Department of Public Health (CDPH), regulates and issues licenses to cannabis businesses that manufacture cannabis products.

CDFA's regulations implementing MAUCRSA include environmental protection measures requiring that all outdoor lighting be downward facing and shielded to minimize the visual effects of lighting (CCR Title 3 Division 8, Section 8304 [c]), and that lighting for mixed-light operations be shielded between sunset and sunrise to minimize nighttime glare (CCR Title 3, Division 8, Section 8304 [g])

Local Laws, Regulations, Plans and Policies
City of Colusa Code of Ordinances
Colusa zoning Ordinance Appendix A of the Code of Ordinances, Section 21.5, relating to cannabis business activities, contains provision requiring lighting for security purposes. Section 21.5.06(q) of the zoning ordinance requires cannabis facilities to have specific security measures in place, including perimeter lighting systems for after-hours security, perimeter security and lighting as approved by the

policies chief and community development director, use of drive gates with card key access, located entrances and interior and exteriors camera systems approved by the police chief.

City of Colusa General Plan

The Community Character and Design Element of the City of Colusa General Plan (2007) contains the following goal and policies applicable to the Proposed Project:

Goal CCD-9: To apply the use of signage and lighting in a manner that will enhance the aesthetic character of the community.

> **Policy CCD-9.5:** Lighting shall be designed to control glare and minimize light spillage onto adjacent properties and into the night sky.
>
> **Policy CCD-9.7:** Security lighting shall be effective while confining illumination to the property on which the fixtures are located.

The Land Use Element also includes the following goals and polices applicable to the Proposed Project:

Goal LU-4: To protect agricultural operations as new development occurs.

> **Policy LU-4.2:** The City shall require a 200-500 foot residential buffer based on type of agricultural use (e.g. field crops, orchards, grazing, etc.) and method of pesticide application (aerial, ground application), as appropriate.
>
> **Policy LU-4.3:** The City shall require a combination of residential buffer, masonry fencing, tree plantings at the urban edge to mitigate agricultural impacts of noise, dust, trespass, and pesticide/herbicide overspray.com

Environmental Setting:

Scenic Highways and Corridors

There are no designated or eligible federal or state scenic highways in Colusa. The City of Colusa General Plan Community Character and Design Element considers the State Route 20 and the 20/45 corridors to be scenic corridors (City of Colusa 2007).

Viewer Sensitivity

Generally, residents have a heightened sensitivity to the surrounding visual character and quality because they have high frequency and duration of views and an expectation of a consistent setting. Employees and patrons of businesses have moderate sensitivity to their surroundings, with interest in both the built environment and natural landscapes. Motorists' viewing sensitivities can be highly variable, depending on the presence of scenic views, duration of time traveled, purpose and speed of travel, duration of the view, and other site-specific conditions. Recreationists generally have higher sensitivity to the surrounding viewsheds because of the nature of their use for purposes of recreation and pleasure, often with the intent of enjoying the local natural landscapes. Active development (CTC Development) activities would occur in an area that is zoned for agricultural development, inside enclosed buildings, and greenhouses. Therefore, the primary viewer groups exposed to the site may include nearby residents, employees of nearby businesses, and patrons of these businesses, with few motorists and/or recreationists.

Viewer Groups
Viewer groups in the vicinity of the project site and their sensitivity to visual changes are described below. Viewer groups with visual access to the project site are divided into the categories of patrons of nearby businesses, motorists, recreationists, and residents.

Residents
The nearest residential structures to the CTC project site are approximately 1,300 linear feet to the northeast in the Walnut Tree subdivision off of Wescot Road. In general, as a view group, residents have a heighted sensitivity to the surrounding viewshed because they have high frequency and duration of views as well as expectations of consistent setting.

Employees and Patrons of Nearby Businesses

The nearest employment businesses to CTC is the Colusa High School, approximately 3,400 linear feet from the northern boundary and an existing single-family home, approximately 1,050 linear feet to the northwest at the terminus of 5th Street which has a small orchard associated with it. WWTP, which is located on the western side of a portion of the project site has several City employees that access the site, typically during normal business hours with some exceptions for weather and other variables.

Motorist
The CTC property will be seen by motorist traveling Will S. Green Road, Wescott Road and 5th Steet. Motorist view would be temporary, and they would be limited expectations of the setting because these roads are primarily used by agricultural practices and those attending Colusa High School, typically during sporting events as the playing field is located next to the Brookins Ranch portion of the annexation site. 5th Street terminates into the boundary of the site, while Will S. Green Road and Wescott Road are predominately unpaved and typically serve traffic accessing the agricultural fields and water canals. In general, as a viewer group, motorists in this area would have reduced sensitivity to the surrounding viewshed. The project site would not be visible from the Highway 20 or 20/45 scenic corridor.

Recreationist
There are currently no trails or paths abutting the CTC site; however, the site is near the Colusa High School football/track field on the northern portion of the site. This area holds seasonal activities, at night for football games or after school/weekends for other events such as track and field, or graduation. To the west, approximately 500 linear feet of the CTC site consists of an abandoned railroad right of way, which at times is utilized for walking/biking. This abandoned right of way is not paved and is identified as a proposed Class I pedestrian path in the City Master Bicycle Plan (2012). Approximately 1500 feet to the north of the CTC site is a model airfield, used by remote control airplane hobbies.

Light and Glare
Nighttime lighting is necessary to provide and maintain safe and secure environments. Light that falls beyond the intended area of illumination is referred to as "light trespass." The most common cause of light trespass is spillover light, which occurs when a lighting source illuminates surfaces beyond the intended area, such as when building security lighting or parking lot lights shine onto neighboring properties. Spillover light can adversely affect light sensitive uses, such as residences, at nighttime. Both light intensity and type of fixture can affect the amount of light spillover. Fixtures that face downward and are shielded are typically less obtrusive than upward-facing and/or unshielded light fixtures.

Glare is caused by light reflections from pavement, vehicles, and building materials, such as reflective glass, polished surfaces, or metallic architectural features. During daylight hours, the amount of glare depends on the intensity and direction of sunlight

Agricultural activities will continue to take place and typically are done during daylight hours or early morning to dusk and do not require nighttime lighting. Structures associated with the CTC development are strategically placed to minimize the views from the public right of way and near residential buildings and as such, will be subject to Colusa Municipal Code and General Plan requirements pertaining to lighting placement, intensity and shielding.

DISCUSSION

1.a - Have a substantial adverse effect on a scenic vista: There are no areas that are mapped or designated as a scenic vista near the CTC project site. There are limited views of the Coastal Range, which is approximately 16 miles to the west and the Sierra Nevada Range, which is approximately 47miles to the east, and Sutter Butte mountain range, which is 7 miles to the east of the project site available from the site.

Development at the CTC site will be on approximately 88.97 acres abutting the WWTP. The site is remote and outlying to the surrounding communities. Future development on the 88.97 acres will not impede vistas as there are no residential properties nearby and minimal public access. Development will be subject to the proposed A-G Agricultural zoning designation of Colusa Municipal Code, which limits agricultural buildings to a height of 50 feet and to 100 feet for accessory structures. In this instance, the only proposed improvements within the boundary of the project site will be the CTC project, which will have a overall height of 44 feet, below the maximum height limit.

Therefore, a less than significant impact would occur at the CTC Project Site.

Other city-owned agricultural properties will continue to be in agricultural production as they are currently held in a long-term lease with a farmer for agricultural purposes.

Brookins Ranch will continue to operate as a small family orchard, with associated site improvements such as a single-family home and outbuildings. As discussed above in the Project Description, no development is currently anticipated for the Brookins Ranch site, and this IS/MND does not cover any buildout of the property. In the event a future request to develop Brookins Ranch is applied for, such an entitlement would be subject to additional CEQA review and analysis.

The General Plan amendment, rezone, and municipal code amendment would allow for the existing city-owned land to receive an AG – Agricultural land use designation. This designation and the supported Municipal Code Amendment mirror those found in the County. In that the land is currently zoned EA – Exclusive Agricultural and permits various agricultural related land uses. As such, the City is adopting the County's version of their municipal code, as the City currently does not have an agricultural zoning district or municipal code designation.

With respect to the LAFCO Annexation, while there is no development project anticipated in the foreseeable future for Brookins Ranch or the remainder of the City-owned properties, there is a change between pre-annexation and post-annexation conditions related to a change in development potential from existing County zoning to proposed City zoning and access to urban services (sewer and drinking water) from the City.

The change in development potential for the Brookins Ranch component of the proposed project in terms of pre-annexation and post-annexation conditions is a maximum of approximately 155 light industrial parcels to approximately 843 single-family residential parcels. It is important to note that the actual number

of industrial sites and residential units is likely much lower when taking into consideration site development standards and physical constraints.

For the remainder of the City-owned properties component of the proposed project, the change in development potential in terms of pre-annexation and post-annexation conditions is 423-acres of exclusive agricultural zoned land with a 40-acre minimum lot size (which does not allow for commercial cannabis operations, but does allow for agricultural uses and operations in areas where fertile soils are suited for crop production and protects from encroachment of incompatible land uses) to 423-acres of agricultural zoned land with a 40-acre minimum lot size which allows for indoor commercial cannabis operations subject to the issuance of a special use permit, if one is available as the City has set a total cap on permits issued.

1.b - Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway:
Neither Brookins Ranch, the City owned agricultural lands nor the CTC project site contain scenic resources, such as trees of scenic value, rock outcroppings, or historic buildings. There are no State designated or eligible scenic highways within the vicinity of the Site. Per the California Department of Transportation (Caltrans) State Scenic Highway Program (2020), there are no designated or "eligible" state scenic highways within or in close proximity to the City of Colusa. Historical structures are limited to the "grid" portion of Colusa, essentially the downtown and its surrounding areas. Therefore, there will be a less than significant impact upon scenic resources.

1.c. - Substantially degrade the existing visual character or quality of public views of the site and its surroundings?
During the construction of the 88.97 acres by CTC, temporary light and glare impacts may occur during development of site improvements and structures and are not regulated by Colusa Municipal Code. However, construction hours are limited by Colusa Municipal Code from 7:00 a.m. to 7:00 p.m. on weekdays and 8:00 a.m. to 7:00 p.m. on weekends (City Code Section 11A-3), which should minimize related temporary glare off-site and minimize adverse-effects to nighttime views during nighttime hours. Part of the construction of the site includes a new levy system that would wrap around the perimeter of the project boundary, limiting views of the site to just the tops half of the structures.

Potential light sources within the 88.97 acres include external building lights near entry doors, loading docks, access gates and parking areas. This type of lighting is typical in that lighting would be utilized to provide attractive, safe, and secure nighttime environments. To minimize impacts, lighting associated with developed area will be in compliance with City codes, which requires lighting to be minimal of one-half feet candle illumination for every point in the parking lot and that such lighting shall be arranged to reflect the light away from adjoining premises and streets (Article 29 - Off Street Parking Requirements – Section 29-04: Minimum parking specifications, Article 21.5 – Cannabis Regulations).
The City's General Plan discusses applying lighting in a manner that will enhance the aesthetic character of the community (Goal CCD-9), and that although lighting is important to illuminate the built environment, over-lighting should be avoided (Policy CCD-9.4). With the introduction of Mitigation Measure AESH-1 and AESH-2, below, the introduction of new sources of light and glare will minimally contribute to nighttime light pollution resulting in minimal impacts to nighttime views in the area less than significant impacts with mitigation.

Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and its associated out buildings have existing lighting, such as porch or patio lights, while no lights are associated with the City-owned agricultural fields. General Plan

amendments, rezone, and text amendments to the Colusa Municipal Code will have no impact upon views or their surroundings.

MITIGATION MEASURE

AESH-1: Dark Sky Compliant
To minimize over-lighting and to provide for a quality-built environment, outdoor lighting placed on structures, within parking lots, shall be dark sky compliant (darksky.org), directed downward and contain cut offs to minimize excessive sources of light and glare. Future building plan submittals shall indicate and provide details on the type of lighting, location, height, size and intensity.

AESH-2: Lighting Photometric Plan
Prior to the issuance of a building permit a photo-metric study or lighting photometric plan shall be submitted for review and approval by the Planning Department. Such a study shall illustrate all outdoor lighting, both on the structures and within parking/vehicle movement areas and shall illustrate a maximum one-half feet candle illumination for every point in the parking lot and that such lighting shall be arranged to reflect the light away from adjoining premises and streets. The absolute minimum amount of lighting shall be utilized, and pole lighting shall be lowered from 50 feet to a height that achieves the maximum of one-half foot candle illumination. Areas of less than one-half foot candle illumination are permitted by approval of Planning Staff in events when such lighting will increase safety.

1.d - Create a new source of substantial light or glare?:
As discussed above, the CTC property will go from an agricultural field with no permanent light or glare sources to that of an environment similar to warehousing associated with an agricultural operation. Lighting would need to be typical of an urban setting to ensure a safe nighttime environment. As noted above, two mitigation measures are proposed to limit the number of light sources. In addition, the below mitigation measure will aid in limiting any potential sources of glare in the built environment. With adherence to existing Colusa Municipal Code requirements and discussed Mitigation Measures (above and below), impacts to light and glare sources at the CTC site will be less than significant.

Both the Brookins Ranch and the City-owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and it's associated out buildings have existing lighting, such as porch or patio lights, while no lights are associate with the city-owned agricultural fields. General Plan Amendments, rezone, and text amendments to the Colusa Municipal Code will have no impact upon views or their surroundings or create any new source of light or glare.

MITIGATION MEASURE

AESH-3: Finished Materials
All external finishes and materials shall be painted in an earth color tone, such as green, tan or brown or similar as approved by City staff, including roofing material and lighting fixtures. No metal material shall be left in an untreated state and shall be painted with a matted color that does not reflect light.

2. AGRICULTURE AND FORESTRY RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with	Less Than Significant Impact	No Impact

		Mitigation Incorporated		
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the 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 PRC 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 forestland to non-forest use?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to agricultural or forestry resources in relation to the proposed Project.

State Laws, Regulations and Policies

Cortese-Knox-Hertzberg Local Government Reorganization Act

California's Local Agency Formation Commissions (LAFCOs) are independent county-level agencies established under the Cortese-Knox-Hertzberg Local Government Reorganization Act. Part of the Legislature's intent in creating LAFCOs was to limit the premature conversion and loss of California's open space and agricultural lands (including prime agricultural lands), and guide development toward vacant urban land. (Gov. Code §§ 56001; 56377.) LAFCOs follow the principle that development or use of land for other than open-space uses must be guided away from existing prime agricultural lands in open-space use toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area. (Gov. Code § 56377(a).) When LAFCO reviews a proposal, a factor among many to be considered is how the proposal affects both the physical and economic integrity of agricultural lands. (Gov. Code § 56668(e).) LAFCOs are guided by specific definitions relating to agricultural lands. Specifically, "agricultural lands" are defined as "land currently used for the purpose of producing an agricultural commodity for commercial purposes, land left fallow under a crop rotational program, or land enrolled in an agricultural subsidy or set-aside program." (Gov. Code § 56016.) Additionally, "prime agricultural land" is defined as "land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use" and that meets any of the following

qualifications: (a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible; (b) Land that qualifies for rating 80 through 100 Storie Index Rating; (c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003; (d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre; or (e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars ($400) per acre for three of the previous five calendar years. (Gov. Code § 56064.)

Farmland Mapping and Monitoring Program

The California Department of Conservation (CDOC) established the Farmland Mapping and Monitoring Program (FMMP) in 1982 as a nonregulatory program to provide a consistent and impartial analysis of agricultural land use and land use changes throughout California. Creation of the FMMP was supported by the California State Legislature and a broad coalition of building, business, government, and conservation interests. The first Important Farmland maps, produced in 1984, covered 30.3 million acres in 38 counties. This is an ongoing data set; CDOC collects data every 2 years to assist in understanding changes in agricultural land in the state. Data now span more than 32 years and have expanded to 49.1 million acres as modern soil surveys have been completed by the U.S. Department of Agriculture (USDA). The FMMP now maps agricultural and urban land use for nearly 98 percent of California's privately held land (CDOC 2015)

The FMMP has developed categorical definitions of Important Farmland that incorporate the land's suitability for agricultural production rather than solely relying on the physical and chemical characteristics of the soil. The FMMP includes data on the location of agricultural land, land use changes from agriculture to urban development, and soil quality. Land that is identified as Important Farmland is mapped as one of the following four categories (CDOC 2016):

- **Prime Farmland**. Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. These lands have the soil quality, growing season, and moisture supply needed to produce sustained high yields. Prime Farmland must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date
- **Farmland of Statewide Importance**. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Farmland of Statewide Importance must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.
- **Unique Farmland**. Farmland of lesser quality soils used for the production of the state's leading agricultural crops. These lands usually are irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones. Unique Farmland must have been cropped at some time during the 4 years before the FMMP's mapping date.
- **Farmland of Local Importance**. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965, better known as the Williamson Act, is California's primary program to protect agricultural land. The Williamson Act discourages premature and unnecessary conversion of agricultural land to urban uses. The legislation benefits landowners by allowing them to enter

into long-term contracts (10 or 20 years) with the State of California to keep agricultural land in production. In return, the State reduces property taxes based on a complex calculation tied to agricultural income. The State implements the Williamson Act when a city or county creates an agricultural preserve. The purpose of agricultural preservation is the long-term conservation of agricultural and open space lands; the lands are restricted to agricultural, open space, or recreational uses in exchange for reduced property tax assessments. After a preservation is established, the landowner enters a contract with a city or county. The landowner and any successors in-interest are obligated to adhere to the contract's enforceable restrictions unless the contract is rescinded or cancelled.

Forest Land, Timberland, and the Taxation Reform Act
Forest land is defined as native tree cover greater than 10 percent that allows for the management of timber, aesthetics, fish and wildlife, recreation, and other public benefits (Pub. Res. Code Section 12220[g]). A subset of forest land, timberland, is defined under the Forest Practice Act as all non-federal land that is available for, and capable of, growing a crop of trees of commercial species, as designated by the Board of Forestry (Pub. Res. Code Section 4526; 14 CCR Section 895.1). A "crop of trees" includes any number of trees that may be harvested commercially (14 CCR Section 895.1.)

The Forest Taxation Reform Act, enacted in 1976, provides guidelines that allow cities and counties with qualifying timberland to adopt timber protection zones (TPZs). Government Code Section 51104(g) defines TPZs as areas zoned in accordance with Sections 51112 and 51113 for the purposes of growing and harvesting timber, or for growing and harvesting timber and compatible uses. TPZs are privately owned land or land acquired for State forest purposes. When a TPZ is established, a private landowner agrees to commit the land to forest production for at least 10 years. In return, the approving jurisdiction grants the landowner a property tax reduction. The California Department of Forestry and Fire Protection (CAL FIRE) has regulatory authority over timber harvest and timberland conversion decisions in TPZs.

California Department of Forestry and Fire Protection
The California Forest Practice Act, adopted in 1973, requires owners of nonfederal timberland to apply for a Timberland Conversion Permit from the Director of the California Department of Forestry and Fire Protection (CAL FIRE n.d.) for the conversion of timberland to another use. CAL FIRE may grant exemptions for conversions of less than 3 acres. To qualify for an exemption from CAL FIRE, applicants must comply with applicable provisions of the Forest Practice Act and regulations, county general plans, zoning ordinances, and other implementing ordinances of the local jurisdiction. The Forest Practice Act and implementing regulations also govern the removal of "commercial" timber species from areas of pending new construction (CAL FIRE n.d.).

Local Laws, Regulations and Policies

City of Colusa General Plan
The City of Colusa General Plan's Parks, Recreation and Resource Conservation chapter does not contain goals or policies for agricultural lands that are applicable to the Proposed Project; it addresses conservation of agricultural lands outside the City's urban growth boundary. However, Section 6.8.2, "Outlook – Agricultural Lands," contains the following statement (City of Colusa 2008, p. 6-29):

Implementation of the Land Use Element may result in substantial conversions of prime agricultural land to urban uses. However, the County General Plan Land Use designations anticipate such conversions.

Although Colusa does not currently designated any of its lands in the Planning Area for agricultural uses, the preservation of farmland is a critical component in maintaining Colusa's rural, small-town character.

Environmental Setting

The City-owned lands have been in seasonal crop production and are in long-term lease with a farmer. The site is routinely planted with row crops such as tomato, corn, wheat, and alfalfa. While the Brookins Ranch site contains an existing single-family home and out structures as well as orchard trees. The area is rural in nature in that roads are gravel and infrastructure improvements (power, water, sewer) extend to existing improvements such as the WWTP and the structure on the Brookins Ranch property.

The County's 2030 General Plan identifies Brookins Ranch as Industrial, and the City owned land as Agricultural. One of the guiding principles of the County's 2030 General Plan is to support the County's agricultural economy. The 2030 General Plan includes measures to maintain and enhance the County's agricultural economy, through allowing a broader range of agricultural uses and encouraging agricultural support uses, such as packing, distributing, and processing, to encourage increased agricultural production.

The Draft Master Environmental Impact Report (DMEIR) prepared for the City of Colusa General Plan Update in 2007 evaluated potential land use impacts associated with build-out of the General Plan Update. Analysis for the DMEIR was based on a review of planning documents including the General Plan, Zoning Ordinance, a field review of the City and surrounding areas, and consultation with responsible agencies. The DMEIR agricultural analysis utilized information from various sources including the California Department of Conservation Farmland Conversion Report 1998-2000, the California Department of Conservation Important Farmland Map of Colusa County, the Soil Survey of Colusa County prepared by the NRCS in 2002, and the Summary of County Agricultural Commissioners' Reports, 2003-2004 by the National Agricultural Statistics Service. Based on this information, the analysis assessed the potential value of agricultural lands in the proposed Planning Area and utilized the proposed Land Use Diagram to determine potential impacts.

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program (FMMP), which identifies and maps significant farmland. Farmland is classified using a system of five categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS).

No properties within the City of Colusa Planning Area are designated by the General Plan as Agricultural. Although some Prime Farmland exists in the City, the DMEIR identified that any conversion of prime agricultural land would be significant and unavoidable and a Statement of Overriding Considerations was made as part of the General Plan EIR certification (Impact 6.2). The Site boundaries are designated Prime Farmland by the DOC, but are currently not in routine production.

According to the DMEIR, there are no properties in the City subject to a Williamson Act contract, that contain forest or timber resources, or zoned for forestland protection or timber production.

DISCUSSION

2.a - Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance: The CTC project site at the terminus of Will S. Green Road is designed Prime Farmland, as noted by the California Department of Conservation Division of Land Resource Protection (Colusa County Important Farmland 2020). This proposed CTC project would transform the Prime Farmland to the cultivation, production and distribution of cannabis, which is considered an agricultural product, pursuant to Business and Professions Code section 26060(a). California law designates cannabis as an agricultural product for Williamson Act purposes (Page 4.2-20 of PEIR). In 2019, the California legislature passed Senate Bill 527, which

incorporated cannabis and industrial hemp cultivators into the Williamson Act (See Government Code section 51231(b)). Additionally, as noted in the PEIR, cultivation of cannabis on Prime Farmland, Unique Farmland and Farmland of Statewide Importance is an acceptable use of these agricultural land types (Page 4.2-20 of PEIR). The project site would therefore remain in agricultural use and would not result in the loss of agricultural land. Construction of indoor cultivation and other structures would be part of the agricultural activities at the site and are not considered conversion. Nurseries will be utilized for cannabis cultivation using mixed-light conditions. Other structures would be utilized for ancillary uses supporting cannabis cultivation, including research and development, distribution, warehousing, non-storefront retail, and manufacturing. The CTC project site will remain in agricultural use through cannabis cultivation, and all proposed structures will directly support the agricultural use of the project site. The use of these structures would be comparable to other post-harvest processing facilities, such as vineyards that operate onsite wineries. The land will therefore remain devoted to the production of an agricultural commodity.

This type of agricultural practice is akin to a winery, canary or other agricultural practices in which processing, testing, and sampling happens on site. These specific practices are ancillary and support the main use, which is production. On-site agricultural processing is currently permitted by right land use in E-A Exclusive Agricultural as listed in the County Municipal Code (Table 44-2.20-2). Such agricultural facility examples currently exist in the County, such as the Farmers Rice Cooperative at 4937 CA-45 (north of Colusa) and American Commodity Company at 6133 Able Road (east of Williams) where the property is improved with structures, processing equipment and is located on E-A Exclusive Agricultural zoned lands.

Thus, the impacts of this portion of the Project would be less than significant.

In addition, the scope of the Project, including all City owned acres, is to adopt a new General Plan designation and corresponding zoning. The new designations of Agricultural and A-G – Agricultural zoning, would permit the use of cannabis operations on A-G Agricultural zoned lands, subject to securing proper entitlements from the City. Since cannabis cultivation is considered an agricultural use under State law, including the Williamson Act, no conversion of farmland will occur through adoption of the new General Plan designation and zoning. And any future entitlement, development or utilization of the City owned land within the new General Plan designation and zoning, other than ongoing agricultural uses, would require additional CEQA review, based upon the scope and details of the proposal.

The balance of City-owned property will continue to be under agricultural production, which typically consists of seasonal row crops (tomato, corn, alfalfa). While the Brookins Ranch property, which is pre-zoned R-1 Single Family in the City's General Plan, will continue to operate as a small family agricultural operation farming orchards (i.e. almonds and walnuts). No physical developments or land use changes are currently proposed on the Brookins Ranch property. Any future development proposals at Brookins Ranch will be subject to additional CEQA review, based upon the scope and details of the proposal.

As discussed in the Regulatory Setting above, LAFCOs follow the principle that development or use of land for other than open-space uses must be guided away from existing prime agricultural lands in open-space use toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area. (Gov. Code § 56377(a).) Pursuant to Government Code section 56064, "prime agricultural land" means an area of land, whether a single parcel or contiguous parcels, that has not been developed for a use other than an agricultural use and that meets any of the following qualifications: (a) Land that qualifies, if irrigated, for rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible; (b) Land that qualifies for rating 80 through 100 Storie Index Rating; (c) Land that supports livestock used for the production of food and fiber and that has an annual

carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003; (d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre; or (e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars ($400) per acre for three of the previous five calendar years.

As noted above, the CTC facility site is designated Prime Farmland, by the California Department of Conservation Division of Land Resource Protection, and given its historical agricultural production within the last five years for commercial harvest purposes. Therefore, the site would also meet the definition of "prime agricultural lands" pursuant to Government Code section 56064.

As discussed above the cultivation, production and distribution of cannabis, which is considered an agricultural product, pursuant to Business and Professions Code section 26060(a). California law even designates cannabis as an agricultural product for Williamson Act purposes. As such, the CTC site will have indoor hydroponic cannabis as its crop. With that said, indoor hydroponic agricultural production is becoming a common agricultural land use in California. This type of farming offers advantages such as water savings, space efficiency, higher yields and faster growth due to direct nutrient access and reduced pesticide use thanks to a controlled environment. Other benefits include year-round growing, precise control over plant nutrition and the ability to grow crops in areas with poor soil or extreme weather, as well as resilience against climate change.

Hydroponics agriculture, also known as Controlled Environment Agriculture (CEA) can not only be used for cannabis, but other food-based crops such as leafy greens like lettuces, spinach, arugula, bok choy and kale. Herbs such as basil, mint and cilantro and other vegetables like tomatoes, cucumbers, peppers, strawberries and radishes can also be grown using hydroponics. Although less common, hydroponic agriculture can also produce carrots, onions, wasabi, broccoli and cauliflower. Vertical hydroponic agriculture, the act of growing plants in a vertically stacked setup (i.e.: tower) allows for a higher per acre yield. For example, one estimate illustrates that 700 acres of traditional farming for certain crops can be contained in a 95,000 square foot warehouse (ATTRA Sustainable Agriculture https://attra.ncat.org/publication/vertical-farming/:).

According to a January 2024 study done by U.S. Department of Agriculture – Economic Research Services, on the trends, insight and future prospects of CEA systems, it found that the CEA sector is expanding in large part due to technological advancements. The number of CEA operations more than doubled between 2009 and 2019. Further, more than 60 percent of production for some prominent CEA crops (primarily vegetables) were grown using nontraditional technological systems in 2019. The report concludes that the value of production for crops produced in CEA systems in the United States has increased from $296 million in 1998 to more than $626 million (in constant dollar terms) between 1998 and 2019. The number of CEA operations almost tripled to 2,994 during the same time span. Approximately 60 to 70 percent of the crops grown in CEA systems are tomatoes, lettuce, and cucumbers, with hydroponic systems being the predominant method of cultivation
(https://ers.usda.gov/sites/default/files/_laserfiche/publications/108221/EIB-264.pdf).

In short, the CTC facility has the potential, market demand and ability to be utilize for other hydroponic agriculturally based products, beyond cannabis.

As discussed at length and with additional detail in Section 10 – Hydrological and Water Quality, by placing the proposed CTC facility next to the WWTP, the CTC facility can then take advantage of purple pipe water

from the WWTP. This reclaimed water will be utilized in a closed loop system by the operator to grow cannabis, reducing the demand on well water and municipal water for the operation. The utilization of this water is less than necessary to grow traditional agricultural crops, as water demand for outdoor crops depends on the actual crop, wind factor, evaporation and the soil's ability to hold the water. Hence, locating the CTC facility at a different location containing nonprime agricultural lands may hinder the CTC facility's efficient water use for its indoor hydroponic agricultural production and thus not promote the planned, orderly, efficient development of an area.

The City of Colusa analyzed the potential impacts associated with development of important farmlands that have been designated for non-agricultural uses, specific to the Brookins Ranch, in the DMEIR prepared for the 2007 General Plan. Specifically, the City's DMEIR notes that by implementing the General Plan, "development of the project site into residential, open space and educational uses would remove this area from potential agricultural production and results in the permanent loss of prime or locally important farmland to urban development. This is considered a "significant impact" (page 5.1-10). As such, a Statement of Overriding Considerations was incorporated into the 2007 General Plan EIR noting that the benefits of the project (General Plan Update) outweigh the adverse environmental effects. However, the Proposed Project does not contemplate any new development at Brookins Ranch. Brookins Ranch will continue to operate as a small family agricultural operation (i.e. almonds and walnuts). No physical development or land use changes are currently proposed on the Brookins Ranch property. Any future development proposals at Brookins Ranch will be subject to additional CEQA review, based upon the scope and details of the proposal. Therefore, there will be no conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance at the Brookins Ranch site.

Additionally, there is currently no development proposal for the reminder of the City-owned properties. The proposed project only consists of a zone change to A-G Agricultural as part of the annexation to the City and access to sewer and water services provided by the City.

The change in development potential for the Brookins Ranch component of the proposed project in terms of pre-annexation and post-annexation conditions is a maximum of approximately 155 light industrial parcels compared under the County's current zoning of M-1 Light Industrial to approximately 600 single-family residential parcels under the City's pre-zoning of R-1 Single Family The actual number of industrial sites and residential units that would be constructed is likely much lower when taking into consideration site development standards, requirements (roadway widths/lengths, low impact development requirements etc.) and physical constraint.

For the remainder of the City-owned properties, the A-G Agricultural Zoning District designation would result in 423-acres of agricultural zoned land with a 40-acre minimum lot size. Commercial cannabis business facilities (including cultivation, nursery, manufacturing, production, testing, microbusiness) are not currently allowed in this zone (see City of Colusa Municipal Code section 21.5.01), but the zone does allow for agricultural uses and operations in areas where fertile soils are suited for crop production and protects from encroachment of incompatible land uses. As part of the proposed project, Appendix A Section 21.5.- Cannabis Regulations would be amended to specify that commercial cannabis business facilities are allowed in the A-G Agricultural Zoning District subject to issuance of a Special Use Permit issued by City Council.

The proposed General Plan Amendment, Rezone, and Municipal Code Amendment would allow for the existing City-owned land to receive an AG – Agricultural land use designation. This designation and the supported Municipal Code Amendment mirror those found in the County. In that the land is currently zoned EA – Exclusive Agricultural and permits various agricultural related land uses. As such, the City is

adopting the County's version of their municipal code, as the City currently does not have an agricultural zoning district or municipal code designation.

2.b - Conflict with existing zoning for agricultural use, or a Williamson Act contract:

Pursuant to the *California Williamson Act Enrollment Finder* interactive website managed by the California Department of Conservation and as well as the General Plan, the Project Site and its surroundings are not enrolled or a part of a Williamson Act contract.

The annexed properties will receive a City of Colusa zoning designation of A-G Agricultural, which would permit the ongoing agricultural uses at both the Brookins Ranch and the City-owned parcels. The City's municipal code Appendix A – Section 21.5 Cannabis Regulations would also be amended to include cannabis operations in an A-G Agricultural zone, subject to securing approval for a Special Use Permit from the City. No other cannabis operations are proposed on City-owned land at this time. Any future cannabis uses permitted under the code must comply with CEQA.

2.c - Conflict with existing zoning for, or cause rezoning of, forest land:
Neither Brookins Ranch, the City-owned agricultural lands nor the CTC location is designated or zoned as forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)) or timberland, but rather on land that will be designated and zoned for agricultural use. No impact would occur.

Similarly, the General Plan amendment, rezone and accompanying text amendments to the Municipal Code to designate the site as Agricultural and have an AG – Agricultural municipal code will not have an impact on forest lands.

2.d - Result in the loss of forest land or conversion of forest land to non-forest use:
The proposed project would not result in result in the loss of forest land or conversion of forest land to non-forest use as the site. The Site is void of forest resources, not designated as a forest resources zone or land by the City. As further discussed above in 2.c above, the Brookins Ranch, City-owned agricultural lands and the CTC location has no timberland production. Similarly, a General Plan amendment, rezone and accompanying text amendments to the Municipal Code to designate the site as Agricultural and have an AG – Agricultural municipal code will not have an impact on forest lands.

No impact would occur.

2.e - Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland:
As discussed above in 2.a, the CTC project site is designated Prime Farmland by the California Department of Conservation Division of Land Resource Protection (Colusa County Important Farmland 2018) and is currently in production with seasonal crops (i.e. tomato, corn etc.).

The PEIR noted that the most pressing issue related to cannabis operations on existing farmlands would be water supply to existing farmers not associated with the cannabis operation. For surface water diversions, the State Water Resources Conservation Board (SWRCB) through its water rights process would require that the cultivator's diversions do not unreasonably affect other legal users of water. This would prevent such an impact from arising due to the direct use of surface water. For cultivators obtaining surface water

supplies from other water purveyors (e.g., municipal water systems, water trucks), the purveyors would be required to comply with the same requirements, avoiding the potential for a significant impact.

The issue is potentially of more concern with respect to groundwater, which is not subject to the same water rights process. Overuse of groundwater resources could lead to impacts such as basin overdraft or well interference. However, as discussed below (Section 19 – Utilities and Services Systems), the cannabis growing operation will benefit from the utilization of purple pipe water sourced from the abutting WWTP (approximately 1,500 to 2,000 GPM). The purple pipe capacity will be 450,000 gallons a day. Purple pipe infrastructure already exists on site, as it was installed in 2024 and will be made available for the 509 acres of city-owned agricultural lands and the cannabis operation. City groundwater (?) will be utilized for domestic purposes such as restrooms and drinking fountains. The cannabis operation will also use reverse osmosis (RO) to reclaim onsite agricultural water used for hydroponic purposes.

Currently, the 509 acres of city agricultural lands are using agricultural wells. The agricultural lands have had a mix of row crops through the years, ranging from tomato, watermelon, corn or seed crops. Each crop requires different water needs, for example 1 acre of corn requires 680,000 gallons of water during the growing season, while tomato ranges between 214,00 to 706,000 gallons of water during its growing season. These factors do change depending on weather conditions, such as hot, dry weather, wind and the ability for the soils to retain moisture.

As discussed in the Project Description, for one building, the startup operations and the cultivation facility, including the nursery, would require approximately 44,640 gallons utilizing the City's affluent available water (purple pipe). Once these facilities are operational, the daily water requirements for the cultivation facility, including the nursery, would be around 44,640 gallons. The recycled water system is expected to reclaim about 98% of this daily usage, amounting to 43,740 gallons internally captured and 670 new gallons introduced. With utilization of both purple pipe water and the reverse osmosis system, the CTC project will not utilize the agricultural wells.

. The A-G Agricultural zoning district, which parallels the current county designations, permits single family homes on large lots as well as farm housing. In this instance, all remaining agricultural lands are owned by the City and are not threatened by residential development, as they are under long term lease. In the event that such a proposal was to ever be made, it would require subsequent CEQA review and analysis.

For these reasons, the project would not involve other changes in the existing environment that, because of their location or nature, would not result in conversion of farmland into nonagricultural use or conversion. This impact would be less than significant.

MITIGATION MEASURES

No mitigation required.

3. **AIR QUALITY**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Regulatory Setting

Federal and State Laws, Regulations and Policies

The Clean Air Act is implemented by the U.S. Environmental Protection Agency (USEPA) and sets ambient air limits, the National Ambient Air Quality Standards (NAAQS), for six criteria pollutants: particulate matter of aerodynamic radius of 10 micrometers or less (PM10), particulate matter of aerodynamic radius of 2.5 micrometers or less (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO2), ground-level ozone, and lead. Of these criteria pollutants, particulate matter and ground-level ozone pose the greatest threats to human health. Ground level ozone is caused by emissions of ozone precursor, nitrous oxides (NOX) and reactive organic gases (ROG).

Local Laws, Regulations and Policies

California Air Resources Board (CARB)

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The City of Colusa lies in the North Sacramento Valley Air Basin (NSVAB), which includes Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta counties. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above mean sea level, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area.

California Clean Air Act (CCAA)

The California Clean Air Act (CCAA) allows the State to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer

products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan
The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The Colusa County Air Pollution Control District (CCAPCD) is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the Colusa County portion of the NSVAB. In an attempt to achieve NAAQS and CAAQS and maintain air quality, the air district, in coordination with the other air districts of the NSVAB, has completed several air quality attainment plans and reports, which together constitute the SIP for the NSVAB. Specifically, all of the air districts in the NSVAB including the CCAPCD prepared an air quality attainment plan for O3 in 1994. Updated every three years since adoption, the current Northern Sacramento Valley Planning Area 2021 Triennial Air Quality Attainment Plan (2021 AQAP) includes forecast ROG and NOx emissions (O3 precursors) for the entire NSVAB through the year 2025. The 2021 AQAP provides local guidance for air basins to achieve attainment of the California ambient air quality O3 standard.

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act
CARB's statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the State's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Colusa County Air Pollution Control District
The Colusa County Air Pollution Control District (CCAPCD) is the agency primarily responsible for ensuring that National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality

Standards (CAAQS) are not exceeded and that air quality conditions are maintained in the Colusa County portion of the Northern Sacramento Valley Air Basin (NSVAB). The CCAPCD adopts and enforces control on stationary sources of air pollutants through its permit and inspection program. The district also regulates agricultural burning. Other responsibilities include monitoring air quality, preparing clean air plans, and responding to citizen complaints concerning air quality. The CCAPCD develops regulations to improve air quality and protect the health and welfare of Colusa County residents and their environments. The CCAPCD has a list of rules of regulations of activities association with the project:

- **Rule 200 (Nuisance)** – This rule prohibits the discharge from any non-vehicular source such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- **Rule 201 (Visible Emissions)** - As provided by Section 41701 of the California Health and Safety Code, a person shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminants for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart as published by the U.S. Bureau of Mines.
- **Rule 230 (Architectural Coatings)** – This rule requires manufacturers, distributors, and users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings by placing limits on the VOC content of various coating categories.
- **Rule 231 (Cutback and Emulsified Asphalt)** – The purpose of this Rule is to limit emissions of volatile organic compounds (VOCs) from the use of cutback and emulsified asphalt in paving, construction, or maintenance of parking lots, driveways, streets, and highways. This rule prohibits the use or application for paving, construction or maintenance of parking lots, driveways, streets, or highways any rapid or medium cure cutback asphalt or slow cure cutback asphalt containing more than 0.5 percent by volume of VOCs which evaporate at 260°C (500°F) or less. This rule also prohibits any emulsified asphalt material containing more than 3.0 percent by volume of VOCs which evaporate at 260°C (500°F) or less.
- **Rule 252 (Stationary Internal Combustion Engines)** – To limit emissions of NOx and CO from stationary internal combustion engines any gaseous, diesel, or any other liquid-fueled stationary internal combustion engine within Colusa County shall not be operated in a manner that results in emissions exceeding limits established by the CCAPCD.
- **Rule 430 (New Source Review)** – The CCAPCD has established pre-construction review requirements for new and modified stationary sources of air pollution in order to analyze air quality impacts and insure that the operation of such sources does not interfere with the attainment or maintenance of ambient air quality standards. This rule applies to all new and modified stationary sources which are subject to CCAPCD permit requirements and, after construction, emit or may emit any affected pollutants. Rule 430 provides for no net increase in emissions, pursuant to Section 40918 of the California Health & Safety Code (HSC), from new or modified stationary sources which emit, or have the potential to emit, 25 tons per year or more of any non-attainment pollutant or its precursors.
- **Rule 431 (Emission Reduction Credits and Banking)** – This rule provides a mechanism for permitted and non-permitted emission sources to deposit, transfer, and use Emission Reduction Credits (ERCs) as offsets as allowed by applicable laws and regulations. All uses of emission reductions that are required under the CCAPCD's Rule 430 shall be processed in accordance with this Rule. The provisions of this rule apply to the deposit, transfer, and use of ERCs from stationary sources and open biomass burning sources of air pollution emissions.

City of Colusa General Plan
The City of Colusa General Plan (2007) includes the following goals and policies related to air quality:

Goal PRC-5: To recognize improved air quality as a health benefit and to preserve air quality as a natural resource.

> **Policy PRC-5.1:** The City shall require that site preparation and construction activities incorporate effective measures to minimize dust and pollutant emissions from motorized construction equipment and vehicles.
>
> > **Implementation Action PRC-5.1.a: Development Review.** Projects will be evaluated for their potential impacts to air quality as part of the development review process, applying the California Environmental Act (CEQA) Guidelines and in consultation with Colusa County Air Pollution Control District (APCD).
> >
> > **Implementing Action PRC-5.1.b:** Best Management Practices. The City will require that developers use best management practices (BMPs) as recommended by the U.S. Natural Resources Conservation Service (NRCS) and Colusa County APCD. Approaches to design, construction, and maintenance techniques should ensure that development would not cause or worsen air quality.
>
> **Policy PRC-5.3:** The City shall ensure that residents' exposure to post-construction emissions is minimized.
>
> > **Implementing Action PRC-5.3.a:** Development Review. Through the development review process, projects will be required to demonstrate that existing and/or future sensitive receptors are protected from significant air emissions or odors through the use of adequate buffer zones, setbacks, or other site design techniques.

Neither the City of Colusa nor the CCAPCD have established air pollution thresholds under CEQA for the assessment of air quality impacts. However, CCAPCD staff has recommended that CEQA documents use CCAPCD Rule 430, New Source Review, Best Available Control Technology thresholds as CEQA significant thresholds for criteria pollutants emissions. The thresholds of significance are summarized in the **Table 1** below:

Table 1 - Significant Thresholds

Air Pollutant	Average Daily Emissions (pounds per day)
ROG	25
NOx	25
SOx	80
PM10	80
CO	500

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions

contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable.

DISCUSSION

3.a: Conflict with or obstruct implementation of the applicable air quality plan.
ECORP Consulting, Inc. prepared an Air Quality & Greenhouse Gas Emissions Assessment (Assessment) for the Project (see **Appendix 3**).

The Assessment noted as part of its enforcement responsibilities, the USEPA of each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. As previously stated, the Colusa County portion of the NSVAB, which encompasses the Project Site, is classified as attainment for all federal standards. As such, Colusa County is not subject to a SIP.

The CCAPCD attains and maintains air quality conditions in the City of Colusa through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. In an attempt to achieve and maintain air quality standards, the air district has participated in the preparation of air quality attainment plans and reports. Specifically, all of the air districts in the NSVAB including the CCAPCD, prepared an air quality attainment plan for O3 in 1994. Updated every three years since adoption, the current Northern Sacramento Valley Planning Area 2021 Triennial Air Quality Attainment Plan includes forecast ROG and NOx emissions (O3 precursors) for the entire NSVAB. The 2021 AQAP provides local guidance for air basins to achieve and maintain attainment of the California O3 standard. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions, and updated emission inventory methodologies for various source categories.

A Project would not be consistent with the 2021 AQAP if it would result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQAP. The Project would not exceed the short-term construction standards or long-term operational standards with implementation of mitigation measure AQ-1.

Mitigation Measure AQ-1 would mandate the use of Tier 4 Certified engines for all dozers, scrapers, and graders used during Project construction. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 horsepower and increasingly more stringent Tier 2, Tier 3, and Tier 4 standards for all equipment with phase-in schedules from 2000 to 2015. As a result, all off-road, diesel

fueled construction equipment manufactured from 2006 to 2015 has been manufactured to Tier 3 standards. The Tier 3 standards can reduce NOx emissions by as much as 64 percent and PM emissions by as much as 39 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which are currently phased-in over the period of 2008-2015. The Tier 4 standards require that NOx emissions be further reduced by about 90 percent. This, as a result, decreases ROG emissions as well. All off-road, diesel-fueled construction equipment manufactured in 2015 or later have been manufactured to Tier 4 standards.

A General Plan amendment, rezone and accompanying text amendments to the Municipal Code to designate the site as Agricultural and have an AG – Agricultural municipal code will not have an impact upon air quality.

Therefore, the CTC facility would not conflict with or obstruct reduction measures presented in the 2021 AQAP and is considered less than significant with mitigation measures.

Mitigation Measure AQ-1 CARB Tier 4 Certified Equipment
Prior to the certificate of construction related permits for the Triple Crown Cannabis Research and Development Center Project, the Project applicant shall demonstrate to the satisfaction of the City of Colusa Planning Division that the following measure would be implemented during Project construction:

- **All dozers, scrapers, and graders used in Project construction shall be CARB Tier 4 Certified, as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.**

3.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.

ECORP Consulting (Assessment) for the Project the Assessment noted Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. The basic sources of short-term emissions that will be generated through construction of the Proposed Project would be from ground-disturbing activities and from the operation of construction vehicles (i.e., trenchers, dump trucks). Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soil would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates high potential for dust generation.

Construction-generated emissions associated with the Proposed Project are calculated using the CARB approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Construction was modeled occurring in five phases over five years.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 2 (below). Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the applicable thresholds of significance.

Table 2 - Unmitgated Construction-Related Criteria Air Pollutants					
Anticipated Construction Year	**Pollutant (pounds per day)**				
	ROG	**NOx**	**CO**	**SO_2**	**PM_{10}**
Calendar Year One	5.75	48.00	48.40	0.12	19.50
Calendar Year Two	5.60	45.10	47.80	0.12	19.40
Calendar Year Three	5.49	42.70	47.60	0.12	19.30
Calendar Year Four	5.33	39.70	46.90	0.12	19.20
Calendar Year Five	5.21	37.70	46.90	0.12	19.10
Potentially Significant Impact Threshold	25	25	500	80	80
Exceed Threshold?	**No**	**Yes**	**No**	**No**	**No**

As shown in the **Table - 2 Unmitigated Construction-Related Criteria Air Pollutants** (above), criteria air pollutant emissions generated during Project construction would result in significant concentrations of NOx emissions for every year of construction. Therefore implementation of Mitigation Measure AQ-1 is required in order to reduce NOx emissions to levels below the significance thresholds.

Mitigation Measure AIR-1 would mandate the use of Tier 4 Certified engines for the Project offroad construction equipment used during Project construction. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 horsepower and increasingly more stringent Tier 2, Tier 3, and Tier 4 standards for all equipment with phase-in schedules from 2000 to 2015. As a result, all off-road, diesel-fueled construction equipment manufactured from 2006 to 2015 has been manufactured to Tier 3 standards. The Tier 3 standards can reduce NOx emissions by as much as 64 percent and PM emissions by as much as 39 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which are currently phased-in over the period of 2008-2015. The Tier 4 standards require that NOx emissions be further reduced by about 90 percent. This, as a result, decreases ROG emissions as well. All off-road, diesel-fueled construction equipment manufactured in 2015 or later have been manufactured to Tier 4 standards.

With incorporation of Mitigation Measure AIR-1, noted below, the construction related daily pollutants would be generated at levels below the potentially significant threshold, as indicated in **Table 3 – Mitigated Construction-Related Criteria Air Pollutant Emissions** noted below.

Table 3 - Mitigated Construction-Related Criteria Air Pollutant Emissions					
Anticipated Construction Year	**Pollutant (pounds per day)**				
	ROG	**NOx**	**CO**	**SO_2**	**PM_{10}**
Calendar Year One	2.05	11.90	59.80	0.12	17.90
Calendar Year Two	2.05	11.60	59.70	0.12	17.90
Calendar Year Three	2.03	11.20	59.70	0.12	17.90
Calendar Year Four	2.00	10.80	59.50	0.12	17.90
Calendar Year Five	1.98	10.50	59.50	0.12	17.90

Potentially Significant Impact Threshold	25	25	500	80	80
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O3 precursors such as ROG and NOX. Project-generated increases in emissions would be primarily associated with energy use from cannabis cultivation and mobile sources, including employee and delivery trips to the Project Site. Operational air pollutant emissions were estimated based on the building square footage and water usage data provided by the Project Proponent, along with traffic information from CGW Traffic Engineers (2025). Long-term operational emissions attributable to the Project are identified in Table 4 and compared to the significance threshold.

Table 4 – Operational Criteria Air Pollutants Emissions

Emission Source	**Pollutant (pounds per day)**				
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**
Mobile	1.58	0.86	16.00	0.04	4.94
Area	0.20	0.00	0.00	0.00	0.00
Energy	1.30	23.60	19.80	0.14	1.79
Total	3.08	24.46	35.80	0.18	6.70
Potentially Significant Impact Threshold	25	25	500	80	80
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**

As shown in **Table 4 – Operational Criteria Air Pollutants Emissions**, daily emissions associated with Project operations would not exceed the significance threshold for ROG, NO_X, CO SO_2 or PM_{10}.

3.c: Exposure of Sensitive receptors to Toxic Air Contaminants

Sensitive receptors are defined 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 people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. Sensitive receptors are defined as any residence including private homes, condominiums, apartments, and living quarters, schools, preschools, daycare centers, and health facilities such as hospitals or retirement and nursing homes, long term care hospitals, hospices, prisons, and dormitories or similar live-in housing. The nearest sensitive receptor is a rural residence located northeast of the Proposed Project approximately 1,277 feet (0.24 mile) distant.

Construction- Generated Air Contaminants

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of DPM, ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); truck traffic; paving; and other miscellaneous activities. The Colusa County portion of the NSVAB is listed as a non-attainment area for the state standard for PM_{10} (CARB 2023). Thus, PM_{10} levels in the Colusa County portion of the NSVAB are at unhealthy levels during certain periods. However, as shown in Table 3, the Project would not exceed the significance thresholds for any criteria air pollutant emissions, including PM_{10} with implementation of mitigation measure AQ-1.

The health effects associated with O_3 are generally associated with reduced lung function. O3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of ROG and NOx in the presence of sunlight. The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term O_3 exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to O_3 may increase the risk of respiratory related deaths. The concentration of O_3 at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of O3 and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggests that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum O_3 concentration reaches 80 parts per billion. Because the Project would not involve construction activities that would result in O3 precursor emissions (i.e., ROG or NOx) in excess of the thresholds with the implementation of AQ-1 the Project is not anticipated to substantially contribute to regional O3 concentrations and the associated health impacts.

CO tends to be localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. With implementation of AQ-1, which requires CARB Tier 4 Certified, as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations to be utilized, the Project would not involve construction activities that would result in CO emissions in excess of the thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM and it contains $PM_{2.5}$ exhaust as a subset. As with O_3 and NO_x, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the thresholds within implementation of AQ-1. The increases of these pollutants generated by the Proposed Project would not on their own generate an increase in the number of days exceeding the NAAQS or CAAQS standards. Therefore, PM10 and PM2.5 emissions, when combined with the existing PM emitted regionally, would have minimal health effect on people located in the immediate vicinity of the Project Site. Additionally, the Project would be required to comply with Rule 403 for fugitive dust control, as described above, which limits the amount of fugitive dust generated during construction. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional

concentrations of nonattainment pollutants with implementation of mitigation measure AQ-1and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants
Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract additional mobile sources that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The Project would not have a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots
It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the NSVAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the SCAQMD's 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 AQMP can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQM1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District, the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given

project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The CTC Project is anticipated to result in an approximate maximum of 832 daily trips (GCW 2025). Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Proposed Project traffic exceeding CO values. Both the Brookins Ranch and the City-owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and it's associated out buildings while the site itself will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and air quality. Therefore, the overall project will have a less than significant impact upon Toxic Air Contaminates.

3.d: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. It is expected that the odors associated with the Project's construction would not be concentrated or stagnant near any of the sensitive receptors. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any of these types of outdoor odor-generating uses. Although cannabis cultivation and processing have the potential to generate odors, these operations would occur entirely indoors within enclosed, climate-controlled structures. Such facilities are typically equipped with odor control systems, including carbon filtration, carbon scrubbers or other air treatment technologies, to prevent the release of noticeable odors beyond the building envelope.

In addition, the Project would follow all odor control requirements of the City's Zoning Code, Article 21.5, Section 21.5.06(n), and Chapter 12F-12 – Odor control - including use of air filtration systems. Such Colusa Code sections require sufficient odor absorbing ventilation and exhaust system so that odor generated inside the cannabis business facility that is distinctive to its operation is not detected outside the cannabis business facility, anywhere on adjacent property or public rights-of-way, on or about any exterior or interior common areas walkways, hallways, breezeways, foyer, lobby areas, or any other areas available for common use by tenants or the visiting pubic. As such, cannabis business facilities must (1) install and maintain exhaust air filtrations systems with odor control that prevents odors from being emitted externally and (2) install air systems that creates negative air pressure between the cannabis business facility's interior or exterior so that odors generated inside the cannabis business facility are not detectable outside the cannabis facility.

Operations were analyzed at a programmatic level in the CalCannabis PEIR (CDFA 2017), and the Proposed Project would be consistent with the assumptions and analysis of the PEIR, which noted local communities have developed odor control requirements which match local community expectations and standards (sited above). Both the Brookins Ranch and the City-owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and air quality. Therefore, with existing regulations and requirements in place, impacts related to potential generation of objectionable odors are thus expected to be less than significant.

4. BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Game 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, and regulations or by the California Department of Fish and Game 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?	☐	☐	☐	☒

Regulatory Setting

Federal Laws, Regulations and Policies

Endangered Species Act
The Endangered Species Act (ESA) (16 U.S. Code [USC] § 1531 et seq.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species. Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC Section 1532). Section 7 of the ESA (16 USC Section 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats. Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from USFWS or NMFS for otherwise lawful activities that incidentally may result in "take" of endangered or threatened species, subject to specific conditions. A habitat conservation plan (HCP) must accompany an application for an incidental take permit

Migratory Bird Treaty Act
The Migratory Bird Treaty Act (MBTA) (16 USC, Chapter 7, Subchapter II) protects migratory birds. Most actions that result in take, or the permanent or temporary possession of, a migratory bird constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. USFWS is responsible for overseeing compliance with the MBTA.

Bald and Golden Eagle Protection Act
The Bald and Golden Eagle Protection Act (16 USC Section 668; 50 CFR Part 22) prohibits take of bald

and golden eagles and their occupied and unoccupied nests. USFWS administers the Bald and Golden Eagle Protection Act.

State Law, Regulations and Policies

California Fish and Game Code
The California Fish and Game Code (F&G Code) includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977 (NPPA) and the California Endangered Species Act (CESA). The NPPA (F&G Code Sections 1900-1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances. CESA (F&G Code Sections 2050–2098) prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under CESA as endangered or threatened. Section 2080 of the F&G Code prohibits the take of any species that is state listed as endangered or threatened, or designated as a candidate for such listing. California Department of Fish and Wildlife (CDFW) may issue an incidental take permit authorizing the take of listed and candidate species if that take is incidental to an otherwise lawful activity, subject to specified conditions.

F&G Code Sections 3503 and 3513 protect native and migratory birds, including their active or inactive nests and eggs, from all forms of take. In addition, Sections 3511, 4700, 5050, and 5515 identify species that are fully protected from all forms of take. Section 3511 lists fully protected birds, Section 5515 lists fully protected fish, Section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians.

F&G Code Section 1602 requires that a Streambed Alteration Application (SAA) be submitted to the CDFW for "any activity that may substantially diver or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream or lake'. The CDFW reviews the proposed actions and, if necessary, submits proposed measures to protect affected fish and wildlife resources to the Applicant. The SAA is the final proposal mutually agreed upon by CDFW and the Applicant. Projects that require an SAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the SAA overlap in these instances.

California Code of Regulations – Cannabis Cultivation
With regard to CDFA's CalCannabis program, the following regulations are applicable to the Project:

- California Business and Professions Code Section 26060.1(b)(3) requires all cultivators to comply with Section 1602 of the F&G Code or receive written verification from the CDFW that a streambed alteration agreement is not required.

Local Laws, Regulations and Policies

City of Colusa Code of Ordinances
The Colusa Municipal Code, Chapter 19 relates to trees and shrubs. Removal, Trimming, or planting of tress within the public right-of-way requires approval by the Colusa Tree Commission.

DISCUSSION
4.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:

A Biological Resource Assessment (BRA) was conducted by Gallaway Enterprises during October of 2025 on the 88.9 acres that are to be encumbered by the Colusa Triple Crown project. The purpose of this BRA is to document the endangered, threatened, sensitive, and rare species and their habitats that occur or may occur in the biological survey area (BSA).

The BRA notes that the land within the within the BSA, the 88.9 acres, is characterized by cropland, barren, and man-made riverine habitats.

Cropland accounts for approximately 79.2 acres of the property. Vegetation in cropland habitat includes a variety of sizes, shapes, and growing patterns. Most croplands support annuals, planted in spring and harvested during summer or fall. In many areas, second crops are commonly planted after harvesting the first. Soils often dictate the crops grown. Cropland vegetation is grown as a monoculture, using tillage or herbicides to eliminate unwanted vegetation. Croplands are established on the State's most fertile soils, which historically supported an abundance of wildlife unequalled in other sites. Croplands have greatly reduced the wildlife richness and diversity of California. Many species of rodents and birds have adapted to croplands and are controlled by fencing, trapping, and poisoning to prevent excessive crop losses (California Department of Food and Agriculture 1975). Except for insectivores, raptors, doves, and pheasants, avian wildlife that becomes numerous and uses crops before they are harvested are generally not welcome by growers. Wildlife such as waterfowl, sandhill cranes, and other species that use waste grain after harvest are usually not discouraged. Croplands flooded for weed control, leaching, irrigation, or waterfowl hunting serve as freshwater wetlands for a variety of associated wetland wildlife, including shorebirds, wading birds, and gulls. A variety of plants may occupy the periphery of cropland, where drainage or irrigation ditches harbor moisture for longer periods, and the soils are not as frequently disturbed. At the time the habitat assessment was performed, the cropland within the BSA was not being utilized for production, and the only plants within the mostly barren rows was the occasional stinkwort weed (*Dittrichia graveolens*). However, a larger variety of plant species were observed within the drainage ditch on the western edge of the field, including prickly lettuce (*Lactuca serriola*), black nightshade (*Solanum nigrum*), Russian thistle (*Salsola tragus*), perennial pepperweed (*Lepidium latifolium*), European heliotrope (*Heliotropium europaeum*), and even some tomato (Lycopersicon asculentum) deposited there from a previous crop cycle. Similarly, no animals were seen within the designated cropland of the BSA; they were only found on the periphery within the irrigation ditch, and included several species of pollinators (butterflies, wasps, and honey bees) as well as western fence lizards (*Sceloporus occidentalis*), black phoebes (*Sayornis nigricans*), and lesser goldfinch *(Spinus psaltria*).

Barren land accounts for approximately 8.8 acres of the property. Barren habitat is typified by non-vegetated soil, rock, and gravel. Access paths, parking, unpaved roads, and storage areas associated with existing buildings are classified as barren habitat within the BSA. Barren habitat typically provides low quality habitat to wildlife. Some ground-nesting birds, such as killdeer (*Charadrius vociferus*), will nest in gravelly, barren substrate, and reptile species may use this habitat for thermoregulation.

Man-made Riverine lands account for approximately 0.90 acres of the property. Intermittent or continually running water distinguishes rivers and streams. With increasing temperatures, decreasing velocities and accumulating bottom sediment, organisms of the fast water are replaced by organisms adapted to slower moving water. Mollusks and crustaceans replace the rubble-dwelling insect larvae. Backswimmers, water boatmen and diving beetles inhabit sluggish stretches and backwaters. Emergent vegetation grows along the banks, and duckweed floats on the surface. Abundant decaying matter on the river bottom promotes the growth of plankton populations that are not usually found in fast water. Most natural riverine systems are relatively stable over long periods of time as long as there is no human interference. The building of dams and the dredging and straightening of stream channels are the most important factors controlling the duration of stream and river types. Riverine habitats can occur in association with many terrestrial habitats.

The temperature of the riverine habitat is not constant. In general, small, shallow streams tend to follow, but lag behind air temperatures, warming and cooling with the seasons. Waters provide food for waterfowl, herons, shorebirds, belted kingfisher, and American dipper. Many species of insectivorous birds (swallows, swifts, flycatchers) hawk their prey over water. The riverine habitat within the BSA was dominated by a thick, dead stand of cattail (*Typha sp*.) within the larger irrigation ditches that had not had continuous flow of water for some time.

There is suitable habitat within the BSA for federal and state listed species. Special-status plants that have the potential to occur within the BSA include heartscale (*Atriplex cordulata var. cordulata*). Special-status animals, including proposed and candidate species, that have the potential to occur within the BSA include Crotch's bumble bee (*Bombus crotchii*), monarch butterfly (*Danaus plexippus*), giant garter snake (*Thamnophis gigas*), northwestern pond turtle (*Actinemys marmorata*), western burrowing owl (*Athene cunicularia ssp. hypugaea*), tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), and a variety of migratory bird and raptor species protected by the Migratory Bird Treaty Act (MBTA). There is no designated United States Fish and Wildlife Service (USFWS) critical habitat within the BSA for any federally listed species. The BSA also concluded that the site does not have any Sensitive Natural Communities.



Based upon the site visit, the BRA makes the following conclusions and recommendations to minimize and mitigate measures to further reduce or eliminate Project-associated impacts to special-status plant and wildlife species. The BRA notes that the proposed measures may be amended or superseded by the Project-specific permits issued by the regulatory agencies.

It should be noted that both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and biological resources.

Endangered, Threatened, and Rare Plants

Special-Status Botanical Species (Mitigation Measure Bio-1)

- A qualified botanist should conduct a protocol-level botanical survey during the appropriate survey window (i.e. blooming period) for special-status botanical species (i.e. heartscale) to determine presence or absence within the BSA.

- If special-status botanical species are observed within the BSA, then mitigation measures that are recognized by CDFW will be implemented based on the level of potential impacts. Mitigation options recognized include:

    - The Project should be designed to avoid or minimize impacts to areas where special status botanical species occur and maintain protective elements such as, fencing, open space or conservation easements, and/or buffer zones around suitable habitat where special-status botanical species occur prior to construction activities and throughout construction activities and/or;

    - If the Project design cannot completely avoid impacts to special-status botanical species, then consultation with the CDFW should be conducted and on-site or off-site compensation (such as through a mitigation bank) may be required to mitigate for impacts.

Special-status Vertebrates

Crotch's Bumble Bee (Mitigation Measure Bio-2)
To avoid impacts to Crotch's bumble bee, the following are recommended avoidance and minimization measures:

- A qualified biologist should conduct a bumble bee survey during the worker bee active period; (for Crotch's bumble bee: April-August).

- Assume all bumble bees are special-status bees. If CBB or other species of bumble bees are observed during Project activities, allow the bumble bee to leave the work area under its own volition and notify a qualified biologist of the observation to determine appropriate avoidance measures.

- If a CBB nest is discovered during surveys or construction activities, the qualified biologist should establish a non-disturbance buffer around the suitable nesting habitat and CDFW should be consulted. No work should occur within the buffer until the nest is confirmed to be inactive.

- If CBB are discovered to be present at the site, then it is advised that a CESA incidental Take Permit (ITP) is obtained prior to construction activities occurring in the buffer area defined by the biologist in coordination with CDFW.

Monarch Butterfly (Mitigation Measure Bio-3)
In the event that monarch butterfly is formally listed by USFWS during development of the project site, the following avoidance and minimization measures are recommended:

- If monarch butterfly is observed consult with the USFWS on appropriate avoidance, minimization and mitigation measures.

- If any milkweed plants are discovered during survey efforts, then protection buffers should be established around the milkweed plants, as determined by a qualified biologist and consultation with the USFWS should be initiated.

- If a monarch butterfly is observed during Project activities, allow the monarch butterfly to leave the work area on its own accord.

Giant Garter Snake (Mitigation Measure Bio-4)

If the proposed project does not involve work in or within 200 feet of the canal/riverine habitat the following avoidance and minimization measures are recommended:

- A pre-construction survey shall be conducted 24 hours before any ground disturbance activities around the creek channel. The survey should be repeated if there is a lapse in construction for two weeks or more.

- A qualified biologist shall be present on-site during vegetation removal to monitor for GGS.

- If a GGS is encountered during construction activities, then construction shall stop within the area of the sighting until the snake has left the work area or a qualified biologist has determined that there will be no harm to the snake. Any sightings or incidental take shall be reported to the USFWS and CDFW within 24 hours.

- Before initiating any ground disturbances, restrictive silt fencing will be installed along the construction boundaries to prevent wildlife (i.e., reptiles, mammals, birds, etc.) from entering the construction site from the adjacent aquatic settings and to prevent construction equipment and personnel from entering potential habitat from the construction site.

- Prior to commencement of construction, contractors and work crews that are onsite for more than 30 minutes, shall go through a worker environmental awareness training (WEAT) regarding avoidance of GGS and the possible penalties for not complying with these requirements. The training can be given by a qualified biologist or the Foreman that has been trained by the qualified biologist to conduct the WEAT.

If work is proposed to occur in or within 200 feet of the canal/riverine, then consultation with the USFWS and CDFW will be required prior to any ground disturbance or in-water work. Any avoidance, minimization and mitigation measures identified by the results of the consultation with USFWS and CDFW shall be incorporated into the project conditions.

Northwestern Pond Turtle (Mitigation Measure Bio-5)

The following are avoidance and minimization measures recommended in order to avoid and minimize potential impacts to northwestern pond turtle:

- Immediately prior to conducting vegetation removal or ground-disturbing activities in suitable northwestern pond turtle habitat, a qualified biologist shall conduct a survey to determine the presence or absence of western pond turtles. If western pond turtles are observed where they could be potentially impacted by project activities, as determined by the onsite biologist, then work shall not be conducted within 100 feet of the sighting until

the turtle has left the project site or a qualified biologist has relocated the turtle to suitable habitat outside of the project boundary.

- If turtle eggs are uncovered during construction activities, then all work shall stop within a 25-foot radius of the nest and the qualified biologist should be notified immediately. The 25-foot buffer should be marked with identifiable markers that do not consist of fencing or materials that may block the migration of young turtles to the water or attract predators to the nest site. No work will be allowed within the 25-foot buffer until consultation with CDFW has occurred.

- All portions of the project site that could result in inadvertently trapping turtles, such as open pits, trenches, and dewatered areas will be covered and/or exclusion fencing will be installed to prevent turtles from entering these areas.

- In the event that northwestern pond turtle is formally listed by USFWS prior to or during development of the project site, consultation with USFWS shall be conducted and any avoidance, minimization and mitigation measures identified by the results of the consultation shall be incorporated into the project conditions.

Western Burrowing Owl (Mitigation Measure Bio-6)

To avoid impacts to WEBO from Project activities, the following are recommended avoidance and minimization measures:

- Per the CDFW Staff Report on Burrowing Owl Mitigation, direct impacts will be avoided by conducting a preconstruction survey within 14 days of the start of Project activities.

    - A qualified biologist will conduct the preconstruction survey. The biologist will have familiarity with the species and its local ecology, experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor; familiarity with the appropriate state and federal statutes related to burrowing owls, scientific research, and conservation; and experience with analyzing impacts of development on burrowing owls and their habitat.

- If a burrowing owl or its burrow is observed within the Project limits or within 500 feet of the Project limits, work will stop within 500 feet of the observation, and a no disturbance buffer will be established and consultation with CDFW shall be initiated to identify appropriate avoidance, minimization and mitigation measures, which may include the acquisition of an Incidental Take Permit.

Tricolored Blackbird (Mitigation Measure Bio-7)

To avoid impacts to TRBL from Project activities, the following are recommended avoidance and minimization measures:

- Conduct a pre-construction survey to determine presence or absence of nesting tricolored blackbird within 500 feet of mapped potentially suitable habitat. The pre-construction survey will be conducted within 7 days prior to ground-disturbing activities.

- If any tricolored blackbirds' nests are observed within 500 feet of the Project Boundary, the City will be notified and will then consult with CDFW for further guidance.

Swainson's Hawk (Mitigation Measure Bio-8)

To avoid impacts to Swainson's hawks from Project activities, the following are recommended avoidance and minimization measures:

- If Project activities cannot begin prior to the avian breeding season (March 1 – August 31), then a pre-construction survey will be conducted to determine presence or absence of nesting Swainson's hawks within a quarter-mile of the Project Boundary. The pre-construction survey will be conducted within 7 days prior to ground-disturbing activities.

- If a Swainson's hawk nest is observed within a quarter-mile radius of the Project Boundary, the City will be notified and will then consult with CDFW for further guidance.

Migratory Birds and Raptors (Mitigation Measure Bio-9)

To avoid impacts to avian species protected under the MBTA and the CFGC, the following avoidance and minimization measures are recommended:

- Project activities, including site grubbing and vegetation removal, should be initiated outside of the bird nesting season (February 1 – August 31) whenever feasible.

- If Project activities cannot be initiated outside of the bird nesting season, then the following will occur:

    - A qualified biologist shall conduct a nesting bird survey within 250 feet of the BSA, where accessible, within 7 days prior to the start of Project activities.

    - If an active nest (i.e., containing egg[s] or young) is observed within the BSA or in an area adjacent to the BSA where impacts could occur, then a species protection buffer will be established by the qualified biologist and in consultation with appropriate agencies. The species protection buffer will be defined by a qualified biologist based on the species, nest type, and tolerance to disturbance. Construction activity shall be prohibited within the buffer zones until the young have fledged, or the nest fails, as determined by a qualified biologist. Nests shall be monitored by a qualified biologist once per week and a report submitted to the CEQA lead agency weekly.

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

The nearest riparian habitat in relationship to the project is approximately 0.56 miles to the west of the project boundary, the Colusa National Wildlife refuge. While the Sacramento River is approximately 2.5 miles to the west. The land itself in which the cannabis operation will take place is regularly disturbed by agricultural practices, including tilling and disking. The CTC project site was also subject to extensive trenching for the purple pipe installation and was subsequently graded and left flat.

Across this property, as noted in the BRA, there are several wetlands features, characterized as man-made riverine (agricultural ditches and canals/levees). These irrigation ditches that run along three of the four peripheries of the BSA offer potential suitable habitat, although the habitat is low quality and marginal at best. With the inclusion of the above reference Mitigation Measures (**Bio-1 through Bio-9**) impacts associated with an adverse effect on any riparian habitat will be minimized to a less than significant impact with mitigation measures.

There will be no changes to the existing operations on the site known as Brookins Ranch, which will continue to operate as a small agricultural facility. Same can be said for the city owned agricultural lands, which are disturbed and will continue in agricultural practices. In regards to the General Plan Amendments, rezones and text amendments to the Colusa Municipal Code it can be said they will have no direct correlation between these actions and biological resources.

4.c: Have a substantial adverse effect on state or federally protected wetlands

Pursuant to the *U.S. Fish and Wildlife Service's (USFWS) National Wetland Mapper* the Project Site is void of any known, mapped or previously identified creeks/streams or wetlands. However, the BRA notes that there are several wetland features throughout, characterized as man-made riverine (agricultural ditches and canals/levees). Vegetations within these ditches receive ephemeral water flows. Reviews of historical aerial photographs of the site indicate that the ditches and canals run dry during summer months and appear to not be connected to perennial water source. The same historical aerial photographs show that such ditches are often moved, added, altered or removed depending on the specific agricultural production. However, with the inclusion of the above reference Mitigation Measure (**Bio-1 through Bio-9**) impacts related to wetlands would be less than significant.

It should be noted, that construction activities are only slated on the 88.97-acre site which CTC will operate, that portion of the project would be subject to the Construction General Permit Order 2009-0009-DWQ, which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) and implementation of standard Best Management Practices (BMPs). Such BMPs may include installation of straw bales, fiber rolls, and/or silt fencing structures, limiting ground disturbance to the minimum necessary, and stabilizing disturbed soil areas as soon as feasible after construction is completed, which would aid in assuring the minimization of erosion and avoiding runoff. In addition, drainage improvements proposed under the project would include curb, gutter, and sidewalk, as well as storm drain inlets and drainage storage, catch bases and filtration systems, which would further minimize potential impacts. There will be no changes to the existing operations on site known as Brookins Ranch or the balance of the 509 acres owned by the City that are in agricultural production. In regards to the General Plan Amendments, rezones and text amendments to the Colusa Municipal Code it can be said they will have no direct correlation between these actions and biological resources, therefore a less than significant impact would occur.

4.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.
As discussed above, the site is void of trees, native habitat that supports resident wildlife and the overall the proposed project would not impact the movement of any native resident or migratory fish (See 4.c); however, there is the potential for native resident wildlife species in the vicinity of the Site to be impacted during earth moving activities, and project construction and operation, including bird species protected under the Endangered Species Act, Migratory Bird Treaty Act of 1918 (MBTA), the Bald and Golden Eagle Protection Act of 1940, or other regulations. As previously mentioned, Mitigation Measures BIO 1 through BIO-9 will minimize any impacts to special status wildlife species to a less than significant impact.

Orchard trees exist on the Brookins Ranch portion of the site, which are routinely managed and harvested. This results in a marginal resource for nesting birds. These trees and the agricultural production and maintenance associated with them will continue to operate. The Sacramento River, which is 2.5 miles to the west on the opposite side of the city limits, would qualify as a wildlife corridor, however given the distance of the project site to the river, there would be no impact upon this corridor. The west coast is home to the "pacific flyway" a north-south flyway for migratory birds that extend from Alaska to Patagonia, where every year migratory birds travel the distance in both spring and fall. These migratory birds will make stops in the valley, typically in rice fields or wildlife preserves. The nearest preserve is 0.5 miles to the west of the CTC site, while rice fields are common in the valley and Colusa County. Given that construction season typically starts in late spring and extends through summer to the start of fall, construction activities would generally avoid migratory birds not traveling in the area. Further, the site itself does not contain water features which would allow birds to stop. Impacts upon wildlife corridors are expected to be less than significant.

Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and it's associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and biological resources.

4.e: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The City of Colusa does not have any policies and regulations pertaining to the protection on private property, including tree removal and preservation regulations. With the exception of the 88.97-acre site, all properties will remain in an "as is" condition, including the Brookins Ranch, which includes active farming practices. The City's Municipal Code, Chapter 19 requires approval of the tree commission for removal, trimming or planting of any trees in the public right-of-way, however in this instance, no trees at location are slated to be removed from the project site. The General Plan amendment, rezone and accompanying text amendments to the Colusa Municipal Code do not involve tree related resources. Therefore, there will be a no impact upon local ordinances and tree resources.

4.f: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan. The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, as there are no such plans applicable to the Site or adopted for the City. Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and Habitat Conservation Plan or Natural Community Plan. No impact would occur.

5. **CULTURAL RESOURCES**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 dedicated cemeteries?	☐	☒	☐	☐

Regulatory Setting

Federal Laws, Regulations and Policies
The Project does not require any federal approvals and is not located on federal lands.

State Laws, Regulations and Polices

CEQA and CEQA Guidelines
Section 21083.2 of CEQA requires that the lead agency determines whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information.

- Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Although not specifically inclusive of paleontological resources, these criteria may also help to define "a unique paleontological resource or site." Measures to avoid, conserve, preserve, or mitigate significant effects on these resources are also provided under CEQA Section 21083.2. Section 15064.5 of the CEQA Guidelines notes that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Substantial adverse changes include physical changes to the historic resource or to its immediate surroundings, such that the significance of the historic resource would be materially impaired. Lead agencies are expected to identify potentially feasible measures to mitigate significant adverse changes in the significance of a historic resource before they approve such projects. Historical resources are those that are:

- listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Pub. Res. Code Section 5024.1[e]);

- included in a local register of historic resources (Pub. Res. Code Section 5020.1[k]) or identified as significant in an historic resource survey meeting the requirements of Pub. Res. Code Section 5024.1(g); or

- determined by a lead agency to be historically significant

CEQA Guidelines Section 15064.5 also prescribes the processes and procedures found under Health and Safety Code Section 7050.5 and Pub. Res. Code Section 5097.95 for addressing the existence of, or probable likelihood of, Native American human remains, as well as the unexpected discovery of any human remains within the project site. This includes consultation with the appropriate Native American tribes.

CEQA Guidelines Section 15126.4 provides further guidance about minimizing effects to historical resources through the application of mitigation measures. Mitigation measures must be legally binding and fully enforceable

The lead agency having jurisdiction over a project is also responsible for ensuring that paleontological resources are protected in compliance with CEQA and other applicable statutes. Paleontological and historical resource management is also addressed in Pub. Res. Code Section 5097.5, "Archaeological, Paleontological, and Historical Sites." This statute defines as a misdemeanor any unauthorized disturbance or removal of a fossil site or remains on public land and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. This statute would apply to any construction or other related project impacts that would occur on state-owned or state-managed lands.

California Register of Historic Resources

Pub. Res. Code Section 5024.1 establishes the CRHR. The register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed as or determined to be eligible for listing in the NRHP, including properties evaluated under Section 106 of the National Historic Preservation Act. The criteria for listing are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

1. Area associated with the events that have made a significant contribution to the broad pattern of California's history or cultural heritage.

2. Are associated with the lives of persons important in our past;

3. Embody the distinctive characteristics of a type, period, region, or method of construction or represent the work of an important creative individual, or possess high artistic values; or

4. Have yield, or maybe likely to yield, information important in prehistory or history.

Environmental Setting: As provided in the Chapter 4.9 Historic and Cultural Resources of the City of Colusa General Plan Draft Master Environmental Impact Report, (see Reference Document List), the project is located within Wintun Indian territory which occupied the southwest portion of the Sacramento Valley, from the lower hills of the eastern North Coast Ranges to the Sacramento River, and from Princeton south to San Pablo and Suisun Bays. A number of Wintun villages had been identified along the Sacramento River near the City of Colusa (Kroeber 1925, 1932). Euro-American contact with Native American groups living in the Central Valley of California began during the last half of the eighteenth century. At this time,

the attention of Spanish missionaries shifted away from the coast, and its dwindling Native American population, to the conversion and missionization of central valley interior populations.

The City of Colusa is located at the site of the former Native American village of Koru. Koru was the governing seat for the Korusi tribelet of Southern Wintun. In 1843, General John Bidwell and a small party of men (from the Chico Rancheria approximately 50 miles northeast of Colusa) traveled south along the Sacramento River through Korusi territory on their way to Sutter's Fort in Sacramento. Bidwell estimated the population of the village of Koru to be at least 1,000. He also noted 17 large villages west of Colusa along a stream that connected to the Sacramento River and estimated that not less than 15,000-20,000 Native Americans occupied the area within ten miles of Koru (Green, 1880; Rogers, 1891). Beginning in the late 19th century, Colusa County and the City of Colusa became agricultural centers for the production of wheat, and by 1876, Colusa County produced 143,000 tons of wheat for export. In 1911-12, rice was introduced into the valley and eventually replaced wheat as the major agricultural crop in Colusa County. Rice required more water than other crops, which fostered the development of irrigation projects such as the Glenn-Colusa Irrigation Canal. Consequently, both rice and water have been major factors in the growth of both Colusa County and the City of Colusa.

DISCUSSION:

5.a: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.

The City General Plan notes that the City has a minimum of 244 buildings that are considered locally significant or eligible for inclusion on the National Register of Historic Places and/or the California Register of Historic Resources, none of which occur on or near the Project site, as the majority of these structures are within the downtown area of Colusa, approximately 1.5 miles to the northeast. The General Plan notes that as of 2002, there are a total of 15 properties recognized as historically significant by the City of Colusa Heritage Preservation Committee. These structures are also located in the core of the City and are limited to the areas of Fifth Street, Sixth Street, 10th Street, Webster Street, Main Street, Market Street, Oak Street and Jay Street and consist of known physical improvements such as the Colusa Court House, Grammer School, Carnegie Library, I.O.O.F building, Chinatown, etc.

The property within the annexation is routinely disrupted through agricultural practices and production. This includes tiling, harvesting, and utilization of heavy equipment on site. Any subsurface cultural resources within the routine area of agricultural activities have more than likely been destroyed or compromised. With that said, when construction activities begin on the 88.97-acre portion of the site, it will be disrupted again, at deeper depths, which could lead to a potential impacts to unidentified or unrecorded historical resources or an accidental discovery of a historical or archaeological resources. In the event a resource is discovered during construction related activities, mitigation measure CULT-1, CULT-2 and CULT-3 provided below would mitigate the impact to less than significant.

No construction related activities or ground disturbances are proposed anywhere within the annexation, besides the 88.97 acres for the cannabis operation. . Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and cultural resources.

5.b Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5: On April 1, 2025 Element Land Solutions contacted the Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and the contact information for the representatives of the Native American tribes associated with the project area.

On April 3, 2025 a response was received from the NAHC, which noted that a SLF search was conducted through the Native American Heritage Commission and the results were negative. Included with the letter was a Native American contact list of tribes who may have knowledge of cultural resources in the Project area. A total of five (5) tribal contacts are included on the contact list. On April 3, 2025, individual letters were then mailed to each tribal contact, which gave a brief project description, a location of the Site and a copy of the proposed annexation map, a General Plan/Zoning map and an aerial photograph outlining the project area. The letters requested that individual tribes contact the City within 30 days, in the event they wished to discuss the Project further. No tribe requested formal consultation or additional information on the project within the 30-day window. Therefore, adherence and compliance with state laws has been fulfilled.

It should be noted that on May 16, 2025, after the 30-day consultation window, the Yocha Dehe Tribe responded with a written request to consult. On September 9th, 2025, as directed in the Tribe's letter and email was sent to CRD Administrator. As the date of this IS/MND the Tribe has not responded to the City's email.

The 2007 General Plan EIR notes that a search of the University of California Museum of Paleontology collections database did not identify any evidence of significant paleontological resources in the Planning Area, which also includes the City limits and its Sphere of Influence.

Any prehistoric sites or historic structures which might have once existed in the Project area are likely to have been previously disturbed through prior agricultural activities, bulldozing, and episodes of development and demolition, including ditch excavation, grading for single family home pads, agricultural plantings and grazing of the site.

Although no resources are known to existing within the Project Site, and out of an abundance of caution, there could be a potential, during construction related activities, of a Native American and/or historic-period resources discovery since subsurface historical resources may exist on the project site and could be impacted during ground disturbance activities. Therefore, with the inclusion of mitigation measures CULT-1, CULT-2, and CULT-3 listed below impacts would be considered less than significant.

Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and cultural resources.

5.c: Directly or indirectly destroy a unique paleontological resource or site or unique geological feature. As discussed above in Cultural Resources section 5.a and 5.b the Project Site is routinely disturbed through routine and historical agricultural purposes. The site is flat with no visible or known paleontological resources or unique geological features. With that said the 88.97-acre site is anticipated to be developed as noted in the Project Description and will be subject to underground-related construction activities. With the introduction of CULT 1, CULT-2 and CULT-3, any unknown subsurface cultural resources that exist, including human remains, may be disturbed and discovered. With the incorporation of the outlined Mitigation Measures, impacts to these resources would be reduced to less than significant.

No construction related activities or ground disturbances are proposed anywhere within the annexation, besides the 88.97 acres for the cannabis operation. All subsequent farming activities will continue both the city owned lands and, on the properties, known as Brookins Ranch. The General Plan Amendments, rezones

and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and cultural resources.

5.c: Disturb any human remains, including those interred outside of formal cemeteries. As noted above in Cultural Resource section 5.a and 5.b, although no historical, pre-historic, archaeological resources are known to exist at the Site, there is a potential that subsurface cultural resources exist, including human remains, and that may be disturbed during ground-disturbing construction activities. To reduce the potential impact to less than significant, mitigation measure CULT-1 and CULT-2 would apply and result in a less than significant impact with mitigation measures.

As for the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and cultural resources and therefore would not have any impact on these resources.

MITIGATION MEASURES

CULT-1: Construction Notes and Stop Work. A note shall be placed on all grading and construction plans which informs the construction contractor that if any bones, pottery fragments or other potential cultural resources are encountered during construction, all work shall cease within the area of the find pending an examination of the site and materials by a professional archaeologist. If during ground disturbing activities, any bones, pottery fragments or other potential cultural resources are encountered, the developer or their supervising contractor shall cease all work within the area of the find and notify Planning staff at (530) 458-4740. A professional archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology and who is familiar with the archaeological record of Colusa County, shall be retained by the applicant to evaluate the significance of the find.

Site work, within 100 feet of the discovery, shall not resume until the archaeologist conducts sufficient research, testing and analysis of the archaeological evidence to make a determination that the resource is either not cultural in origin or not potentially significant. If a potentially significant resource is encountered, the archaeologist shall prepare a mitigation plan for review and approval by the City of Colusa Staff, including recommendations for chain of command, total data recovery, Tribal monitoring, disposition protocol, or avoidance, if applicable. All measures determined by City Staff to be appropriate shall be implemented pursuant to the terms of the archaeologist's report. The preceding requirement shall be incorporated into construction contracts and plans to ensure contractor knowledge and responsibility for proper implementation.

CULT-2: Discovery. If archaeological resources are encountered during construction, work shall be temporarily halted within 100 feet of the discovered materials and a qualified archaeologist and the City of Colusa shall notify all the local tribes on the consultation list maintained by the State of California Native American Heritage Commission, to provide local tribes the opportunity to monitor evaluation of the site during underground construction related activities. Construction fencing (4-foot-high orange safety fence) shall be installed around the 100-foot setback of the discovery. Workers shall avoid altering the materials and their context until a qualified professional archaeologist, in collaboration with the local tribes, has evaluated the situation and provided appropriate recommendations. Project personnel shall not collect archaeological resources. [Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.]

CULT-3: Documentation. Any identified cultural resources shall be recorded on DPR 523 historic resource recordation forms by a qualified archaeologist, available online from the Office of Historic Preservation's website: http://ohp.parks.ca.gov/default.asp?page_id=1069**.**

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

Federal Laws, Regulations and Policies

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this act, the National Highway Traffic and Safety Administration, part of the US Department of Transportation (DOT), is responsible for revising fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturers' compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. The US Environmental Protection Agency calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. Based on information generated under the CAFÉ program, DOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 and 2005

The Energy Policy Act (EPAct) of 1992 was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas1. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The EPAct of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

State Laws, Regulations and Polices

On October 7, 2015, Governor Edmund G. Brown, Jr. signed into law Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015 (De León, Chapter 547, Statutes of 2015), which sets ambitious annual targets for energy efficiency and renewable electricity aimed at reducing greenhouse gas (GHG) emissions. According to the Final Commission Report of the California Energy Commission (CEC), dated October 2017, SB 350 requires the CEC to establish annual energy efficiency targets that will achieve a cumulative doubling of statewide energy efficiency savings and demand reductions in electricity and natural gas final end uses by January 1, 2030. This mandate is one of the primary measures to help the State achieve its long-term climate goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The proposed SB 350 doubling target for electricity increases from 7,286 gigawatt hours (GWh) in 2015 up to 82,870 GWh in 2029. For natural gas, the proposed SB 350 doubling target increases from 42 million therms (thm) in 2015 up to 1,174 MM in 2029 (CEC, 2017).

State of California Energy Action Plan

CEC is responsible for preparing the state energy plan, which identifies emerging trends related to energy supply, demand, and conservation; public health and safety; and the maintenance of a healthy economy. The current plan is the 2003 California Energy Action Plan (2008 update). The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies several strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs, as well as the encouragement of urban design that reduces vehicle miles traveled (VMT) and accommodates pedestrian and bicycle access.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), CEC and the California Air Resources Board (CARB) prepared and adopted a joint agency report in 2003, Reducing California's Petroleum Dependence. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT (CEC and CARB 2003). A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2030.

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (PRC section 25301(a)). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every 2 years and an update every other year. The 2021 IEPR is the most recent IEPR. The 2021 IEPR provides a summary of priority energy issues currently facing the state, outlining strategies and recommendations to further the state's goal of ensuring reliable, affordable, and environmentally responsible energy sources. The report contains an assessment of major energy trends and issues in California's electricity, natural gas, and transportation fuel sectors. The report provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. Topics covered in the 2021 IEPR include building decarbonization, coordination between state energy agencies, decarbonizing the state's natural gas system, increasing transportation efficiencies, and improving energy reliability. The

IEPR also presents an assessment of the California Energy Demand Forecast (CEC 2022a). The 2023 IEPR is in process.

Renewables Portfolio Standard
The state passed legislation referred to as the Renewables Portfolio Standard (RPS), which requires increasing the use of renewable energy to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2, Chapter 1, Statutes of 2011), 52 percent by 2027 (SB 100, Chapter 312, Statutes of 2018), 60 percent by 2030 (also SB 100, Chapter 312, Statutes of 2018), and 100 percent by 2045 (also SB 100, Chapter 312, Statutes of 2018). On September 16, 2022, SB 1020 (Chapter 361, Statutes of 2022) was signed into law. This bill supersedes the goals of SB 100 by requiring that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035; 95 percent by December 31, 2040; and 100 percent by December 31, 2045, and supply 100 percent of electricity procured to serve all state agencies by December 31, 2035.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015
The Clean Energy and Pollution Reduction Act of 2015 (SB 350, Chapter 547, Statutes of 2015)) requires that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030. It also establishes energy efficiency targets that achieve statewide, cumulative doubling of the energy efficiency savings in electricity and natural gas end uses by the end of 2030.

Assembly Bill 1007: State Alternative Fuels Plan
AB 1007 (Chapter 371, Statues of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative nonpetroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce greenhouse gas (GHG) emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

California Building Energy Efficiency Standards (Title 24, Part 6 and Part 11)
The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current California Energy Code will require builders to use more energy efficient building technologies for compliance with increased restrictions on allowable energy use. The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into on-site generation by requiring solar photovoltaic (PV) systems on new homes, providing significant GHG savings. The 2022 California Energy Code, the most recent version, advances the on-site energy generation progress started in the 2019 California Energy Code by encouraging electric heat pump technology and use, establishing electric-ready requirements when natural gas is installed, expanding solar PV system and battery storage standards, and strengthening ventilation standards to improve indoor air quality. CEC estimates that the 2022 California Energy Code will save consumers $1.5 billion and reduce GHG emissions by 10 million metric tons of carbon dioxide-equivalent emissions over the next 30 years (CEC 2022b).

The California Green Building Standards Code, known as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code. It became mandatory effective January 1, 2011 (as part of the 2010

California Building Standards Code). The current version is the 2022 CALGreen Code, which took effect on January 1, 2023. As compared to the 2019 CALGreen Code, the 2022 CALGreen Code strengthened sections pertaining to electric vehicle and bicycle parking, water efficiency and conservation, and material conservation and resource efficiency, among other sections of the CALGreen Code. The CALGreen Code sets design requirements equivalent to or more stringent than those of the California Energy Code for energy efficiency, water efficiency, waste diversion, and indoor air quality. These codes are adopted by local agencies that enforce building codes and used as guidelines by state agencies for meeting the requirements of Executive Order B-18-12.

AB 1279 and 2022: Scoping Plan for Achieving Carbon Neutrality
On September 16, 2022, the state legislature passed AB 1279 (Chapter 337, Statutes of 2022), which codified the stringent emission targets for the state of achieving carbon neutrality and an 85-percent reduction in 1990 emissions level by 2045. CARB released the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) on November 16, 2022, as also directed by AB 1279 (CARB 2022). The 2022 Scoping Plan traces the pathway for the state to achieve its carbon neutrality goal and an 85-percent reduction in 1990 emissions goal by 2045. CARB adopted the 2022 Scoping Plan on December 16, 2022.

California Energy Efficiency Action Plan
The 2019 California Energy Efficiency Action Plan has three primary goals for the state: double energy efficiency savings by 2030 relative to a 2015 base year (per SB 350, Chapter 547, Statutes of 2015), expand energy efficiency in low-income and disadvantaged communities, and reduce GHG emissions from buildings. This plan provides guiding principles and recommendations related to how the state would achieve those goals. These recommendations include:

- Identifying funding sources that support energy efficiency programs,
- Identifying opportunities to improve energy efficiency through data analysis,
- Using program designs to encourage increased energy efficiency on the consumer end,
- Improving energy efficiency through workforce education and training, and
- Supporting rulemaking and programs that incorporate energy demand flexibility and building decarbonization

Department of Cannabis Control
CCR, title 4, division 19 includes the following requirements regarding energy use for commercial cannabis uses.

Section 16305: Renewable Energy Requirements

(a) Beginning January 1, 2023, all holders of indoor, tier 2 mixed-light license types of any size, and all holders of nursery licenses using indoor or tier 2 mixed-light techniques shall ensure that electrical power used for commercial cannabis activity meets the average electricity greenhouse gas emissions intensity required by their local utility provider pursuant to the California Renewables Portfolio Standard Program in division 1, part 1, chapter 2.3, article 16 (commencing with section 399.11) of the Public Utilities Code.
(b) If a licensed cultivator's average weighted greenhouse gas emission intensity, as calculated and reported upon license renewal pursuant to section 15020, is greater than the local utility provider's greenhouse gas emission intensity, the licensee shall obtain carbon offsets to cover the excess in carbon emissions from the previous annual licensed period. The carbon offsets shall be purchased from one or more of the following recognized voluntary carbon registries:
    a. American Carbon Registry;

b. Climate Action Reserve; or
c. Verified Carbon Standard.

Local Laws, Regulations and Policies

City of Colusa General Plan
The City of Colusa General Plan (2007) includes the following goals and policies related to energy consumption

Goal PRC-11: To reduce consumption of energy sources in Colusa.

> **Policy PRC-11.1:** The City shall seek to minimize energy impacts from new residential and commercial projects.

6.a: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation.

Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project.

During both construction and operation of the CTC portion of the project, consumption of energy resources would be required for the movement of equipment and materials during construction, as well as for operation of the newly constructed cannabis operation (e.g., lighting, pumps, heating and cooling etc.). However, during the project construction activities would have a nominal effect on local and regional energy supplies, especially over the long-term. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and requirements for recycling of construction debris and incorporation of previously mentioned mitigation measure Air-1, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

When structures are built, they would be subject to Part 6 (California Energy Code) and Part 11 (California Green Building Standards Code (commonly known as "CalGreen") of Title 24 of the California Code of Regulations, which contains energy conservation standards applicable to residential and non-residential buildings throughout California to ensure new and existing buildings achieve energy efficiency and preserve outdoor and indoor environmental quality. For commercial development of the proposed type, these standards require that they be solar ready. As discussed in the PEIR, typical equipment for indoor cannabis cultivation operation creates artificial climate conditions conductive to cannabis propagation, vegetative growth, flowing and processing. Different areas within the premises may be used for each of these activities. Lighting and climate control equipment required for indoor cultivation operations includes high-intensity lighting, which requires a relatively large amount of energy (mainly electricity) for operation.

Reliance on equipment can vary widely as a result of various factors, including plant spacing, layout, and the surrounding outdoor climate. Indoor cultivators would be required to comply with all applicable local and state regulations, including building and electrical codes. Additionally, providing the plants with more light during photo periods by using reflectors, growing rooms that are painted white, and/or more intense lighting can increase the rate of plant growth indoors, while reducing energy consumption. The PEIR notes

that there is overall a high demand for energy use for indoor cultivation. As such the PEIR discussed implementing environmental protection measures found in Section 8313 and 8315 (PEIR Page 4.3-31) of the proposed regulations (Appendix A of the PEIR) to aid if offsetting energy demand. Those environmental protection measures have become Mitigation Measures (ENG-1 and ENG-2) to adequately capture the measure and ensure compliance with regulations.

The proposed project would consume energy, but it would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy or wasteful use of energy resources, nor would the proposed project conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The projected energy demand would not be excessive relative to total countywide demand or relative to other land use projects and would not inherently be a source of wasteful energy demand. As described in the Project Description, the applicant will utilize photovoltaic solar panels and battery energy storage system (BESS) to offset energy demands. The California Energy Commission, through the California Building Code, requires PV solar energy systems to have a minimum design to offset the annual electrical consumption of the proposed building. These requirements are based on the climate zone, total condition floor area of the structure and the specific building type, as well as the slope of the roof (2025 Energy Code). Additional discussion on solar and accompanying mitigation measures are in in Section 3 – Air Quality.

For these reasons, related impacts are considered to be less than significant with Mitigation Measures.

Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and with its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and energy resources.

ENG-1: Prohibited Energy Sources: Utilization of gas or diesel generators other than for emergency back up power, are prohibited.

ENG-2: Energy Sources:
Energy sources for the project will be provided from any combination of the following sources: (a) on-grid power with 42 percent renewable sources; (b) on-site zero-net-energy renewable sources providing 42 percent of power; or (c) purchase of carbon offsets for any portion of power above 58 percent not from renewable sources; (d) the cultivator must demonstrate that the equipment used is 42 percent more energy efficient compared to standard equipment, using 2014 as a baseline 2 year.

6.b: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency:
The City of Colusa has not adopted a local plan for renewable energy or energy efficiency. However, several goals, policies, and actions were adopted with the City's 2007 General Plan Update that encourage and require energy efficiency in new development. The DMEIR adopted in conjunction with the General Plan Update provides that "[t]he City can and does require energy efficient design in building construction within the City. This requirement and the General Plan policies and implementing actions listed previously can effectively reduce GHG emissions from building operations (energy use)." As described in the Project Description, the applicant will utilize photovoltaic solar panels and battery energy storage system (BESS) to offset energy demands. The California Energy Commission, through the California Building Code, requires PV solar energy systems to have a minimum design to offset the annual electrical consumption of the proposed building. These requirements are based on the climate zone, total condition floor area of the structure and the specific building type, as well as the slope of the roof (2025 Energy Code). Additional discussion on solar and accompanying mitigation measures are in in Section 3 – Air Quality.

. Because the City doesn't have an adopted plan, the state's 2008 Update Energy Action Plan and the 2019 California Energy Efficiency Action Plan serve as the appropriate plans for comparison. Operation of a new commercial cannabis cultivation licensed and associated processing and/or distribution transport-only operations energy use would be primarily electric, with such electricity provided by PG&E. As required by SB 100, PG&E's electricity would be generated by increasingly more renewable sources to meet the state's progressive renewable energy targets.

New development within the City would also be required to adhere to the most recent version of the California Energy Code. Known as Title 24, it sets efficiency standards that regulate the design and construction of buildings in California. It aims to reduce energy consumption and promote sustainable building practices. In addition to Title 24, New commercial cannabis cultivation sites would also be required to comply with CCR, title 4, section 16305 regarding energy sources that reduce greenhouse gas emissions. Compliance with the building code and its increasing requirements related to energy efficiency and prohibition of generators as a regular energy source would align with the intent of the 2019 California Energy Efficiency Plan. In this instance, as discussed further in Section – 3 Air Quality and Section 8 Green House Gas the Mitigation Measures have been incorporated to reduce energy demand. Such measures require electric vehicle charging stations, energy efficient applicants and equipment and the installation and operation of on-site solar photovoltaic systems that are designed to meet 100 percent of the Project's electricity demands during normal operating conditions. In addition, pursuant to the California Green Building Standards Code (CALGreen) Electric Vehicle Charging Stations (EVCS) are required for the total number of parking stalls. In this event, the project is proposed to have 220 parking stalls, therefore CALGreen requires that 30 percent (66 total parking stalls) of the total stalls to EVCS are to be installed or approximately 6 per structure. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Additionally, section 6.a (above) would require that indoor and mixed-use cultivation sites use alternative forms of electricity and not rely on generators as their primary source of energy. Therefore, the construction and operation of licensed commercial cannabis cultivation sites would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. No development will occur within the balance of the annexation, as it will remain in an as is condition, consisting of agricultural practices. The General Plan Amendment, Rezone and Municipal Code text amendments are not correlated to energy use. Therefore, this impact would be less than significant.

7. GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐

	i) 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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
	ii) Strong seismic ground shaking?	☐	☐	☒	☐
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv) 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 waste water?	☐	☐	☒	☐
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Regulatory Setting

Federal Laws, Regulations and Policies

National Earthquake Hazards Reduction Act
The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) established the National Earthquake Hazards Reduction Program (NEHRP) which is a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. The following four federal agencies are responsible for coordinating activities under NEHRP:

1. USGS;
2. National Science Foundation (NSF):
3. Federal Emergency Management Agency (FEMA); and
4. National Institute of Standards and Technology.

Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. Nevertheless, the four basic NEHRP goals remain unchanged (NEHRP 2018):

1. Develop effective practices and policies for earthquake loss reduction and accelerate their implementations;

2. Improve techniques for reducing earthquake vulnerabilities of facilities and systems;
3. Improve earthquake hazards identifications and risk assessments methods, and their use; and
4. Improve the understanding of earthquakes and their effects.

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

State Laws, Regulations and Policies

Alquis-Priolo Earthquake Fault Zone Act
The Alquist–Priolo Earthquake Fault Zoning Act (Alquist–Priolo Act) (Pub. Res. Code Section 2621 et seq.) was passed to reduce the risk to life and property from surface faulting in California. The Alquist–Priolo Act prohibits construction of most types of structures intended for human occupancy on the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals situated in and adjacent to earthquake fault zones. Under the Alquist–Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." Before a project can be permitted, cities and counties require completion of a geological investigation to demonstrate that the proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act
The Seismic Hazards Mapping Act of 1990 (Pub. Res. Code Sections 2690–2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist–Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist–Priolo Act. The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other seismic hazards; cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses not only seismically induced hazards but also expansive soils, settlement, and slope stability. Under the Seismic Hazards Mapping Act, cities and counties may withhold the development permits for a site within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans

California Building Standards Code
Title 24 of the California Code of Regulations, also known as the California Building Standards Code (CBC), specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. CBC specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California.

Local Laws, Regulations and Policies

City of Colusa General Plan
The City of Colusa General Plan (2007) includes the following goals and policies related to geology, soils, and seismicity:

Goal SAF-1: To minimize injury and property damage due to seismic and geologic hazards.

Policy SAF-1.1: The City shall continue to mitigate the potential impacts of seismic and geologic hazards.

Implementing Action SAF-1.1a: Development Review. The City will continue to refer all development proposals to the Fire and Building Department/ Building Division, Public Works Department, and City Engineer to address potential seismic or geologic impacts. The City will require development applicants to provide specific data requirements pertaining to potential seismic and geologic hazards, and, where necessary, require geotechnical reporting by a licensed soils or geotechnical engineer. In all development review, the City will continue to enforce the Uniform Building Code, including seismic design provisions. These review requirements will apply to all public and private building construction.

City of Colusa Municipal Code
Chapter 6, Article II of the City of Colusa Code of Ordinances adopts the CBC as the Building Code of the City of Colusa. As a result, any proposed development project within the City of Colusa must comply with the CBC.

Environmental Setting:

Geomorphic Setting
The Project Site is located within the Great Valley Geomorphic Province (i.e., Central Valley), which is primarily described as a relatively flat alluvial plain, about 50 miles wide and 400 miles long, with thick sequences of sedimentary deposits of Jurassic through Holocene age (about 160 million years ago). The Sacramento Valley occupies the northern one-third of the Central Valley and Colusa and the Site are along the central axis of the valley. Major geomorphic units of the Central Valley include dissected uplands, low alluvial plains and fans, river flood plains and channels, and overflow lands and lake bottoms. Topography within the General Plan area generally falls to the south and west, toward the Colusa Drain and away from the Sacramento River. Elevations range from approximately 60 feet above mean sea level in the northernmost portions of the General Plan area to approximately 45 feet above mean sea level in the southernmost portions. The overall gradients are typically very flat, and usually about 0.1 percent or less.

The geological history of the Colusa area includes a mixture of ancient marine and alluvial deposits. About 300 million years ago, a vast sea occupied the valley and upland areas of Colusa County. Up to 155 million years ago, periods of volcanic activity and uplifting were followed by periods of uplifting and folding, which formed the Coast Range to the west. These periods ended about three to four million years ago, when the sediments of the Tehama Formation were deposited from coastal range streams onto the valley floor (City of Colusa DMEIR July 2007,).

Site Geology
According to the California Geological Survey (CGS, 1960), the Project site is underlain by what is termed Fan and Basin deposits, stratified deposits of gravel, sand, silt, clay, or other debris, moved by streams from higher to lower ground (USGS 2018a).

Site Soils
According to Figure 4.6-1 – City of Colusa - Soils of the EIR are indicated as three different types:

Colusa Series: Colusa Series soils are derived from mixed river sediments, which contain a predominance of micaceous granite material. Colusa subsoil structure has no definition but includes distinct horizontal

characteristics. Variations in this series include deep subsoil, which may be stratified and underlain at various depths by a moderately dense clay substratum that resembles Marvin Series soil material. Alkali content varies in amount and consists of sodium carbonate alkali. Topography found with these soils is flat with many shallow drainage channels. Drainage is poor, but the annual water table is high.

Sycamore Series: The Sycamore Series is composed of a group of alluvial soils formed from transported materials that are dominantly granite in character. This series also contains some basic and sedimentary alluvium. Surface textures range from fine sandy loam to clay loams. Most of the loams have been inherited from ground water reaching the lower profile during the rainy season. Parent materials are generally non-calcareous, but the subsoils are calcareous. The topography of these soils is generally flat, with gently sloping flood plain relief. The soil type is generally well drained with little to no erosion.

Marvin Series: The Marvin Series consists of soil derived from transported alluvium of mixed origin with a predominance of granite material. These soils occupy the older and imperfectly drained portions of the flood plain and/or occur near the flat basin area of a river channel. The subsoils are moderately compacted with accumulations of lime. Surface and subsoil drainage tend to be poor.

The expansion and contraction of these soils can cause damage to building foundations, streets and other infrastructure. Proper engineering and construction techniques can eliminate expansive soil problems (City of Colusa DMEIR, July 2007).

Regional Seismicity and Fault Zones

In California, special definitions for active faults were devised to implement the Alquist-Priolo Earthquake Fault Zoning Act of 1972, which regulates development and construction in order to avoid the hazard of surface fault rupture. The State Mining and Geology Board established policies and criteria in accordance with the act. The Board defined an active fault as one which has had surface displacement within Holocene time (about the last 11,000 years). A potentially active fault was considered to be any fault that showed evidence of surface displacement during Quaternary time (last 1.6 million years). Because of the large number of potentially active faults in California, the State Geologist adopted additional definitions and criteria to limit zoning to only those faults with a relatively high potential for surface rupture. Thus, the term "sufficiently active" was defined as a fault for which there was evidence of Holocene surface displacement. This term was used in conjunction with the term "well-defined," which relates to the ability to locate a Holocene fault as a surface or near-surface feature (CGS 2010).

Per the Safety Element of the Colusa General Plan, there are no known active faults within Colusa County. However, the possibility of an earthquake affecting the City of Colusa cannot be ruled out. Colusa County is vulnerable to moderate ground shaking from earthquakes centered outside of the County. Four minor quakes on an unknown fault in the coastal foothills to the west occurred in 1985. Earthquakes of a maximum magnitude of 5.7 on the Richter scale could occur at the nearest known fault at the Sutter Buttes. This could cause ground shaking in Colusa County up to an intensity of VI to VII, as measured by the Modified Mercalli Scale. The effects of earthquakes of this magnitude on structures are described as minor to moderate, especially in un-reinforced masonry chimneys and architectural ornaments. Still, the best geologic evidence indicates that Colusa would experience only low-intensity shaking from faults outside the County

Paleontological Resources

Paleontology is defined as a science dealing with the life of past geological periods as known from fossil remains. Paleontological resources include fossil remains, as well as fossil localities and formations, which have produced fossil material in other nearby areas. This resource can be an important educational resource, and are classified as non-renewable scientific resources. Paleontological resources are protected by

California Public Resources Code Section 5097.5. Pursuant to the DMEIR a search of the University of California Museum of Paleontology (UCMP) collections database did not identify any evidence of significant paleontological resources in the proposed Planning Area for the City (page 4.9-4).

DISCUSSION

7.a.i: Seismic-related rupture of a known earthquake fault
The entire annexation boundary is not located within an earthquake fault zone designated by the Chief of the California Geological Survey (CGS) pursuant to the Alquist-Priolo Act (California Department of Conservation 2022). Further, per the General Plan EIR, there are no identified active faults within the City or in Colusa County. Faults from outside the County may generate earthquakes of sufficient strength to be felt in the City and possibly cause some damage. These faults include the Cleveland Hill Fault in Butte County, and the San Andreas, Hayward and other faults in the San Francisco Bay Area. The future structures within the 88.97 acres will be required to be built to current California Building Code (CBC) standards, which ensure new structures are adequately designed and built to withstand shaking in areas of high earthquake hazards. No development is proposed within the balance of the annexation area, as both the city land and the site known as Brookins Ranch will continue agricultural practices. Therefore, impacts associated with earthquake fault zones are extremely low and are considered less than significant.

7.a.ii: Strong seismic ground shaking
As noted above, there are no mapped faults or Alquist-Priolo special studies zones traversing the locations. However, since the location is not situated within a seismically active region and given the proximity of known active faults to the location, the locations will likely experience low to medium intensity ground shaking during the economic life span of any development on the Site.

Construction will be limited to the 88.97 acre cannabis operation would be required to comply with the Colusa General Plan (2007) Colusa Municipal Code, and the most recent requirements of the California Building Code (CBC), which includes design criteria for seismic loading and other geologic hazards, including design criteria for geologically induced loading that governs sizing of structural members and provide calculation methods to assist in the design process. Thus, while shaking impacts would be potentially damaging, they would also tend to be reduced in their structural effects due to CBC criteria that recognize this potential. The CBC includes provisions for buildings to structurally survive an earthquake without collapsing and includes measures such as anchoring to the foundation and structural frame design. The proposed General Plan Update (Policy SAF-1.1, Action SAF -1.1.a and Action SAF-.1.1.b) specifically requires that all new buildings in the City be built under the seismic requirements of the CBC and that damage to new structures from seismic conditions be prevented to the maximum extent feasible. No structures are proposed in the balance of the annexation site, which will continue to operate as agricultural practices as it does prior now, Therefore, a less than significant impact would occur.

7.a.iii: Seismic-related ground failure, including liquefaction
Since the locations are not located within a mapped Alquist-Priolo special studies zone, the potential for surface rupture on the Site from an active fault, within the design life of the future residential development at the Site, is considered low.

Due to Colusa's inland location, the City is not at risk for tsunamis or seiches; however, earthquakes can cause liquefaction within the City, and the Site is mapped within an area with a generally moderate to highly expansive soils. Proper excavation and site preparation, as well as adherence to the latest requirements of the Colusa 2007 General Plan, Colusa Municipal Code, and CBC, would reduce potential seismic and geological risks, including seismic related ground failure. A less than significant impact would occur.

7.a.iv: Landslide.
As noted above, landslide potential is influenced by a number of factors, including geology, water influences, and topography. Landslides have the potential to occur in the foothill portions of the western county, approximately 16 miles to the west of the site or at the Sutter Buttes which are 8 miles to the east., There are no foothills or mountainous terrain within the City therefore, there will be no impacts from landslides.

7.b: Substantial soil erosion or the loss of topsoil
The lands within the annexation boundary known as Brookins Ranch and the 509 acres of the city's own land that are both in agricultural production, will continue to operate as such with no changes to the land use or the baseline conditions. General Plan amendments, rezones and Municipal Code updates are not related to soil erosions or topsoil as they are map exercises and code updates.

Onsite development within the 88.97-acres would require excavation and ground disturbing activities. All development activities, would be subject to local and State regulations regarding environmental protections, including the General Construction Activity Stormwater Permit (Construction General Permit Order 2009-0009-DWQ, also known as the CGP). The CGP requires operators of such construction sites to implement stormwater controls and develop a Stormwater Pollution Prevention Plan (SWPPP) identifying specific Best Management Practices (BMPs) to minimize the amount of sediment and other pollutants associated with construction sites from being discharged in stormwater runoff. These BMPs may include erosion control measures such as limiting construction during the rainy season, limiting ground disturbance to the minimum necessary, and stabilizing disturbed soil areas as soon as feasible after construction is completed, and sediment control measures such as straw bales, fiber rolls, and/or silt fencing structures to reduce the potential for sedimentation of stormwater. Low Impact Development (LID), adopted in 2005 by the State Water Resource Control Board, contains provisions and requirements that ensure development of the site will reduce impervious surface, increase infiltration, improve water quality by reducing runoff from developed sites, and reduce costly infrastructure. LID practices include bioretention facilities or rain gardens, grass swales and channels, vegetated rooftops, rain barrels, cisterns, vegetated filter strips, and permeable pavements. In short, LID is a stormwater management strategy that aims to minimize the environmental impact of development by mimicking the natural water process. It focuses on managing stormwater runoff at its source. This approach helps maintain the natural water balance of the site and reduces the need for traditional, centralized stormwater infrastructure. The balance of the annexation boundary will continue to operate as is, which includes agricultural practices and will not change post-annexation

Through the implementation of BMPs described above, compliance with LID and development provision in the Colusa Municipal Code, requirements by the Colusa County Air Pollution Control District and the CGP, the project would not result in substantial soil erosion or the loss of topsoil. A less than significant impact would occur.

7.c: Location on a geologic unit or soil that is unstable or that would become unstable as a result of the Proposed Project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse

As discussed in above (Section 7.aiii), because the project site is not located within a mapped Alquist-Priolo special studies zone the potential for surface rupture on the properties from an active fault is considered low. The 88.97-acres site that will be operated by CTC will be required to adhere to the development and building requirements of the Colusa 2007 General Plan, Colusa Municipal Code, and CBC. No new development is proposed beyond the 88.97 acres for the CTC. Therefore, potential seismic and geological impacts would be less than significant.

Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and with its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and geological and soil resources.

7.d: Location on expansive soil, creating substantial risks to life or property

Expansive soils generally comprise cohesive, fine-grained clay soils and represent a significant structural hazard to buildings founded on them, especially where seasonal fluctuations in soil moisture occur at the foundation-bearing depth. Per Figure 4.6-1 of the General Plan the Site is mapped within the Mavin, Colusa, and Sycamore soil series, which are considered low to moderate expansive soils, with low to well drainage. As previously noted, the City has adopted the current version of the California Building Code. The California Building Code includes common engineering practices requiring special design and construction methods that reduce or eliminate potential expansive soil-related impacts. In addition, as discussed above in 7.c, development is only to occur on the 88.97-acre site That construction and development of the CTC portion of the site will be subject to existing rules and regulations, including geotechnical reports and adherence to the CBC when developing structures.

Both the Brookins Ranch and the City owned agricultural lands will continue to operate in an "as is" condition, in that the single-family home and with its associated out buildings and the site will continue to be in agricultural production. The General Plan Amendments, rezones and text amendments to the Colusa Municipal Code will have no direct correlation between these actions and geological and soil resources.
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7.e: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater

The 88.97-acre CCTC site for cannabis operation will be required to connect to city services for both water and sewer, which immediately abut the site to the north and east. No new development is proposed beyond the 88.97 acres for the CTC. The property known as Brookins Ranch does have a single-family structure, which utilizes well and septic systems as they were developed in the County. That property will not be required to connect to city services at this time. General Plan Amendments, rezones and Municipal Code changes do not trigger wastewater disposals. Therefore, the result will have no impact.

7.f: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

No new development is proposed beyond the 88.97 acres for the CTC, as Brookins Ranch and the balance of agricultural lands owned by the city will not change in their condition. Further, General Plan Amendments, rezone and text amendments to the Colusa Municipal code do not inherently impact geological features. There are no known paleontological resources or unique geologic features at any location. Additionally, the Sites are not listed within an area identified as containing paleontological resources as discussed above. However, as a portion of the project requires ground-disturbing activities beyond the existing agricultural practices including grading and excavation, there is potential for the inadvertent discovery of paleontological resources. With the incorporation of Mitigation Measure GEO-1, below, which contains specific requirements in the event any fossils or fossil-bearing deposits are encountered during project development, a less than significant impact with mitigation measures.

MITIGATION MEASURES

GEO-1: Discovery. In the event that fossils or fossil-bearing deposits are discovered during anticipated future construction on-site, the contractor shall notify a qualified paleontologist to examine the discovery and excavations within 50 feet of the find shall be temporarily halted or diverted. The area of discovery shall be protected to ensure that fossils are not removed, handled, altered, or damaged until the Site is properly evaluated and further action is determined. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the city for review and approval prior to implementation.

8. GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions (GHG), 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?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations and Policies

At the federal level, USEPA has developed regulations to reduce greenhouse gas (GHG) emissions from motor vehicles and has developed permitting requirements for large stationary emitters of GHGs. On April 1, 2010, USEPA and the National Highway Traffic Safety Administration (NHTSA) established a program to reduce GHG emissions and improve fuel economy standards for new model year 2012-2016 cars and light trucks. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. In August 2016, USEPA and the NHTSA jointly finalized Phase 2 Heavy-Duty National Program standards to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond (USEPA 2017). March of 2024 it was announced that a Phase 3 standard for Heavy-Duty Vehicles would be set in place to further reduce greenhouse gas emissions beginning in 2027. The new standards will be appliable to heavy duty vocational vehicles (such as delivery trucks, refuse haulers, public utility trucks, transit, shuttle, school buses, etc.) and tractors. The final Phase-3 standards build upon the Phase-2 maintain that program's flexible structure, which is designed to reflect the diverse nature of the heavy-duty vehicle industry. The standards are technology-neutral and performance-based, allowing each manufacturer to choose what set of emissions control technologies is best suited for them and the needs of their customers.

State Laws, Regulations and Policies

Executive Order S-3-05
Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates
In 2006, the California legislature passed AB 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2022 Scoping Plan Update, outlines strategies and actions to reduce GHG emissions in California. The plan focuses on achieving the state's goal of reaching carbon neutrality by 2045 and reducing GHG emissions to 40 percent below 1990 levels by 2030. The plan includes a range of strategies across various sectors, including transportation, industry, energy, and agriculture. Some of the key strategies include transitioning to zero-emission vehicles, expanding renewable energy sources, promoting sustainable land use practices, implementing a low-carbon fuel standard, and reducing emissions from buildings. Additionally, the plan addresses equity and environmental justice by prioritizing investments in communities most impacted by pollution and climate change. The plan also aims to promote economic growth and job creation through the transition to a low-carbon economy.

Senate Bill 32 of 2016
In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030 (the other provisions of AB 32 remained unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provided a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies. The 2017 Scoping Plan also placed an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with Statewide per capita goals of no more than 6 metric tons of CO2e by 2030 and 2 metric tons of CO2e by 2050.

Assembly Bill 197 of 2016
AB 197 is a bill linked to SB 32 and was signed on September 8, 2016. AB 197 prioritizes efforts to cut GHG emissions in low-income or minority communities. AB 197 requires CARB to make available, and update at least annually, the emissions of GHGs, criteria pollutants, and toxic air contaminants for each facility that reports to CARB and air districts. In addition, AB 197 adds two Members of the Legislature to the CARB board as ex officio, non-voting members and creates the Joint Legislative Committee on Climate

Change Policies to ascertain facts and make recommendations to the Legislature and the houses of the Legislature concerning the State's programs, policies, and investments related to climate change.

Assembly Bill 1279 of 2022
In September 2022, Governor Brown signed AB 1279, The California Climate Crisis Act, which requires California to achieve carbon neutrality as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. AB 1279 also requires that by 2045 statewide anthropogenic GHG emissions be reduced to at least 85 percent below 1990 levels and directs CARB to ensure that its scoping plan identifies and recommends measures to achieve these goals. AB 1279 also directs CARB to identify policies and strategies to enable carbon capture, utilization, and storage and CO2 removal technologies to meet emission reduction goals. In addition, CARB is required to submit an annual report on progress in achieving the 2022 Scoping Plan's goals.

In response to the passage of AB 1279 and the identification of the 2045 GHG emissions reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (2022 Update). The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying a new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan; addresses recent legislation and direction from Governor Newsom; extends and expands upon these earlier plans; and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Update, "the plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the State's natural and working lands and using a variety of mechanical approaches." Specifically, the 2022 Update achieves the following:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands to the State's GHG emissions, as well as their role in achieving carbon neutrality.

- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.

- Evaluates the substantial health and economic benefits of taking action.

- Identifies key implementation actions to ensure success.

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Update includes emissions and carbon sequestration in natural and working lands and explores how they contribute to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet these GHG emissions reduction goals and achieve carbon neutrality no later than 2045. The 2022 Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Executive Order N-79-20
Governor Gavin Newsom signed an executive order on September 23, 2020, that would phase out sales of new gas-powered passenger cars by 2035 with an additional 10-year transition period for heavy vehicles. The State would not restrict used car sales, nor forbid residents from owning gas-powered vehicles, meaning that the overall reduction in GHG emissions would likely not substantially reduce GHG emissions from vehicles for many years after the ban goes into effect.

Senate Bill 100 of 2018
In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

Senate Bill 1020 of 2022
SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022, adds interim targets to the policy framework originally established in SB 100 to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040. Additionally, the bill requires all state agencies to rely on 100 percent renewable energy and zero-carbon resources to serve their own facilities by 2035. This bill also requires that CARB's Scoping Plan workshops be held in nonattainment areas and requires the California Public Utilities Commission, the California Energy Commission, and CARB to create a joint report on electricity reliability.

Senate Bill 375 of 2008
SB 375 set forth a mechanism for coordinating land use and transportation on a regional level for the purpose of reducing GHG emissions. SB 375 was adopted with a goal of reducing fuel consumption and GHG emissions from cars and light trucks. Under SB 375, CARB was required to set GHG reduction targets for each metropolitan region for 2020 and 2035, and each of California's metropolitan planning organizations was responsible to prepare a sustainable communities strategy that demonstrates how the region will meet its GHG reduction target through integrated land use, housing, and transportation planning.

2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2022 California Building Codes include provisions related to energy efficiency to reduce energy consumption and GHG emissions from buildings. Some of the key energy efficiency components of the codes are:

1. Energy Performance Requirements: The codes specify minimum energy performance standards for the building envelope, lighting, heating and cooling systems, and other components.

2. Lighting Efficiency: The codes require that lighting systems meet minimum efficiency standards, such as the use of energy-efficient light bulbs and fixtures.

3. HVAC Systems: The codes establish requirements for heating, ventilation, and air conditioning (HVAC) systems, including the use of high-efficiency equipment, duct sealing, and controls.

4. Building Envelope: The code includes provisions for insulation, air sealing, glazing, and other building envelope components to reduce energy loss and improve indoor comfort.

5. Renewable Energy: The codes encourage the use of renewable energy systems, such as photovoltaic panels and wind turbines, to reduce dependence on non-renewable energy sources.

6. Commissioning: The codes require the commissioning of building energy systems to ensure that they are installed and operate correctly and efficiently.

Overall, the energy efficiency provisions of the 2022 California Building Codes aim to reduce the energy consumption of buildings, lower energy costs for building owners and occupants, and reduce the environmental impact of the built environment. The 2022 Building Energy Efficiency Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The exact amount by which the 2022 Building Codes are more efficient compared to the 2019 Building Codes would depend on the specific provisions that have been updated and the specific building being considered. However, in general, the 2022 Building Codes have been updated to include increased requirements for energy efficiency, such as higher insulation and air sealing standards, which are intended to result in more efficient buildings. The 2022 standards are a major step toward meeting Zero Net Energy.

Local Laws, Regulations and Policies

City of Colusa General Plan
The City of Colusa General Plan (2007) includes the following goals and policies related to greenhouse gas emissions:

Goal PRC-9: To manage and protect the City's water resources.

Policy PRC-9.3: The City shall maintain its ability to meet its water supply requirements.

Implementing Action PRC-9.3a: Development Review. As part of the development review process, the City will evaluate the incorporation of water conservation techniques in all new developments

Policy PRC9.4: The City shall encourage the use of treated wastewater and other non-potable water sources for irrigation and groundwater recharge.

Goal PRC-11: To reduce consumption of energy sources in Colusa.

Policy PRC-11.1: The City shall seek to minimize energy impacts from new residential and commercial projects.

Implementing Action PRC-11.1c: Title 24 Uniform Building Code. The City will require energy efficient siting and building design in all new development projects consistent with the requirements of Title 24 of the California Administrative Code. Measures include building orientation and shading, landscaping, use of active and passive solar heating and hot water systems, etc. The City will also investigate and consider adopting Leadership in Energy and Environmental Design (LEED) sustainability standards for residential and commercial development.

DISCUSSION

8.a: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment

No new development is proposed beyond the 88.97 acres for the CTC, as Brookins Ranch and the balance of agricultural lands owned by the city will not change in their condition. Further, General Plan Amendments, rezone and text amendments to the Colusa Municipal code do not inherently impact greenhouse gas emissions.

CEQA guidelines, Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact are as are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Neither the City of Colusa nor the CCAPCD promulgate GHG emission thresholds or have adopted plans intended to reduce GHG emissions. Therefore, the Project will be assessed for consistency with the 2022 Scoping Plan.

Where GHG emission quantification was required, emissions were modeled using CalEEMod, version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions were calculated using CalEEMod model defaults for Colusa County and Project land use type, and square footage as well as construction phasing, duration, vehicle trips, and equipment provided by the Project applicant. Operational GHG emissions are calculated using CalEEMod model defaults for Colusa County, building and land use square footage estimates identified in the by the Project applicant, and daily trips provided by GCW Engineers and Surveyors (2025).

Project Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 7 illustrates the specific construction generated GHG emissions that would result from the construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 7 – Construction Related Greenhouse Gas Emissions

Emissions Source	CO2e Emissions (Metric Tons/Year)
Construction Phase One	467
Construction Phase Two	466
Construction Phase Three	472
Construction Phase Four	465
Construction Phase Five	465
Total Construction Emissions	**2,335**
Notes: Building construction, paving and painting are assumed to occur simultaneously. Construction phasing provided by the Project proponent. Construction GHG emissions account for the implementation of mitigation measure AQ-1.	

Project construction would result in the generation of approximately 2,335 metric tons of CO2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease.

Project Operations
Operations of the Project would result in an increase in GHG emissions primarily associated with energy and water sources. Long-term operations GHG emission attributed to the Project are identified in Table 8, below.

Table 8 – Operational Related Greenhouse Gas Emissions	
Emissions Source	**CO2e Emissions (Metric Tons/Year)**
Mobile	627
Area	0
Energy	6,784
Water	1,176
Waste	821
Refrigeration	91
Total	**9,499**
Notes: Emissions projections were primarily based on CalEEMod default assumptions for Colusa County, spatial estimates of onsite land uses derived from the Project Site Plan, and daily trip data (832 daily trips) provided by GCW (2025) to inform calculations of operational mobile source emissions. Operational energy-related emissions also account for water demand estimates provided by the Project applicant, including increased usage during the summer months (four months).	

As shown in Table 8 (above), the Project would generate 9,499 metric tons of CO2e annually. Long-term operational GHG emissions would result primarily from electricity use associated with indoor cannabis cultivation. Although these emissions would continue over the life of the Project, GHG emissions are global in nature and any single project's contribution is not expected to cause a measurable impact on climate change. The Project does not include stationary combustion sources or other high-emitting industrial processes. Further, as discussed in Section 6 – Energy, Cannabis operations are subject to the utilization of solar as a state requirement (PEIR Appendix A). State requirements on energy sources continue to become more stringent over time, resulting in SB 100, which requires electricity to be generated from increasingly more renewable sources to meet the state's progressive renewable energy targets.

Construction of the CTC project will be subject to Title 24 of California Building Code requirements, ensuring that the structures meet the most stringent of energy requirements, further reducing GHG from the site. While the City of Colusa has not established formal GHG significance thresholds, the operations of the CTC Project will implement voluntary greenhouse gas mitigation, including installation of electric

vehicle charging stations, use of high-efficiency appliances, and development of a on-site renewable energy system through solar power as required by the California Building Code. These measures reflect the applicant's commitment to environmental stewardship and a proactive approach to minimizing GHG emissions to the extent feasible. Further, as discussed in Section 17- Transportation, the site will encourage bicycle uses through end of service facilities (bicycle racks and showers) as well as utilize bicycle and golf carts for onsite circulation.

The ECORP GHG analysis discusses the California Air Resource Board 2022 Scoping Plan, which is a document dealing with how the state will achieve carbon neutrality by 2025 by cutting greenhouse gas (GHG) emission by 85% below 1990 levels by 2045 in accordance with AB 1279. The 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high global warming potential; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (i.e., Climate Action Plan) consistent with CEQA Guidelines Section 15183.5.

Statewide strategies to reduce GHG emissions in the latest 2022 Scoping Plan include implementing SB 100, which would achieve 100 percent clean electricity by 2045; achieving 100 percent zero emission vehicle sales in 2035 through Advanced Clean Cars II; and implementing the Advanced Clean Fleets regulation to deploy zero-emission vehicles (ZEV) buses and trucks. Additional transportation policies include the Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, In-use Off-Road Diesel-Fueled Fleets Regulation, Clean Off-Road Fleet Recognition Program, and Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation. The 2022 Scoping Plan would continue to implement SB 375. GHGs would be further reduced through the Cap-and-Trade Program carbon pricing and SB 905. SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate carbon dioxide removal projects and technology.

GHG reductions are also achieved as a result of State of California energy and water efficiency requirements for new residential developments. These efficiency improvements correspond to reductions in secondary GHG emissions. For example, in California, most of the electricity that powers homes are derived from natural gas combustion. Therefore, energy saving measures, such as Title 24, reduces GHG emissions from the power generation facilities by reducing load demand.

The 2022 Scoping Plan Appendix D provides local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan.

The 2022 Scoping Plan Appendix D lists potential actions that support the state's climate goals. However, the 2022 Scoping Plan notes that the applicability and performance of the actions may vary across the regions. The document is organized into two categories (A) examples of plan-level GHG reduction actions that could be implemented by local governments and (B) examples of on-site project design features, mitigation measures, that could be required of individual projects under CEQA, if feasible, when the local jurisdiction is the lead agency.

The Project would include a number of the 2022 Scoping Plan standard conditions and mitigation measures for construction and operation. For example, the 2022 Scoping Plan's construction actions include enforcing idling time restrictions on construction vehicles and requiring construction vehicles to operate highest tier engines commercially available.

As identified in Table-9 below in 8.b (Table 3-4 of the ECORP assessment) the Project would be consistent with all applicable plan goals and applicable regulatory programs designed to reduce GHG emissions generated by land use projects. The Project would be subject to compliance with all building codes in effect at the time of construction, which include energy conservation measures mandated by California Building Standards Code Title 24 – Energy Efficiency Standards. Because Title 24 standards require energy conservation features in new construction (e.g., high- efficiency lighting, high-efficiency HVAC systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures), they indirectly regulate and reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle.

- CARB's Advanced Clean Truck Regulation: Adopted in June 2020, CARB's Advanced Clean Truck Regulation requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California is required to be zero-emission. The Advanced Clean Truck Regulation accelerates the transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8.

- Executive Order N-79-20: This Executive Order establishes the goal for all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, to be zero-emission by 2035 and all medium and heavy-duty vehicles to be zero-emission by 2045. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new ZEVs "towards the target of 100 percent."

- CARB's Mobile Source Strategy: CARB's Mobile Source Strategy takes an integrated planning approach to identify the level of transition to cleaner mobile source technologies needed to achieve all of California's targets by increasing the adoption of ZEV buses and trucks.

- CARB's Sustainable Freight Action Plan: The Sustainable Freight Action Plan which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks. This Plan applies to all trucks accessing the Project Site and may include existing trucks or new trucks that are part of the Statewide goods movement sector.

- CARB's Emissions Reduction Plan for Ports and Goods Movement: CARB's Emissions Reduction Plan for Ports and Goods Movement identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories.

While these measures are not directly applicable to the Project, any activity associated with goods movement would be required to comply with these measures as adopted. The Project would not obstruct or interfere with efforts to increase ZEVs or state efforts to improve system efficiency. Compliance with applicable state standards (e.g., continuation of the Cap-and-Trade regulation; CARB's Mobile Source Strategy, Sustainable Freight Action Plan, and Advanced Clean Truck Regulation; Executive Order N-79-20; SB 100/renewable electricity portfolio improvements that require 60 percent renewable electricity by 2030 and 100 percent renewable by 2045, etc.) would ensure consistency with state and regional GHG reduction planning efforts, including the 2022 Scoping Plan. It is also noted that the Project would not convert any or decrease the state's urban forest carbon stock, which is an area of emphasis in the 2022 Scoping Plan.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that Project operations would benefit from applicable measures enacted to meet state GHG reduction goals. The Project would not impede the state's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. Table 3-4 below shows the Projects consistency with the 2022 Scoping Plan.

In conclusion, the Project does not conflict with the applicable plans and regulatory programs that are discussed above.

8.b: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

No new development is proposed beyond the 88.97 acres for the CTC, as Brookins Ranch and the balance of agricultural lands owned by the city will not change in their condition. Further, General Plan Amendments, rezone and text amendments to the Colusa Municipal code do not inherently impact greenhouse gas emissions.

CARB's 2022 Scoping Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. The 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high global warming potential; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (i.e., Climate Action Plan) consistent with CEQA Guidelines Section 15183.5.

Statewide strategies to reduce GHG emissions in the latest 2022 Scoping Plan include implementing SB 100, which would achieve 100 percent clean electricity by 2045; achieving 100 percent zero emission vehicle sales in 2035 through Advanced Clean Cars II; and implementing the Advanced Clean Fleets regulation to deploy zero-emission vehicles (ZEV) buses and trucks. Additional transportation policies include the Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, In-use Off-Road Diesel-Fueled Fleets Regulation, Clean Off-Road Fleet Recognition Program, and Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation. The 2022 Scoping Plan would continue to implement SB 375. GHGs would be further reduced through the Cap-and-Trade Program carbon pricing and SB 905. SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate carbon dioxide removal projects and technology.

GHG reductions are also achieved as a result of State of California energy and water efficiency requirements for new residential developments. These efficiency improvements correspond to reductions in secondary GHG emissions. For example, in California, most of the electricity that powers homes are derived from natural gas combustion. Therefore, energy saving measures, such as Title 24, reduces GHG emissions from the power generation facilities by reducing load demand.

The 2022 Scoping Plan Appendix D provides local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan.

The 2022 Scoping Plan Appendix D lists potential actions that support the state's climate goals. However, the 2022 Scoping Plan notes that the applicability and performance of the actions may vary across the regions. The document is organized into two categories (A) examples of plan-level GHG reduction actions that could be implemented by local governments and (B) examples of on-site project design features, mitigation measures, that could be required of individual projects under CEQA, if feasible, when the local jurisdiction is the lead agency.

The Project would include a number of the 2022 Scoping Plan standard conditions and mitigation measures for construction and operation. For example, the 2022 Scoping Plan's construction actions include enforcing idling time restrictions on construction vehicles and requiring construction vehicles to operate highest tier engines commercially available.

As identified in Table 9 - Project Consistency with Applicable Scoping Plan Measures below, the Project would be consistent with all applicable plan goals and applicable regulatory programs designed to reduce GHG emissions generated by land use projects. The Project would be subject to compliance with all building codes in effect at the time of construction, which include energy conservation measures mandated by California Building Standards Code Title 24 – Energy Efficiency Standards. Because Title 24 standards require energy conservation features in new construction (e.g., high- efficiency lighting, high-efficiency HVAC systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures), they indirectly regulate and reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle.

As shown in Table 8 – Operational Related Greenhouse Gas Emissions, approximately 78 percent of the Project's emissions are from energy and mobile sources, which would be further reduced by the 2022 Scoping Plan actions described above. However, these emissions would decline in the future due to statewide measures, as well as cleaner technology and fleet turnover. Several of the state's plans and policies would contribute to a reduction in the Project's mobile source emissions, including the following:

• CARB's Advanced Clean Truck Regulation: Adopted in June 2020, CARB's Advanced Clean Truck Regulation requires truck manufacturers to transition from diesel trucks and vans to electric zero emission trucks beginning in 2024. By 2045, every new truck sold in California is required to be zero-emission. The Advanced Clean Truck Regulation accelerates the transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8.

• Executive Order N-79-20: This Executive Order establishes the goal for all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, to be zero-emission by 2035 and all medium and heavy-duty vehicles to be zero-emission by 2045. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new ZEVs "towards the target of 100 percent."

• CARB's Mobile Source Strategy: CARB's Mobile Source Strategy takes an integrated planning approach to identify the level of transition to cleaner mobile source technologies needed to achieve all of California's targets by increasing the adoption of ZEV buses and trucks.

• CARB's Sustainable Freight Action Plan: The Sustainable Freight Action Plan which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks. This Plan applies to all trucks accessing the Project Site and may include existing trucks or new trucks that are part of the Statewide goods movement sector.

• CARB's Emissions Reduction Plan for Ports and Goods Movement: CARB's Emissions Reduction Plan for Ports and Goods Movement identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories.

While these measures are not directly applicable to the Project, any activity associated with goods movement would be required to comply with these measures as adopted. The Project would not obstruct or interfere with efforts to increase ZEVs or state efforts to improve system efficiency. Compliance with applicable state standards (e.g., continuation of the Cap-and-Trade regulation; CARB's Mobile Source Strategy, Sustainable Freight Action Plan, and Advanced Clean Truck Regulation; Executive Order N-79-20; SB 100/renewable electricity portfolio improvements that require 60 percent renewable electricity by 2030 and 100 percent renewable by 2045, etc.) would ensure consistency with state and regional GHG reduction planning efforts, including the 2022 Scoping Plan. It is also noted that the Project would not convert any or decrease the state's urban forest carbon stock, which is an area of emphasis in the 2022 Scoping Plan.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that Project operations would benefit from applicable measures enacted to meet state GHG reduction goals. The Project would not impede the state's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. Table 9, below shows Project consistency with the 2022 Scoping Plan.

Table 9 – Project Consistency with Applicable Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and Trade Program Linked to Western Climate initiative	Regulations for the California Cap and Trade Program; and GHG Emissions and Market Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.

			The Proposed Project would not conflict with implementation of the Cap-and-Trade program and would indirectly be consistent with regard to the use of electricity and fuel.
	California Light-Duty Vehicle GHG Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with Project construction and operation would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent.** The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with Project construction and operations would be required to comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve GHG Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The Project would not conflict with implementation of this measure. It is assumed that any motor vehicles associated with Project construction and operations would be consistent with the measure and utilize low carbon transportation fuels.
	Goods Movement	Goods Movement Action Plan January 2007	**Not Applicable.** The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer GHG Regulation	**Consistent.** This measure applies to medium- and heavy-duty vehicles that operate in the state. The Project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with Project construction would be required to comply with this regulation

	High Speed Rail	Funded under SB 862	**Not Applicable.** This is a Statewide measure that cannot be implemented by a project applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulations	**Consistent.** The Project would not conflict with implementation of this measure, as it would be subject to compliance with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Buildings	
		Title 24 Par 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent.** The Project would obtain electricity from the Pacific Gas & Electric Company (PG&E). PG&E delivers approximately 40 percent of the electricity that they provide from renewable resources. PG&E also offers a program to customers to purchase up to 100 percent of their electricity from either solar or regional renewable energy sources. Therefore, the utility would provide power to the Project that would be is comprised of a greater percentage of renewable sources.
	Millon Solar Roofs Program	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
	Millon Solar Roofs Program	Tax Incentive Program	**Consistent.** This measure is to increase solar use throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standard	**Consistent.** The state is required to increase use of green building practices. The Project would implement required green building strategies through existing regulations that require the Project to comply with various CALGreen Code standards.

Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	**Not Applicable.** The Mandatory Reporting Regulation requires facilities and entities with more than 10,000 metric tons of CO_2e of combustion and process emissions, all facilities belonging to certain industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. The Project is not considered a "facility" and the majority of these emissions are from mobile sources. Therefore, this regulation would not apply
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards AB 341 Statewide 75 Percent Division Goal	**Consistent.** The Project would not conflict with implementation of these measures. The Project is required to achieve the recycling mandates via compliance with the CALGreen Code.
Forest	Sustainable Forest	Cap-and-Trade Offset Projects	**Not Applicable.** The Project is in an area designated for urban uses. No forested lands exist on the site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program 95380	**Consistent.** The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage systems. The Project would not conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap-and-Trade Offset Projects for Livestock and Rice Cultivation	**Not Applicable.** No grazing, feedlot, or other agricultural activities that generate manure occur currently on site or are proposed by the Project.

No development is proposed beyond the 88.97 acres for the CTC as the balance of the annexation boundary will continue to operate in as is condition, consisting of active agricultural practices and a single-family home without structures. In conclusion, the Project does not conflict with the applicable plans and regulatory programs that are discussed. Therefore, there will be a less than significant impact.

Mitigation Measures
Non-Required

9. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites complied 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 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations and Policies

Comprehensive Environmental Response, Compensation, and Liability Act – Superfund Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act; 42 USC Section 9601 et seq.) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, USEPA has the authority to seek the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the "Superfund") for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

Resource Conservation and Recovery Act of 1976

The Resource Conservation and Recovery Act of 1976 (RCRA; 42 USC Section 6901 et seq.), as amended by the Hazardous and Solid Waste Amendments of 1984, is the primary federal law for the regulation of solid waste and hazardous waste in the United States. These laws provide for the "cradle-to-grave" regulation of hazardous wastes, including generation, transport, treatment, storage, and disposal. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed of.

USEPA has primary responsibility for implementing RCRA, but individual states are encouraged to seek authorization to implement some or all RCRA provisions. California was delegated authority to implement the RCRA program in August 1992. The California Department of Toxic Substances Control (DTSC) is responsible for implementing the RCRA program in California, in addition to California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Federal Insecticide, Fungicide and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC Section 136 et seq.) was enacted in 1947, but has since been amended by the Federal Environmental Pesticide Control Act of 1972 and the Food Quality Protection Act of 1996. In its current form, FIFRA mandates USEPA to regulate the use and sale of pesticides to protect human health and the environment. USEPA achieves this mandate by registering and labeling pesticides.

Currently, no pesticides are registered for use on cannabis. CDPR has published guidance that commercial cultivators can legally apply pesticides to cannabis that are exempt from residue 36 tolerance requirements and are either: (1) registered and labeled for a use that is broad enough to include use on cannabis (e.g., unspecified green plants), or (2) exempt from registration requirements as a minimum-risk pesticide under FIFRA Section 25(b). See additional discussion of CDPR's guidance with respect to cannabis under "State Laws, Regulations, and Policies" below.

Commercial cannabis cultivators using registered pesticides would be required to follow the label instructions developed pursuant to FIFRA. Under FIFRA, all new pesticides (with minor exceptions) must be registered by the Administrator of USEPA through a process in which appropriate crops and sites for use of the pesticide are identified and prescribed based on research data. Labeling requirements control when and under what conditions pesticides can be applied, mixed, stored, loaded, or used; when a site can be reentered after application; and when crops can be harvested.

Spill Prevention, Control and Countermeasure Rule

USEPA's Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR Part 112) applies to facilities that contain a single aboveground storage tank (AST) with a storage capacity greater than 660 gallons, or multiple tanks with a combined capacity greater than 1,320 gallons. The rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific types of facilities to prepare, amend, and implement SPCC plans.

Worker Safety Regulations

The Occupational Safety and Health Administration (OSHA) is responsible at the federal level for ensuring worker safety. The agency sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). These standards, codified in 29 CFR Part 1910, address issues that range in scope from walking and working surfaces, to exit routes and emergency planning, to hazardous materials and personal protective equipment (PPE). They include exposure limits for a wide range of hazardous materials, including pesticides, as well as

requirements that employers provide PPE (i.e., protective equipment for eyes, face, or extremities; protective clothing; respiratory devices) to their employees wherever it is necessary (i.e., when required by the label instructions) (29 CFR Section 1910.132). OSHA also establishes criteria by which each state can implement its own health and safety program.

Federal Aviation Administration Airspace Protection Regulations
The Federal Aviation Administration (FAA) is responsible for ensuring the safe, efficient use, and preservation of the navigable airspace in the U.S. Under 14 CFR Part 77, the FAA must be notified of certain proposed construction or the alteration of certain existing structures. The FAA may then conduct an aeronautical study to determine obstructions to air navigation, and navigational and communication facilities. Generally, the regulations in 14 CFR Section 77.9 require notification of FAA for any construction or alteration that is more than 200 feet above ground level at its site, or for any construction that exceeds an imaginary surface extending outward and upward at any of the following slopes:

1. 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway for any applicable airports (e.g. public use, military);
2. 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway for any appliable airport;
3. 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of any applicable heliport.

State Laws, Regulations and Policies

The Unified Program
The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, and it works with other state agencies and delegates its authority to local jurisdictions that enter into agreements with the state. Local agencies administer these laws and regulations. DTSC, CalEPA, and other state agencies set the standards for their programs while local governments implement the standards. These local implementing agencies, the Certified Unified Program Agencies (CUPAs), regulate and oversee the following for each county:

- Hazardous materials business;
- California accidental release prevention plans or federal risk management plans (RMPs);
- The operation of underground storage tanks (USTs) and ASTs;
- Universal waste and hazardous waste generators and handlers;
- On-site hazardous waste treatment;
- Inspections, permitting and enforcement;
- Proposition 65 reporting (described below); and
- Emergency response.

California Health and Safety Code – Hazardous Waste and Hazardous Materials
Several sections of the California Health and Safety Code deal with hazardous waste and hazardous materials. Division 20, Chapter 6.5 addresses hazardous waste control and contains regulations on hazardous waste management plans, hazardous waste reduction, recycling and treatment, and hazardous waste transportation and hauling. Under Chapter 6.5, Article 6, persons generating hazardous wastes that are to be transported for off-site handling, treatment, storage, or disposal must complete a hazardous waste manifest before transport, indicating the facility to which the waste is being shipped for treatment, disposal,

or other purposes.

Under Chapter 6.95, Article 1, areas and businesses that have a threshold amount of hazardous materials on site (55 gallons of liquid; 500 pounds of solid for businesses) must have plans in place for emergency response to an accidental release of materials. These Hazardous Materials Business Plans (HMBPs) and Hazardous Materials Area Plans (HMAPs) must include at least the following:
A listing of the chemical name and common names of every hazardous substance or chemical product handled by the business;

- The category of waste, including the general chemical and mineral composition, of every hazardous waste handled by the business;
- The maximum amount of each hazardous material or mixture containing a hazardous material that is present on site;
- Sufficient information on how and where the hazardous materials are handled by the business to allow fire, safety, health, and other appropriate personnel to prepare adequate emergency responses to potential releases of the hazardous materials;
- Emergency response plans and procedures in the event of a reportable release or threatened release of a hazardous material; and
- Training for all new employees and annual training, including refresher courses, for all employees on safety procedures in the event of a release or threatened release of a hazardous material

Under Chapter 6.95, Article 2, operators of stationary sources of hazardous materials are required (if they are deemed an accident risk) to prepare risk management plans (RMPs), detailing strategies to reduce the risk of accidental hazardous material release, and submit them to the California Emergency Management Agency.

California Accidental Release Prevention Program
First implemented in 1997, the California Accidental Release Prevention (CalARP) program was designed to prevent accidental releases of hazardous substances, minimize damage if releases occur, and satisfy community right-to-know laws. Similar to the chemical accident prevention provisions of the federal Clean Air Act, the CalARP program and implementing regulations (19 CCR 2, Chapter 4.5) require businesses that handle more than a threshold quantity of regulated substances to develop an RMP.

In most cases, the CUPA is the administering agency responsible for implementing the CalARP program. When no CUPA exists, the administering agency is designated by the Secretary for Environmental Protection or the Office of Emergency Services. The administering agency determines the level of detail in the RMPs, reviews the RMPs, conducts facility site inspections, and provides public access to most of the information provided by facilities.

California Fire Code – Hazardous Materials Management Plans and Hazardous Materials Inventory Statements
The California Fire Code (29 CCR Part 9) requires businesses that handle more than a threshold quantity of hazardous materials to prepare a Hazardous Materials Management Plan (HMMP) and a Hazardous Materials Inventory Statement (HMIS). HMMPs and HMISs are similar to the HMBPs and HMAPs required under Chapter 6.95 of the California Health and Safety Code. Similar to business and area plans, the HMMP/HMIS requirement is an element of the Unified Program; however, the CAL FIRE Office of the State Fire Marshall is responsible for implementing the HMMP and HMIS.

The HMMP must include a facility site plan containing information such as the location of emergency equipment, hazardous material storage tanks, and emergency exits. The HMIS must include information on the hazardous materials at the site, such as product name, chemical components, amount in storage, and hazard classification. As part of an application for a permit, owners or operators of facilities that handle hazardous materials also must submit an emergency response plan and an emergency response training plan.

California Emergency Services Act
The California Emergency Services Act (Cal. Gov. Code, Chapter 7) established the California Emergency Management Agency and created requirements for emergency response training and planning. Under this act, the State is required to develop a statewide toxic disaster contingency plan that can facilitate an effective, multi-agency response to a situation in which toxic substances are dispersed in the environment so as to cause, or potentially cause, injury or death to a substantial number of persons or substantial harm to the natural environment (Cal. Gov. Code Section 8574.18). The California Emergency Services Act also requires the agency to develop and manage the California Hazardous Substances Incident Response Training and Education Program, which provides classes in hazardous substance response (Cal. Gov. Code Section 8574.20). Under the California Emergency Services Act, the California Emergency Management Agency would have the ability to provide an effective response to catastrophic hazardous materials release, such as from an accident at a chemical pesticide manufacturing plant.

Hazardous Waste Generator Program
The Hazardous Waste Generator Program is administered by CUPAs under the Unified Program with oversight and assistance from DTSC. Under the program, CUPAs conduct inspections at hazardous waste generator facilities. Inspectors check hazardous waste generators for compliance with such requirements as having a USEPA identification number, contingency plan information posted near a telephone, containers in good condition and properly labeled, and authorized waste transport vehicles. If generators fail to comply with regulations or permit requirements, CUPAs may assess penalties.

CUPAs also administer on-site, tiered permitting programs. Based on the type of waste they treat and the treatment processes they employ, businesses are required to obtain a permit for the appropriate tier. Permits may require businesses to clean equipment or alter processes to improve safety.

Pesticides and Pest Control Operations
Detailed implementing regulations for CDPR's pesticide regulatory program are codified in the California Code of Regulations, Title 3, Division 6. CDPR is the state agency with primary responsibility for regulating pesticide use in California. CDPR oversees state pesticide laws, including pesticide labeling, and is vested by USEPA to enforce federal pesticide laws in California. CDPR also oversees the activities of the county agricultural commissioners (CACs) related to enforcement of pesticide regulations and related environmental laws and regulations locally.

As identified in California Code of Regulations Title 3, Division 6, CDPR evaluates proposed pesticide products and registers those pesticides that it determines can be used safely. In addition, CDPR's oversight includes:

- Licensing and pesticide professionals;
- Site-specific permits required before restricted-use pesticides may be used in agriculture;
- Strict rules to protect workers and consumers;
- Mandatory reporting of pesticides use by agricultural and pest control businesses;
- Environmental monitoring of water and air; and

- Testing of fresh produce of pesticides residues.

The regulations require that employers of pesticide workers provide protective clothing, eyewear, gloves, respirators, and any other required protection, and requires employers to ensure that protective wear is worn according to product labels during application. The regulations also require that employers provide workers with adequate training in pesticide application and safety; communicate pesticide-related hazards to workers; ensure that emergency medical services are available to workers; and ensure adherence to restricted 15 entry intervals between pesticide treatments. (3 CCR Section 6764.)

CDPR Guidance on Pesticide Use in Cannabis Cultivation
In accordance with MAUCRSA, CDPR is required to develop guidelines for the use of pesticides in the cultivation of cannabis and residue in harvested cannabis (Bus. & Prof. Code Section 26060[d]). However, CDPR is preempted by federal law from registering a pesticide for sale and use that is not first registered by USEPA.

CDPR has advised CACs to issue a Unique Identifier (i.e., an operator identification data number) to any cannabis grower who submits a valid application, except in counties in which growing cannabis is prohibited by a local ordinance. The operator identification data would be used in the management of pesticide use data. CDPR has advised that the use of a pesticide for the cultivation of cannabis falls under the broad definition of "agricultural use" in the Food and Agricultural Code, even though the Food and Agricultural Code does not explicitly consider cannabis an agricultural commodity.

CDPR has also prepared guidance documents outlining the legal requirements for pesticide use on cannabis and providing guidance on legal pest management practices for California cannabis growers. Essentially, CDPR's guidance states that the only pesticide products allowable for use on cannabis are those that contain an active ingredient that is exempt from residue-tolerance requirements and are either (1) registered and labeled for a use that is broad enough to include use on cannabis (e.g., unspecified green plants), or (2) exempt from registration requirements as a minimum-risk pesticide under FIFRA section 25(b) and the California Code of Regulations, Title 3, Section 6147 (CDPR 2017).

Pesticide Contamination Prevention Act
The Pesticide Contamination Prevention Act (Food & Agr. Code Sections 13145–13152) requires CDPR to:

- Obtain environmental fate and chemistry data for agricultural pesticides before they can be registered for use in California;
- Identify agricultural pesticides with the potential to pollute groundwater;
- Sample wells to determine the presence of agricultural pesticides in groundwater;
- Obtain, report, and analyze the results of well sampling for pesticides by public agencies;
- Formally review any detected pesticide to determine whether its use can be allowed; and
- Adopt use modifications to protect groundwater from pollution if formal review indicates that continued use can be allowed.

The act requires CDPR to develop numerical values for water solubility, soil adsorption coefficient, hydrolysis, aerobic and anaerobic soil metabolism, and field dissipation of pesticides to protect groundwater, based in part on data submitted by pesticide registrants.

The act also states that CDPR shall establish a list of pesticides that have the potential to pollute groundwater, called the Groundwater Protection List. Any person who uses a pesticide that is listed on the Groundwater Protection List is required to file a report with the CAC, and pesticide dealers are required to make quarterly reports to CDPR of all sales of pesticides on the list to persons not otherwise required to file a report. The Pesticide Contamination Prevention Act ensures that pesticides allowed for use in California, including those that may be used in cannabis cultivation, will have been studied by CDPR for their potential to contaminate groundwater and the environment.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65)
The Safe Drinking Water and Toxic Enforcement Act, or Proposition 65, requires the Governor to maintain and publish a list of chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. Once a chemical has been listed, businesses are responsible for providing a warning before knowingly or intentionally exposing their employees or the public to an amount of the chemical that poses a significant risk. The California Office of Environmental Health Hazard Assessment (OEHHA) is the lead agency responsible for implementing Proposition 65, with input from CDPR and other agencies so that the best scientific information is used in listing chemicals. In its current state, the Proposition 65 list contains a wide variety of chemicals, including various pesticides and cannabis smoke (OEHHA 2018).

California Division of Occupational Safety and Health Regulations
The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) regulations contain requirements for agricultural operations related to pesticide application. The regulations require that a notice be attached to all tanks larger than 100 gallons in capacity that are used for pesticides, providing precautionary instructions; controls on the tanks must be placed to minimize exposure to employees from ruptured or breaking lines (8 CCR Section 3453). Machines, applicators, and other equipment used for pesticide application must be decontaminated before they are overhauled or placed in storage (8 CCR 40 Section 3451).

In addition, the Cal/OSHA regulations contain various provisions that require safe operation of equipment, safety instructions provided in a language that employees understand, and access to first aid.

California Department of Public Health Office of Manufacturing Cannabis Safety
The CDPH Office of Manufactured Cannabis Safety is responsible for regulating the manufacturers of cannabis products for both medicinal and adult use

California Fire Code
The California Fire Code (24 CCR Part 9) establishes minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. The California Fire Code also contains requirements related to emergency planning and preparedness, fire service features, building services and systems, fire resistance–rated construction, fire protection systems, and construction requirements for existing buildings, as well as specialized standards for specific types of facilities and materials.

Local Laws, Regulations and Policies

City of Colusa General Plan
The City of Colusa General Plan (2007) contains the following goals and policies related to hazards and hazardous materials:

Goal SAF-4: To protect the community's health, safety, natural resources, and property by regulation of the use, storage, transport and disposal of hazardous materials.

Policies SAF 4-1: The City shall require the disclosure of the use and storage of hazardous materials in existing and proposed industrial, commercial, and public-use activities, and the siting of hazardous waste disposal facilities, in accordance with federal, state, and local regulations.

Implementing Action SAF-4.1.a: California Health and Safety Code Chapter 6.95 and Title 40, Code of Federal Regulations. The City will comply with and enforce, to the extent feasible, Chapter 6.95, Section 25503 of the California Health and Safety Code governing the storage of hazardous materials. Where appropriate, the City shall also ensure compliance with Title 40, Part 112, of the Code of Federal Regulations, which requires preparation of a Spill Prevention, Control and Countermeasures (SPCC) Plan, a similar but more detailed plan than the Hazardous Materials Business Plan required under the State Code, for businesses that store hazardous wastes in excess of standards set in the statute. These statutes will apply to hazardous chemical storage at all City-owned and operated facilities.

Implementing Action SAF-4.1.b: Development Review. The City will refer any development proposal that may be affected by, or affect, the storage, handling, disposal, or transportation of hazardous materials to the Fire Department, the Colusa County Sheriff's Office, and other appropriate agencies for review. When required, a Hazardous Material Business Plan will be prepared and submitted in accordance with County procedures. The Business Plan will contain all provisions required by Assembly Bill 2185, Department of Transportation, and Cal-OSHA regulations for environmental controls of hazardous materials, and other provisions that may be required by the County.

Policy SAF-4.2: The City shall ensure that it maintains sufficient resources, contacts, and personnel to provide the public with emergency notification in the event of a hazardous materials spill or airborne release.

Implementing Action SAF-4.2.a: Interagency Coordination. The City will utilize contacts with County agencies and special districts to develop coordinated plans to respond to hazardous material spills or releases. The City will also keep abreast of and, where appropriate, implement Office of Emergency Services hazardous spill prevention and planning programs.

Colusa County Airport Land Use Compatibility Plan

The Colusa County Airport Land Use Compatibility Plan (ALUCP) (Colusa County Airport Land Use Commission 2014) serves to promote compatibility between the Colusa County Airport and future land use development in the surrounding areas. The ALUCP accomplishes this by establishing a set of compatibility criteria applicable to new development around the airport. According to the ALUCP's Compatibility Policy Map, a portion of the project site is within the identified Zone C3 (Secondary Traffic Pattern Zone) (Colusa County Airport Land Use Commission 2014). Agricultural land uses are normally compatible within the C3 Zone. While a portion of the northwestern of the annexation area is located in Zone D – Other Airport Environs, this does not carry any land uses regulations with it. With respect to airspace protection and obstruction height criteria, the ALUCP generally incorporates the requirements identified by FAA (see detailed discussion under "Federal Laws, Regulations, and Policies").

9.a: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

No development is proposed beyond the 88.97 acres for the CTC Project as the balance of the annexation boundary will continue to operate in an as is condition, consisting of active agricultural practices and a single-family home and out structures on the portion of the site known as Brookins Ranch. The city General Plan Amendment and rezone of the land mirrors the general plan and zoning designation in the County, in that the City is adopting the same land use matrix that has already been reviewed by ALUC. The municipal code amendment would permit cannabis operations in the AG – Agricultural zone, subject to the issuance of a special use permit.

In regard to the 88.97-acre site where cannabis operations are intended to take place, the 2017 CDFA PEIR found that cultivation may involve use of hazardous materials, such as fuel for power equipment and backup generators. Additionally, indoor and mixed-light cultivation operations may use high powered lights, which could contain hazardous components that could enter the environment during disposal. The PEIR concludes that, with adherence to existing hazardous materials laws, use, storage, transport, and disposal of these materials would not create a significant hazard to the public or environment.

Cultivation activities also may use pesticides; however, as described above, the only pesticide products currently allowable for use on cannabis are those that contain an active ingredient that is exempt from residue-tolerance requirements and are either (1) registered and labeled for a use that is broad enough to include use on cannabis (e.g., unspecified green plants), or (2) exempt from registration requirements as a minimum-risk pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 25(b) and the California Code of Regulations, Title 3, Section 6147 (CDPR 2015a). In general, the pesticides that meet these criteria are less toxic than those with residue-tolerance requirements or that are subject to registration requirements, and include such substances as garlic oil and neem oil. The screening-level human and ecological health risk evaluation conducted for the CDFA PEIR found that use of these materials in cannabis cultivation would not result in significant risks to human or ecological health when used in accordance with licensing requirements and other applicable laws and regulations. In addition, CDFA's regulations require licensees to implement pesticide application and storage protocols to further minimize risk, such as the following:

- Comply with all pesticide label directions;
- Store chemicals in secure buildings or sheds to prevent access by wildlife;
- Contain any chemical leaks and immediately clean up any spills;
- Apply the minimum amount of product necessary to control the target pest;
- Prevent offsite drift; and
- Only use properly labeled pesticides.

This environmental review concurs with the CDFA PEIR in finding that hazardous materials use associated with cultivation would not result in a significant impact, given compliance with applicable laws and regulations. As such, the detailed discussion that follows focuses on the areas that were not addressed in the CDFA PEIR: specifically, the potential effects associated with site development and construction, and the effects associated with manufacturing of cannabis products.

During site development and construction, the Project would involve the routine transport, use, and disposal of hazardous materials. For example, fuel, oil, and other materials used in construction equipment would be transported, stored, and used on the site. Following use, these materials may be transported to an appropriate disposal facility. In accordance with existing laws and regulations, including OSHA and

Cal/OSHA regulations, the construction contractor would be required to provide PPE and ensure that such materials are handled in a way that is safe for workers and the environment. Additionally, as further described in Section 3.9, "Hydrology and Water Quality," the Project would be required to implement a SWPPP, which would include measures for proper storage and handling of hazardous materials on the site.

Cannabis testing and manufacturing facilities included as part of the CTC operation may involve the use of hazardous materials, such as cleaners and solvents for routine cleaning and related activities. Manufacturing of cannabis products at the project site would not use volatile solvents, such as butane, as described in the Project Description; rather, the non-chemical process of fractional distillation would be used. This process would not pose a hazard to cannabis workers or the public.

Consistent with the CDFA PEIR (2017) and BCC IS/ND (2017), once constructed, the cannabis facilities would be subject to numerous existing laws and regulations pertaining to hazardous materials. These include OSHA and Cal/OSHA standards for worker safety and Unified Program requirements related to hazardous materials and waste storage and management. As those statewide environmental documents concluded, these requirements would be sufficient to protect cannabis workers, the public, and the environment from significant hazards due to hazardous materials. Overall, given compliance with existing laws and regulations related to routine transport, use, and disposal of hazardous materials, the Proposed Project would not result in a significant risk to human health or the environment.

On November 17, 2025 the Colusa County Airport Land Use Commission reviewed the annexation, General Plan Amendment, rezone and the CTC project and found it in compliance with the 2014 Airport Land Use Plan. Therefore, this impact would be less than significant.

9.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.

No development is proposed beyond the 88.97 acres for the CTC as the balance of the annexation boundary will continue to operate in as is condition, consisting of active agricultural practices and a single-family home without structures. The General Plan Amendment, rezone and Municipal Code updates do not inherently involve the release of hazardous materials in the environment.

As discussed in Hazards 9.a (above), construction of the Project would involve the use of hazardous materials, such as fuel, oil, solvents, and paint, some of which would be contained in construction equipment. If improperly stored or used, these materials could be accidentally released and/or spilled, which could create a significant hazard to the public or the environment due to their toxicity and adverse effects. However, in accordance with the NPDES General Construction Permit (applicable to construction projects that disturb greater than one acre of land), the construction contractor would be required to prepare and implement a SWPPP, including good site housekeeping and spill prevention measures for hazardous materials. The SWPPP would include a spill contingency response plan to minimize the adverse effects from any accidental release of hazardous materials.

In addition, utilization of pesticides that are applied to the site in a regulatory environment by handlers who are trained and certified. Existing rules and regulations will continue to apply to those areas of the project, which include the Colusa County Department of Agriculture enforces pesticide use and regulations within the County. The department's Agricultural Biologist are responsible for regulatory duties, such as maintaining state license for pesticide regulations, investigation and environmental monitoring. The department also enforces other agricultural laws and regulations including weights and measures, State and federal plant quarantine, State seed nursery inspection and State quality standards for produce. The department is also responsible for managing pest detection and weed and vertebrate pest management.

The department also regulates the type, timing and application of pesticides, requiring applicators to register and notify the department on the type of material that are to be applied to a particular site. The department is responsible for issuing both Restricted Materials Permits and Operator Identification numbers to property operators and landowners who wish to purchase and use pesticides. These records are kept with the department.

As analyzed and described in the CDFA PEIR (2017) and BCC IS/ND (2017), cannabis cultivation and business activities during project operation would not result in substantial hazards, given compliance with existing laws and regulations. Therefore, a less than significant impact will occur.

9.c: **Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.**

General Plan Amendments, rezones and municipal code text amendments do not involve hazardous materials. Beyond the 88.97 acres for the CTC Project as the balance of the annexation boundary will continue to operate in an as is condition, consisting of active agricultural practices and a single-family home without structures. Agricultural activity regulations encompass a wide range of laws and rules governing farming practices, land use, and environmental protection. These regulations aim to ensure food safety, protect workers, and minimize environmental impact. Key areas include pesticide use, water quality, worker protection, and land management.

The 88.97-acres project site that is proposed for a cannabis operation and development, the nearest school is Colusa High School, which is approximately 3,557 linear feet (0.67 miles) to the north of the CTC site. As required by state regulations, cannabis facilities must be at least 600 feet from schools. As required by City of Colusa regulations, cannabis facilities must be at least 1,200 feet from schools. As discussed in Hazards 9.a (above) emissions from the cannabis operation would be anticipated to be relatively minor during the operation and would not result in a significant adverse effect, therefore this impact would be less than significant.

9.d: Located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

A records search was conducted using the State Water Resources Control Board's (SWRCB) GeoTracker database (2024) and California Department of Toxic Substances Control's (DTSC) EnviroStor database (2024), in which no listed hazardous materials sites were identified on-site or within 1,000 feet of the entire project boundary. Since the proposed annexation project boundary is not included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5, no impact would occur.

9.e: Located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport and result in a safety hazard for people residing or working in the study area.

The annexation boundary is to the east and northeast of the Colusa County Airport and falls within both Zone C3 and Zone D of the ALUCP. Agricultural practices are conditionally approved land uses within those zones, given if they abided by ALUCP policies that prohibit land uses that attract birds, generate dust or produce steam or smoke or otherwise pose hazards to flight. Given that such the existing uses are not proposed to change, they are consistent with the ALUCP. As discussed above, on November 17, 2025, the

Colusa County Airport Commission found the annexation, general plan amendment, rezone and the CTC project consistent with the Airport Land Use Plan.

The Brookins Ranch portion of land is already pre-zoned as R1 Single Family, as part of the 2007 General Plan and as part of the adoption of the ALUCP, was already found to be in compliance with the document. While the A-G Agricultural zoning for the city owned agricultural lands will be changed from E-A – Exclusive Agricultural, the land uses themselves are not going to change in that the City will be amending the Colusa Municipal Code to include a A-G Agricultural zoning district that mirrors that of the County.

Regarding the CTC portion of the project site, which is 0.7 miles to the east of the Colusa County Airport and falls within both Zone C3 and Zone D of the ALUCP. Warehouse uses are both normally compatible (Zone D) and conditionally compatible (Zone C3). Zone C3 requires that an intensity of no more than 200 people be permitted per acre. As noted in the project description for the cannabis operation it is anticipate to employe approximately 320 individuals on 88.97 total acres (3.27 people per acre), well below the threshold noted in the ALUCP.

Proposed cannabis structures are proposed to be no taller than 44 feet and would not include features greater than 180 feet AGL that would require notification of the FAA and could potentially interfere with aircraft accessing the Colusa County Airport. Additionally, while workers at the CTC facility could potentially be exposed to a safety hazard if an aircraft were to crash into the facility, such an event is considered unlikely, particularly given the Proposed Project's distance from the airport (0.7 miles) and the relatively low volume of air traffic at the Colusa County Airport. Noticing requirements under the FAA Part 7 are not applicable to the project as the project (height) does not meet the thresholds, nor does the Colusa Airport runway length meet the thresholds (3,200 linear feet). Review of the entire project has been submitted to the ALUCP, particularly in regard to the CTC as the ALCUP requires any new building over 10,000 square feet to receive ALUC review. The project approvals will be conditioned on receiving ALUC review prior to any construction related activities. Overall, this impact would be less than significant.

9.f: **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

The city of Colusa has a Comprehensive Safety Action Plan (CSAP), which is designed to improve safety on its roads, intersections and schools. CSAP provides a plan to identify and address potential safety hazards and proposed capital improvement projects that aim to reduce and ultimately eliminate roadway fatalities, injuries and collision. CSAP is data driven by community engagement and funded by Safe Route to School Grant. The CSAP is not an emergency plan, but rather a plan to improve circulation and hazards in the public right of way.

As described in more detail in Section 17 – Transportation and Traffic, construction with the proposed project is expected to generate approximately 832 daily trips, occurring Monday through Friday 7:00 a.m. and 7:00 p.m. with potential work permitted on weekends and holidays if need be. As a result, traffic is expected to increase during this time, but not substantially. No road closures are anticipated to result from construction of facilities and structures for the Proposed Project; however, construction activities related to site access on Will S. Green Street could temporarily restrict emergency access to the area and the project site. Therefore, Implementation of Mitigation Measure HAZ-1 (Prepare and Implement a Construction Traffic Management Plan) would ensure that emergency access is maintained throughout the construction period.

HAZ-1 Prepare and Implement a Construction Traffic Management Plan

Prior to issuance of a grading permit, the applicant, in consultation with the City of Colusa Police and Fire Departments, shall prepare a construction traffic management plan that ensures construction-related traffic does not impact vehicle movements along Will S. Green Avenue or Colusa Avenue near Colusa High School. At a minimum, such a Plan should prohibit truck traffic from parking or being stored along Will. S. Green Avenue. The plan should also include additional signage and heighten awareness of high pedestrian points, such as parking or crosswalks. Such signage or heighten awareness can include visibility markers, flags for students to utilize while crossing a cross walk, temporary barriers to ensure parking is separated from vehicle traffic. The Plan shall be shared with all vendors and subcontractors to the site. The Plan shall be approved by City staff.

During normal operation of the CTC facility, 832 daily trips are anticipated. With Will. S. Green serving as the only northern access point to the facility. This portion of Will. S. Green is currently unimproved with roadway surface and as discussed in the project description will be paved from where the unimproved portion currently terminates to the CTC project site. However, as discussed in the Traffic Impact Study, there are numerous existing dirt roads to the east, west and south of the project stie that could be used for emergency access which connect to other local and collector roads. As provided by the applicant and illustrate above (Figure 5 – Additional Points of Access) , the site has additional access to the west which will allow for an alternative route from the west to the south and southeast along Westcott Road through agricultural lands and ultimately connecting back to the city. Therefore, to significant emergency access is provided for the project and the impact is considered less than significant.

9.g Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The entire annexation boundary is located in an area that is flat with vegetation that is predominately agricultural in material, which is usually watered and actively maintained. These land uses will not change while the 88.97 acre portion dedicated to the CTC operation will be required to install both fire hydrants to city standards, both in flow rate and spacing. Further the structure will also be required, as part of the CBC to install a sprinkler system and have fire extinguishers on hand. General Plan Amendments, rezones and text amendments to the Municipal Code inherently have no impacts on risks to wildfires. Therefore, impacts related to exposure to wildland fires are expected to be less than significant. For a detailed discussion on wildland fires, see Section 20 – Wildfires

10. HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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:	☐	☒	☐	☐
i) Result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site	☐	☐	☒	☐
iii) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
iv) 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 water quality control plan or sustainable ground water management plan	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations and Policies

Clean Water Act and Associated Programs
The Federal Water Pollution Control Act of 1972, also known as the Clean Water Act (CWA), is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands (USEPA 2016a). The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." States, territories, and authorized Tribes establish water quality standards that describe the desired condition of a waterbody or the level of protection, which are then approved by USEPA; these standards form a legal basis for controlling pollution that enters the waters of the United States. Water quality standards consist of the designated beneficial uses of the waterbody, criteria to protect those designated uses, antidegradation requirements to protect existing uses and high-quality waters, and general policies regarding implementation (USEPA 2016b).

USEPA is responsible for implementing the CWA, although some sections are implemented by other federal agencies under USEPA's oversight, such as Section 404 dealing with discharge of dredged and fill material into waters of the United States (which is implemented by USACE). USEPA also has the option to delegate implementation of certain programs to a State agency. In California, the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) administer various sections of the CWA.

Section 401
CWA Section 401 requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the United States. In California, USEPA has delegated to SWRCB and the RWQCBs the authority to issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and that region's water quality

control plan (also known as a Basin Plan). Applicants for a federal license or permit to conduct activities that might result in the discharge to waters of the United States must also obtain a Section 401 water quality certification to ensure that any such discharge would comply with the applicable provisions of the CWA.

Section 402

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES). Under Section 402, a permit is required for point-source discharges of pollutants into navigable waters of the United States (other than dredge or fill material, which are addressed under Section 404). In California, the NPDES permit program is also administered by the SWRCB. Permits contain specific water quality–based limits and establish pollutant monitoring and reporting requirements. Discharge limits in NPDES permits may be based on water quality criteria designed to protect designated beneficial uses of surface waters, such as recreation or supporting aquatic life. The various NPDES permits that may apply to the cannabis operation are discussed below.

General Construction Stormwater Permit

Most construction projects that disturb 1 acre or more of land are required to obtain coverage under the SWRCB's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ), in accordance with CWA Section 402. The general permit requires the applicant to file a public notice of intent to discharge stormwater and prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP must include a site map and a description of the proposed construction activities; demonstrate compliance with relevant local ordinances and regulations and present a list of best management practices (BMPs) that will be implemented to prevent soil erosion and protect against discharge of sediment and other construction-related pollutants to surface waters. Permittees are further required to conduct monitoring and reporting to ensure that BMPs are correctly implemented and are effective in controlling the discharge of construction-related pollutants.

Municipal Stormwater Permitting Program

The SWRCB regulates stormwater discharges from municipal separate storm sewer systems (MS4s), in accordance with Section 402 of the CWA, through its Municipal Storm Water Permitting Program. As described above, the MS4 permitting requirements were developed in two phases: Phase I and II. MS4 permits continue to be issued under Phase I or Phase II depending on the size of the MS4 seeking authorization. Phase I permits for medium and large MS4s require the discharger to develop and implement a Storm Water Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP), including identifying what BMPs will be used to address specific program areas.

Colusa County is covered under the Phase II Small MS4 General Permit (Order 2013-0001-35 DWQ). Among other things, this permit prohibits discharges of waste from the MS4 that are prohibited by Statewide Water Quality Control Plans or applicable Regional Water Quality Control Plans (Basin Plans), as well as discharges of storm water from the MS4 to waters of the U.S. in a manner causing or threatening to cause a condition of pollution or nuisance as defined in Water Code section 13050.

Section 404

Section 404 of the CWA prohibits discharges of dredged or fill material into waters of the U.S. without a permit from USACE. No discharges to waters of the U.S. are contemplated as part of 3 the proposed Project; therefore, this section of the CWA is not discussed further.

National Toxics Rule and California Toxics Rule
USEPA issued the National Toxics Rule (NTR) in 1992. The goal of the NTR is to establish numeric criteria for specific priority toxic pollutants, to ensure that all states comply with the requirements in CWA Section 303. A total of 126 priority toxic pollutants currently are specified in the NTR (USEPA 2016c).

In 2000, USEPA promulgated the California Toxics Rule (CTR), which contains additional numeric water quality criteria for priority toxic pollutants for waters in the state. The CTR fills a gap in California water quality standards that was created in 1994 when a State court overturned the State's water quality control plans containing water quality criteria for priority toxic pollutants. These federal criteria are legally applicable in California for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA (USEPA 2016d).

The NTR and CTR include toxicity thresholds for freshwater and saltwater systems and human health for a number of chemicals which may be used for permitted or unpermitted cannabis cultivation, including heavy metals (which may be found in fertilizers, irrigation water, soils, and other grow media), hydrocarbons (found in fuels and lubricants for powered equipment used in cultivation), and pesticides.

Safe Drinking Water Act
The Safe Drinking Water Act (SDWA) is intended to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells that serve more than 25 individuals. The goal of the SDWA is to ensure that drinking water is safe for human consumption. Under the SDWA, USEPA has set drinking water standards for chemical, microbiological, radiological, and physical contaminants in its National Primary Drinking Water Regulations (40 CFR Part 141). Runoff from cannabis cultivation sites has potential to contain water quality constituents that are regulated under the SDWA, such as nutrients and hydrocarbons.

National Flood Insurance Program
Congress established the National Flood Insurance Program (NFIP) to provide property owners with access to federally backed flood insurance protection and to reduce the destructive consequences of flooding. FEMA administers the NFIP and works closely with state and local officials to identify flood hazard areas and flood risks. FEMA's Flood Insurance Rate Maps (FIRMs) show the extent of areas within the 100-year floodplain (i.e., areas that would be inundated by the 1-percent annual chance flood), providing the basis of the NFIP regulations and flood insurance requirements (FEMA 2017).

State Laws, Regulations and Policies

Porter-Cologne Water Quality Control Act
Effective in January 1970, the Porter-Cologne Act (California Water Code Division 7) created water quality regulation on the State level, establishing the SWRCB and dividing California into nine regions, each overseen by an RWQCB. The act establishes regulatory authority over waters of the State, defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." More specifically, the SWRCB and RWQCBs have jurisdiction over any surface water or groundwater to which a beneficial use may be assigned.

Following enactment of the federal CWA in 1972, the Porter-Cologne Act assigned responsibility for implementing CWA Sections 303, 401, and 402 to the SWRCB and RWQCBs.

The Porter-Cologne Act requires the RWQCBs to adopt Basin Plans for the protection of surface water and groundwater quality. The act also authorizes the RWQCBs to issue waste discharge requirements (WDRs) for discharges to waters of the state, including NPDES permits. Any activity, discharge, or proposed

activity or discharge from a property or business that could affect California's surface water, coastal waters, or groundwater will (in most cases) be subject to WDR. The California Water Code authorizes the SWRCB and RWQCBs to conditionally waive WDRs if this is in the public interest. Discharges made under the Proposed Program may be subject to WDR requirements (CDFA 2017).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), passed in 2014, became law in 2015, and created a legal and policy framework to manage groundwater sustainably at a local level. SGMA allows local agencies to customize groundwater sustainability plans to their regional economic and environmental conditions and needs and establish new governance structures, known as groundwater sustainability agencies (GSAs) (DWR 2016). SGMA requires that a groundwater sustainability plan (GSP) be adopted for groundwater basins designated as high and medium priority under the California Statewide Groundwater Elevation Monitoring (CASGEM) program (described below) by 2020 for basins with critical overdraft of underground aquifers. GSPs are intended to facilitate the use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results. Undesirable results are defined as the following (DWR 2016):

- Chronic lowering of groundwater levels (not including overdraft during a drought if a basin is otherwise managed);
- Significant and unreasonable reduction of groundwater storage;
- Significant and unreasonable seawater intrusion;
- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies;
- Significant and unreasonable land subsidence that substantially interferes with surface land uses; and
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

GSPs are required to include measurable objectives, as well as interim milestones in 5-year increments, to achieve the sustainability goal for the basin for the long-term beneficial uses of groundwater. The GSP may, but is not required to, address undesirable results that occurred before, or had not been corrected prior to the date that the SGMA went into effect. The GSA has the discretion to decide whether to set measurable objectives and the timeframes for achieving any objectives for undesirable results that occurred before 2015. Additionally, GSPs are required to include components related to the monitoring and management of groundwater levels within the basin, mitigation of overdraft, and a description of surface water supply used or available for use for groundwater recharge or in lieu use.

As with other local regulatory requirements, GSP requirements may apply to licensed cultivators located within the boundaries of a GSA and using groundwater as a source; the source could include on- or off-site wells, as well as supplies from water purveyors or water delivery services that have groundwater as some component of their supply.

As described further under Section 3.9.2, although the Colusa subbasin is currently designated as Medium priority under CASGEM (DWR 2015); however, the draft 2018 SGMA Basin Prioritization proposes to

change the subbasin's designation to High priority (DWR 2018). The Colusa Groundwater Authority is the GSA for the Colusa County portions of the groundwater basins that are subject to SGMA (CGA 2018). This includes the portion of the Colusa subbasin within which the proposed Project would be located.

State Water Resources Control Board Order WQ 2017-0023-DWQ – Cannabis General Order
SWRCB's Order WQ 2017-0023-DWQ regulates discharges of waste to waters associated with cannabis cultivation activities. Under this order, indoor commercial cultivation activities are exempt. Therefore, given that the proposed Project would include cultivation activities within greenhouses that would have permanent roofs and floors, and that would discharge industrial wastewater to a community sewer system, the Project is likely exempt under the SWRCB General Order.

California Code of Regulations – Cannabis Cultivation
Regulations pertaining to cannabis cultivation are codified in CCR Title 3 Division 8. In accordance with Assembly Bills 243 and 266, and Senate Bill 643, which were enacted and signed into law in 2015, the regulations contained in CCR Title 3 Division 8 establish a licensing program for lawful cultivation of medicinal and adult-use cannabis. The regulations specify a tiered system of license types, and requirements related to obtaining a cultivation license and conducting cannabis cultivation activities, including environmental protection requirements.

The following requirements contained in the CCR cannabis cultivation division are applicable to the Proposed Project:

- CCR Title 3 Div 8 Section 8307(a) requires all cultivators to comply with all CDPR laws and regulations.

- CCR Title 3 Div 8 Section 8307(b) contains protocols to reduce potential effects from pesticide use including: comply with all label requirements, store chemicals in a secure building, contain leaks and spills, apply the minimum amount necessary to control the target pest, and prevent off-site drift.

- CCR Title 3 Div 8 § 8102(o) requires that applicants provide proof of enrollment in or exemption from the applicable SWRCB or RWQCB program for water quality protection.

- CCR Title 3 Div 8 § 8102(u) requires applicants to identify all applicable water sources used for cultivation activities and the applicable supplemental information for each source.

- CCR Title 14 Section 15011(a) Additional Information, states:

  (11) If applicable, the applicant shall provide evidence that the proposed premises is not located in whole or in part in a watershed or other geographic area that the State Water Resources Control Board or the Department of Fish and Wildlife has determined to be significantly adversely impacted by cannabis cultivation pursuant to section 26060(a)(2) of the Business and Professions Code.

- CCR Title 14 Section 16307, Pesticide Use Requirements, state:

  (a) Licensed cultivators shall comply with all applicable pesticide statutes and regulations enforced by the Department of Pesticide Regulation.

(b) For all pesticides that are exempt from registration requirements, licensed cultivators shall comply with all applicable pesticide statutes and regulations enforced by the Department of Pesticide Regulation and the following pesticide application and storage protocols: (1) Comply with all pesticide label directions; (2) Store chemicals in a secure building or shed to prevent access by wildlife; (3) Contain any chemical leaks and immediately clean up any spills; (4) Apply the minimum amount of product necessary to control the target pest; (5) Prevent offsite drift; (6) Do not apply pesticides when pollinators are present; (7) Do not allow drift to flowering plants attractive to pollinators; (8) Do not spray directly to surface water or allow pesticide product to drift to surface water. Spray only when wind is blowing away from surface water bodies; (9) Do not apply pesticides when they may reach surface water or groundwater; and (10) Only use properly labeled pesticides. If no label is available, consult the Department of Pesticide Regulation

- CCR, Title 14, Section 16311, Supplemental Water Sources Information, states:
  The following information shall be provided for each water source identified by the applicant:
  (a) Retail water supply sources:
  (1) If the water source is a retail water supplier, as defined in section 13575 of the Water Code, such as a municipal provider, provide the following:
  (A) Name of the retail water supplier; and
  (B) A copy of the most recent water service bill or written documentation from the water supplier stating that service will be provided at the premises address.
  (2) If the water source is a small retail water supplier, such as a delivery service, and is subject to section 26060.1(a)(1)(B) of the Business and Professions Code and the retail water supplier contract is for delivery or pickup of water from a surface water body or an underground stream flowing in a known and definite channel, provide all of the following:
  (A) The name of the retail water supplier under the contract;
  (B) The water source and geographic location coordinates, in either latitude and longitude or the California Coordinate System, of any point of diversion used by the retail water supplier to divert water delivered to the commercial cannabis business under the contract;
  (C) The authorized place of use of any water right used by the retail water supplier to divert water delivered to the commercial cannabis business under the contract;
  (D) The maximum amount of water delivered to the commercial cannabis business for cannabis cultivation in any year; and
  (E) A copy of the most recent water service bill.
  (3) If the water source is a small retail water supplier, such as a delivery service, and is subject to section 26060.1(a)(1)(B) of the Business and Professions Code and the retail water supplier contract is for delivery or pickup of water from a groundwater well, provide all of the following:
  (A) The name of the retail water supplier under the contract;
  (B) The geographic location coordinates for any groundwater well used to supply water delivered to the commercial cannabis business, in either latitude and longitude or the California Coordinate System;
  (C)The maximum amount of water delivered to the commercial cannabis business for cannabis cultivation in any year;
  (D)A copy of the well completion report filed with the Department of Water Resources pursuant to section 13751 of the Water Code for each percolating groundwater well used to divert water delivered to the commercial cannabis business. If no well completion report is available, the applicant shall provide evidence from the Department of Water Resources indicating that the Department

of Water Resources does not have a record of the well completion report. When no well completion report is available, the State Water Resources Control Board may request additional information about the well; and
(E) A copy of the most recent water service bill.

(b) If the water source is a groundwater well, provide the following:

(1) The groundwater well's geographic location coordinates, in either latitude and longitude or the California Coordinate System; and
(2) A copy of the well completion report filed with the Department of Water Resources pursuant to section 13751 of the Water Code. If no well completion report is available, the applicant shall provide evidence from the Department of Water Resources indicating that the Department of Water Resources does not have a record of the well completion report. If no well completion report is available, the State Water Resources Control Board may request additional information about the well.

Central Valley RWQCB Cannabis Cultivation Order

CVRWQCB order No. R5-2015-0113 (Central Valley RWQCB 2015) applies to cannabis cultivation sites on which cultivation activities occupy and/or disturb more than 1,000 square feet. Cannabis cultivation activities at a given site fall within one of three tiers based on threat to water quality (Tier 1, Tier 2, and Tier 3), as determined by specific physical characteristics of the operation and its surroundings. Discharge prohibitions and specifications included in the CVRWQCB Order that are potentially applicable to the proposed cannabis operation include the following:

- The discharge shall neither create nor threaten to create a condition of pollution defined by Water Code section 13050.

- The discharge of earthen materials, soil, silt, plant waste, slash, or other organic, or inorganic refuse, rubbish, and solid waste, chemicals, bio-stimulatory substances and/or water containing elevated temperatures above background conditions, and/or chemicals, such as but not limited to pesticides, fertilizers, or other substances potentially causing toxicity, into any stream or watercourse is prohibited.

- The discharge of hazardous waste, as that term is defined in California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

- The discharge of any waste not specifically regulated by this General Order and that could affect the quality of the waters of the state is prohibited, unless the discharger obtains regulatory coverage under separate WDRs or certification issued by the Central Valley RWQCB or SWRCB.

- Cultivation areas must be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

- Adequate buffers shall be in place to filter wastes from surface water discharges from production lands and associated facilities to all lakes, wetlands, watercourses, drainage ditches, or other water conveyances.

- No production lands or associated facilities are allowed to be located within 100 feet of any surface water body.

- Fertilizers, potting soils, compost, and other soils and soil amendments must be stored in locations where they cannot enter or be transported into surface waters and where nutrients or other elements cannot be leached into groundwater.

- Pesticides, petroleum products, and other liquid chemicals (including diesel, gasoline, oils, etc.) must be stored so as to prevent their spillage, discharge, or seepage. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature. Above ground storage tanks and containers must be provided with a secondary means of containment for 110 percent of the capacity of the largest single container and sufficient freeboard to contain precipitation.

State Water Resource Control Board Regulations for Cannabis Cultivation
Discharges related to cannabis cultivation must be covered under the SWRCB Cannabis Policy under Order WQ 2023-0102-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (Cannabis Cultivation General Order). The Cannabis Cultivation General Order is currently undergoing an update and is going before the State Water Board for readoption (SWRCB 2024a). The Cannabis General Order provides a statewide tiered approach for permitting discharges and threatened discharges of waste from cannabis cultivation and associated activities. The tier structure consists of two tiers:

- Tier 1 outdoor commercial cultivation activities disturb an area equal to or greater than 2,000 square feet and less than 1 acre (43,560 square feet).
- Tier 2 outdoor commercial cultivation activities disturb an area equal to or greater than 1 acre.

Local Laws, Regulations and Policies

City of Colusa General Plan

The City of Colusa General Plan's Parks, Recreation, and Resource Conservation Chapter (City of Colusa 2007) contain goals and policies that outline the City's commitment to water conservation and water quality for both surface water and groundwater. In addition to land use considerations, key implementing actions to protect water resources involve the use of setbacks, best management practices for grading, drainage and erosion control, and site design. The Safety Chapter contains goals and policies that address flood hazard and storm drainage. The following goals and policies are applicable to the Proposed Project:

Goal PRC-9: To manage and protect the City's water resources.

> **Policy PRC-9.1:** The City shall require natural drainage flows to be maintained in new development projects to the greatest extent feasible.

Goal SAF-2: To minimize the potential for loss of life and damage to property due to flooding.

> **Policy SAF-2.1:** The City shall continue to regulate all uses and development in areas subject to potential flooding through land use planning, zoning and other appropriate actions.
>
> **Policy SAF-2.2:** The City shall minimize the potential for flood damage to buildings and other structures, particularly from storm water runoff.
>
> > **Implementing Action SAF-2.2.a:** Storm Drainage Master Plan, The City will adopt a Storm Drainage Master Plan for Colusa. The Master Plan will identify drainage facilities

that will be constructed to eliminate or mitigate drainage problems in the City and describe the means for financing the proposed improvements. The Storm Drainage Master Plan will be consistent with any Capital Improvements Plan prepared by the City and will address Regional Water Quality Control Board water quality standards, including Best Management Practices for storm drainage.

Environmental Setting:

Regional Hydrology
The Sacramento River forms a natural boundary for the City of Colusa. The River originates in the mountains of Siskiyou County and flows generally in a north-south direction until it empties into Suisun Bay. Other streams in the vicinity of Colusa include Lurline Creek, Freshwater Creek, and Salt Creek. These creeks flow west to east from the foothills toward Colusa, but are redirected south by the Colusa canal located three miles west of the City.

Surface Water
The City of Colusa is located in the greater Sacramento River hydrologic region which includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties, and small areas of Alpine and Amador counties (DWR 2006). The City of Colusa and the Project site are located within the Sacramento-Stone Corral Watershed and draws water from the Colusa Sub-basin (DMEIR July, 2007).

Groundwater
Within the City limits, the City of Colusa administers a domestic water delivery system, operated by the Public Works Department which currently extracts groundwater from five wells at various locations throughout the northern part of the City. Each of the City's wells are drilled to a uniform depth of 150 feet, extracting groundwater from the alluvial formation of the Colusa groundwater sub-basin. The Alluvial aquifer system is the uppermost groundwater bearing unit, reaching from ground surface to a maximum depth of about 200 feet. Many domestic wells draw water from this aquifer system.

Stormwater
The project area is not currently developed with large impervious surfaces, and is largely agricultural land. As such, the project area does not generate substantial surface runoff and does not include stormwater infrastructure. Several barn/shed structures and an abandoned residence exist on the northern perimeter of the site, but these small areas of impervious surface do not generate substantial runoff. The site is relatively flat, and precipitation falling on the site infiltrates into the soil and groundwater below, or sheet-flows off the site through existing irrigation ditches. The project site is not currently connected to the City's stormwater system, but as part of the improvement of the site, it would be required to connect to existing facilities found in Will S. Green Road.

Project Site Hydrology and Onsite Drainage
The Federal Emergency Management Agency (FEMA) has mapped the flood hazard zones for the City of Colusa (Panel 06011C0535G, Effective 3/27/2024) and most of the surrounding vicinity. The 100-year floodplain designation (Zone X) indicates the probable maximum extent of flooding during a storm with a one percent probability of occurrence in any given year. The 100-year flood is the standard generally used in flood hazard planning.

Periods of flooding can cause significant circulation problems and has resulted in some property damage in flood-prone areas. Flooding events cause inconveniences and potential safety hazards to motorists traveling through the flooded streets and property owners attempting to access parked cars. Minor flooding

events can appear as quickly as one hour after significant rainstorms. While flooding may occur as quickly as one hour after the initiation of a storm event, generally the flooded areas drain within two or three hours after the end of the storm event.

10.a and 10.f: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality

With the exception of the 88.97 acres that will be developed as part of the CTC facility, all land uses within the annexation boundary will continue to operate in an as is condition, with no changes, consisting of active agricultural practices and a single-family home with small agricultural practice.
In terms of water quality, the cannabis operation will adhere to the specific standards as noted in the project description.

Site preparation would involve grading, excavation, and import and placement of fill. Ground disturbance and operation of construction equipment for these activities could release sediment or leaked hazardous materials, such as fuel or oil contained in the equipment. If hazardous materials were spilled on site, they could be washed off the site during a precipitation event, or potentially infiltrate the soil or groundwater, resulting in adverse impacts on water quality and beneficial uses. Given the presence of a raised levee on the northern, southern and eastern boundary of the Project site (between the Project site and the Sacramento River), any pollutants spilled on the Project site would not be transported to the Sacramento River as the river is 2.5 miles to the east of this 88.97-acres. The levee will be designed and constructed in a manner that meets state requirements for pre- and post-construction run-off. In that rainwater that is captured on the site has to be equal to or better than pre-construction and such run-off cannot unduly be worse than previously.

Compliance with the NPDES General Construction Permit (see discussion above) would minimize potential impacts, as it would require preparation and implementation of a SWPPP, which would include erosion control and spill prevention measures. The SWPPP also would include good site housekeeping measures and a contingency plan in the event of a spill, including appropriate cleanup protocols. All of these requirements would reduce the potential for a spill or discharge of pollutants to occur during project construction and would minimize adverse effects should a spill occur.

With implementation of NPDES General Construction Permit requirements, the cannabis operation would not violate any water quality standards or WDRs, or otherwise substantially degrade water quality during construction.

Additionally, the project would be subject to the State Water Resource Control Board's Low Impact Development which was adopted in January 2005. Low Impact Development (LID) is a practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID takes a different approach by using site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional storm water management.

Construction projects that would disturb more than one acre of land, such as the proposed project, would be subject to the requirements of General Construction Activity Stormwater Permit (Construction General Permit Order 2009-0009-DWQ, also known as the CGP), which requires operators of such construction sites to implement stormwater controls and develop a Stormwater Pollution Prevention Plan (SWPPP)

identifying specific BMPs to be implemented to minimize the amount of sediment and other pollutants associated with construction sites from being discharged in stormwater runoff. Such BMPs may include, for example, straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas (including the unnamed tributary and downstream watercourses), limit ground disturbance to the minimum necessary, and stabilize disturbed soil areas as soon as feasible after construction is completed. With adherence to the above standards and regulations, there will be a less than significant impact on water quality.

The proposed CTC facility would include installation and maintenance of a pressure sewer system that would be connected to the City's existing sewer system. The system would include grinder pumps that would collect all the wastewater from the facility and grind it into slurry, which would then be pumped to a larger sewer main line which discharges to the municipal sewer system from the Proposed Project are discussed in Section 3.18, "Utilities and Service Systems," and would not substantially affect water quality in receiving waters.

Operation of the Proposed Project also would be required to comply with the Central Valley RWQCB's Order R5-2015-0113 (described above). As such, discharges of cannabis cultivation wastes and materials and resulting adverse effects on water quality would be prohibited.

In compliance with this order, as well as hazardous materials laws and regulations (see discussion in Section 3.8, "Hazards and Hazardous Materials"), the Proposed Project also would store pesticides, petroleum products, and other liquid chemicals (e.g., diesel, gasoline, oil) so as to prevent their spillage, discharge, or seepage.

Given compliance with the existing laws and regulations described above, and inclusion of stormwater management features on site, the Proposed Project would not adversely affect water quality during operation. Therefore, this impact would be less than significant for operation.

10.b: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or lowering of the local groundwater table level

With the exception of the 88.97 acres that will be developed as part of the CTC facility, all land uses within the annexation boundary will continue to operate in an as is condition, with no changes, consisting of active agricultural practices and a single-family home with small agricultural practice These sites currently obtain water from agricultural wells and domestic wells for single-family home. Currently the city of Colusa is installing "purple pipe" infrastructure in the 509 acres of agricultural lands that they own. Purple pipes are used to carry recycled water, also known as reclaimed water. This water has been treated at the abutting WWTP and will be used to irrigate the city owned agricultural lands. In discussion with the city, it is anticipated the WWTP will be able to utilize approximately 450,000 gallons of treated water for both city owned agricultural and cannabis operations going forward. General Plan Amendments, rezones and Municipal Code text amendments do not inherently require the utilization of water resources.

In this instance the cannabis growing operation will use purple pipe water sourced from the abutting WWTP. Purple pipe infrastructure was already installed onsite in 2024 and will be made available for the 509 acres of city owned agricultural lands. City water will be utilized for domestic purposes such as restrooms and drinking fountains. The cannabis operation will also use reverse osmosis (RO) to reclaim onsite agricultural water used for hydroponic purposes.

The 509 acres of City agricultural lands have used agricultural wells to irrigate a mix of row crops through the years, ranging from tomato, watermelon, corn or seed crops. Each crop requires different water needs.

For example, 1 acre of corn requires 680,000 gallons of water during the growing season, while 1 acreof tomatoes requires between 214,00 to 706,000 gallons of water during the growing season (or over 359,300,000 gallons of water for one growing season). These factors do change depending on weather conditions, such as hot, dry weather, wind and the ability for the soils to retain moisture.

As discussed in the Project Description, for one building, the startup operations and the cultivation facility, including the nursery, would require approximately 44,640 gallons per day of the City's recycled water (purple pipe). The recycled water system is expected to reclaim about 98% of this daily usage, amounting to 43,740 gallons internally captured and 900 new gallons introduced. With utilization of both purple pipe water and the reverse osmosis system, the need for the agricultural wells for the CTC site is minimal compared to the approximate 62,800,000 yearly gallons of water needed for seasonal crop production that currently take place on site. Therefore, the construction of the cannabis operation would reduce agricultural water needs for the site and thereby reduce ground water needs overall.

In the event that the WWTP can't provide continued purple pipe water, the CFA CalCannabis PEIR (CDFA 2017) found that water use requirements for cannabis production are generally in line with water use for other agricultural crops, such as corn, alfalfa, tomatoes, peaches and hops, each of which have historically been grown on the CTC site.

Additionally, the DMEIR notes that implementation of the General Plan could result in a substantial increase in population and the number of housing units, which is a significant and unavoidable impact. However, with that said, the General Plan contains mitigation measures for new development (Action PRC-9.4a, Policy MFS7-2 and MFS7-3) to reduce and minimize the need for water resources for landscaping. Plant material shouldbe drought-tolerant plant species and irrigation systems should be efficient, both in public, private, open spaces and common areas and parks. The General Plan states that such policies would assist the City in maintaining its groundwater supply. Therefore, with implementation of Mitigation Measure HYDR-1 the impact upon water resources would be considered less than significant.

The Project's domestic water demand (i.e., sinks, restrooms) would be met through connections to the City's municipal system. As described in Section 3.18, "Utilities and Service Systems," the City's water supply is obtained from groundwater. The City pumps on average 1.8 million gpd of groundwater. Pursuant to a letter from the City to LAFCo, discussing plans for services for the annexation area (See Draft Letter to LAFCo), the City Engineer outlined the estimated number of domestic fixtures, sprinkler and the water associated to maintain the system and flow. The letter concludes that "The City of Colusa maintains a total of eight groundwater wells, with three currently out of service and abandoned. The imminent commissioning of Well No. 9 will result in six active wells contributing to the City's water supply system. Per the draft Water Master Plan, the aggregate source pumping capacity of these active wells exceeds 6,000 gallons per minute (gpm). The projected water demand for the agricultural development is substantially within the operational capacity of the City's existing well infrastructure and pumping capabilities, ensuring reliable supply to meet project requirements."

Finally, construction activities require relatively small amounts of water for dust control and other related uses. Given that the City's municipal water supplies are obtained entirely from groundwater it is likely that those construction water demands would be met through groundwater.

Overall, this impact would be less than significant with mitigation.

HYDR-1: Drought Tolerant Landscaping. Prior to the issuance of a final occupancy permit for structures within the project, the applicant shall ensure that any outdoor landscaping installed are

installed pursuant to AB 1881 water usage requirements (the Water Conservation in Landscaping Act of 2006) and will be drought tolerant and on drip irrigation systems with timers.

10.c.i: **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, resulting in substantial erosion**

As discussed previously, except for the 88.97-acre site, the entire boundary of the annexation area will continue to operate in an as is condition. Consisting primarily of agricultural lands, except for the single-family home and the outbuildings on the Brookins Ranch portion of the site. General Plan Amendment, rezone and the text amendment to the Colusa Municipal code do not modify any drainage patterns. Drainage within those areas will remain unchanged. The annexation boundary is void of any streams, rivers or creeks that would need to be modified or altered. The site does have drainage ditches that collects seasonal water and can be used for irrigation and are routinely maintained.

With development of the 88.97-acres, the existing drainage patterns of the acres would be altered through the addition of newly proposed impervious surfaces, however it would not result in substantial erosion or siltation on- or off-site, as the project would be subject to the Statewide Construction General Permit (CGP), which requires the preparation and implementation of a SWPPP that specifies erosion and sediment control construction and post-construction BMPs to reduce or eliminate construction-related and operational impacts on receiving water quality. Such BMPs may include straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limit ground disturbance to the minimum necessary, and stabilize disturbed soil areas as soon as feasible after construction is completed. The levee, which will be constructed on the northern, southern and eastern property line and connected to the existing levee that abuts the WWTP, will be designed and constructed in a manner that meets state requirements for pre- and post-construction run-off. In that rainwater that is captured on the site has to be equal to or better than pre-construction and such run-off cannot unduly be worse than previously.

Further, all development in California is subject to Low Impact Development (LID) standards. LID is a stormwater management and land-use planning approach that aims to minimize the environmental impact on development by mimicking a site's natural hydrology. LID strategies allow water to infiltrate, evaporate or be stored on site. This approach helps reduce runoff, improve water quality and enhance groundwater recharge. Therefore, impacts associated with alteration of drainage patterns to the site will be considered less than significant.

10.c and 10.e: **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, resulting in substantial increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site or create and contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.**

The annexation boundary area is void of any stream of river. The project does not involve construction activities that would have potential to cause soils erosion or siltation on or off site. General Plan amendments, rezones and text amendments to the Colusa Municipal Code do not themselves impact drainage. Except for the CTC site, all existing land uses at Brookins Ranch and on the city owned agricultural land will continue in an "as is" condition. Site preparation, grading, and use of heavy construction equipment could loosen soil during construction activities on the CTC facility, which cold than be eroded and washed off site during rain storms. Because more than one acre would be disturbed, the RWQCB would require compliance with the NPDES General Construction Permit where a SWPPP would be implemented. As described in item "a" above, the SWPPP would include erosion control measures and

good site housekeeping measures that would serve to avoid or minimize erosion or siltation during construction activities. As a result, compliance with this permit would ensure that this impact is less than significant for construction.

Within the 88.97-acres slated for cannabis construction and operation, the area would be expected to increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. As previously discussed, (10.c.ii), the proposed project would increase the amount of impervious surface on-site, as the Site is currently undeveloped. These improvements will include new frontages, roadways, curbs, gutter, structures and paved surfaces which will direct stormwater to a designed drainage system connecting to the city's existing system. The cannabis project developer would be required to prepare a SWPPP and implement standard BMPs such as straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limit ground disturbance to the minimum necessary, and stabilize disturbed soil areas as soon as feasible after construction is completed.

The developed site will also be subject to Low Impact Development (LID) standards and regulations. LID is a set of design guidelines that aim to mimic stormwater runoff by mimicking natural drainage patterns, primarily by using distributed, on-site practices like vegetation swales and rain gardens to collect rooftop and paved surface rainwater. Thereby reducing runoffs entering storm drains and reducing pollution into waters ways. Essentially, slowing down runoff and cleaning it before it leaves the site. In addition to standard requirements and regulations, the implementation of mitigation measure HYDR-3 project would have a less than significant impact on the rate of surface water runoff.

Finally, the construction portion of the project will be subject to drainage management within the City and the urban area is provided by a system of developed and undeveloped collection systems operated and maintained by the City. Pursuant to the 2009 Drainage Master Plan for the City, the City is broken down into three district drainage areas: Eastern Corridor, Central Drainage Corridor and Western Drainage Corridor. All future development will comply with the City's 2009 Drainage Master Plan and would include storm drain drop inlets as necessary along the proposed streets. The City standards require applicants to develop a comprehensive storm drainage plan for the ultimate development buildout and any interim drainage plan serving the entire project area or any portion of the project area associated with phasing of the development improvements. The storm drainage plan must be prepared by a registered civil engineer and submitted to the City Engineer for approval prior to final approval of the project improvements plans. Required contents of the drainage plan including the following:

- Specific storm drainage design features to control increased runoff from the project site;
- Information demonstrating the effectiveness of the proposed storm drainage system to prevent negative impacts to existing downstream facilities and to prevent additional flooding at off-site downstream locations;
- All necessary calculations and assumptions and design details;
- Design features consistent with the most recent version of the City's Storm Drainage Master Plan and City Public Improvement Standards; and of secondary flood routing analysis and final sizing and location of onsite and off-site storm conduit channels, structures, and detention facilities.

In addition, construction projects that would disturb more than one acre of land, such as the proposed project, would be subject to the requirements of General Construction Activity Stormwater Permit (Construction General Permit Order 2009-0009-DWQ, also known as the CGP).

Given that the Project would be subject to standard requirements and regulations, the project would have a less than significant impact on the rate of surface water runoff.

10.d: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The proposed Project site is located inland, out of the coastal zones of California, therefore there are no risks to a tsunami or seiche zone or other large body of inundation. The site is located within a FEMA flood zone that would require all structures to be built out of the flood zone, by exciting the height of the Base Flood Elevation (BFE) by 1 foot (FEMA Panel 06011C0550G, Effective 3/27/2024). In this instance, the applicant will surround the property with a 7-foot-tall levee system that will ensure the site does not get inundated in times of flooding. The system will be earthen and extended around the entire perimeter. The system would be owned and operated by the City and operators of CTC. Therefore, impacts associated with the project site flooding are considered less than significant.

10.e: Conflict with or obstruct implementation of water quality control plan or sustainable ground water management plan?

As discussed in other items above (10.c and 10.e) the Project also would be required to comply with regulatory standards, which require that all new projects do not contribute to new or increased flooding impacts on adjoining parcels, nor upon upstream and downstream areas. To ensure that all projects comply with these standards, the City's Storm Drainage Master Plan and City Public Improvement Standards require that the project applicant prepare a comprehensive storm drainage plan for the ultimate development buildout and any interim drainage plan serving the entire project area or any portion of the project area associated with phasing of the development improvements. The storm drainage plan must be prepared by a registered civil engineer and submitted to the City Engineer for approval prior to final approval of the project improvement plans. General Plan Amendments, rezones and text amendments to the Colusa Municipal Code inherently have no association with water quality. Brookins Ranch and the remaining city owned agricultural lands will continue to operate as they do now, prior to annexation. Therefore, this impact would be considered less than significant.

11. LAND USE AND PLANNING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations and Policies

No federal regulations are applicable to land use and planning in relation to the Project.

State Laws, Regulations and Policies

Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (LAFCO)
Government Code Section 56000 governs annexations of property into cities and districts. This code section outlines the process and requirements for cities to annex unincorporated areas, aiming to encourage orderly growth and address inefficiencies associated with unincorporated areas within or near city boundaries.

Department of Cannabis Control (DCC)
The DCC is a state agency responsible for licensing, regulating and overseeing commercial cannabis business across California.

Local Laws, Regulations and Policies

City of Colusa General Plan
The City of Colusa General Plan's Land Use Chapter establishes the framework for community development and is accompanied by goals, policies, and implementing actions that will guide the City's physical growth through 2027 (City of Colusa 2007). This element uses an illustrative land use map to express these policies as well as the City's development priorities.

Goal LU-2: To ensure public health and safety by maintaining adequate buffers between agricultural land and urbanized areas**.**

> **Policy LU-2.1:** Development projects shall be reviewed on a case-by-case basis to ensure that adequate buffers are maintained between urban and agricultural lands, while giving developers flexibility in design at the urban edge.

Goal LU-4: To protect agricultural operations as new development occurs.

> **Policy LU-4.1:** The City shall require an evaluation of the potential for adverse impacts on agricultural production and economic value from exposure to urban development for all new projects adjacent to rural lands. It is the intent of this policy to minimize the creation of conditions that will impair any present farm operations to a degree that threatens the long-term viability of the use of that land for continued agricultural purposes.

> **Policy LU-4.2:** The City shall require a 200-500 foot residential buffer, based on the type of agricultural use (e.g., field crops, orchards, grazing, etc.) and method of pesticide application (aerial, ground application), as appropriate.

Goal LU-5: To ensure growth occurs in an orderly, compact, and efficient manner, so that municipal services and infrastructure can be extended at the least possible cost.

> **Policy LU-5.3:** The City shall limit annexations and future urban development to land within the sphere of influence for this General Plan through the year 2025.

Goal LU-6: To provide a comprehensive, logical land use planning process rather than an incremental, piecemeal approach.

> **Policy LU-6.2:** Growth shall occur on the basis that projected revenues should be sufficient to meet public costs.

Policy LU-6.3: Growth shall be managed to ensure that adequate public facilities and services are planned for and provided in a manner that protects the public's health, safety, and welfare.

11.a: Physically divide an established community

There are no residential neighborhoods in the area, with the exception of lands to the north and east of Brookins Ranch. The City's General Plan Land Use diagram identifies Brookins Ranch as a future growth area with anticipated development to predominately consist of single-family homes. The City owned lands near the WWTP have no urban development near it, with the exception of the WWTP itself. The project site for the CTC operation is being selected due to its remoteness and distance away from the urban areas of the City. Therefore, there will be no impact on the division of an established community.

11.b: Conflict with land use plans or policies

The boundaries of the annexation area are identified within the Sphere of Influence (SOI) for the City. An SOI is a region or area where future services area or boundaries of the local government are anticipated to be established. SOI are established to ensure orderly growth and prevent urban sprawl while ensuring efficient delivery of public services (i.e: water, sewer, police, fire). As part of the annexation application process with LAFCo, a Plans for Services pursuant to Government § 56653(b) will be prepared, which outlines the level and range of services, a feasible timeline for extension services and required improvements or upgrades (if necessary). LAFCo may require further information as part of their review process.

The development of the project site will be agricultural in practice, as discussed in Section 2 -Agricultural (above) the site is designed Prime Farmland, as noted by the California Department of Conservation Division of Land Resource Protection (Colusa County Important Farmland 2020). This site would be utilized for the cultivation and distribution of cannabis, which is considered an agricultural product, pursuant to Business and Professions Code section 26060(a). Therefore, the project site would remain in agricultural use and would not result in the loss of agricultural lands. Construction of indoor cultivation and other structures would be part of the agricultural activities at the site and are not considered conversions, as a result this impact would be less than significant.

In addition, the scope of the Project is to adopt a new General Plan designation and corresponding zoning. The new designations of Agricultural and A-G – Agricultural zoning, would permit the use of cannabis operations on A-G Agricultural zoned lands, subject to securing Special Use Permit from the City and subsequent CEQA review.

It should be noted, that while there is no development project anticipated for the foreseeable future for Brookings Ranch or the reminder of the City-owned properties, there is such change between pre-annexation and post-annexation conditions related to a change in development potential from existing County zoning to proposed City zoning and access to urban services (sewer and drinking water) from the City.

The change in development potential for the Brookins Ranch, which is zone M-1 Industrial in the County, component of the proposed project in terms of pre-annexation and post-annexation conditions is a maximum of approximately 155 light industrial parcels to approximately 600 single-family residential parcels, as it has a pre-zoning for the city as R-1 Single Family. It is important to note that the actual number of industrial sites and residential units is likely much lower when taking into consideration site development standards, requirements (roadway widths/lengths, low impact development requirements etc.) and physical constraint.

For the remainder of the City-owned properties component of the proposed project, the change in development potential in terms of pre-annexation and post-annexation conditions is 423-acres of agricultural zoned land with a 40-acre minimum lot size, which does not allow for commercial cannabis operations, but does allow for agricultural uses and operations in areas where fertile soils are suited for crop production and protects from encroachment of incompatible land uses, to 423-acres of agricultural zoned land with a 5-acre minimum lot size which allows for indoor commercial cannabis operations, subject to issuance of a Special Use Permit by the City and subsequent CEQA review. Municipal Code text amendments for the City will mirror those as currently found in the County for AG-Agricultural land uses. Cannabis uses would be permitted in the AG – Agricultural zone, with issuance of a Special Use Permit.

12. MINERAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Regulatory Setting

Federal Laws, Regulations and Policies
No federal regulations are applicable to mineral resources in relation to the Project.

State Laws, Regulations and Policies
Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) provides comprehensive policies on surface mining and reclamation activities to ensure the minimization of adverse environmental impacts. Another responsibility of SMARA is to encourage the production, conservation, and protection of mineral resources of the state (CDOC 2018). As part of SMARA, all mines in California are required to provide annual reports. The State Mining and Geology Board is required to identify, map, and classify any aggregate resources found throughout the state that contain significant mineral resources. Local jurisdictions are required to establish mineral resource management policies in their general plans that seek to enhance mineral conservation.

12.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.
The project is not located in an area of known rock, aggregate, sand, or other mineral resource deposits of local, regional, or State value. There are no known mineral resources of significance on either Site that would be made unavailable by the proposed project. Furthermore, none of the parcels are utilized for Surface Mining and Reclamation Act (SMARA) activities, nor are any such sites located in the vicinity of the Site (CGS, 2016 and 2022). There are no known natural occurring asbestos in the area. Further, neither

the City of Colusa General Plan, nor the DMEIR adopted for the City, identifies any mineral resources in the Planning Area. Municipal Code text amendment, General Plan Amendment and rezone are inherently not associated with mineral resources. Brookins Ranch and the city owned agricultural lands will continue to operate as they do now. Therefore, no impact would occur on mineral resources.

12.b: Loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.
No mining sites are located within a 5-mile radius of the project site. The closest sites are the Gould Road Quarry (Mine ID: 91-06-0009) and the West Butte Quarry (Mining ID: 91-51-19 0003). Both are located approximately 9 miles north of the City. The Gould Road Quarry is closed, and reclamation has been certified complete. It is owned by Juell and its primary product was sand and gravel. Operation type for the mine was streambed or gravel bar skimming and pitting (CDOC 2016a). The West Butte Quarry is an active mine that is in progress for reclamation. It is owned and operated by Butte Sand and Gravel and its primary product is sand and gravel. Operation type for the mine is open pit (CDOC 2016b).

There are no designated Mineral Resource Zones located within the City (City of Colusa 2007) and none mentioned in the DMEIR of the General Plan. Therefore, there will be no impact upon mineral resources.

MITIGATION MEASURES
No mitigation required.

13. NOISE. Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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?	☐	☐	☐	☒

Environmental Setting:
Noise Fundamentals
Noise is generally defined as sound that is loud, disagreeable, or unexpected. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in Leq) and the average daily noise levels (in Ldn/CNEL).

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Mobile transportation sources, such as highways, and hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance from the source. Noise generated by stationary sources typically attenuates at a rate of approximately 6.0 to 7.5 dBA per doubling of distance from the source (USEPA 1971).

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise but are less effective than solid barriers.

The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive, creating the A-weighted decibel (dBA) scale.

Different types of measurements are used to characterize the time-varying nature of sound. Below is a brief definition of these measurements and other terminology used in this chapter.

- **Decibel (dB)** is a measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

- **A-weighted decibel (dBA)** is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Maximum sound level (Lmax)** is the maximum sound level measured during a given measurement period.

- **Minimum sound level (Lmin)** is the minimum sound level measured during a given measurement period.

- **Equivalent sound level (Leq)** is the equivalent steady-state sound level that, in a given period, would contain the same acoustical energy as a time-varying sound level during that same period.

- **Percentile-exceeded sound level (Lxx)** is the sound level exceeded during x percent of a given measurement period. For example, L10 is the sound level exceeded 10 percent of the measurement period.

- **Day-night sound level (Ldn)** is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels during the period from 10:00 p.m. to 7:00 a.m. (typical sleeping hours). This weighting adjustment reflects the elevated sensitivity of individuals to ambient sound during nighttime hours.

- **Community noise equivalent level (CNEL)** is the energy average of A-weighted sound levels during a 24-hour period, with 5 dB added to A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

In general, human sound perception is such that a change in sound from a 3 dB is barely noticeable, a change of 5 db is clearly noticeable and a change of 10 dB is perceived as doubling or halving the sound level. The table below presents approximate noise levels or common noise sources, measured adjacent to the source.

Common Outdoor Activities	Noice Level (dBA)
Jet flying over at 1,000 feet	110
Gas lawnmower at 3 feet	100
Diesel truck at 50 feet traveling 50 miles per hour	90
Noisy urban area, daytime	80
Gas lawnmower at 100 feet, commercial area	70
Heavy traffic at 300 feet	60
Quiet urban area, daytime	50
Quiet urban area, nighttime	40
Quite suburban area, nighttime	30
Quite rural area, nighttime	20

Source: Caltrans 2009

Vibration

Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Most environmental vibrations consist of a composite, or "spectrum," of many frequencies. The normal frequency range of most ground borne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or of the vibration level measured with respect to root-mean-square vibration velocity in decibels (VdB), with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do those characterized by low frequencies, so that in a far-field zone distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration.

Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The nearest sensitive noise receptors to the Project site are residences located approximately 1200 feet east of the development site.

The Noise Element of the City of Colusa General Plan outlines goals, policies, and implementing actions to protect Colusa residents from excessive noise levels that are annoying to the senses and detrimental to public health. The element establishes acceptable noise level standards for land uses affected by both mobile and stationary noise sources, including temporary noise related to construction. Noise and land use compatibility criteria are designed to provide an acceptable community noise environment and to minimize noise-related complaints from residents. The compatibility criteria should be used in conjunction with future noise exposure levels in order to identify projects or activities that may require special treatment to minimize noise exposure.

Regulatory Setting

Federal Laws, Regulations and Policies

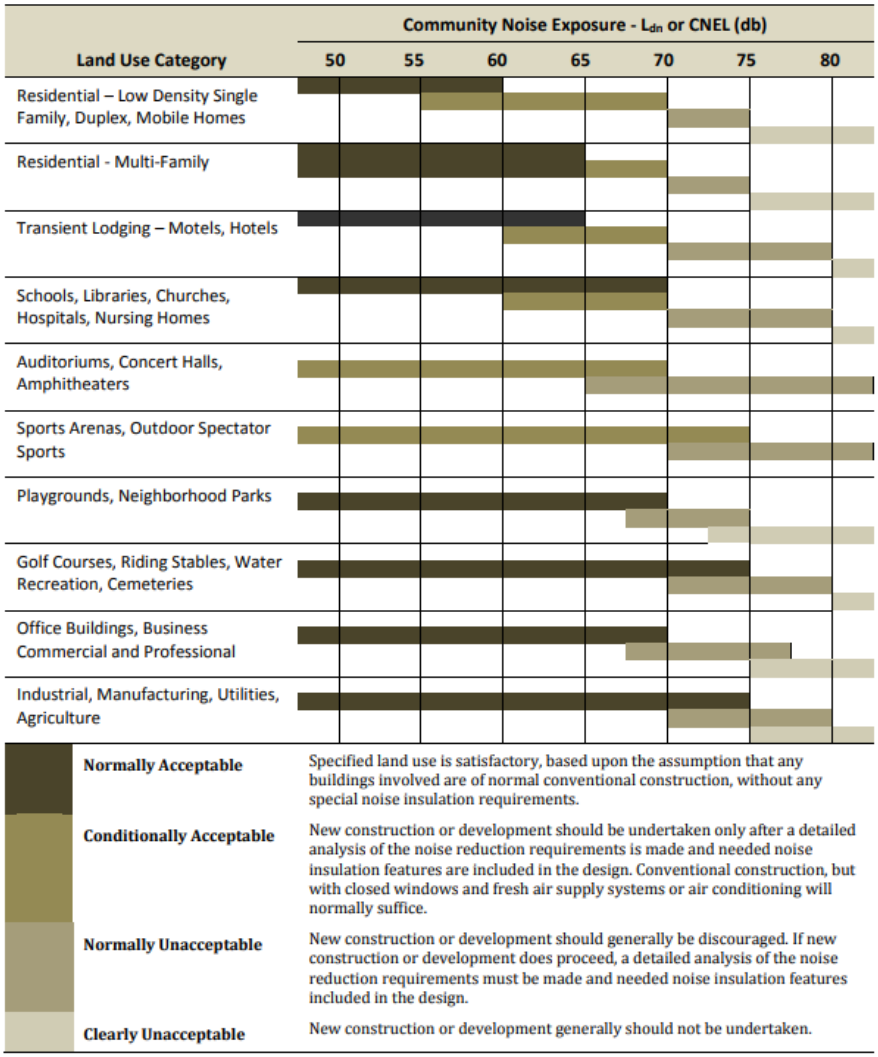
No federal laws, regulations, or policies for construction-related noise and vibration apply to the project. However, the Federal Transit Administration (FTA) guidelines for Construction Vibration in Transit Noise and Vibrations Impact Assessments sate tat for evaluating daytime construction noise impacts in outdoor areas, noise thresholds of 90 dBA Leq and 100 dBA Leq should be used for residential and commercial/industrial areas respectively (FTA 2018)

For construction vibration impacts, the FTA guidelines see an annoyance threshold of 80 Vdb for infrequent events (fewer than 30 vibrations events per day) and a damage threshold of 0.12 inch per second (in/sec) PPV for buildings susceptible to vibration damage (FTA 2018)

State Laws, Regulations and Policies

California requires each local government entity to implement a noise element as part of its general plan. The California Administrative Code, Title 4, presents guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The state land use compatibility guidelines are listed in the State Land Use Compatibility Standards for Community Noise Environment, below.

Table 3.12-2. State Land Use Compatibility Standards for Community Noise Environment



Source: California Governor's Office of Planning and Research 2017

Local Laws, Regulations and Policies
City of Colusa General Plan

The City of Colusa General Plan (2007) includes the following goals and policies related to noise.

Goal N-1: To protect noise-sensitive land uses from new noise-generating uses that would be incompatible with such sensitive receptors.

> **Policy N-1.1:** The City shall implement the noise standards in Table 7.3 above for new uses affected by traffic and airport (mobile) noise and in Table 7.4 above for new uses affected by non-transportation (stationary) noise sources.
>
> > **Implementing Action N-1.1a: Development Review:** The City will implement its development review process in accordance with the requirements contained in documents such as, but not limited to, the City of Colusa Zoning Ordinance, the Uniform Building

Code (UBC), State Noise Insulation Standards (Title 24), Specific Plans, the City's design guidelines, the California Environmental Quality Act (CEQA), and Colusa County environmental health regulations.

Implementing Actin N-1.1b: Noise Performance Standards. The noise performance standards shown in Table 7.3 and Table 7.4 of this Noise Element will be adopted with theGeneral Plan update. The City will apply these standards to the review of new development of noise-sensitive uses exposed to existing fixed noise sources. These standards will also be used to evaluate the potential impacts of proposed new fixed noise sources in proximity to existing noise-sensitive land uses. Where a noise sensitive land use is proposed near a fixed noise source, such as an industrial facility or the airport, noise measurements will be performed to determine whether existing and/or future noise levels from that source will exceed the City's noise performance standards at the property line of the proposed use. Similarly, where a fixed noise-producing use such as an industrial facility, is proposed near an existing or future noise sensitive use, a noise analysis will be prepared to ensure that the noise produced by the proposed project will not exceed the City's noise performance standards at the property line of the noise sensitive use. The acoustical analysis will be the responsibility of the project applicant and follow the guidelines in Table 7.5. [Note: Table 7.5 is noted below.]

Policy N-1.2: The City shall require appropriate noise attenuation measures to be included in the project design for proposed noise-sensitive uses in proximity to existing noise-producing uses, as needed, and project design shall be in compliance with the noise standards in Table 7.3 and Table 7.4.

Policy N-1.3: Where noise attenuation is required to meet the standards of this Element, an emphasis shall be placed on site planning and project design, including, but not limited to, building orientation, setbacks, landscaping, and building construction practices.

Policy N-1.5: The City shall require any necessary noise analyses to assess compliance with the City's Noise Element standard and Environmental Review Ordinance. Noise analysis shall be prepared in accordance with the requirements in Table 7.5.

Goal N-2: To minimize noise generated by construction activities.

Policy N-2.1: The City shall regulate, and control noise associated with construction activities to reduce impact on nearby sensitive receptors.

City of Colusa Noise Ordinance

The City of Colusa Noise Ordinance (2009) prohibits excessive noise and establishes construction noise requirements. The prohibitions against excessive noise consider a variety of factors, including (but not limited to) the location and sound level of the noise, proximity to residential property, time of day or night, noise duration, and noise source. The construction noise requirements are that "no person shall perform construction work, or any construction related activities between the hours of 7:00 p.m. and 7:00 a.m. on weekdays or between 7:00 p.m. and 8:00 a.m. on Saturdays and Sundays.

DISCUSSION

13.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

As previously stated, the only construction or change of land use that will take place within the boundary site is the 88.97 acres related to the CTC operation and the balance of the site will remain in an as is conditions, consisting of ongoing agricultural practices that are part of the environmental baseline for the area. General Plan amendment, rezone and the text amendments to the Municipal Code do not generate noise.

Excessive and chronic exposure to elevated noise levels can result in auditory and nonauditory effects in humans. Auditory effects of noise on people are those relating to temporary or permanent hearing loss induced by noise. Nonauditory effects of exposure to elevated noise levels are those relating to behavioral and physiological effects. The nonauditory behavioral effects of noise on humans are associated primarily with the subjective effects of annoyance, nuisance, and dissatisfaction, which lead to interference with such activities as communications, sleep, and learning.

The degree to which noise results in annoyance and interference with activities is highly subjective and may be influenced by non-acoustic factors. The number and effect of these non-acoustic environmental and physical factors vary, depending on the individual characteristics of the noise environment, including sensitivity, level of activity, location, time of day, and length of exposure. One key aspect to the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the noise level change caused by a new noise source relative to an individual's customary environment, the less tolerant of the new noise source the individual will be.

With regard to human perception of increases in sound levels expressed in decibels (dB), a 1 dB change generally is not perceivable, excluding controlled conditions and pure tones. Outside controlled laboratory conditions, the average human ear barely perceives a change of 3 dB. A 5 dB change generally fosters a noticeable change in human response, and an increase of 10 dB is subjectively heard as a doubling of loudness.

Based upon the calculations found in the East Clay Street Initial Study/Mitigated Negative Declaration, which evaluated this same project but on East Clay Street. It was found that utilizing two of the loudest machines during construction (bulldozer and excavator) would result in a reference noise level at 50 feet of 88dBA and 85 dBA. At the East Clay location, the nearest residential unit was 765 feet south of the project, which would result in approximately 66 dBA. Operating the two loudest pieces of equipment simultaneously within 61 feet of the receptor would expose the receptor to a noise level of 86 dBA or greater. This would be below the 90 dBA threshold during permissible daytime construction periods. In this instance, the nearest residential unit is approximately 1,200 linear feet (0.22 miles) to the east on Ashely Drive. Utilizing the same assumptions for equipment noise, the anticipated approximately 60 dBa to the Ashley Drive receptor or the equivalent to conversation speech.

As provided in the Noise Element (Chapter 7, Page 7-9) of the City of Colusa 2007 General Plan, the City has established noise compatibility standards for different land uses for both exterior and interior locations, as provided below. These noise standards are consistent with those recommendations by the State Office of Noise Control and are most appropriately applied to lands adjacent to continuous noise sources such as roadway traffic noise and land within the airport overlay zones, as the entire annexation boundary is located in both the C3 – Secondary Traffic Pattern and D Other Airport Environs Airport Overlay zones pursuant to the Colusa County Airport Land Use Plan. .

TABLE 7.3
NOISE STANDARDS FOR NEW USES AFFECTED BY TRAFFIC AND AIRPORT NOISE

New Land Use	Outdoor Activity Area - L_{dn}	Interior - L_{dn}/Peak Hour L_{eq}[1]	Notes
All residential	60-65	45	2, 3, 4, 8
Transient lodging	65	45	5
Hospitals and nursing homes	60	45	6
Theaters and auditoriums	---	35	
Churches, meeting halls, schools, and libraries	60	40	
Office buildings	65	45	7
Commercial buildings	65	50	7
Playgrounds and parks	70	---	
Industry	65	50	7

Notes:

1. *For traffic noise in the City of Colusa, L_{dn} and peak-hour L_{eq} values are estimated to be approximately similar. Interior noise level standards are applied in noise-sensitive areas of the various land uses, with windows and doors in the closed positions.*
2. *Outdoor activity areas for single-family residential uses are defined as back yards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100-foot radius of the residence.*
3. *For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas, or tennis courts. Where such areas are not provided in multi-family residential uses, the standards shall be applied at individual patios and balconies of the development.*
4. *Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed—provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.*
5. *Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas.*
6. *Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.*
7. *Only the exterior spaces of these uses designated for employee or customer relaxation are considered sensitivee.*

The cannabis operation would generate noise associated with construction activities that would be temporary and cease once construction was complete. During construction, the site would be consistent with the City of Colusa Noise Ordinance, which limits construction activities and uses of construction equipment to 7:00 a.m. to 7:00 p.m. weekdays and 8:00 a.m. to 7:00 p.m. on Saturday, Sunday and Holidays.

Operational noise sources pumps for sewer and stormwater transport would be located underground or within pump stations. Emergency generators for the Proposed Project would be tested and/or operated up to 100 hours per year and will also be located in doors. These systems are only anticipated to be utilized in the event of a emergency such as an power outage. The Project's HVAC systems and climate control features for the greenhouse facilities would not be anticipated to be loud noise sources, and would generally be located at least over 1,130 feet from the nearest residences. Thus, the Proposed Project's operational activities would not result in significant ambient noise increases at the nearest sensitive receptors because of existing noise sources (i.e., existing agricultural operations on the site) and the distance to sensitive receptors. For the reasons described above, operational noise impacts would be less than significant.

13.b Generation of excessive groundborne vibration or groundborne noise levels.
Vibrations threshold for buildings occur at Peak Particle Velocity (PPV) of 0.12 in/sec for buildings that are extremely susceptible to vibration damage. The human annoyance threshold for vibration-causing

activities is 80 Vibration decibels (VdB). For the construction of the cannabis site, it is assumed that graders, large and small bulldozers and vibrating roller will be used to grub the site, compact soils and install paving. As discussed above, the nearest residential home is approximately 0.22 miles to the east of the site, well beyond the distance associated with vibrations. Typically, manmade vibration problems are confined to a short distance of 500 feet or less, and with the nearest residence at 0.22 miles or 1,130 feet away, groundboard vibrations and noise levels would be less than significant for the project.

13.c. For a project located within the vicinity of 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 Colusa County Airport is approximately 1.45 miles to the west of the cannabis operation. The parcel in which the cannabis operation is proposed to be developed upon is in both the Colusa County Airport Compatibility Zone C3 and D. No residential elements are proposed as part of the project; while employees at the cannabis operation may experience noise levels up to the 55dB range when working outside. As the project is proposed to be phased, employees in Phase I, may experience temporary construction related noise as additional phases are being built out. These impacts would be temporary in nature, as construction would cease when the other structures are complete. These noise levels would not be excessive and would be infrequent as related to airport traffic and construction.. Indoor noise levels would be lower than these external levels. Therefore, this impact would be less than significant.

14. POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or 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?	☐	☐	☒	☐

Regulatory Setting

There are no federal, state, or local laws, regulations or policies applicable to population and housing in relation to the Project.

DISCUSSION

14.a: Induce substantial unplanned population growth.

The entire annexation boundary, including the city owned agricultural lands and Brookins Ranch property are within the Sphere of Influence for the City of Colusa. Approximately 509 acres of the total annexation site will receive a General Plan designation of Agricultural and a zoning of A-G Agricultural. As proposed, this land use does not permit residential development beyond 40-acre minimum lot size. In this case, this would be unlikely as the land is currently owned by the City and in long term lease for agricultural practices and with, he exception of the CTC site and Brookins Ranch property, the balance of the site lacks easy

access to public infrastructure (storm drain, sewer, water, power). Similarly, the CTC site does not include a residential component. As discussed in the Traffic Analysis, it is anticipated that approximately 75 percent of the workforce will be come from within 2.8 miles of the CTC property, which encompasses the majority of the city of Colusa and its existing housing stock and residential zoned lands. As of August 2025, statistics from the California Employment Development Department (EDD), Colusa County has a labor force of 11,860 individuals and a current unemployment rate of 1,090 individuals or 9.2%. Demonstrating that there is a need for employment in the existing population.

As for the Brookins Ranch portion of the site, it is discussed within the 2007 General Plan, as a location that could develop with up to 600 single family residential lots in a variety of sizes. Since adoption of the General Plan, the owners of the site submitted to the City an application that involved not just low density, but supporting land uses such as open space, parks, and a fire station. However, since the application was submitted in the late 2000s, during the peak of the great recession, the application has not proceeded and has expired. The Brookins Ranch development is not analyzed as language in the General Plan requires that the future development of this site will contain a Specific Plan or other similar document. Any future development of the site would be subject to environmental review, as required under CEQA.

It should be noted, that while there is no development project anticipated for the foreseeable future for Brookings Ranch or the reminder of the City-owned properties, there is such change between pre-annexation and post-annexation conditions related to a change in development potential from existing County zoning to proposed City zoning and access to urban services (sewer and drinking water) from the City.

The change in development potential for the Brookins Ranch component of the proposed project in terms of pre-annexation and post-annexation conditions is a maximum of approximately 155 light industrial parcels to approximately 600 single-family residential parcels. It is important to note that the actual number of industrial sites and residential units is likely much lower when taking into consideration site development standards, requirements (roadway widths/lengths, low impact development requirements etc.) and physical constraint. Any future development at Brookins Ranch would be subject to separate CEQA review.

For the remainder of the City-owned properties component of the proposed project, the change in development potential in terms of pre-annexation and post-annexation conditions is 423-acres of agricultural zoned land with a 40-acre minimum lot size, which does not allow for commercial cannabis operations, but does allow for agricultural uses and operations in areas where fertile soils are suited for crop production and protects from encroachment of incompatible land uses, to 423-acres of agricultural zoned land with a 5-acre minimum lot size which allows for indoor commercial cannabis operations, subject to issuance of a Special Use Permit and subsequent CEQA review.

The Project itself is not anticipated to increase population growth, therefore the result would be an impact that is less than significant.

14.b: **Displace a substantial number of existing housing or people**

No homes are slated for removal or demolition as part of this project. Therefore, there will be no impact.

MITIGATION MEASURES
No mitigation required.

15. **PUBLIC SERVICES**. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations and Policies

No federal laws, regulations, or policies were identified related to public services and the Project.

State Laws, Regulations, and Policies

Medicinal and Adult Use Cannabis Regulations and Safety Act (MAUCRSA)

MAUCRSA governs cannabis business operations at the state level. Under state law, CDFA is responsible for regulating and issuing licenses for commercial cannabis cultivation activities. BCC is responsible for regulating and issuing licenses to cannabis businesses that distribute, test, transport, or sell cannabis. MCSB regulates and issues licenses to cannabis businesses that manufacture cannabis products.

MAUCRSA and its implementing regulations contain several provisions designed to reduce impacts to public services. Under MAUCRSA, all cannabis business licensees in California must record activities on the state track-and-trace system, which will require unique identifiers of cannabis and cannabis products. Licensees are required to report the movement of immature and mature cannabis or cannabis products on the licensed premises and any movement associated with commercial cannabis activity between licensees through the track-and-trace system. This system is the primary recordkeeping and inventory system for recording all applicable commercial cannabis activities. Licenses are required to establish a functioning account in the track-and-trace system and must maintain an active account while licensed. The track-and-trace system is intended to reduce and report diversion of cannabis and cannabis products and thus reduces burdens on law enforcement services.

CDFA has instituted setbacks between cultivation sites and schools, as required by MAUCRSA (CCR Title 3, Division 8, Section 8102[g]). Cultivation sites must be located a minimum of 600 feet from any school or daycare center, as defined in Section 26001 of the Business and Professions Code, unless otherwise provided by the local jurisdiction.

CDFA regulations under MAUCRSA also include measures related to fire protection (CCR Title3, Division 8, Section 8102[z]). Applicants for indoor cultivation licenses must attest that the local fire department has been notified of the cultivation site.

Article 5 of the BCC regulations details a range of security measures applicable to cannabis businesses, including businesses that distribute and transport cannabis. The regulations require employees to display identification badges at all times when engaged in commercial cannabis activities (Section 5043). Cannabis businesses are subject to detailed rules regarding video surveillance. All areas where cannabis is being handled or sold, all entrances and exits, all security areas, and all storage areas must be recorded 24 hours per day. Section 5006(d) requires cannabis business license applicants to submit a detailed premises diagram, including a diagram of where all cameras are located. The diagram must assign a number to each camera for identification purposes.

Cannabis businesses are required to install commercial-grade locks on all doors to all points of entry as and limited-access areas within the facility. Licensed businesses must also install an alarm system that is monitored by a licensed alarm company operator.

All applicants for cannabis businesses must include with their application a description of planned security procedures, including the following (Section 5002[c][29][D]):

(i) The applicant's procedure for allowing individuals access to the premises.
(ii) A description of the applicant's video surveillance system, including camera placement and procedures for the maintenance of video surveillance equipment.
(iii) How the applicant will ensure that all access points to the premise will be secured, including the use of security personnel.
(iv) A description of the applicant's security alarm system.

California Building, Electrical and Fire Codes
The California Building Standards Code (CCR Title 24) serves as the basis for the design and construction of buildings in California. The California Building Code (Title 24, Part 2) covers all aspects of building design and required safety features for all types of buildings, including fire protection systems, fire and smoke protection features, means of egress, and structural design and materials. Title 24, Part 3 is the Electrical Code, which contains standards for electrical systems, including safety features such as overcurrent protection, surge arresters, and proper wiring methods.

Title 24, Part 9 is the California Fire Code. This portion of the code contains requirements related to emergency planning and preparedness, fire service features, building services and systems, fire-resistance-rated construction, fire protection systems, and construction requirements for existing buildings, as well as specialized standards for specific types of facilities and materials.

Local Laws, Regulations and Policies

Police Protection
The City of Colusa imposes detailed security measures that every cannabis business operation must employ. Colusa Zoning Ordinance Section 21.5.06(q) requires cannabis facilities to have specific security measures in place, including an alarm system that is remotely monitored, perimeter lighting systems for after-hours security, perimeter security and lighting as approved by the police chief and community development director, use of drive gates with card key access, locked entrances, access control systems in growing and processing areas, interior and exterior camera systems approved by the police chief, security

systems attached to an uninterruptible power supply, security patrols by a licensed security company, auditable accounting systems, track and trace systems, and computer network security systems. Colusa Ordinance 12F-4 (14) requires applicants to submit a security plan for "insuring the safety of persons and to protect the premises from theft." Under Zoning Ordinance Section 21.5.06(q), the security plan must be approved by the police chief prior to the commencement of operations.

Colusa Zoning Ordinance Section 21.5.06(p) also states that all cannabis operations shall occur entirely inside a building that shall be secure, locked, and fully enclosed with a ceiling, roof, or top. The building, including all walls, doors, and the roof, shall be of solid construction meeting the minimum building code requirements for industrial structures, and include material strong enough to prevent entry except through an open door.

DISCUSSION

15.a Fire Protection: The annexation area is currently served by both the City of Colusa Fire Department and the Sacramento River Fire Protection District; both serve the City of Colusa and respond to emergencies in the City as well as surrounding unincorporated area. The project also consists of the detachment from the Sacramento River Fire Protection District, which not only serves portions of the City (i.e.: airport), but areas beyond the limits. By annexing the lands into the City limits, the Colusa Fire Department would be able to serve the site, as they currently respond to the WWTP and other properties in the vicinity (Colusa High School and Perilli Building on Will S. Green Road). The Sacramento River Fire District's equipment, such as Water Tenders, is typically utilized for grassland fires, while the City's equipment is more diverse and are design for structural fires. Pursuant to Firefighting Wiki, the Sacramento River Fire District covers 212 miles of which 184 are in Colusa County and 28 square miles in Glenn County. The Sacramento River Fire District has two stations, one in the City of Colusa and one south, in the unincorporated town of Grimes.

As noted on the City's website, the Colusa Fire Department was established in 1873 and serves a population of approximately 6,175 people and an area of approximately 3.5 square miles. Pursuant to the General Plan MDEIR, the Fire Department participates in a countywide mutual aid program with six other fire protection agencies in Colusa County. One being the Sacramento River Fire District, which has a station within City limits. Colusa Fire Department career staff consists of 7 paid positions, including 3 firefighters, 2 Fire Apparatus Engineers, 1 Captain and 1 Fire Chief (Colusa Fire Department Comment Letter, Dated January 24, 2024). In addition to paid staff, the Colusa Fire Department has a supporting roster of 15 volunteers. The volunteer staff consists of a Division Chief, four captains, four Driver/Operators, and Firefighters. Of the entire staff, 12 personnel are trained as Emergency Medical Technicians (EMT) and all other personnel are trained as First Responders. Shift personnel work 24-hour rotating shifts year-round.

The Fire Department has a fire station in the City of Colusa located at 750 Market Street. Firefighting equipment consists of four engine pumpers (three with a capacity of more than 1,250 gallons per minute (gpm) and one with a capacity of 1,000 gpm), one ladder truck with a 1,500-gpm capacity and 500-gallon water tank, and one grass rig with a 300-gpm capacity and 500-gallon tank. One reserve ambulance is housed for emergency back-up only and is rarely dispatched.

On May 6, 2025, City Council authorized the Fire Department to purchase an additional Type 1 Engine. This Engine expands the fleet from 4 to 5 firefighting equipment while also increasing the department's strength and operational readiness. A Type 1 Engine is the most common type of fire engine and is primarily used for structural firefighting. They are designed to support urban, rural and suburban fire departments and carry all the necessary National Fire Protection Association (NFPA) firefighting equipment.

According to verbal communication with the Fire Chief, the Fire Department can provide an average 1- to 4-minute response time to anywhere within the current service area, including the WWTP. Access problems

are slight throughout the City of Colusa, as most of the City's streets are in a grid pattern that facilitates emergency vehicle movement. The Fire Department currently has an Insurance Service Office (ISO) rating of 3. An ISO rating is based upon the public protection classification program, which rates a given city's fire service for water supply, equipment, personnel, alarm and dispatch, and training. An ISO rating is a prime factor in determining fire insurance rates within a community. The rating is on a scale of 1 to 10, with 1 representing the best level of fire protection.

The 2021 Municipal Service Review (MSR) notes that overall, fire protection services in the City of Colusa are able to provide existing service levels with a combination of career and volunteer personnel. However, there are service challenges including a lack of financing for full-time, paid staffing and that there is reliance of volunteer firefighter service for delivery. The MSR further states that the number of volunteers has declined significantly in the last decade. However, in communication with the Fire Chief (2025) the current volunteer staffing ranges between 17 and 20 individuals and 6 full time carrier staff (1 per 1,000 population), with 2 personnel on shift 24/7 with no nighttime "brown outs". All of which supersede the statistics mentioned in the MSR.

Prior to the 2021 MSR, the City of Colusa set up a Community Finance District (CFD). CFDs are a special tax district, under State Law, that funds public improvements and on-going services within a defined area. Parks, streets, sewer improvements and public safety services are some of the public improvements and services that may be financed by a CFD. In this instance, CFD No. 2-2020 was created to authorize the levy of a special tax to fund the operation and maintenance of providing operations and maintenance of public improvements related to infrastructure and public safety, including, but not limited to: Storm Drainage, Detention Basins, Surface Street Improvements (i.e., curbs, gutters, sidewalks and asphalt paving), Street Lighting, Water, and Sewer Infrastructure. All recent discretionary projects (i.e. ARCO, Westcott Subdivision) are routinely added to CFDs ensuring that impacts are appropriately captured and funding for infrastructure are in place.

To support on-going paid staffing services and equipment for the Fire Department, the City requires all discretionary projects to join the CFD and be assessed a special tax to ensure projects are self-sufficient and funded.

The Project would consist of construction and operation of a complex of structures that would contain cannabis cultivation nurseries and cultivation, manufacturing, and distribution facilities. These buildings would be constructed with electrical and fire prevention systems that are assembled and installed in compliance with building and electrical codes. All cannabis cultivation activities, including processing and drying, would take place indoors.

As described in the CDFA PEIR (2017), an elevated risk of fire associated with indoor cannabis cultivation is a commonly cited concern in the literature. Indoor cannabis cultivation typically involves use of high-intensity grow lights, as well as various other pieces of equipment (e.g., water pumps, humidity control, temperature control), which can create a relatively large electrical load. If the load exceeds the system capacity (e.g., as may occur in a building without appropriate or updated wiring for use in cannabis cultivation), it could result in an electrical fire. The PEIR notes that this hazard is particularly associated with unpermitted indoor cultivation and noncompliance with building and electrical codes.

CDFA regulations require that the applicant meet all relevant state and local codes and requirements, including those of the building and electrical codes, and the emergency regulations require that modifications to electrical systems at licensed facilities be performed by a licensed electrician (3 CCR Section 8205). For indoor and mixed-light cultivators, CDFA regulations also require applicants to identify all power sources for cultivation activities, including but not limited to, illumination, heating, cooling, and

ventilation (3 CCR Section 8102[r]), as well as the lighting location and the maximum wattage for each light (3 CCR Section 8106[2]). The PEIR concluded that licensed cultivation operations in compliance with building and electrical codes would not have an elevated fire risk as compared with other businesses.

As described in the BCC IS/ND (2017), cannabis business activities such as distribution and manufacturing would not generate an elevated fire risk. Cannabis businesses are required to obtain electricity legally and use facilities that meet applicable codes, including electrical, building, and fire codes. In addition, the types of facilities and structures used for these activities would not differ substantially in their operations from other commercial facilities and structures associated with agricultural operations that are typically permitted by local jurisdictions in a manner such that they would cause an increased fire risk.

The City requires all buildings and development projects to comply with state building and fire codes (Colusa City Ordinances, Chapters 6 and 9). The City of Colusa General Plan requires that new development and redevelopment projects implement fire-safe design and practices in new construction (Policy SAF-3.1). In addition, the City must "ensure that landscaping, lighting, building siting and design, adequate water pressure and peak load storage capacity, and building construction materials reduce the opportunity for fire hazards" (Policy SAF44 -3.1).

The Project would consist of newly constructed buildings with new electrical and fire prevention systems that are assembled and installed in compliance with building and electrical codes. Required compliance with building and electrical codes would adequately address fire risk, thereby preventing the need for construction of additional fire protection facilities. As discussed in Section 3.13, "Population and Housing," the Proposed Project would not result in substantial population growth, and therefore would be unlikely to increase fire protection needs to the extent that it would necessitate new or altered fire protection facilities, the construction of which could cause significant impacts. Therefore, based upon all of the above, impacts related to fire services, ability to serve, response time and staffing would be less than significant.

15.b Police Services: The annexation boundary is currently being served by the Colusa Police Department, with mutual aid agreements with the Colusa Sheriff's Department and California Highway Patrol. No modifications to the agreements are a part of the project.

The CTC portion of the project would consist of construction and operation of a cannabis facility that would contain cannabis cultivation nurseries and cultivation, manufacturing, and distribution. The facility would have around-the-clock, on-site security personnel; security fencing; with 24-hour video surveillance and security lighting. Passcode-protected steel sliding gates would be installed at vehicle and pedestrian entrances to the site to prevent unauthorized entry into the facility.

The CDFA PEIR (2017) noted that an elevated risk of crime associated with cannabis cultivation operations was a concern noted in a review of available literature. However, the PEIR did not find any definitive evidence either that state-licensed cannabis operations were correlated with an increase in crime, or any evidence that licensed cannabis activity operations required construction of new or expanded police facilities. Rather, it concluded that demand may decrease due to a larger number of lawful cultivators and their coordination and cooperation with law enforcement authorities.

Similarly, the BCC IS/ND (2017) found that the operation of licensed cannabis businesses was not likely to substantially increase pressure on police resources. State licensing regulations for cannabis businesses such as distribution and manufacturing require a series of security measures, including requirements to install an alarm system; limitations on access to certain areas of licensed premises; implementing 24-hour video surveillance; and installation of commercial-grade door locks on entrances, exits, and limited-access

areas. The BCC IS/ND found that these requirements would help ensure that impacts on police resources would not be significant.

The City of Colusa imposes additional security requirements on cannabis businesses. Colusa Ordinance 12F-4 (14) requires applicants for cannabis business permits to submit a security plan for "ensuring the safety of persons and to protect the premises from theft." Such plans would be reviewed by the City prior to granting a permit to operate. Security plans submitted by cannabis business applicants must demonstrate compliance with all provisions of the City's Zoning Ordinance. Colusa Zoning Ordinance Section 21.5.06(q) requires cannabis facilities to have specific security measures in place, including an alarm system that is remotely monitored, perimeter lighting systems for after-hours security, perimeter security and lighting as approved by the police chief and community development director, use of drive gates with card key access, locked entrances, access control systems in growing and processing areas, interior and exterior camera systems approved by the police chief, security systems attached to an uninterruptible power supply, security patrols by a licensed security company, auditable accounting systems, track-and-trace systems that limit the potential for theft or fraud, and computer network security systems. The ordinance requires that all of these security measures be approved by the police chief prior to the commencement of operations. These required security measures are in addition to the state's security requirements for cannabis businesses. Approval of the security plan by the police chief provides further assurance that City police resources would not be strained due to criminal activity during site operations at a cannabis business.

In addition to the required security measures, Colusa Zoning Ordinance Section 21.5.06(p) states that all cannabis operations shall occur entirely inside a building that shall be secure, locked, and fully enclosed with a ceiling, roof, or top. The building, including all walls, doors, and the roof, shall be of solid construction meeting the minimum building code requirements for industrial structures, and include material strong enough to prevent entry except through an open door. Compliance with this ordinance provides additional protection from potential theft or burglary.

CTC would be required to comply with all state and local regulations related to security and crime prevention, as described above. The facility would need to submit a detailed security plan to the City, have the plan approved by the police chief, and implement all aspects of the plan. These requirements would help ensure that demand for police services would not substantially increase. As discussed in Section 3.13, "Population and Housing," the Proposed Project would not result in substantial population growth, and therefore would be unlikely to increase police protection needs. As such, the Proposed Project would not create an increase in demand for law enforcement to a need for new or additional police facilities in any particular location, the construction of which could cause significant environmental effects.

The Colusa Police Department provides police protection services 24-hour per day to residents of the City. Additionally, the Police Department extends its services to areas beyond the City limits on an as-need basis, through a mutual aid agreement with the Colusa County Sheriff's Department as required by the Office of Emergency Services. Currently the Department operates one police station, located at 260 Sixth Street. Recently, the City closed escrow on property for the future construction of a new police station. The Department has an authorized strength of 11 (up from 9 in the General Plan) sworn offers, including the Chief of Police, one lieutenant, two sergeants and five officers. There is one personnel position consisting of a non-sworn secretary. The Police Department currently utilizes seven vehicles to patrol the City and responds to calls for services. The Police Department noted a Project Site response time between 2 to 3 minutes.

The Colusa County Sheriff's Department provides police protection services to the unincorporated areas of Colusa County, including those areas outside the Colusa city limits. The Sheriff's Department is located on and operates a single dispatch facility at 929 Bridge Street in the City of Colusa. The Sheriff's Department

currently employs 60 staff, of which thirty positions are divided between correctional staff, animal control staff, the Office of Emergency Services, administration and support staff. The thirty additional employees are sworn officers that maintain a person per officer ratio of approximately 660 to 1. The Colusa County Jail, located at 929 Bridge Street in the City of Colusa, houses both County and City of Colusa inmates. The facility has the ability to hold State and federally incarcerated inmates. The jail has a 96-person capacity.

The California Highway Patrol (CHP), a State agency, provides traffic regulation enforcement, emergency accident management, and service and assistance on State roadways and other major roadways. The CHP has an office in the City of Williams, which is approximately 9.8 miles to the west of the City along Highway 20.

Because the Police Department operates with a minimal budget and staff the City requires all discretionary projects to join the CFD (See 15.a Fire Services, above), which levies a special tax upon properties to ensure that local services are sufficiently provided to a given project.

15.c Schools: The annexation boundary will continue to be within the jurisdiction of the Colusa Unified School District. As previously described, no land uses are expected to change, with the exception of the CTC facility which is agricultural and therefore would not create a need for new school facilities. As required by Colusa Zoning Ordinance 21.5.06(k), the cannabis operation is not located within 1,200 feet of any existing school or school proposed in the General Plan. In this instance, the operation is over 3,400 linear feet from Colusa High School. This setback would reduce the potential for the CTC project to conflict with school operations. In addition, planning efforts and permitting decisions by the City (related to commercial cannabis operations or otherwise) would address any potential for siting conflicts or inconsistencies.

The Colusa Unified School District also collects fees, with a new 2024 Developer Fee Justification Study being adopted. The CTC operation will be required to pay impact fees as part of the building process, therefore, because the operation is agricultural in nature, no homes are proposed there would be a less than significant impact on schools.

15.d Parks: The annexation boundary does not include any parkland. Except for the Brookins Ranch property, which will be R-1 Single Family, the balance of the properties will be A-G Agricultural in zoning and practices, and such land use has little to no impact upon parks. The Brookins Ranch site, as required by the 2007 General Plan, would be required to submit a Specific Plan or similar document at the time of entitlement. Such a project will be further reviewed and analyzed pursuant to CEQA. The CTC operation itself does not create a demand for park land as it too is agricultural in nature. The boundary of the project site is not located on or adjacent to any parks or public facilities and would not create a need to alter any public lands. There are no housing as part of the project therefore it is not expected to result in a substantial population growth and therefore would not create a need for new park facilities. There would be a less than significant impact.

15.e Other public facilities:

While there is no development project anticipated for the foreseeable future for Brookins Ranch or the reminder of the City-owned active agricultural properties, there is no such change between pre-annexation and post-annexation conditions related to a change in development potential from existing County zoning to proposed City zoning and access to urban services (stormdrain, sewer and drinking water) from the City.

The change in development potential for the Brookins Ranch component of the proposed project in terms of pre-annexation and post-annexation conditions is a maximum of approximately 155 light industrial parcels to approximately 600 single-family residential parcels. It is important to note that the actual number of industrial sites and residential units is likely much lower when taking into consideration site development standards, requirements (roadway widths/lengths, low impact development requirements etc.) and physical constraint.

For the remainder of the City-owned properties component of the proposed project, the change in development potential in terms of pre-annexation and post-annexation conditions is 423-acres of agricultural zoned land with a 40-acre minimum lot size, which does not allow for commercial cannabis operations, but does allow for agricultural uses and operations in areas where fertile soils are suited for crop production and protects from encroachment of incompatible land uses, to 423-acres of agricultural zoned land with a 5-acre minimum lot size which allows for indoor commercial cannabis operations, subject to issuance of a Special Use Permit and subsequent CEQA review.

In 2024 upgrades were started and completed on portions of the WWTP, which allowed the plant to improve reliability, increase capacity and minimize sanitary sewer overflows. The project involved the construction of new submersible sewer pump stations and abandonment of two older pump stations, construction of 2,000 linear feet of 21-inch sewer downs stream of the pump station to the WWTP and the construction of 7,800 linear feet of 10 to 18-inch sewers to replace existing defiance sewers within the city. That project would allow discharge of treated wastewater on the abutting city owned agricultural lands. As discussed in other sections of this IS/MND, CTC will also receive benefit from this reclaimed water for their operations. It is anticipated that the work done at the WWTP will provide capacity for City's growth for approximately 30 years, reduce the overall energy consumption of the WWTP, reduce local groundwater demand and reduce the demand on the City water system.

Currently, the city is proceeding with the Well No. 9 Project which would allow additional 2,200 gallons per minute to be pumped and the water to be treated for both manganese and arsenic as needed. This project also included additional treatment to iron and manganese, odor control treatment to other City wells and to turn existing wells into back up wells, while ensuring all the wells are linked to the city's supervisory control and data acquisition (SCADA) system.

The proposed project would not have a significant impact on other public facilities, as population is expected to increase as a result of the proposed project, the population increase would not constitute unplanned growth that would otherwise significantly increase the usage of other public facilities, such as regional hospitals or libraries, or significantly increase the population of the City of Colusa to the extent that new or physically altered public facilities would be required. A less than significant impact would occur.

16. RECREATION. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

a) 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) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Federal Laws, Regulations, and Policies
No federal laws, regulations or policies are applicable to recreation in relation to the Proposed Project.

State Laws, Regulations, and Policies
No state laws, regulations or policies are applicable to recreation in relation to the Proposed Project.

Local Laws, Regulations and Policies

City of Colusa General Plan
The City of Colusa addresses recreation goals and policies in the Parks, Recreation and Resource Conservation Chapter of the 2007 General Plan Update. In this chapter, the City focuses on maintaining and expanding existing parklands and facilities, as well as acquiring new facilities, as being essential for improving the City's recreational programs and parks (City of Colusa 2007). The policies described in this general plan chapter relate primarily to residential development and are not directly applicable to the Proposed Project.

City of Colusa Bikeway Master Plan
The City's Bikeway Master Plan (City of Colusa 2012) is intended to develop a city-wide bikeway network through private development and city-sponsored projects, in compliance with the California Bicycle Transportation Act. The plan incorporates some regional short-range bicycle transportation improvement projects that were identified in the 2008/09 Regional Transportation Plan for Colusa County. A Class I bikeway is proposed for the Sacramento River Levee from Roberts Road to the east side of the city limits.

The following goal and policies of the Bikeway Master Plan are applicable to the Proposed Project:

Overall Goal: To promote safe, convenient, and enjoyable cycling by establishing a comprehensive network of bikeways that link the Activity Centers of Colusa and coordinate with existing and future Colusa County Regional Transportation Bikeways.

> **Objective 1:** Create a safe and efficient network of bikeways that enhances bicycle use as a viable alternative mode of transportation for commuter and recreational use, for the avid cyclists as well as beginners.
>
> > **Policy 1:** Implement the bikeway network by working closely with Colusa County staff, bicycle advisory committees, developers, and City residents.

Objective 3: Provide for bikeways that connect to work, school, shopping, transit transfer points, and recreational areas.

Objective 4. Create a bikeway system that takes advantage of the scenic qualities in Colusa for both residents and visitors to enjoy.

Objective 5. Integrate bicycle planning with other community planning, including land use and transportation planning.

Policy 5. Include bikeways in City planning efforts and consider Master Plan when establishing development plans.

DISCUSSION

16.a 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:

Colusa boasts an abundance of "green areas" and parks through a combination of City parks and regional open space for its residents (Table 1 – City of Colusa Parks and Recreation Areas). The Colusa-Sacramento River State Recreation Area to the northeast of the city and nearby Colusa National Wildlife Refuge provide a riverfront and open space lands for both active and passive recreational uses (Table 2 Non- City Recreational Opportunities). An array of recreational opportunities are also offered to residents by City-owned and maintained neighborhood parks.

The Project is located in the vicinity of the following neighborhood parks and recreational facilities and opportunities:

Table 1 – City of Colusa Parks and Recreation Areas

Name	Location	Description
Colusa Levee Scenic Park	1.82 miles to the north. 10th and Levee St. adjacent to Sacramento River Recreation Area	2.19 acres: built upon River levee; grass, trees, paved walking, jogging, biking trail, picnic tables, BBQ pits
Memorial Park	1.80 miles to the north. 10th and Market Streets	2.35 acres: shady, tree-filled; children's play area with swings and slide, rock-climbing wall, picnic tables, restroom, available electricity
A.B. Davison Park	1.57 miles to the north. 10th Street between Webster and Parkhill Streets	1.02 acres: grassy, tree-filled; paved walking paths throughout
Municipal Swimming Pool	1.56 miles to the north. 9th Street between Webster and Parkhill Streets.	One 8ft. deep pool, one 3ft. deep pool, one wading pool – open during summer only
Will S. Green Park	1.55 miles to the north. 8th Street between Webster and Parkhill Street.	2.88 acres: barbeque facilities, picnic tables, horseshoe pit, children's play area with swings, slide, jungle gym, and glider swings for tots.

		2.35 acres: two lighted tennis courts and children's play area, lots of shade trees, restrooms, group picnic area
Sankey/Elmwood Park	1.43 miles to the north, Between Webster and Parkhill and 3rd and 4th Street.	0.58 acres: kindergarten playground with slide, swings, drinking fountain, picnic tables, BBQ pit, restrooms, tennis courts, volleyball area, electricity available
C.D. Semple Park	0.98 miles to the north. Corner of 3rd and Larson Lane.	1.2 acres: open grass area for play, picnic tables, BBQ facilities, playground
Lewis Tennant Ballfield Complex	1 mile to the north. Colusa Ave. across from Colusa High School.	4.0 acres: site of Colusa Softball Assn. games and tournaments; 2 softball fields, restrooms, concession, picnic tables 0.33 acres: tot lot play area scaled to toddlers; sand surface
King-Vale Park	0.78 miles to the north along 3rd Street.	0.3 acre: sand surface, children's tot lot with swings, slide, merry go round
Leland L. Taylor Memorial Park	0.10 miles to the north along Country Club Drive.	1.0 acre: open grass area for play, picnic tables

Table 2 – Non-City Recreational Resources

Name	Location	Description
Colusa-Sacramento River State Recreation Area	2 miles to the north. East of Highway 45, along the western banks of the Sacramento River	This park, part of the California State Parks system, is located just outside the City limits to the northwest, along the Sacramento River. This 67-acre facility includes picnic tables, barbeque stoves, a boat launch ramp, campsites, beach areas, and restroom facilities. Various recreational activities take place at the State Recreation Area: hiking, fishing, boating and bicycling.
Colusa Bypass Wildlife Area	3.22 miles to the north east. East of Sacramento River, south of Laux Road	The approximately 1,200-acre Colusa Bypass Wildlife Area is mostly grasslands. Several rows of willows and cottonwood trees line the eastern edge of the property. This area plays a role in local flood management when excess water is diverted into the area from the Sacramento River during high flows in the winter.
Colusa County Fairgrounds	0.96 miles to the northeast. Along Highway 20	The Fairgrounds include exhibition halls, a grandstand, an entertainment building, and other facilities. The Colusa County Fair is held at this site every June, and the Farm Equipment Show is held every February. However, the Fairgrounds are also used year-round for exhibits, weddings, shows, banquets, dances and general entertainment.

Colusa Golf and Country Club	0.34 miles to the northeast. Along Highway 20	The Colusa Golf Course is located at the southeastern entryway to the City along SR 20/45, northwest of the Colusa County Airport. The golf course is a semi-private facility that has nine holes. It is one of only two golf courses in Colusa County.
Colusa National Wildlife Refuge	1.86 miles to the northwest. Along Highway 20	The refuge consists of 5,077 acres consisting primarily of wetlands, with some grasslands and riparian habitats.

Given the relative size of the City and the accessible road pattern, the project site is in close proximity to an abundant of existing recreational areas. Currently there are over 18.6 acres of city owned and operated parks while there are an additional 6,344 acres of recreational opportunities, including the Golf Course, Refuge and Wildlife areas, all of which are immediately at the border of the limits of the City. As a result, of the project, impacts are considered less than significant.

16.b: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment:

The Proposed Project would result in up to 300 new jobs, it would not substantially increase the demand for recreational facilities in the city. However, given that the number of future employees is expected to be pooled from the City, and that the City is relatively easy for the bicycle community (flat, public road grid system, weather), supported by both General Plan Policies and the Bicycle Master Plan discussing bicycle improvements associated with new commercial development. As discussed in the Project Description the project will involve end of service bicycle facilities. Such improvements will consist of bicycle racks that are dispersed around the campus and shower facilities. With such improvements, and access to existing recreation facilities, impacts are expected to be less than significant.

17. TRANSPORTATION. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations and Policies
No federal regulations are applicable to transportation and traffic in relation to the Project.

State Laws, Regulations and Policies
On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law, initiating an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA, with the goal to better measure the actual transportation-related environmental impacts of a given project. Traditionally, transportation impacts had been evaluated by using Level of Service (LOS) analysis. As of July 1, 2020, lead agencies are required to analyze the transportation impacts of new projects using vehicle miles traveled (VMT), instead of LOS. According to SB 743 Frequently Asked Questions provided by the Governor's Office of Planning and Research (OPR), VMT measures how much actual automobile travel (i.e., additional miles driven) a proposed project would create on California roads.

If the project adds excessive car travel onto the roads, the project may cause significant transportation impact. VMT analysis is intended to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations (OPR, 2020). As of the date of this Initial Study, the City has not yet adopted thresholds for VMT impacts.

However, the City is a member of the Colusa County Transportation Commission (CCTC), which is a Regional Transportation Planning Agency (RTPA). The CCTC is the designated transportation planning and regional coordination, grant applications and management, administrative and management agency for transportation projects and programs throughout the County (Government Code 29535).

In 2018, CCTC created the Regional Transportation Plan (RTP), a cooperative effort between Colusa County, the city of Colusa, the city of Williams, Caltrans, Native Tribal Governments, and county residents. The RTP includes policies and programs for use of federal, state and local funding. The overall focus of RTP is directed at developing a coordinated and balanced multi-modal regional transportation system that is financially constrained to the revenues anticipated through the planning horizon for the RTP (2042). This new focus required by the RTP 2018 Guidelines balances anticipated revenues from all funding categories with RTP project and program costs so that any overages or funding short-falls are minimized.

The State and the County are committed to providing a stronger connection between transportation and land use planning. A closer connection will help reduce congestion, commute times, VMT, and ultimately Green House Gases (GHG) with its direct correlation to an improvement in air quality. Although Colusa County is generally considered a slow growth county (less than 2% growth per year), the Colusa County Transportation Commission (CCTC) sees an opportunity in the 2018 RTP update to more strategically invest available funding in the transportation system, with the goal of achieving a balanced and multi-modal transportation system.

Local Laws, Regulations and Policies

Colusa County Transportation Commission
As discussed above, the City is a member of the CCTC which through the creation of the RTP creates a blueprint for transportation investments and plans while also setting Goals and Policies in Colusa County.

City of Colusa Zoning Code – Site Plan Provisions

The City of Colusa zoning code includes on-site parking requirements for new development projects based on the type of land use. The number of required parking spaces for Agricultural Processing – on Site Projects is 1 stall per employee.

City of Colusa General Plan
The City of Colusa General Plan (2007) Circulation Element describes the principle of the City's circulation system as the preservation and development of a variety of transportation systems that link residential, commercial and public areas of the community. In addition to the Circulation Element, the Community, Character and Design Element contains policies that would be applicable to the Proposed Project. Applicable policies from both elements are listed below.

Goal CIR-1: To provide a motor vehicle circulation system that serves existing and planned land uses while maintaining a desired level of traffic flow.

> **Policy CIR-1.1**: The City shall ensure the maintenance of acceptable Levels of Service (LOS) on City streets and intersections when considering new development within Colusa.
>
> > **Implementing Action CIR-1.1a**: Streets and Roadways Master Plan: The City will prepare, adopt, and periodically update a Streets and Roadways Master Plan that establishes LOS C as the minimum acceptable LOS for City streets and intersections, except in the downtown area on SR 20/45 and SR 20 (Market, Bridge, 10th, and Main Streets), where LOS D is established as the minimum acceptable LOS, consistent with Caltrans LOS standards for state highways through urban areas. If conditions of LOS D or worse are already present, future proposed projects may not cause roadway volumes to increase by five percent or more and will be accompanied by other mitigation measures intended to reduce trip generation.

Goal CIR-3: To provide, safe, convenient, and adequate parking for land uses throughout the City.

> **Policy CIR-3.1:** The City shall require adequate parking to meet the needs of existing and planned land uses.
>
> **Policy CIR-4.3:** The City shall require inclusion of bicycle parking facilities at all new major public and quasi-public facilities and commercial and employment sites. Major employers shall be encouraged to provide showers and lockers in their facilities to encourage biking.

Discussion
17.a Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition, which consists of active agricultural lands. The portion of the annexed land known as Brookins Ranch has a single-family structure and outbuildings upon it, and no development or physical land use changes are proposed.

The annexation and development of the CTC site would not conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths as it is expected that construction of the project would result in a slight increase in traffic to and from the Site, as construction workers arrive and leave the site at the beginning and end of the day. This impact would be temporary and limited as discussed in the project description. This activity would generate approximately

30 trips daily, occurring Monday through Friday between 7:00 a.m. to 7:00 p.m. with some work permitted on weekends and holidays pursuant to the Colusa Municipal Code requirements.

The City of Colusa requested a Traffic Impact Study from GCW Engineers which was completed for the project in April 2025. GCW conducted a traffic impact analysis for the buildout of the CTC facility and analyzed the base line conditions, project conditions, baseline plus the project conditions, future year conditions and future year plus project conditions (see Appendix 2, GCW Traffic Impact Study).

The GCW Impact Analysis focused on the following:

Public Transit Evaluation
The project has the potential to incrementally increase demand for public transit, but the increase is not likely to cause or necessitate changes to the transit system or facilities. The project would not conflict with any public transit programs or plans. Therefore, the project would have a less-than-significant impact on public transit.

Alternative Transportation Mode Evaluation
The project has the potential to incrementally increase bicycle and pedestrian activity in the project area. As discussed in the "Existing Conditions" section of this report, sidewalks exists on the south side of Colus Avenue along the Colusa High School frontage and sporadically along Sioc Street. The City of Colusa Bikeway Master Plan (December 2012) identifies proposed future bicycle facilities in the project vicinity including a Class I "Loop Trail" around the City. The southwest portion of the Loop Trail would follow the Abandoned Railroad that crosses Will S Green Avenue approximately 0.8 miles south of SR 20.

The project would not conflict with the City's multimodal (bicycle or pedestrian) transportation programs or plans (i.e. Bikeway Master Plan) and would therefore have a less-than-significant impact on bicycle or pedestrian travel.

Roadway/Vehicle Circulation Evaluation
The City has plans to pave/repave the roadway surface on Will S. Green Avenue south of Colus Avenue, on Colus Avenue, and on 8th Street. The Colusa Triple Crown project will add notable traffic to Will S. Green Avenue, Colus Avenue, and 8th Street, and should contribute a fair share contribution toward the roadway surface improvements on the roadways.

Traffic operations, level of service, and delay are no longer considered environmental impacts under the current CEQA guidelines.

The project would not conflict with any roadway programs, long-range planning, or vehicle circulation policies. Therefore, the project would have a less-than-significant impact on roadway programs and vehicle circulation.

Vehicle Miles Traveled (VMT) Evaluation
The 2018 Colusa County Regional Transportation Plan (RTP) Update states:

> *Colusa County has experienced relative slow growth (less than 2% per year) in population and employment over the past two decades and is forecast to continue this trend through 2042. Based on this trend and the guidelines established in the California Transportation Commission's 2010 RTP Guidelines, the County is not required to run a network travel demand model to determine VMT. The guidelines cite the lack of road congestion and the fact that emission changes from higher MPG vehicles will continue to help the County comply with future emission caps established by the*

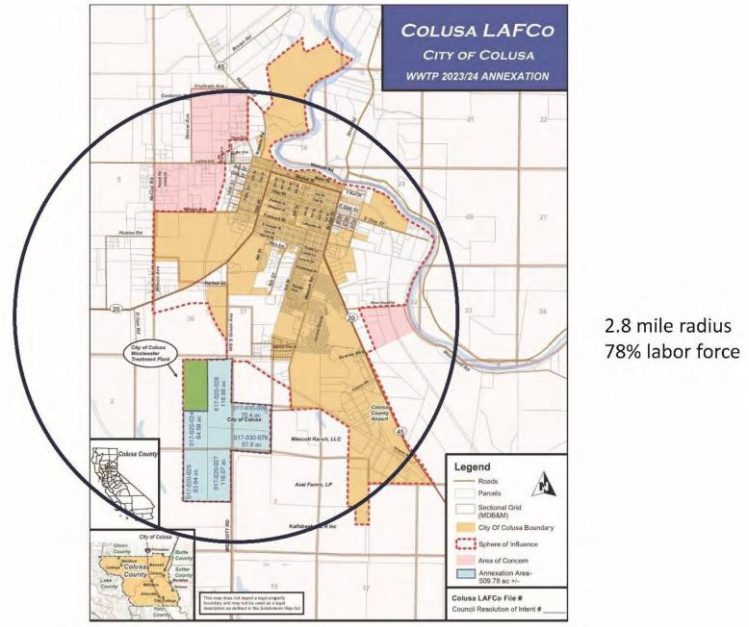
California Air Resources Board as part of AB 32. The County does monitor VMT levels through Caltrans VMT and Mileage Reports. In 1990, VMT per capita was approximately 21,800 annually in the county. In 2007, this number increased to 22,300 annually. In 2010, the per capita VMT was calculated to be 21,821, which was almost at 1990 levels. The County will continue to monitor population and employment and VMT growth to remain consistent with the RTP and the County's General Plan policies.

Based on the RTP guidelines and County/City policy regarding VMT, the project would have a less-than significant impact on Vehicle Miles Traveled.

Although the project is not required to perform a detailed VMT analysis per County policy, the following factors were considered in this evaluation:

Project Proximity to the City of Colusa Urban Core

As shown in the image below, the annexation area and Colusa Triple Crown project are located within an approximately 2.8 mile radius of downtown Colusa, where an estimated 78 percent of the Colusa Triple Crown labor force is expected to reside.



The Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018, published by the Governor's Office of Planning and Research (OPR) states:

> In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis. Note, however, that clustered small towns and small town main streets may have substantial VMT benefits compared to isolated rural development.

Although the CTC site is remote and located away from commercial cores and residential zones, given that Colusa is approximately 3.4 square miles and is a small rural town with a population of 6,632, and with a traditional grid pattern road network taken up the majority of the city, it is still within easy travel and proximity of goods, services and housing, including downtown and the commercial corridor on Highway

20 with little to no traffic and with plenty of alternative routes. The proximity of the annexation area and CTC project to the downtown core of Colusa is
consistent with the VMT reduction strategy of placing new development as close as feasible to an existing urban center. The project, which creates local jobs in Colusa, and project location are likely a benefit to reducing VMT since fewer Colusa residents would travel outside the City for employment.

It should be noted that the annexation area is entirely within the City of Colusa Sphere of Influence.

Proposed Transportation Demand Management Strategies

The Colusa Triple Crown project proposes implementing transportation demand management strategies that are intended to promote multi-modal activity, manage Vehicle Miles Traveled (VMT), and thereby reduce greenhouse gas (GHG) emissions, including:

- Providing shuttle service within the community for employees
- Assisting in the development of workforce housing within the City of Colusa
- Providing charging stations for electric vehicles on site
- Providing bicycle parking in various locations on site and providing shared bicycles
- Limiting on-site and off-site parking to encourage ride sharing and shuttle use
- Promoting car-share, bike-share, and ride-share programs to its employees
- Incentivizing carpooling by providing better parking locations within the project for carpool
- vehicles/drivers
- Providing golf carts and bicycles for employees to use within the project site
- Providing locker rooms with showers

All of these features are consistent with the strategies for reducing VMT outlined in the Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018, published by the Governor's Office of Planning and Research (OPR).

Considering the RTP guidelines and County/City policy regarding VMT, the project proximity to the existing urban core, and the proposed features of the project that will serve to reduce project VMT, the project is deemed to have a less-than-significant impact on Vehicle Miles Traveled.

Design Feature Evaluation

Access to the annexation property and the proposed Colusa Triple Crown facility is provided via Will S. Green Avenue, Colus Avenue, and 8th Street. Will S Green Avenue is currently a dirt road south of Colusa High School. The City has plans to pave/repave the roadway surface on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street. Will S Green Avenue is adjacent to and serves agricultural land, which could result in some interaction between vehicles and off-highway or farm equipment. Colus Avenue is adjacent to and serves Colusa High School. As part of the paving project, the City will post 35 mph or lower speed limit signs on Will S Green Avenue and 25 mph speed limit signs on Colus Avenue to minimize the speeds of interactions between different types of vehicles. The City will also post a "No Public Access" sign on Will S Green Avenue south of Colus Avenue. The project would have a less-than significant impact related to safety and design features.

Emergency Access Evaluation

Primary access to the annexation property and the proposed Colusa Triple Crown project is provided via Will S Green Avenue to the north. There are also numerous existing dirt roads to the east, west, and south of the project site that could be used for emergency access which connects to other local and collector roadways. Therefore, the project would have a less-than-significant impact related to emergency access.

At least one alternate/emergency route should be identified, designated, and signed by the City from the annexation area to a collector roadway, not using Will S Green Avenue.

No significant impacts related to transportation have been identified, therefore no environmental mitigations are proposed.

GCW analysis, which was based upon the build out of the CTC facility concluded the following:

- The project consists of the annexation of the agricultural land adjacent to and bordering the east and south sides of the Colusa Wastewater Treatment Plant, including the Brookins Ranch property, from Colusa County into the City of Colusa. The total land area to be annexed is approximately 672 acres. The land zoned as AG - Agricultural General consists of approximately 509 acres, while the Brookins Ranch property, currently zoned LD – Low Density Residential, consists of approximately 162 acres. In addition to the annexation, the City is evaluating the proposed development of approximately 88.97 acres of the AG – Agricultural zoned land, east of the Wastewater Treatment Plant, for the Colusa Triple Crown facility – a cannabis research and development park.

- For traffic operations analysis purposes, the "Project" consists of traffic generated by the Colusa Triple Crown cannabis research and development park. Additional traffic generated by all other properties within the annexation boundary was included in the background traffic volumes.

- This study includes analysis of the weekday 5:30 AM to 6:30 AM Morning peak hour and the 1:30 PM to 2:30 PM Afternoon peak hour to capture the proposed employee shift changes of the Colusa Triple Crown operation, as these are the periods of time in which peak traffic is anticipated to occur. Analysis of the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak commute periods was not included because project traffic generated during these periods is much lower than the Morning and Afternoon peak hours. The worst-case traffic volumes associated with the project are evaluated.

- The Colusa Triple Crown project is anticipated to generate approximately 832 Daily, 244 Morning peak hour, 60 AM peak hour, 324 Afternoon peak hour, and 16 PM peak hour trips.

- The Colusa Triple Crown project proposes to implement transportation demand management strategies that are intended to promote multi-modal activity, manage Vehicle Miles Traveled (VMT), and thereby reduce greenhouse gas (GHG) emissions associated with the project. The project proposes to provide shuttle service, bicycle parking, electric vehicle charging stations, and carpool/ride-share incentives for Colusa Triple Crown employees.

- Under Existing, Baseline, Baseline Plus Project and Future Year conditions, the study intersections operate within policy level of service thresholds during the Morning and Afternoon peak hours.

- Under Future Year Plus Project conditions, the westbound approach of the SR 20 (10th Street)/Sioc Street intersection is expected to operate at LOS E during the Afternoon peak hour, however the overall intersection is expected to operate at LOS A (within policy level of service thresholds). Traffic engineering practitioners recognize that LOS E/F conditions for the side street approach, during the peak hour(s), does not indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and

suburban areas and is manageable when there are alternate routes which drivers can use to avoid a particular movement with delay. No improvement or mitigation is recommended.

- The City has plans to pave/repave the roadway surface on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street. As part of the paving project, the City will post 35 mph or lower speed limit signs on Will S Green Avenue and 25 mph speed limit signs on Colus Avenue. The City will also post a "No Public Access" sign on Will S Green Avenue south of Colus Avenue.

- The City of Colusa Bikeway Master Plan (December 2012) identifies existing and proposed bicycle facilities in the City of Colusa, including a Class I "Loop Trail" around the city. The southwest portion of the Loop Trail would follow the Abandoned Railroad and cross Will S Green Avenue south of Colus Avenue.

- The project would have a less-than-significant impact on public transit.

- The project would have a less-than-significant impact on alternative transportation modes.

- The project would have a less-than-significant impact on vehicle circulation.

- The project would have a less-than-significant impact on Vehicle Miles Traveled (VMT).

- The project would have a less-than-significant impact related to safety and design features.

- The project would have a less-than-significant impact related to emergency access.

- No significant impacts related to transportation have been identified.

The GCW analysis did make several recommendations (not mitigation measures) for enhancements to the CTC project and the improvements to the area. Such recommendations are:

- The Colusa Triple Crown shifts should be established to not overlap with Colusa High School traffic. Field observations indicate that high school traffic typically disperses within approximately 10 minutes of the release time; therefore, shift times should avoid heavy traffic generation during the 2:10 PM to 2:20 PM period on Wednesdays and the 3:10 PM to 3:20 PM period on other weekdays.

- The Colusa Triple Crown project will add notable traffic volumes to Will S Green Avenue, Colus Avenue, and 8th Street, and should contribute a fair share contribution toward the roadway surface improvements on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street.

- As part of the paving project, the City will post 35 mph or lower speed limit signs on Will S. Green Avenue and 25 mph speed limit signs on Colus Avenue for safety and to minimize the speeds of interactions between different types of vehicles.

- As part of the paving project, the City will post a "No Public Access" sign on Will S. Green Avenue south of Colus Avenue.

- There are numerous existing dirt roads to the east, west, and south of the project site that could be used for emergency access which connect to other local and collector roadways. At least one

alternate/emergency route should be identified, designated, and signed by the City from the annexation area to a collector roadway, not using Will S Green Avenue (the primary project access).

The GCW study specifically noted that the above are not environmental mitigation measures, as such, they will become conditions of approval addressed in the Development Agreement as the City is also participating in various improvements in the area that include new underground water pipes and some roadway improvements. This approach will allow both the City and the applicant to significantly improve the desired roadways with a greater scale of economic benefit to both parties and the public.

17.b Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)

As noted above in State Laws, Regulations and Policies, on September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law, initiating an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA, with the goal to better measure the actual transportation-related environmental impacts of a given project. Traditionally, transportation impacts had been evaluated by using Level of Service (LOS) analysis. As of July 1, 2020, lead agencies are required to analyze the transportation impacts of new projects using vehicle miles traveled (VMT), instead of LOS. Currently the city of Colusa has not adopted VMT related thresholds.

The Traffic Impact Study created by GCW Engineers discussed both LOS and VMT, as the City of Colusa does not have a standard for VMT. The LOS standard was utilized as there are existing General Plan (2007) policies that discuss maintaining acceptable LOS for streets and intersections.

In regard to LOS, the Traffic Impact Study found that the CTC project had the following Trip Generation Estimates:

Table 4: Trip Generation Estimates – Colusa Triple Crown

Trip Generator	Size/ Units	Trips[1]								
		Daily	Morning		AM		Afternoon		PM	
			Total	In/Out	Total	In/Out	Total	In/Out	Total	In/Out
Morning Shift (6AM-2PM)	240 employees	528	240	240 / 0	0	0 / 0	240	0 / 240	0	0 / 0
Afternoon Shift (2PM-10PM)	80 employees	176	0	0 / 0	0	0 / 0	80	80 / 0	16	8 / 8
Night Shift (10PM-7AM)	40 employees	88	0	0 / 0	40	0 / 40	0	0 / 0	0	0 / 0
Deliveries (6AM-4PM)	20 per day	40	4	2 / 2	20	10 / 10	4	2 / 2	0	0 / 0
Total		832	244	242 / 2	60	10 / 50	324	82 / 242	16	8 / 8

As illustrated above, the CTC facility is expected to generate approximately 832 daily, 244 morning, 60 AM peak hour, 324 Afternoon peak hour, and 16 PM peak hour trips.

Based upon the Trip Generation Estimates, the Traffic Impact Study analyzed several intersections with Trip Distribution assumptions, including:

- 20% to/from the west via SR 20 towards Willows
- 20% to/from the east via SR 20 toward Yuba City
- 20% to/from the north via SR 45

- 40% to/from Colusa, - with an assumption that trips would be dispersed throughout the core

The CTC Trip Generations were then added to the Baseline (existing conditions) of specific intersection and found:

Table 3: Baseline Intersection Level of Service

Int. ID	Intersection	Control	LOS Threshold	Morning[1]		Afternoon[2]	
				Delay[3]	LOS	Delay[3]	LOS
1	SR 20/Will S Green Ave	Side Street (NB) Stop	D				
	NB Approach			11	B	12	B
	WB Left			8	A	8	A
2	Will S Green Ave/Colus Ave	Side Street (WB) Stop	C				
	WB Approach			9	A	9	A
	SB Left			8	A	8	A
3	SR 20 (10th St)/Sioc St	Side Street (WB) Stop	D				
	WB Approach			12	B	18	C
	SB Left			8	A	8	A
4	Sioc St/8th St	All Way Stop	C				
	Overall			8	A	8	A
5	SR 20 (Bridge St)/Sioc St	Signal	D				
	Overall			9	A	21	C

As shown in the above table, the study intersections are expected to operate within policy level of service thresholds during the Morning and Afternoon peak hours.

This analysis was then completed again, but in this instance, it was Baseline, plus the Trip Generation from CTC and projected future conditions. That analysis also found that the intersections studied operated within policy level of service thresholds, except for one westbound approach at State Route 20 and Sioc would operate at a LOS E. The traffic engineer practitioners recognize that LOS E/F conditions for the side street approach, during the peak hour(s), does not indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and suburban areas and is manageable when there are alternate routes which drivers can use to avoid a particular movement with delay. No improvement or mitigation is recommended.

In regards to VMT, the Traffic Impact Study utilized the 2018 Colusa County Regional Transportation Plan (RTP) which was created by the Colusa County Transportation Commission (CCTC). The CCTC is a Regional Transportation Planning Agency (RTPA), which pursuant to Section 29535 of the Government Code establishes the responsibilities of the Transportation Commission. The CCTC is comprised of six members including three County Board of Supervisors, two elected officials from the City of Colusa, and one elected official from the City of Wiliams. CCTC is responsible for transit and transportation related issues within the County.

The CCTC developed the 2018 RTP in a cooperative effort between Colusa County, cities of Williams and Colusa, Caltrans, Native Tribal Governments and residents. The 2018 RTP includes policies and programs with a focus directed at developing a coordinated and balanced multi-modal regional transportation system that is financially constrained to revenue from all funding categories with RTP project and program costs so that any overages or funding short-falls are minimized. The balance is further achieved by using a

systems planning approach that considers investment and improvements for moving people and goods across all modes including roads, transit, bicycle, pedestrian, rail, and aviation.

In regards to VMT, the 2018 RTP Update states:

> *Colusa County has experienced relatively slow growth (less than 2% per year) in population and employment over the past two decades and is forecast to continue this trend through 2042. Based on this trend and the guidelines established in the California Transportation Commission's 2010 RTP Guidelines, the County is not required to run a network travel demand model to determine VMT. The guidelines cite the lack of road congestion and the fact that emission changes from higher MPG vehicles will continue to help the County comply with future emission caps established by the California Air Resources Board as part of AB 32. The County does monitor VMT levels through Caltrans VMT and Mileage Reports. In 1990, VMT per capita was approximately 21,800 annually in the county. In 2007, this number increased to 22,300 annually. In 2010, the per capita VMT was calculated to be 21,821, which was almost at 1990 levels. The County will continue to monitor population and employment and VMT growth to remain consistent with the RTP and the County's General Plan policies.*

In addition, although the project is not required to perform detailed VMT analysis the GCW report notes that the following factors were considered in their evaluation:

Proximity
The CTC project is located within approximately 2.8 miles radius of downtown Colusa, where an estimate 78 percent of the CTC labor force is expected to reside.

The 2018 Technical Advisory on Evaluating Transportation Impacts on CEQA by the Governor's Office of Planning and Research (Now Office of Land Use and Climate Innovation) states:

> In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis. Note, however, that clustered small towns and small town main streets may have substantial VMT benefits compared to isolated rural development.

The proximity of the annexation area and Colusa Triple Crown project to the downtown core of Colusa is consistent with the VMT reduction strategy of placing new development as close as feasible to an existing urban center. The project, which creates local jobs in Colusa, and project location are likely a benefit to reducing VMT since fewer Colusa residents would travel outside the City for employment.

It should be noted that the annexation area is entirely within the City of Colusa Sphere of Influence.

Colusa Triple Crown Demand Management Strategies.
The applicant proposed implementing a transportation demand management strategy that are intended to promote multi-modal activity, management VMT and thereby reduce GHG, such strategies include:

- Delivery vehicles will utilize a Delivery Route Planning software program that optimizes vehicle movements in real time, based on delivery address, traffic patterns, time of day and software program algorithm. These GPS tracking programs create maximum route planning utilizing to minimize VMT and utilization of resources (petroleum, tires, vehicle wear and tear).

- Deliveries to customers are to be grouped into large batches to ensure a delivery drivers are adequately supplied to ensure trips are minimized.

- On-site circulation from structure to structure by employees will utilize both electric golf carts and bicycles.

- Structures will contain "end-of-trip" facilities (EoF) which are designed to support cyclist, walkers, runners who choose active transportation by providing spaces for secure bicycle storage, changing rooms, showers, and bicycles tire pumps.

- Priority vehicle parking will be provided for those who carpool.

- The shuttle service will be set up, to facilitate employee commutes to and from specific destinations from Colusa, Williams and other regional urban centers.

- Assisting in the development of workforce housing projects within the City of Colusa.

- Provide charging stations for electric vehicles within the CTC project site.

- Limit on-site and off-site parking to encourage ride sharing and shuttle use.

- Promoting car-sharing, bike-sharing and ride-share programs to CTC employees.

Considering the RTP guidelines and County/City policy regarding VMT, the project proximity to the existing urban core, and the proposed features of the project that will serve to reduce project VMT, the project is deemed to have a less-than-significant impact on Vehicle Miles Traveled.

17.c Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
The proposed project would utilize the existing roadway network which will be improved to City Standards, which will include a new pavement on Will S. Green Avenue from where it currently turns to gravel just south of Colus Road all the way to the CTC facility. All improvements would be designed to provide sufficient width and turning radius consistent with Colusa Municipal Code. Portions of the project that are not to be developed, such as the Brookins Ranch site and the remainder of the city owned agricultural land will continue to utilize the existing roadway network and its improvements. Therefore, a less than significant impact would occur.

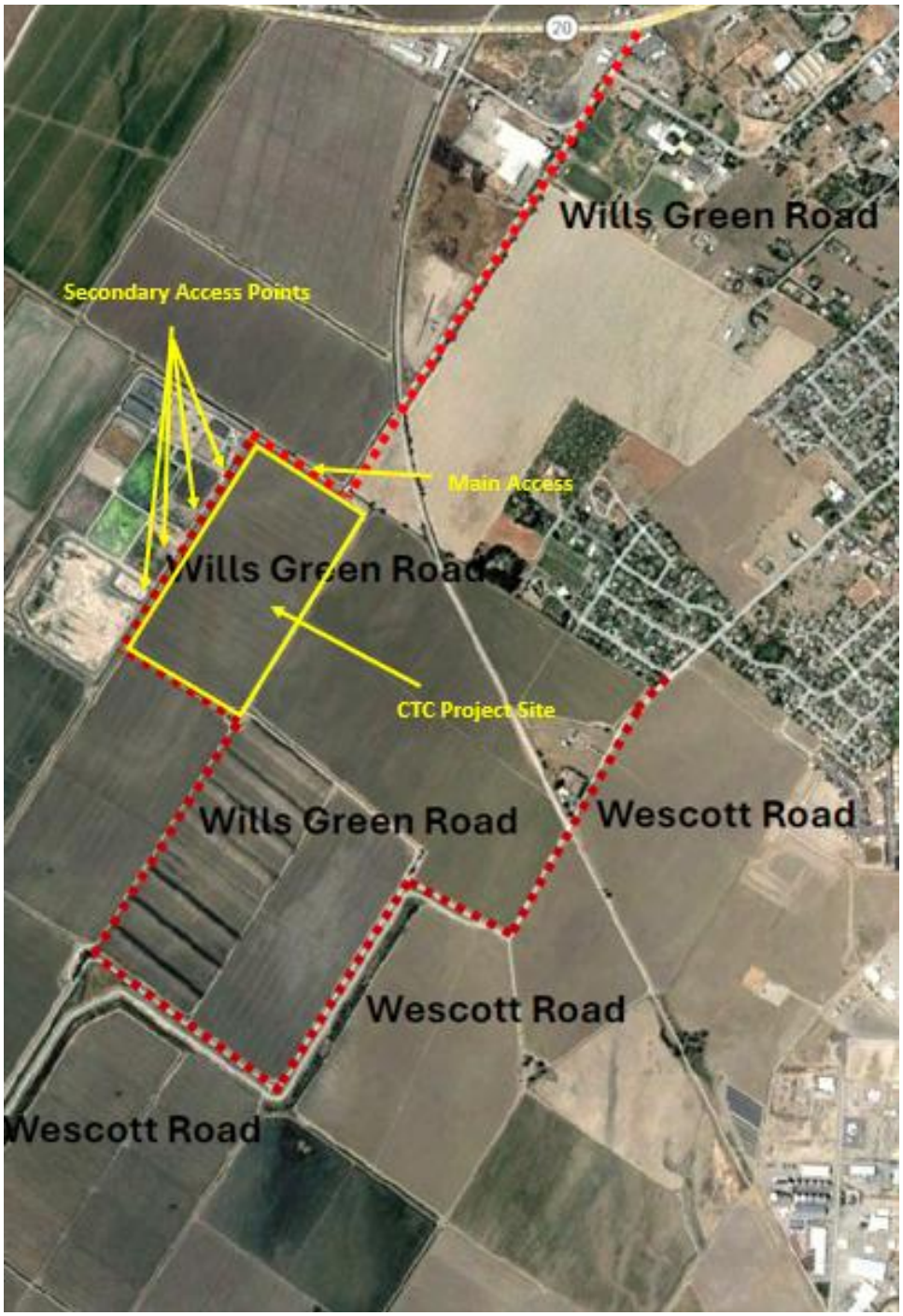
17.d Result in inadequate emergency access
As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition which consists of active agricultural lands. The portion of the stie known as Brookins Ranch has a single-family structure and outbuildings upon it, and no development or physical land use changes are proposed. These sites are already served with public roadway network and are not intensifying in terms of land use changs. Any future changes to these portions of land will require subsequent CEQA analysis and review.

The subject site is currently served by Will S. Green Avenue from the north. This portion of Will. S. Green is currently unimproved with roadway surface and as discussed in the project description will be paved from where the unimproved portion currently terminates to the CTC project site. However, as discussed in the Traffic Impact Study, there are numerous existing dirt roads to the east, west and south of the project

stie that could be used for emergency access which connect to other local and collector roads. CTC provided the below exhibits, illustrating that the project has several proposed gates on the western property line, which connect to existing rights-of-way that allow emergency access to the west and south of the project, thereby providing multiple points of ingress and egress to the site and resulting in a less than significant impact upon emergency access.



Gates illustrated along the western property line (red), illustrating additional access beyond the main gate on Will S Green Road.



Graphic showing the Main gate access on the north, with secondary access points along the western property, indication additional access to Wescott Road.

18. TRIBAL CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, 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:	☐	☐	☐	☐
i) 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 §5020.1(k)?	☐	☒	☐	☐
ii) 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 §5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code §5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Regulatory Setting

Federal Laws, Regulations, and Policies
The Project does not require any federal approvals and is not located on federal lands

State Laws, Regulations, and Policies
CEQA and CEQA Guidelines
Section 21083.2 of CEQA requires that the lead agency determines whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information.
- Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Although not specifically inclusive of paleontological resources, these criteria may also help to define "a unique paleontological resource or site." Measures to avoid, conserve, preserve, or mitigate significant effects on these resources are also provided under CEQA Section 21083.2. Section 15064.5 of the CEQA Guidelines notes that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Substantial adverse changes include physical changes to the historic resource or to its immediate surroundings, such that the significance of the historic resource would be materially impaired. Lead agencies are expected to identify potentially feasible measures to mitigate significant adverse changes in the significance of a historic resource before they approve such projects. Historical resources are those that are:

- listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Pub. Res. Code Section 5024.1[e]);
- included in a local register of historic resources (Pub. Res. Code Section 5020.1[k]) or Identified as significant in an historic resource survey meeting the requirements of Pub. Res. Code Section 5024.1(g); or
- determined by a lead agency to be historically significant

CEQA Guidelines Section 15064.5 also prescribes the processes and procedures found under Health and Safety Code Section 7050.5 and Pub. Res. Code Section 5097.95 for addressing the existence of, or probable likelihood of, Native American human remains, as well as the unexpected discovery of any human remains within the project site. This includes consultation with the appropriate Native American tribes.

CEQA Guidelines Section 15126.4 provides further guidance about minimizing effects to historical resources through the application of mitigation measures. Mitigation measures must be legally binding and fully enforceable

The lead agency having jurisdiction over a project is also responsible for ensuring that paleontological resources are protected in compliance with CEQA and other applicable statutes. Paleontological and historical resource management is also addressed in Pub. Res. Code Section 5097.5, "Archaeological, Paleontological, and Historical Sites." This statute defines as a misdemeanor any unauthorized disturbance or removal of a fossil site or remains on public land and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. This statute would apply to any construction or other related project impacts that would occur on state-owned or state-managed lands.

California Register of Historic Resources

Pub. Res. Code Section 5024.1 establishes the CRHR. The register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed as or determined to be eligible for listing in the NRHP, including properties evaluated under Section 106 of the National Historic Preservation Act. Pursuant to subdivision (c), the criteria for listing are similar to those of the NRHP and include any resource that:

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.

Environmental Setting: The project area is within Patwin ethnographic territory. Patwin are the southernmost members of a group of Native American cultures (i.e., Wintu, Nomlaki, and Patwin) that share a related set of languages. The Native American members of the Colusa Rancheria identify themselves as the Cachil Dehe Band of Wintun Indians. Consequently, Wintun will be used as an alternative to Patwin in this discussion. Wintun occupied the southwest portion of the Sacramento Valley, from the lower hills of the eastern North Coast Ranges to the Sacramento River, and from Princeton south to San Pablo and Suisun Bays. A number of Wintun villages had been identified along the Sacramento River near the City of Colusa (Kroeber 1925, 1932). (City of Colusa General Plan DMEIR, July 2007).

DISCUSSION

18.a.i: and 18.a.ii: April 1, 2025, Element Land Solutions (ELS), on behalf of the Applicant and City of Colusa (City), contacted the Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and the contact information for the representatives of the Native American tribes associated with the project area.

On April 3, 2025, a response was received from the NAHC, which indicated that the results of the Sacred Lands File (SLF) search were negative. Included with the letter was a Native American contact list of tribes who may have knowledge of cultural resources in the Project area. A total of six (6) tribal contacts are included on the contact list:

- Cachil Dehe Band of Wintun Indians of the Colusa Indian Community
- Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
- Estom Yumeka Maidu Tribe of the Enterprise Rancheria
- Grindstone Rancheria of Wintun-Wailaki
- Paskenta Band of Nomlaki Indians
- Yocha Dehe Wintun Nation

On April 3, 2025 individual letters, including a project description, aerial photograph highlighting the project location, a pre-zoning map were mailed out to notify the above Tribes of the Project. Under AB 52 and SB 18, Native American Tribes have 30 days to response and request further project information and formal consultation. No tribe responded within the 30-day window as requested. Accordingly, the requirements of AB 52 and SB 18 have been met for the Project.

It should be noted that on May 16, 2025, after the 30-day consultation window, the Yocha Dehe Tribe responded with a written request to consult. On September 9th, 2025, as directed in the Tribe's letter and email was sent to CRD Administrator. As the date of this IS/MND the Tribe has not responded to the city email.

Due to the earth moving equipment and ground disturbances, a potential impact remains for undiscovered resources, therefore to reduce impacts to levels of less than significant, **Mitigation Measure CULT-1**

through CULT 3 as noted in Section 5, Cultural Resources in addition to the Mitigation Measure as written in the PEIR (TCR-1) will ensure that the Project would have a less than significant impact upon Tribal Resources.

TCR - 1 Consult: Consult with Native American Tribes and Prepare and Implement Treatment Plans for any Tribal Cultural Resources (TCR) Identified at the Site.

If TCRs are identified through this process, CDFA shall consult and work with the tribes to develop feasible alternatives or mitigation measures that will avoid impacts or develop and implement treatment plans that will substantially lessen the impacts on identified TCRs, in accordance with PRC Sections 21083(b)(2) or 21084.3.

19. UTILITIES AND SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater 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?	☐	☐	☒	☐

Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations related to utilities and services systems are applicable to the Project.

State Laws, Regulations, and Policies

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (Pub. Res. Code Division 30) requires all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000 (Pub. Res. Code Section 41780). The State, acting through the California Integrated Waste Management Board, determines compliance with this mandate. Per capita disposal rates are used to determine whether a jurisdiction's efforts are meeting the intent of the act.

Urban Water Management Planning Act

California Water Code Section 10610 et seq. requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per year, prepare an urban water management plan. Urban water management plans must identify and quantify available water supplies and current and projected water use and demands, and plan for maintaining adequate water supply reliability during normal, dry, and multiple dry water years.

California health and Safety Code – Hazardous Waste and Hazardous Materials

Several sections of the California Health and Safety Code deal with hazardous waste and hazardous materials. Division 20, Chapter 6.5 addresses hazardous waste control and contains regulations on hazardous waste management plans, hazardous waste reduction, recycling and treatment, and hazardous waste transportation and hauling. These requirements are discussed in more detail in Section 3.8, "Hazards and Hazardous Materials."

Medical and Adult Use Cannabis Regulation and Safety Act

MAUCRSA and its implementing regulations contain specific provisions for managing cannabis waste. Requirements for cultivators, distributors, transporters, and manufacturers all require compliance with applicable waste management laws and regulations (16 CCR Section 5055; 14 CCR Section 17850 et seq.). Applicants for cannabis business licenses must provide a detailed description of waste management procedures (3 CCR Section 8108; 16 CCR Section 5002 (c)(29)(E)). Cannabis businesses must dispose of waste only at staffed and fully permitted solid waste facilities (3 CCR Section 8108; 16 CCR Section 5055). Licensees must maintain records of the name of the waste facility or hauler, and transfer documentation (3 CCR Section 8308; 16 CCR Section 31 5055).

CDFA regulations require that applicants for cannabis cultivation licenses provide proof of enrollment in or exemption from the applicable SWRCB or RWQCB program for water quality protection (3 CCR Section 8102[o]). The SWRCB water quality protection provisions are described below.

State Water Resource Control Board

The SWRCB Cannabis Cultivation Policy establishes requirements for cannabis cultivation activities to protect water quality and instream flows. The purpose of the Cannabis Policy is to ensure that the diversion of water and discharge of waste associated with cannabis cultivation does not have a negative impact on water quality, aquatic habitat, riparian habitat, wetlands, and springs (SWRCB 2017a). The Cannabis Policy requires cultivators to contain and regularly remove all debris and trash associated with cannabis cultivation activities from the cannabis cultivation site. The SWRCB Cannabis Policy also specifies that cannabis cultivators shall only dispose of debris and trash at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations.

In 2017, the SWRCB issued a General Order, the purpose of which is to ensure that discharges to waters of the State do not adversely affect the quality and beneficial uses of such waters. The Cannabis Cultivation General Order is a simplified WDR available to cannabis cultivators to regulate discharges of waste

associated with cannabis cultivation. Threats of waste discharge may be from irrigation runoff, over fertilization, pond failure, road construction, grading activities, domestic and cultivation related waste (SWRCB 2017b). SWRCB General Order WQ 2017-0023-DWQ requires that activities related to cannabis cultivation, which includes disposal of domestic sewage, must meet applicable County health standards, local agency management plans and ordinances, and/or the RWQCB Onsite Wastewater Treatment System policy.

Local Laws, Regulations and Policies

City of Colusa Wastewater Collection System Master Plan
In 2009, the City published its Wastewater Collection System Master Plan. The City's wastewater plan analyzed the existing wastewater system and outlined the needs for improvements to the system in light of the developments envisioned by the City's General Plan. The City also prepared a Drainage Master Plan in 2009. The storm drainage plan outlines drainage corridors and existing facilities and outlines solutions and costs for improvements in the context of anticipated General Plan development.

City of Colusa General Plan
The 2007 General Plan as well as the 2009 Wastewater Collection System and Drainage Master Plans recognized the need for expansion of and improvements to the City's wastewater treatment system and the storm drainage system. General Plan Policies MFS-8.1 and 8.2 direct the City to expand its wastewater treatment system to adequately accommodate projected new growth and ensure adequate provision of wastewater collections and treatment to all residents and businesses. Policy MFS-9.1 ensures that the City stormwater drainage system is upgraded to accommodate drainage resulting from new development prior to construction. Development of the Project site was anticipated and evaluated in the 2007 General Plan and the 2007 General Plan Master EIR. The MEIR evaluated impacts of development of the project site, which at that time was anticipated to be low- and medium-density residential development.

The 2007 General Plan confirmed that future development within the City of Colusa would not affect the City's ability to provide solid waste disposal services. General Plan Policy MFS 1.1 requires the City to provide facilities to serve new development.

The 2007 General Plan contains goals and policies to minimize wasteful and inefficient use of fuels and energy. General Plan Goal PRC-11 is to reduce consumption of energy sources in Colusa. To implement of this goal, the City requires energy efficient siting and building design in all new development projects consistent with the requirements of Title 24 of the California Administrative Code.

Environmental Setting: As provided in the Municipal Services and Facilities Element of the General Plan, the City of Colusa Public Works Department is responsible for maintenance on public parks, streets, sidewalks, storm drains, streetlights, traffic signals, trees, water and sewer services, garbage, and public landscaping areas. The City of Colusa Police Department provides police protection services within the City limits. The City of Colusa Fire Department provides firefighting services within the incorporated area of the City of Colusa. Currently, the City provides solid waste disposal services to City residents and businesses. Waste is collected and transported in compliance with County and State regulations governing solid waste disposal to the Ostrom Road Landfill in Yuba County.

DISCUSSION

Water Service
The City of Colusa operates a domestic water delivery system through their Public Works Department. The City has five groundwater wells, with a total capacity of 7.78 million gallons per day (MGD). Water storage

is contained in two elevated storage tanks, each with a capacity of 250,000 gallons. The City also provides water to outside its limits: the Walnut Ranch development, the Lurline Avenue area, the area east of Bridge Street, and restrooms at Moon Bend Road. The City receives its municipal water from deep wells that tap aquifers within underground geological formations. The City of Colusa is within the Colusa Subbasin of the Sacramento Valley Groundwater Basin. The Colusa Subbasin aquifer system comprises continental deposits of late Tertiary to Quaternary age. A review of hydrographs of spring-spring groundwater levels indicated a slight decline in levels associated with 1976-77 and 1987-94 droughts, followed by recovery to pre-drought conditions. Generally, groundwater levels have an average seasonal fluctuation of approximately five feet for normal and dry years. Overall, there appears to be no increasing or decreasing trends in groundwater levels as noted in the Master EIR for the General Plan (Page 4.12-1).

Within the City limits, the City of Colusa administers a domestic water delivery system, operated by the Public Works Department. All water used by the City comes from five wells. The depth of these wells exceeds 200 feet below ground surface, and each well is encased with a deep-water sanitary seal for a minimum of 50 feet to prevent infiltration. In 2006, the annual total for all five wells was approximately 545.8 million gallons (Shaw, E., pers. comm., 2007). The wells pump between 1,000 and 1,330 gallons per minute (gpm) with one 225-kW diesel generator. The average dry weather pumping is between approximately 1.5 and 2.0 million gallons per day (mgd), with a peak of 3.0 mgd.

Water lines in the older sections of the City vary in size from 4 to 8 inches in diameter. In a few cases, water lines may have a smaller diameter than 4 inches. Much of the newer lines in the developing southern section of the City are 8-inch, 10-inch and 12-inch ductile iron pipe. A standard residential connection is ⅝-inch or ¾-inch. The City meters all water connections.

Currently, the city is proceeding with the Well No. 9 Project. Which would allow additional 2,200 to 2,600 gallons per minute (GPM) to be pumped and the water to be treated for both manganese and arsenic as needed. This project also included additional treatment to iron and manganese, odor control treatment to other City wells and to turn existing wells into back up wells, while ensuring all the wells are linked to the city's supervisory control and data acquisition (SCADA) system. Once this well is fully activated, other city wells will then serve as emergency standby. This additional well will exceed the GPM for emergency standby wells by two to three fold, in that well No. 4 produces 1,000 GPM while well No. 5 produces 750 GPM.

Wastewater Service

The City of Colusa WWTP provides treatment to the City's wastewater and discharges effluent to the Sacramento River. WWTP is a regional-serving, gravity fed facility located southwest of the City. In addition, the facility is a secondary treatment facility with a current treatment capacity of 12 million gallons per day (mgd). WWTP utilizes alternative power, including a photovoltaic solar array installation which provides approximately 35 percent of the facilities total power demand. A significant portion of the facilities power is also provided by the WCPS's cogeneration facility. According to the City of Colusa Sanitary Sewer Master Plan Update (SSMP) (2017), the collection system consists of sewer mains, trunk sewers, lift stations, and flow diversions that collect and convey wastewater to the City's WWTP, which is located west of the City on Colusa River Road. The City's existing sanitary sewer collection is comprised of roughly 266 miles of gravity collection system pipes up to 66-inches in diameter.

The WWTP has an average dry weather (ADW) (low) flow of approximately 6.9 mgd and an average peak wet weather flow (PWWF) wet weather (high) flow of approximately 20.5 mgd. Future improvements to the sanitary sewer collection systems identified in the City's SSMP are projected to increase the ADW from 6.9 mgd to 13.9 mgd and increase the PWWF from 20.5 mgd to 35.3 mgd. Improvements to the existing

system will provide sufficient capacity to mitigate existing issues in the City and to convey increased flows resulting from future growth. Future development will require construction to serve new users.

In 2014 upgrades were started and completed on portions of the WWTP, which allowed the plant to improve reliability, increase capacity and minimize sanitary sewer overflows. The project involved the construction of new submersible sewer pump stations and abandonment of two older pump stations, construction of 2,000 linear feet of 21-inch sewer downs stream of the pump station to the WWTP and the construction of 7,800 linear feet of 10 to 18-inch sewers to replace existing defiance sewers within the city. That project would allow discharge of treated wastewater on the abutting city owned agricultural lands. As discussed in other sections of this IS/MND, CTC will benefit from this reclaimed water for their operations. It is anticipated that the work done at the WWTP will provide sufficient capacity for City growth for approximately 30 years, reduce overall WWTP energy consumption, reduce local groundwater demand, and reduce overalldemand on the City water system. This is discussed in greater detail, above in Section 10 Hydrology and Water Quality. .

Storm Drainage System

The City of Colusa is located in the lower Sacramento River Valley and is bordered on the north and east by the Sacramento River itself. The Sacramento River flows in a south/southeasterly direction through the Sacramento River Valley.

To the west of the City is a drainage feature called the Colusa Basin, served by the Colusa Drain. The Colusa Basin drains approximately 230,000 acres along the west side of the Sacramento River, extending as far north as the City of Willows and as far south as the City of Woodland. The main channel for the Colusa Drain is an excavated earthen channel. Within Colusa County, the channel depth is approximately 10-15 feet below the original ground elevation, and the average top width of the excavated section is approximately 100 feet. The channel has levees on both sides for the most part, and levee height varies to a maximum of approximately six feet. There are additional levees along tributary drains that connect to the Colusa Drain. The Colusa Drain discharges into the Sacramento River at Knights Landing, northeast of the City of Woodland.

Topography within the General Plan area generally falls to the south and west, toward the Colusa Drain and away from the Sacramento River. Elevations range from approximately 60 feet above mean sea level in the northernmost portions of the General Plan area to approximately 45 feet above mean sea level in the southernmost portions. The overall gradients are typically very flat, and usually about 0.1 percent or less.

Hot, dry summers and moderately cool, wet winters characterize the climate of the City of Colusa. Average annual rainfall in Colusa is approximately 16.34 inches.

Solid Waste Service

The Recology Butte Colusa Counties provides solid waste collection service within the City limits to residential, commercial and industrial customers. Residential services include the pickup of one 90-gallon yard waste container early in the week, and one 30-, 60- or 90-gallon household waste container later in the week. The owner or occupants of all residential properties shall subscribe to no less than the minimum service. Recology will also collect excess yard refuse and loose clippings deposited in alleys and streets for a charge, as well as other materials that otherwise may not be placed in the containers. Trailer bins with a capacity of six cubic yards may be rented from the Recology.

Commercial and industrial bin rates vary according to the bin size, with a minimum of two cubic yards and a maximum of eight cubic yards. Commercial establishments are charged a minimum rate, regardless of

amount of solid waste disposed. All restrictions placed on residential users regarding type of containers used and the type of materials to be collected also apply to commercial and industrial users.

Recology delivers all solid waste to the Ostrom Road Landfill near Beale Air Force Base in Yuba County. According to information from the California Integrated Waste Management Board, the Ostrom Road Landfill (58-AA-0011) has a maximum permitted capacity of 43,467,231 cubic yards. Per CalRecycle.ca.gov, the landfill had a remaining capacity of 39,22,000 cubic yards, with a maximum permitted throughput of 3,000 tons of solid waste per day. The estimated closure date for the landfill is December 31, 2066.

Electric Power and Natural Gas

The Pacific Gas and Electric Company (PG&E) provides electrical and natural gas service to the City of Colusa and the proposed Planning Area. A private utility, PG&E has a service area that covers most of northern and central California. PG&E generates electric power from many sources, including hydroelectric powerhouses, a nuclear power plant (Diablo Canyon) and a few small fossil-fired power plants. PG&E also purchases power from independent power producers; generation sources from these producers can range from large fossil power plants to smaller renewable and cogeneration plants. After the power is produced or bought, it goes into PG&E's electric transmission and distribution systems to get to the homes and businesses of PG&E's customers.

Infrastructure to deliver electricity and natural gas is currently in place. PG&E generally can provide these services to newer developments on request.

Communications

Several private companies provide local and long-distance telephone service to Colusa residents. Telephone facilities include both aerial and underground fiber and copper transmission lines. Both local and long-distance companies utilize these lines (City of Colusa 2007a).

Several private companies provide access to the Internet. Broadband services use telephone lines (DSL), cable television lines, or electronic waves (wireless). Comcast provides cable television and broadband internet services in Colusa. Outside the cable television service area, residents and other customers may use satellite service, an option also available to city residents (City of Colusa 2007a).

19.a Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects:

As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition which consist of active agricultural lands. The portion of the site known as Brookins Ranch has a single-family structure and outbuildings upon it, and no development or physical land use changes are proposed. These sites do not need modification or relocation of any water, wastewater or stormwater, power or other utilities. Any future changes to these portions of land will require subsequent CEQA analysis and review.

The CTC related improvements will install traditional infrastructure improvements related to the proposed end user and demand. Such improvements consist of asphalt pavement along a portion Will S. Green Road. Electric, water and storm drain infrastructure utilities which are abutting the site along the northern property line, while purple pipe infrastructure is along the western property line and runs through the site. These improvements will be necessary to facilitate the CTC project, while subsequent phases of the cannabis facility will connect to phase one improvements and will be private and internal to the boundary of the CTC facility. The development of the CTC site does not trigger the need for upgrading or relocating existing

infrastructure-related improvements. While both on- and off-site improvements would be required for the Project, the respective utility providers and installers would be required to implement applicable BMPs to reduce the potential for impacts, including but not limited to erosion during construction, to occur. As such, a less than significant impact would occur.

The City-owned agricultural lands will continue to receive purple pipe reclamation water, as the fields are permitted to do so as part of the operation of the WWTP. No additional infrastructure will be necessary to continue to operate the city owned agricultural lands.

Assuming buildout of the Brookins Ranch site at an R-1 Single Family density, traditional infrastructure would be required (water, sewer, stormdrain, electricity). As previously discussed above in the Discussion of this section the WWTP and water capacity for the city has been expanded upon recently with upgrades to the WWTP and a new well being drilled in the City. Both recent infrastructure improvements can adequately serve the city of Colusa for approximately 30 years, assuming full buildout and growth, which historically has not kept pace with assumptions. At such timeas Brookins Ranch may pursue discretionary approvals (i.e.: subdivision map), the subject property will also be annexed into the Community Facilities District, which is a special financing district that provides mechanisms for funding for specific facilities (i.e.: Polices, Fire, Public Works and Parks).

19.b Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years:
As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition which consist of active agricultural lands. The portion of the site known as Brookins Ranch has a single-family structure and outbuildings upon it, and no development or physical land use changes are proposed. These sites do not need modification or relocation of any water or water supplies. Any future changes to these portions of land will require subsequent CEQA analysis and review.

The CTC site will have two water supplies, one that would be utilized for domestic water systems, such as showers, cafeteria or restroom facilities. This would connect to the existing water supply that is found in Will S. Green Road. All domestic water service would be metered. Water meters would be installed on all water services to the satisfaction of the City Engineer. Fire hydrants would be installed in accordance with applicable standards, such as distances between them and capacity necessary. In addition. as required by the City of Colusa Cross Connection Control Program, the project applicant would maintain an approved backflow prevention assembly in compliance with the City of Colusa Public Improvements Standards and Construction Standards.

The City of Colusa maintains a total of eight groundwater wells, with three currently out of service and abandoned. The imminent commissioning of Well No. 9 will result in six active wells contributing to the City's water supply system. Per the draft Water Master Plan, the aggregate source pumping capacity of these active wells exceeds 6,000 gallons per minute (gpm). Pursuant to the city engineer, the projected water demand for the agricultural development is substantially within the operational capacity of the City's existing well infrastructure and pumping capabilities, ensuring reliable supply to meet project requirements. In that a total of 94 domestic water fixtures (sinks, showers, water stations etc.) are estimated to be installed within the project, resulting in a approximately 44 gpm. Given that the site will have both hydrant and sprinkler systems due to Title 24 California Building Code requirements, it is estimated that in a time of need, the hydrant systems will be able to produce 4,000 gpm for 4 hours while the automatic sprinkler systems can sustain a flow of 55pm for 60 minutes. Below current thresholds.

The irrigation water for the cannabis portion of the project would be supplied via reclaimed and treated water from the abutting WWTP via an existing purple pipe and the use of reverse osmosis which allows

CTC to recycle water that is already being utilized. For a detailed analysis on water uses, see Section 10. Hydrology and Water Quality. The property has historically been using both agricultural wells to irrigate the existing agricultural activities. In conversations with the City, it is estimated that the WWTP will have a total, daily capacity of 450,000 gallons of purple pipe water that can be utilized for both the cannabis operation and the existing agricultural fields, which will offset the use of agricultural well water. No additional or expanded water infrastructure facilities are needed. Therefore, the proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable during normal, dry and multiple dry years, and a less than significant impact would occur.

It should be noted, that while there is no development project anticipated for the foreseeable future for Brookings Ranch or the reminder of the City-owned properties, there is such change between pre-annexation and post-annexation conditions related to a change in development potential from existing County zoning to proposed City zoning and access to urban services (sewer and drinking water) from the City.

The change in development potential for the Brookins Ranch component of the proposed project in terms of pre-annexation and post-annexation conditions is a maximum of approximately 155 light industrial parcels to approximately 600 single-family residential parcels. It is important to note that the actual number of industrial sites and residential units is likely much lower when taking into consideration site development standards, requirements (roadway widths/lengths, low impact development requirements etc.) and physical constraint. Whenever a future development project is submitted for Brookins Ranch, it will be required to obtain entitlements and be subject to subsequent CEQA review.

For the remainder of the City-owned properties component of the proposed project, the change in development potential in terms of pre-annexation and post-annexation conditions is 423-acres of agricultural zoned land with a 40-acre minimum lot size, which does not allow for commercial cannabis operations, but does allow for agricultural uses and operations in areas where fertile soils are suited for crop production and protects from encroachment of incompatible land uses, to 423-acres of agricultural zoned land with a 5-acre minimum lot size which allows for indoor commercial cannabis operations, subject to issuance of a Special Use Permit and subsequent CEQA review. However, in this instance, these city owned lands are directly linked to the WWTP, in that the WWTP is permitted to spray reclaimed water upon these fields pursuant to the Municipal Stormwater Program (MS4 Permit).

19.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:

As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition which consist of active agricultural lands. The portion of the site known as Brookins Ranch has a single-family structure and outbuildings upon it which are connected to existing private wastewater treatment systems (septic), while the city owned agricultural lands have no structures and no need for connection to any wastewater treatment facility. Any future changes to these portions of land will require subsequent CEQA analysis and review.

The Proposed Project would include installation and maintenance of a pressure sewer system that would be connected to the City's existing sewer system. Small-diameter pipes and grinder pumps would be installed at each connection location. The grinder pump station would collect all the wastewater from the facility and grind it into slurry. The wastewater would then be pumped to a larger sewer main through the City's existing service connection on Will S. Green Road.

As described in the CDFA PEIR (2017), wastewater may be generated during cannabis cultivation operations from irrigation runoff, sanitary waste, or stormwater runoff. Wastewater associated with cultivation activities may contain contaminants such as sediment, chemicals, and trash. Wastewater discharged to a municipal sewer system could result in elevated levels of these contaminants in wastewater effluent. The PEIR noted that cultivation operations could reduce the levels of contaminants in wastewater by utilizing onsite treatment systems and reusing irrigation water (PEIR, p. 4.14-6). In addition, the PEIR found that CDFA and CDPR requirements related to the use of pesticides would reduce the amount of excess pesticide residue entering the sewer system from cultivation wastewater.

The CTC facility would use a UV disinfection system to reclaim, recycle, and reuse agricultural irrigation water, substantially reducing the amount of wastewater that would require treatment compared to typical greenhouse operations. The fertilization system would apply fertilizer to plants directly through irrigation water, eliminating the potential for residue to enter the sewer system. Wastewater would also come from limited domestic uses at the CTC facilities, such as cafeterias and restrooms. For a detailed discussion on water demands, see Section 10, Hydrology and Water Quality.

In addition, the Regional Water Quality Control Board as has adopted Cannabis Cultivation Policies for Cannabis Cultivation (Adopted by State Water Board February 5, 2019, Approved by Office of Administrative Law April 16, 2019). The purpose of the Cannabis Cultivation Policy is to ensure that the diversion of water and discharge of waste associated with cannabis cultivation does not have a negative impact on water quality, aquatic habitat, riparian habitat, wetlands and springs. The Policy applies to commercial recreational cultivation activities throughout California.

The policy establishes principles and guidelines for cannabis cultivation activities to protect water quality and instream flows. The Requirements established by this Policy will be incorporated into and implemented through five regulatory programs:

- CDFA's CalCannabis Cultivation Licensing Program;
- State Water Board's Cannabis General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (Cannabis Cultivation General Order) or any Waste Discharge Requirements addressing cannabis cultivation activities adopted by a Regional Water Quality Control Board (Regional Water Board);
- State Water Board's General Water Quality Certification for Cannabis Cultivation Activities (Cannabis General Water Quality Certification);
- State Water Board's Cannabis Small Irrigation Use Registration (Cannabis SIUR); and
- State Water Board's Water Rights Permitting and Licensing Program.

The 2007 General Plan (City of Colusa 2007a), as well as the 2009 Colusa Wastewater Master Plan (City of Colusa 2009), and those documents determined that sufficient capacity for wastewater services was available. All applicable policies and standards, including mitigation measures addressing impacts of urban development under the General Plan on wastewater service systems incorporated as goals and policies in the General Plan, will be applied to the project as uniformly applied development policies and standards and/or as conditions of approval in the course of processing the application to ensure consistency with the General Plan and compliance with City rules and regulations. In 2014, the City initiated the City of Colusa Wastewater Treatment Plant Upgrade Project (Initial Study/Mitigated Negative Declaration). The scope of the project included meeting Regional Water Board Clean Ater Act NPDES permit compliance, replacing old pump stations with new state of the art stations, replacement of two main collection systems pipelines in the city, constructed one new reclamation pipe (purple pipe), WWTP upgrades including aeration control systems and a second secondary clarifier, lining of the sludge storage basin, and increasing capacity at the

WWTP. Bring permitted capacity of 0.7 million gallons per day, an increase from the previous capacity of 0.52. As of the start of 2025, these improvements are under construction.

For these reasons and because the CTC facility would include features allowing operators to reclaim, recycle, and reuse irrigation wastewater, the impact would be less than significant.

Solid waste collection service would continue to be provided by Recology, which provide weekly curb-side residential and commercial garbage and recycling collection within the City of Colusa. Solid waste is anticipated as a result of project implementation; however, the project does not include any components that would generate excessive waste and the existing landfills have sufficient permitted capacity to accommodate the project's solid waste disposal needs. Recology has also implemented Recyclable Materials and Organic Waste diversion from the landfill of 32% by January 2021, and 35% by 2024. Recology will also develop a specific annual Waste Diversion and Sustainability Work Plan, which includes steps to increase diversion and outreach for waste reduction. Recology is contracted to provide resources to support waste diversion and sustainability programs. A less than significant impact would occur.

19. 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:
As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition, which consists of active agricultural lands. The portion of the site known as Brookins Ranch has a single-family structure and outbuildings upon it, and no development or physical land use changes are proposed. Any future changes to these portions of land will require subsequent CEQA analysis and review.

The CTC facility would generate solid waste and would contribute incrementally to the loss of landfill capacity in the County. However, implementation of state requirements, including mandatory organic waste collection (SB 1383) which requires jurisdictions to provide organic waste collection services to all residence and businesses , as well as the proposed General Plan policies and implementing actions would assist in reducing the solid waste stream, thereby reducing demand on landfill capacity, and would ensure adequate provision of solid waste services.

During operation of the CTC facility, solid waste would result primarily from disposal of harvested vegetation material, although domestic waste would also be produced.. Solid waste would be managed in compliance with all applicable laws and regulations, including the provisions of MAUCRSA applicable to managing cannabis waste. As described above, the Ostrom Road Landfill has sufficient capacity to accommodate solid waste disposal from the Proposed Project..

The CDFA PEIR determined that impacts from cultivation activities would be less than significant due to state-imposed legal requirements for cannabis waste and solid waste generally. CDFA requires that prospective cultivators develop a cannabis waste disposal plan to identify appropriate management and disposal practices for cannabis waste. Such disposal plan would require cultivators to demonstrate compliance with state laws, including CDFA requirements and the SWRCB Cannabis Policy. Additionally, cultivators are required to comply with all laws related to solid waste. This would include any ordinances or regulations promulgated by local jurisdictions pursuant to the California Integrated Waste Management Act, which requires that jurisdictions divert at least 50 percent of their waste from landfill disposal, and sets jurisdiction-specific target disposal rates. An applicant for a license must comply with all local regulations and ordinances in the local jurisdiction in which the proposed cultivation operation is operating.

This proposed project conforms to all applicable management and reduction statutes and regulations related to solid waste disposal. The development would comply with the adopted policies related to solid waste,

and would comply with all applicable federal, state, and local statutes and regulations pertaining to disposal of solid waste, including recycling. A General Plan, Rezone and Colusa Municipal Code amendments would not generate waste. Therefore, the proposed project would have a less than significant impact on solid waste regulations.

19.e Comply with federal, State, and local management and reduction statutes and regulations related to solid waste:

As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition, which consists of active agricultural lands. The portion of the site known as Brookins Ranch has a single-family structure and outbuildings upon it, and no development or physical land use changes are proposed. Any future changes to these portions of land will require subsequent CEQA analysis and review.

The CTC facility would generate solid waste during construction primarily through construction waste. As described above, the Ostrom Road Landfill has a total design capacity of 39 million cubic yards. It is expected to close around 2066, according to a report from the Appeal-Democrat.

During operation of the CTC facility, solid waste would result primarily from disposal of harvested vegetation material, although domestic waste would also be produced. The City of Colusa would manage solid waste disposal at the project site. Solid waste would be managed in compliance with all applicable laws and regulations, including the provisions of MAUCRSA applicable to managing cannabis waste. As described above, the Ostrom Road Landfill has sufficient capacity to accommodate solid waste disposal from the Proposed Project. Additionally, future plans for the Proposed Project include a potential hemp recycling facility that would substantially reduce the amount of solid waste sent to the landfill.

The CDFA PEIR determined that impacts from cultivation activities would be less than significant due to state-imposed legal requirements for cannabis waste and solid waste generally. CDFA requires that prospective cultivators develop a cannabis waste disposal plan to identify appropriate management and disposal practices for cannabis waste. Such disposal plan would require cultivators to demonstrate compliance with state laws, including CDFA requirements and the SWRCB Cannabis Policy. Additionally, cultivators would be required to comply with all laws related to solid waste. This would include any ordinances or regulations promulgated by local jurisdictions pursuant to the California Integrated Waste Management Act, which requires that jurisdictions divert at least 50 percent of their wastes from landfill disposal, and sets jurisdiction-specific target disposal rates. An applicant for a license must comply with all local regulations and ordinances in the local jurisdiction in which the proposed cultivation operation is operating.

The CTC facility would generate solid waste and would contribute incrementally to the loss of landfill capacity in the County. However, implementation of state requirements, as well as the proposed General Plan policies and implementing actions would assist in reducing the solid waste stream, thereby reducing demand on landfill capacity, and would ensure adequate provision of solid waste services. Therefore, this impact is less than significant.

This proposed project conforms to all applicable management and reduction statutes and regulations related to solid waste disposal. The development would comply with the adopted policies related to solid waste, and would comply with all applicable federal, state, and local statutes and regulations pertaining to disposal of solid waste, including recycling. Finally, Colusa Municipal Code amendments would not generate waste. Therefore, the proposed project would have a less than significant impact on solid waste regulations.

20. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges?	☐	☐	☐	☒

Federal Laws, Regulations, and Policies
No federal regulations related to wildfire are applicable to the Project.

State Laws, Regulations, and Policies
CalFire
The City of Colusa is not located in a State Responsibility Area (SRA) hazard severity zone as designated by CalFire. An SRA means the financial responsibility of preventing or suppressing wildfires is primarily the responsibility of the State.

Local Laws, Regulations, and Policies
City of Colusa
The City of Colusa is within a Local Responsibility Area (LRA) hazard severity zone as designated by CalFire. An LRA means the financial responsibility of preventing or suppressing wildfires is primarily the responsibility of the Local agency (city, county, city and county or district).

Environmental Setting
Much of the northern Central Valley of California is in irrigated agricultural production. This land use type is not typically considered conducive to wildfire, and the immediate City of Colusa area has not experienced a significant wildfire in the last 60+ years (CAL FIRE 2018a). The western portion of the County contains the Mendocino Forest which is a high fire zone, that forest is approximately 35 miles to the west of the city. Between the project site and the forest there are abundant open space, including irrigated agricultural farms and Interstate 5.

DISCUSSION
20.a Impair an adopted emergency response plan or emergency evacuation plan: The City's Comprehensive Emergency Management Plan provides direction for responding to disastrous occurrences

in Colusa. The Plan facilitates accomplishing the underlying goal of the Safety Element, which is to protect the life, property, and environment of community residents, businesses, employees, and visitors. It also serves as a key component in implementing the City's policies that address emergency response.

The Plan defines the primary and support roles of City agencies and departments in after incident damage assessment and reporting requirements. In addition, the plan provides for the operation of police, fire, and health services, as well as transportation alternatives in the event of a multi-hazard emergency. City evacuation procedures are described and are submitted to the State Office of Emergency Services (OES) for approval.

The General Plan notes that likely reasons for a potential emergency evacuation of the City of Colusa include a hazardous materials spill from vehicles transporting these materials along SR 20 and SR 20/45 or flooding resulting from levee overtopping or failure. Potential evacuation routes include SR 20 (east and west), SR 20/45 (north), Lurline Avenue (west), Wescott Road (south), and Bridge Street (north). Due to the relatively low number of vehicles currently required to completely evacuate the City and the City's grid street system, an organized evacuation using all available routes could be accomplished in a short period of time.

In this case, the annexation of the boundaries does not modify vehicle connectivity in the area as, with the exception of the CTC facility, all existing land uses will remain in an as is condition. While the CTC facility will have paved vehicle connectivity from the north from Will S. Green Road, with secondary/emergency access to unpaved portions of Wescott Road along the south. Each road exits into different portions of the city and corresponding portions of Highway 20 and Highway 45. Text amendments to the Colusa Municipal Code would not impair response or evacuation plans as they pertain to new zoning designations and permitting cannabis in the agricultural zones. Therefore, the impact related to an emergency evacuation is considered less than significant.

20.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:

The entire annexation boundary is flat with no slope and within the local response area as defined by the California Department of Forestry and Fire Protection. Therefore, exposure to the occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire is limited.

Furthermore, in regards to the CTC facility, potential impacts due to prevailing winds or other factors would be limited as construction would be required to meet or exceed the standards prescribed in the California Building Code (CBC) to ensure fire hazards and risk is minimized. Through compliance with existing standards and policies, potential impacts would be limited. A less than significant impact would occur.

20.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?

As previously stated, except for the CTC facility, the entire annexation boundary will remain in an as is condition which consists of active agricultural lands. The portion of the site known as Brookins Ranch has a single-family structure and outbuildings upon it, and no development or physical land use changes are proposed. No extension or upgrades are necessary to these sites. Any future changes to these portions of land will require subsequent CEQA analysis and review.

The proposed CTC facility does not require the extension of roads, fuel breaks, emergency water sources, power lines or other utilities beyond those that normally are extended to serve a vacant parcel. Such infrastructure is present, abutting the project site either on the north or western property line. These utilities do not need to be increased in capacity or size to accommodate the project. As mentioned in the Project Description, portions of Will S. Green road that are not currently paved but are gravel will receive an asphalt finish to the entrance of the project site.

The project will be sufficiently served by water utilities, as described in Section XIX (Utilities and Service Systems), above, and is within the service boundaries of the Colusa Fire Department. Project design has accounted for proper road width and turn radius needs for emergency vehicles, as required by the California Fire Code and Colusa Municipal Code. Given the size of the project and the proposed use, the proposed project will not trigger the need for any installation of fire-related utilities (e.g., emergency water supplies), fire roads, fire breaks, or other facilities that would exacerbate fire risk or emergency response needs or cause temporary or ongoing impacts to the environment. Furthermore, all contractors would implement standard Best Management Practices (BMPs) and take proper precautions to ensure fire risk is minimized during installation and maintenance of associated infrastructure. A less than significant impact would occur.

20.d Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges:

The proposed project would not expose people or structures to significant risks or landslides, as a result of runoff, post-fire slope instability, or drainage challenges, as the area of development is relatively flat in nature and is not significantly developed.

As discussed above (Section X – Hydrology and Water Quality) The site is located within a FEMA flood zone that would require all structures to be built out of the flood zone, by exciting the height of the Base Flood Elevation (BFE) by 1 foot (FEMA Panel 06011C0550G, Effective 3/27/2024). In this instance, the applicant will surround the property with a private levy system that will ensure the site does not get inundated in times of flooding. The system will be earthen and extended around the entire perimeter of the site at a height of 7 feet.

Additionally, the city of Colusa has a levy system along the banks of the Sacramento river, this system is also connected to Colusa Bypass Wildlife Area, an 1,200-acre area containing grasslands, willows and cottonwood trees. This area plays a role in local flood management when excess water is diverted into the area from the Sacramento River during high flows in winter. This

Additionally, as the site is in continued agricultural production there has been no evidence on-site of recent wildfires at the Site or in the immediate vicinity. Therefore, a less than significant impact would occur.

MITIGATION MEASURES
No mitigation required.

21. **MANDATORY FINDINGS OF SIGNIFICANCE**.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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).	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

THRESHOLDS OF SIGNIFICANCE: The project would have a significant effect on mandatory findings of significance if it would 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; 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.); or have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

DISCUSSION

Certain mandatory findings of significance must be made to comply with CEQA Guidelines §15065. The proposed project has been analyzed and it has been determined that it would not:

- Substantially degrade environmental quality;
- Substantially reduce fish or wildlife habitat;
- Cause a fish or wildlife population to fall below self-sustaining levels;
- Threaten to eliminate a plant or animal community;
- Reduce the numbers or range of a rare, threatened, or endangered species;
- Eliminate important examples of the major periods of California history or pre-history;
- Achieve short term goals to the disadvantage of long term goals;
- Have environmental effects that will directly or indirectly cause substantial adverse effects on human

beings; or
- Have possible environmental effects that are individually limited but cumulatively considerable when viewed in connection with past, current, and reasonably anticipated future projects.

Potential environmental impacts from construction and operation of the proposed project have been analyzed in this document and mitigation measures have been included in the document to ensure impacts would be held to a less-than-significant level.

21.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:

The project does not 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. The Site does not provide habitat for any fish species, nor does the Site support any notable plant or animal communities. This Initial Study proposes Mitigation Measures that are best practices to ensure biological resources, including special status birds, are adequately protected,

Additionally, there are no important examples of California pre-history located on-site. However, there is the potential for unrecorded archaeological and Native American resources and/or human remains to be located on-site. CEQA Guidelines §§15064.5(d) and (f) and PRC §5097.98 provide proper protocol in the event of inadvertent discovery of archaeological or paleontological resources, or human remains on-site during project construction, and required compliance with these protocols provided in this initial study which would ensure impacts would be less than significant.

21.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):

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines Section 15355). As defined by the State of California, cumulative impacts reflect "the change in the environment which results from the incremental impact of the Proposed Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355[b]).

Based upon recent known active planning projects, planned and approved projects in the project area could potentially combined with the Proposed Project to result in cumulative impacts including the following:

- NextGrid Photovoltaic Solary Aarray – A 27-acre solar array project on the northeastern side of the Colusa County Airport (1 mile to the east)
- Wescott Ranch Subdivision – An 80-acre residential and commercial development (0.61 miles to the east).

- Rancho Colus Phase II – A 48-unit affordable apartment project recently approved on 3 acres (approximately 1.5 miles to the east)

The potential exists for the projects listed above to result in temporary adverse effects on the environment, and all of the identified projects are in the same general geographic area as the Proposed Project. Generally, those projects nearest to the project site (NextGrid Solar Array, Wescott Ranch, Rancho Colus Phase II) are located within the developed area of the city and would not affect the same types of resources as the Project. All of these projects would be required to comply with the same regional air quality and GHG regulations as the Project, and each would be required to reduce or mitigate significant impacts on those resources. The Project would consist of short-term construction activities that would be mitigated to a less-than-significant level, and long-term operational impacts on resources considered in this document (e.g., transportation, air quality, noise) would be less than significant after mitigation from a cumulative standpoint.

In conclusion, none of the identified projects have the potential to combine with the Proposed Project to result in a significant cumulative impact to which the Proposed Project might make a substantial contribution. No cumulative impacts have been identified as a result of the proposed project. The analysis included in this Initial Study found that all potential impacts associated with the project could be reduced to a less-than-significant level with Mitigation Measures incorporated. As such, individual impacts from the project would not significantly contribute to cumulative impacts in the area. A less than significant impact would occur.

21.d Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly: The proposed project would not generate any potential direct or indirect environmental effect that would have a substantial adverse impact on human beings including, but not limited to, exposure to geologic hazards, air quality, water quality, traffic hazards, noise, and fire hazards. With mitigation incorporated, all potential impacts associated with construction and operation of the project would be reduced to a less-than-significant level.

VI. REFERENCES

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INTRODUCTION

As part of the CEQA environmental review procedures, Section 21081.6 requires a public agency to adopt a monitoring and reporting program to ensure efficacy and enforceability of any mitigation measures applied to the proposed project. The lead agency must adopt an MMRP for mitigation measures incorporated into the project or proposed as conditions of approval. The MMRP must be designed to ensure compliance during project implementation. As stated in Section 21081.6 (a) (1):

The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required to incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.

MITIGATION MONITORING AND REPORTING PROGRAM

The MMRP, as outlined in the following table, describes mitigation timing, monitoring responsibilities, and compliance verification responsibility for all mitigation measures identified in Initial Study.

The City of Colusa will be the primary agency, but not the only agency responsible for implementing the mitigation measures. In some cases, the City or other public agencies will implement measures. In other cases, the project applicant will be responsible for implementation of measures and the City's role is exclusively to monitor the implementation of the measures. In those cases, the project applicant may choose to require the construction contractor to implement specific mitigation measures prior to and/or during construction. The City will continue to monitor mitigation measures that are required to be implemented during the operation of the project.

The MMRP is presented in tabular form on the following pages. The components of the MMRP are described briefly below:

Mitigation Measures: The mitigation measures are taken from the Mitigated Negative Declaration in the same order that they appear in the Initial Study.

Mitigation Timing: Identifies at which stage of the project mitigation must be completed.

Monitoring Responsibility: Identifies the department within the City, project applicant, or consultant responsible for mitigation monitoring.

Compliance Verification Responsibility: Identifies the department of the City or other State agency responsible for verifying compliance with the mitigation. In some cases, verification will include a contract with responsible state and federal agencies.

TABLE 4.0-1
MITIGATION MONITORING AND REPORTING PROGRAM

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
1. AESTHETICS			
AESH-1: Dark Sky Compliant To minimize over-lighting and to provide for a quality-built environment, outdoor lighting placed on structures, within parking lots, shall be dark sky compliant (darksky.org), directed downward and contain cut-offs to minimize excessive sources of light and glare. Future building plan submittals shall indicate and provide details on the type of lighting, location, height, size and intensity.	*City of Colusa, Building and Planning Departments*	*Building and improvement plans for the site shall indicate compliance with the mitigation measure prior to issuance of a building permit.*	
AESH-2: Lighting Photometric Plan Prior to the issuance of a building permit a photo-metric study or lighting photometric plan shall be submitted for review and approval by the Planning Department. Such a study shall illustrate all outdoor lighting, both on the structures and within parking/vehicle movement areas and shall illustrate a maximum one-half feet candle illumination for every point in the parking lot and that such lighting shall be arranged to reflect the light away from adjoining premises and streets. The absolute minimum amount of lighting shall be utilized, and pole lighting shall be lowered from 50 feet to a height that achieves the maximum of one-half foot candle illumination. Areas of less than one-half foot candle illumination are permitted by approval of Planning Staff in events when such lighting will increase safety.	*City of Colusa, Building and Planning Departments*	*Building and improvement plans for the site shall indicate compliance with the mitigation measure prior to issuance of a building permit.*	
AESH-3: Finished Materials All external finishes and materials shall be painted in an earth color tone, such as green, tan or brown or similar as approved by City staff, including roofing material and lighting fixtures. No metal material shall be left in an untreated state and shall be painted with a matted color that does not reflect light.	*City of Colusa, Building and Planning Departments*	*Building and improvement plans for the site shall indicate compliance with the mitigation measure prior to issuance of a building permit.*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
2. AIR QUALITY			
AQ-1: CARB Tier4 Certified Equipment Prior to the certificate of construction related permits for the Triple Crown Cannabis Research and Development Center Project, the Project applicant shall demonstrate to the satisfaction of the City of Colusa Planning Division that the following measure would be implemented during Project construction: - All dozers, scrapers, and graders used in Project construction shall be CARB Tier 4 Certified, as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.	*The City of Colusa Building and Planning Departments, Colusa County Air Pollution Control District*	*Prior to issuance of a building permit. Building and improvement plans for the site shall indicate compliance with the mitigation measure prior to issuance of a building permit*	
3. BIOLOGICAL RESOURCES			
BIO-1: Special Status Botanical Species A qualified botanist should conduct a protocol-level botanical survey during the appropriate survey window (i.e. blooming period) for special-status botanical species (i.e. heartscale) to determine presence or absence within the BSA. • If special-status botanical species are observed within the BSA, then mitigation measures that are recognized by CDFW will be implemented based on the level of potential impacts. Mitigation options recognized include: o The Project should be designed to avoid or minimize impacts to areas where special status botanical species occur and maintain protective elements such as, fencing, open space or conservation easements, and/or buffer zones around suitable habitat where special-status botanical species occur prior to construction activities and throughout construction activities and/or; o If the Project design cannot completely avoid impacts to special-status botanical species, then consultation with the CDFW should be conducted and on-site or off- site compensation (such as	*City of Colusa Planning Department*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording is included on construction or grading plans, prior to City permit issuance. Letter reports shall be maintained, as applicable, by Planning staff throughout construction.* *On going during ground disturbance activities.*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
through a mitigation bank) may be required to mitigate for impacts.			
Mitigation Measure BIO-2: Crotch's Bumble Bee To avoid impacts to Crotch's bumble ee, the following are recommended avoidance and minimization measures: • A qualified biologist should conduct a bumble bee survey during the worker bee active period; (for Crotch's bumble bee: April-August). • Assume all bumble bees are special-status bees. If CBB or other species of bumble bees are observed during Project activities, allow the bumble bee to leave the work area under its own volition and notify a qualified biologist of the observation to determine appropriate avoidance measures. • If a CBB nest is discovered during surveys or construction activities, the qualified biologist should establish a non-disturbance buffer around the suitable nesting habitat and CDFW should be consulted. No work should occur within the buffer until the nest is confirmed to be inactive. • If CBB are discovered to be present at the site, then it is advised that a CESA incidental Take Permit (ITP) is obtained prior to construction activities occurring in the buffer area defined by the biologist in coordination with CDFW	*City of Colusa Planning Department*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording is included on construction or grading plans, prior to City permit issuance. Letter reports shall be maintained, as applicable, by Planning staff throughout construction.*	
BIO-3: Monarch Butterfly In the event that monarch butterfly is formally listed by the USFWS during development of the project site, the following avoidance and minimization measures are recommended: • If monarch butterfly is observed consult with the USFWS on appropriate avoidance, minimization and mitigation measures.	*City of Colusa Planning Department*	*Prior to issuance of grading permits or any other ground activities, City staff shall verify that this Mitigation is applicable to the project in that the monarch butterfly is listed by the USFWS or not. In the event it is, City staff will ensure that appropriate mitigation language is placed on all grading, improvement*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
• If any milkweed plants are discovered during survey efforts, then protection buffers should be established around the milkweed plants, as determined by a qualified biologist and consultation with the USFWS should be initiated. • If a monarch butterfly is observed during Project activities, allow the monarch butterfly to leave the work area on its own accord.		*and building plans prior to issuance of permits.*	
BIO-4: Giant Garter Snake If the proposed project does not involve work in or within 200 feet of the canal/riverine habitat the following avoidance and minimization measures are recommended: • A pre-construction survey shall be conducted 24 hours before any ground disturbance activities around the creek channel. The survey should be repeated if there is a lapse in construction for • A qualified biologist shall be present on-site during vegetation removal to monitor for GGS. • If a GGS is encountered during construction activities, then construction shall stop within the area of the sighting until the snake has left the work area or a qualified biologist has determined that there will be no harm to the snake. Any sightings or incidental take shall be reported to the USFWS and CDFW within 24 hours. • Before initiating any ground disturbances, restrictive silt fencing will be installed along the construction boundaries to prevent wildlife (i.e., reptiles, mammals, birds, etc.) from entering the construction site from the adjacent aquatic settings and to prevent construction equipment and personnel from entering potential habitat from the construction site. • Prior to commencement of construction, contractors and work crews that are onsite for more than 30 minutes, shall go through a worker environmental awareness training (WEAT) regarding avoidance of GGS and the possible penalties for not complying with these requirements. The training can be given by a qualified	*City of Colusa Planning Department*	*Prior to issuance of grading permits or any other ground activities, City staff shall verify that Mitigation has been placed on all grading, building and improvement plans and plans identify improvements in relationships to canal/riverine habitat. Mitigation will also be satisfied through the issuance of a written verification from a qualified biologist after the site survey.* *On going during ground disturbance activities.*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
biologist or the Foreman that has been trained by the qualified biologist to conduct the WEAT. If work is proposed to occur in or within 200 feet of the canal/riverine, then consultation with the USFWS and CDFW will be required prior to any ground disturbance or in-water work. Any avoidance, minimization and mitigation measures identified by the results of the consultation with USFWS and CDFW shall be incorporated into the project conditions.			
BIO-5: Northwestern Pond Turtle The following are avoidance and minimization measures recommended in order to avoid and minimize potential impacts to northwestern pond turtle: • Immediately prior to conducting vegetation removal or ground-disturbing activities in suitable northwestern pond turtle habitat, a qualified biologist shall conduct a survey to determine the presence or absence of western pond turtles. If western pond turtles are observed where they could be potentially impacted by project activities, as determined by the onsite biologist, then work shall not be conducted within 100 feet of the sighting until the turtle has left the project site or a qualified biologist has relocated the turtle to suitable habitat outside of the project boundary. • If turtle eggs are uncovered during construction activities, then all work shall stop within a 25-foot radius of the nest and the qualified biologist should be notified immediately. The 25-foot buffer should be marked with identifiable markers that do not consist of fencing or materials that may block the migration of young turtles to the water or attract predators to the nest site. No work will be allowed within the 25-foot buffer until consultation with CDFW has occurred. • All portions of the project site that could result in inadvertently trapping turtles, such as open pits, trenches, and dewatered areas will be covered and/or exclusion fencing will be installed to prevent turtles from entering these areas.	*City of Colusa Planning Department*	*Prior to issuance of grading permits or any other ground activities, City staff shall verify that Mitigation has been satisfied through the issuance of a written verification from a qualified biologist.* *On going during ground disturbance activities.*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
• In the event that northwestern pond turtle is formally listed by USFWS prior to or during development of the project site, consultation with USFWS shall be conducted and any avoidance, minimization and mitigation measures identified by the results of the consultation shall be incorporated into the project conditions.			
BIO-6: Western Burrowing Owl To avoid impacts to WEBO from Project activities, the following are recommended avoidance and minimization measures. • Per the CDFW Staff Report on Burrowing Owl Mitigation, direct impacts will be avoided by conducting a preconstruction survey within 14 days of the start of Project activities. o A qualified biologist will conduct the preconstruction survey. The biologist will have familiarity with the species and its local ecology, experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor; familiarity with the appropriate state and federal statutes related to burrowing owls, scientific research, and conservation; and experience with analyzing impacts of development on burrowing owls and their habitat. • If a burrowing owl or its burrow is observed within the Project limits or within 500 feet of the Project limits, work will stop within 500 feet of the observation, and a no disturbance buffer will be established and consultation with CDFW shall be initiated to identify appropriate avoidance, minimization and mitigation measures, which may include the acquisition of an Incidental Take Permit.	*City of Colusa Planning Department*	*Prior to issuance of grading permits or any other ground activities, City staff shall verify that Mitigation has been satisfied through the issuance of a written verification from a qualified biologist.* *On going during ground disturbance activities.*	
Bio-7: Tricolored Blackbird To avoid impacts to TRBL from Project activities, the following are recommended avoidance and minimization measures. • Conduct a pre-construction survey to determine presence or	*City of Colusa Planning Department*	*Prior to issuance of grading permits or any other ground activities, City staff shall verify that Mitigation has been satisfied through the issuance*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
absence of nesting tricolored blackbird within 500 feet of mapped potentially suitable habitat. The pre-construction survey will be conducted within 7 days prior to ground-disturbing activities. • If any tricolored blackbirds' nests are observed within 500 feet of the Project Boundary, the City will be notified and will then consult with CDFW for further guidance.		*of a written verification from a qualified biologist.* *On going during ground disturbance activities.*	
Bio-8: Swainson's Hawk To avoid impacts to Swainson's hawk from Project activities, the following are recommended avoidance and minimization measures: • If Project activities cannot begin prior to the avian breeding season (March 1 – August 31), then a pre-construction survey will be conducted to determine presence or absence of nesting Swainson's hawks within a quarter-mile of the Project Boundary. The pre-construction survey will be conducted within 7 days prior to ground-disturbing activities. • If a Swainson's hawk nest is observed within a quarter-mile radius of the Project Boundary, the City will be notified and will then consult with CDFW for further guidance.	*City of Colusa Planning Department*	*Prior to issuance of grading permits or any other ground activities, City staff shall verify that Mitigation has been satisfied through the issuance of a written verification from a qualified biologist.* *On going during ground disturbance activities.*	
Bio-9: Migratory Birds and Raptors To avoid impacts to avian species protected under the MBTA and CFGC, the following avoidance and minimization measures are recommended: • Project activities, including site grubbing and vegetation removal, should be initiated outside of the bird nesting season (February 1 – August 31) whenever feasible. • If Project activities cannot be initiated outside of the bird nesting season, then the following will occur: o A qualified biologist shall conduct a nesting bird survey within 250 feet of the BSA, where accessible, within 7	*City of Colusa Planning Department*	*Prior to issuance of grading permits or any other ground activities, City staff shall verify that Mitigation has been satisfied through the issuance of a written verification from a qualified biologist.* *On going during ground disturbance activities.*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
days prior to the start of Project activities. o If an active nest (i.e., containing egg[s] or young) is observed within the BSA or in an area adjacent to the BSA where impacts could occur, then a species protection buffer will be established by the qualified biologist and in consultation with appropriate agencies. The species protection buffer will be defined by a qualified biologist based on the species, nest type, and tolerance to disturbance. Construction activity shall be prohibited within the buffer zones until the young have fledged, or the nest fails, as determined by a qualified biologist. Nests shall be monitored by a qualified biologist once per week and a report submitted to the CEQA lead agency weekly.			
5. CULTURAL RESOURCES			
CULT-1: Construction Notes and Stop Work. A note shall be placed on all grading and construction plans which informs the construction contractor that if any bones, pottery fragments or other potential cultural resources are encountered during construction, all work shall cease within the area of the find pending an examination of the site and materials by a professional archaeologist. If during ground disturbing activities, any bones, pottery fragments or other potential cultural resources are encountered, the developer or their supervising contractor shall cease all work within the area of the find and notify Planning staff at (530) 458-4740. A professional archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology and who is familiar with the archaeological record of Colusa County, shall be retained by the applicant to evaluate the significance of the find. Site work, within 100 feet of the discovery, shall not resume until the archaeologist conducts sufficient research, testing and analysis of the archaeological evidence to make a determination that the resource is either not cultural in origin or not potentially significant. If a potentially significant resource is encountered, the archaeologist shall prepare a mitigation plan for review and approval by the City of Colusa Staff, including recommendations for chain of command,	*City of Colusa Planning Department*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording is included on construction or grading plans, prior to City permit issuance. Letter reports shall be maintained, as applicable, by Planning staff throughout construction.* *On going during ground disturbance activities.*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
total data recovery, Tribal monitoring, disposition protocol, or avoidance, if applicable. All measures determined by City Staff to be appropriate shall be implemented pursuant to the terms of the archaeologist's report. The preceding requirement shall be incorporated into construction contracts and plans to ensure contractor knowledge and responsibility for proper implementation.			
CULT-2: Discovery. If archaeological resources are encountered during construction, work shall be temporarily halted within 100 feet of the discovered materials and a qualified archaeologist and the City of Colusa shall notify all the local tribes on the consultation list maintained by the State of California Native American Heritage Commission, to provide local tribes the opportunity to monitor evaluation of the site during underground construction related activities. Construction fencing (4-foot-high orange safety fence) shall be installed around the 100-foot setback of the discovery. Workers shall avoid altering the materials and their context until a qualified professional archaeologist, in collaboration with the local tribes, has evaluated the situation and provided appropriate recommendations. Project personnel shall not collect archaeological resources. [Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.]	*City of Colusa Planning Department*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording is included on construction or grading plans, prior to City permit issuance. Letter reports shall be maintained, as applicable, by Planning staff throughout construction.* *On going during ground disturbance activities.*	
CULT-3: Documentation. Any identified cultural resources shall be recorded on DPR 523 historic resource recordation forms by a qualified archaeologist, available online from the Office of Historic Preservation's website: **http://ohp.parks.ca.gov/default.asp?page_id=1069.**	*City of Colusa Planning Department*	*On going during ground disturbance activities.*	
6. Energy			

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
(PEIR) ENG-1: Prohibited Energy Sources. Utilization of gas or diesel generators other than for emergency back up power, are prohibited.	*City of Colusa Planning Department*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording is included on construction or grading plans, prior to City permit issuance.* *On going during construction activities.*	
(PEIR) ENG-2: Energy Sources: Energy sources for the project will be provided from any combination of the following sources: (a) on-grid power with 42 percent renewable sources; (b) on-site zero-net-energy renewable sources providing 42 percent of power; or (c) purchase of carbon offsets for any portion of power above 58 percent not from renewable sources; (d) the cultivator must demonstrate that the equipment used is 42 percent more energy efficient compared to standard equipment, using 2014 as a baseline 2 year.	*City of Colusa Planning Department*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation is incorporated into the building and improvement plans, prior to City building permit issuance.*	
7. GEOLOGY AND SOILS			
GEO-1: Discovery. In the event that fossils or fossil-bearing deposits are discovered during anticipated future construction on-site, the contractor shall notify a qualified paleontologist to examine the discovery and excavations within 50 feet of the find shall be temporarily halted or diverted. The area of discovery shall be protected to ensure that fossils are not removed, handled, altered, or damaged until the Site is properly evaluated and further action is determined. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the	*City of Colusa Planning Department.*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording is included on construction or grading plans, prior to City permit issuance.* *On going during ground disturbance activities*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
qualities that make the resource important. The plan shall be submitted to the city for review and approval prior to implementation.			
9. HAZARDS AND HAZARDOUS MATERIALS			
HAZ 1. Prepare and Implement a Construction Traffic Management Plan Prior to issuance of a grading permit, the applicant, in consultation with the City of Colusa Police and Fire Departments, shall prepare a construction traffic management plan that ensures construction-related traffic does not impact vehicle movements along Will S. Green Avenue or Colusa Avenue near Colusa High School. At a minimum, such a Plan should prohibit truck traffic from parking or being stored along Will. S. Green Avenue. The plan should also include additional signage and heighten awareness of high pedestrian points, such as parking or crosswalks. Such signage or heighten awareness can include visibility markers, flags for students to utilize while crossing a cross walk, temporary barriers to ensure parking is separated from vehicle traffic. The Plan shall be shared with all vendors and subcontractors to the site. The Plan shall be approved by City staff.	*City of Colusa Planning, Police and Fire Departments*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording is included on construction or grading plans, prior to City permit issuance.* *On going during ground disturbance activities*	
10. HYDROLOGY AND WATER QUALITY			
HYDR-1: Drought Tolerant Landscaping. Prior to the issuance of a final occupancy permit for structures within the project, the applicant shall ensure that any outdoor landscaping installed are installed pursuant to AB 1881 water usage requirements (the Water Conservation in Landscaping Act of 2006) and will be drought tolerant and on drip irrigation systems with timers.	*The City of Colusa Planning Department.*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that landscaping plans are designed to meet the Mitigation requirement.*	
18. Tribal Cultural Resources			
TCR- 1: Consult. Consult with Native American Tribes and Prepare and Implement Treatment Plans for any Tribal Cultural Resources (TCR) Identified	*The City of Colusa Engineering and Planning Department*	*Prior to issuance of grading permits or improvement plans, City staff shall verify that Mitigation wording*	

Proposed Mitigation	Monitoring Responsibility	Timing	Verification (Date and Initials)
at the Site. If TCRs are identified through this process, CDFA shall consult and work with the tribes to develop feasible alternatives or mitigation measures that will avoid impacts or develop and implement treatment plans that will substantially lessen the impacts on identified TCRs, in accordance with PRC Sections 21083(b)(2) or 21084.3.		*is included on construction or grading plans, prior to City permit issuance.* *Ongoing during construction activities.*	

PROJECT APPLICANT'S INORPORATION OF MITIGATION INTO THE PROPOSED PROJECT:

I have reviewed the Initial Study for the City of Colusa Annexation - Colusa Triple Crown Project t and the mitigation measures identified within. As the applicant for the foregoing, I hereby modify the project on file with the City of Colusa and agree to include and incorporate all mitigation measures as set forth in this document.



Authorized Signature

Michael S. OLivas

Printed Name and Date

TRAFFIC IMPACT STUDY

FOR

WASTEWATER TREATMENT PLANT ANNEXATION

April 28, 2025

PREPARED FOR:

City of Colusa

PREPARED BY:

GCW

ENGINEERS \ SURVEYORS



GCW, Inc.
5482 Longley Lane, Suite B, Reno, Nevada 89511
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YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study evaluates the potential traffic impacts associated with the proposed Wastewater Treatment Plant Annexation project in Colusa, California. This study of potential transportation impacts was undertaken for planning purposes and to assist in determining what traffic controls or mitigations may be needed to reduce potential impacts, if any are found.

What does the project consist of?

The project consists of the annexation of the agricultural land adjacent to and bordering the east and south sides of the Colusa Wastewater Treatment Plant, including the Brookins Ranch property, from Colusa County into the City of Colusa. The total land area to be annexed is approximately 672 acres. The land zoned as AG - Agricultural General consists of approximately 510 acres, while the Brookins Ranch property, currently zoned LD – Low Density Residential, consists of approximately 162 acres. In addition to the annexation, the City is evaluating the proposed development of approximately 86 acres of the AG zoned land, east of the Wastewater Treatment Plant, for the Colusa Triple Crown facility – a cannabis research and development park.

For traffic operations analysis purposes, the "Project" consists of traffic generated by the Colusa Triple Crown cannabis research and development park. Additional traffic generated by all other property within the annexation boundary was included in the baseline traffic volumes.

What Improvements are planned by the City of Colusa?

The City has plans to pave/repave the roadway surface on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street. As part of the paving project, the City will post 35 mph or lower speed limit signs on Will S Green Avenue and 25 mph speed limit signs on Colus Avenue. The City will also post a "No Public Access" sign on Will S Green Avenue south of Colus Avenue.

The *City of Colusa Bikeway Master Plan* (December 2012) identifies existing and proposed bicycle facilities in the City of Colusa, including a Class I "Loop Trail" around the city. The southwest portion of the Loop Trail would follow the Abandoned Railroad and cross Will S Green Avenue south of Colus Avenue.

How much traffic will the project generate?

Intersection level of service analysis was conducted for the 5:30 AM to 6:30 AM Morning peak period and the 1:30 PM to 2:30 PM Afternoon peak period to capture the proposed employee shift changes of the Colusa Triple Crown operation, as these are the periods of time in which peak traffic is anticipated to occur. Analysis of the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak commute periods was

not included because project traffic generated during these periods is much lower than the Morning and Afternoon peak hours. The worst case traffic volumes associated with the project are evaluated. The Colusa Triple Crown project is anticipated to generate approximately 832 Daily, 244 Morning peak hour, 60 AM peak hour, 324 Afternoon peak hour, and 16 PM peak hour trips to the external roadway network.

The Colusa Triple Crown project proposes to implement transportation demand management strategies that are intended to promote multi-modal activity, manage Vehicle Miles Traveled (VMT), and thereby reduce greenhouse gas (GHG) emissions associated with the project. The project proposes to provide shuttle service, bicycle parking, electric vehicle charging stations, and carpool/ride-share incentives for Colusa Triple Crown employees.

How will project traffic affect the roadway network?

Under Baseline Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds during the Morning and Afternoon peak hours.

Under Future Year Plus Project conditions, the westbound approach of the SR 20 (10th Street)/Sioc Street intersection is expected to operate at LOS E during the Afternoon peak hour, however the overall intersection is expected to operate at LOS A (within policy level of service thresholds). Traffic engineering practitioners recognize that LOS E/F conditions for the side street approach, during the peak hour(s), does not indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and suburban areas and is manageable when there are alternate routes which drivers can use to avoid a particular movement with delay. No improvement or mitigation is recommended.

What are the CEQA impact analysis findings related to transportation?

The project would have a less-than-significant impact on public transit.

The project would have a less-than-significant impact on alternative transportation modes.

The project would have a less-than-significant impact on vehicle circulation.

The project would have a less-than-significant impact on Vehicle Miles Traveled (VMT).

The project would have a less-than-significant impact related to safety and design features.

The project would have a less-than-significant impact related to emergency access.

No significant impacts related to transportation have been identified.

Are any improvements recommended?

On Wednesdays, Colusa High School is dismissed at 2:10 PM (regular dismissal is at 3:10 PM every other weekday) and the high school traffic would overlap with the Colusa Triple Crown project traffic if the Colusa Triple Crown operation followed its initially proposed work shift schedule. It is recommended that the Colusa Triple Crown shifts (proposed from 6:00 AM to 2:00 PM and 2:00 PM to 10:00 PM) be adjusted to avoid any overlap with high school traffic. Field observations indicate that high school traffic typically disperses within approximately 10 minutes of the release time; therefore, the shift times should be established so that heavy project traffic generation does not occur during the 2:10 PM to 2:20 PM period on Wednesdays or the 3:10 PM to 3:20 PM period on other weekdays.

The Colusa Triple Crown project will add notable traffic volumes to Will S Green Avenue, Colus Avenue, and 8th Street, and should contribute a fair share contribution toward the roadway surface improvements on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street.

There are numerous existing dirt roads to the east, west, and south of the project site that could be used for emergency access which connect to other local and collector roadways. At least one alternate/emergency route should be identified, designated, and signed by the City from the annexation area to a collector roadway, not using Will S Green Avenue (the primary project access).

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INTRODUCTION

This report presents the findings of a Traffic Impact Study completed to assess the potential traffic impacts on local intersections associated with the proposed Wastewater Treatment Plant Annexation project in Colusa, California. This traffic impact study has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, identify potential impacts, document findings, and make recommendations to mitigate impacts, if any are found. The location of the project is shown on **Figure 1** and the annexation map is shown on **Figure 2**.

Study Area and Evaluated Scenarios

The project consists of the annexation of the agricultural land adjacent to and bordering the east and south sides of the Colusa Wastewater Treatment Plant, including the Brookins Ranch property, from Colusa County into the City of Colusa. The total land area to be annexed is approximately 672 acres. The land zoned as AG - Agricultural General consists of approximately 510 acres, while the Brookins Ranch property, currently zoned LD – Low Density Residential, consists of approximately 162 acres. In addition to the annexation, the City is evaluating the proposed development of approximately 86 acres of the AG zoned land, east of the Wastewater Treatment Plant, for the Colusa Triple Crown facility – a cannabis research and development park.

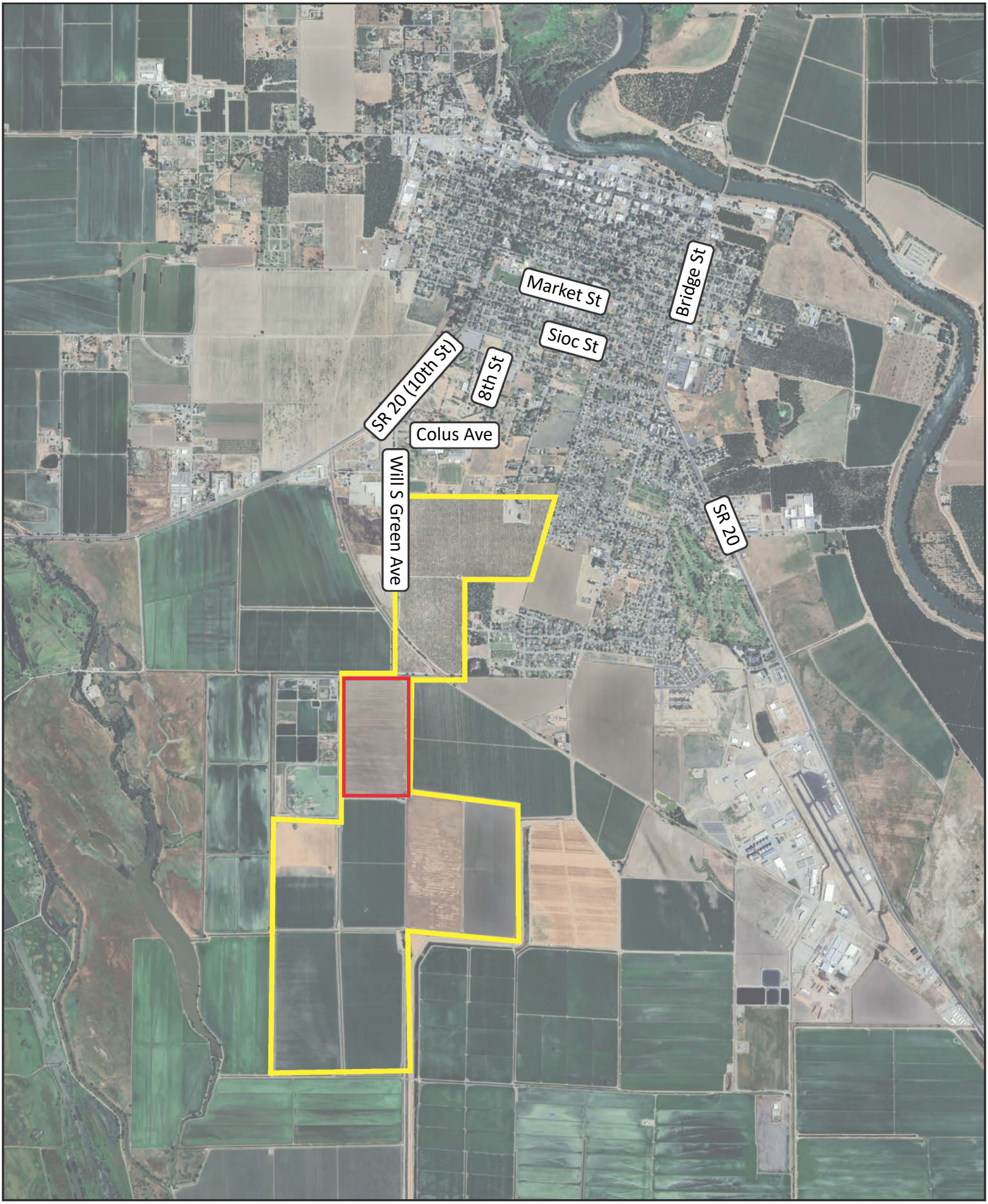
The project is located south of SR 20 and the Colusa city limit. The 162-acre Brookins Ranch property is located east of Will S. Green Avenue and south of Colusa High School. The 510 acres of agricultural property is located south of the Will S. Green Avenue/Wastewater Treatment Plant Access Road intersection. The study intersections were identified with City of Colusa staff as those most likely to be impacted by project traffic. The following intersections are included in this study and shown on **Figure 3**:

1. SR 20/Will S Green Avenue
2. Will S Green Avenue/Colus Avenue
3. SR 20 (10th Street)/Sioc Street
4. Sioc Street/8th Street
5. SR 20 (Bridge Street)/Sioc Street

This study includes analysis of the weekday 5:30 AM to 6:30 AM Morning peak hour and the 1:30 PM to 2:30 PM Afternoon peak hour to capture the proposed employee shift changes of the Colusa Triple Crown operation, as these are the periods of time in which peak traffic is anticipated to occur. The evaluated development scenarios are:

- Existing Conditions
- Baseline Conditions – includes proposed annexations with existing land uses plus planned/approved projects
- Baseline Plus Project Conditions – includes the Colusa Triple Crown project

- Future Year Conditions – 20-year horizon, includes background regional growth, other planned/approved projects, annexations, and the Brookins Ranch property with Low Density Residential zoning
- Future Year Plus Project Conditions – includes the Colusa Triple Crown project



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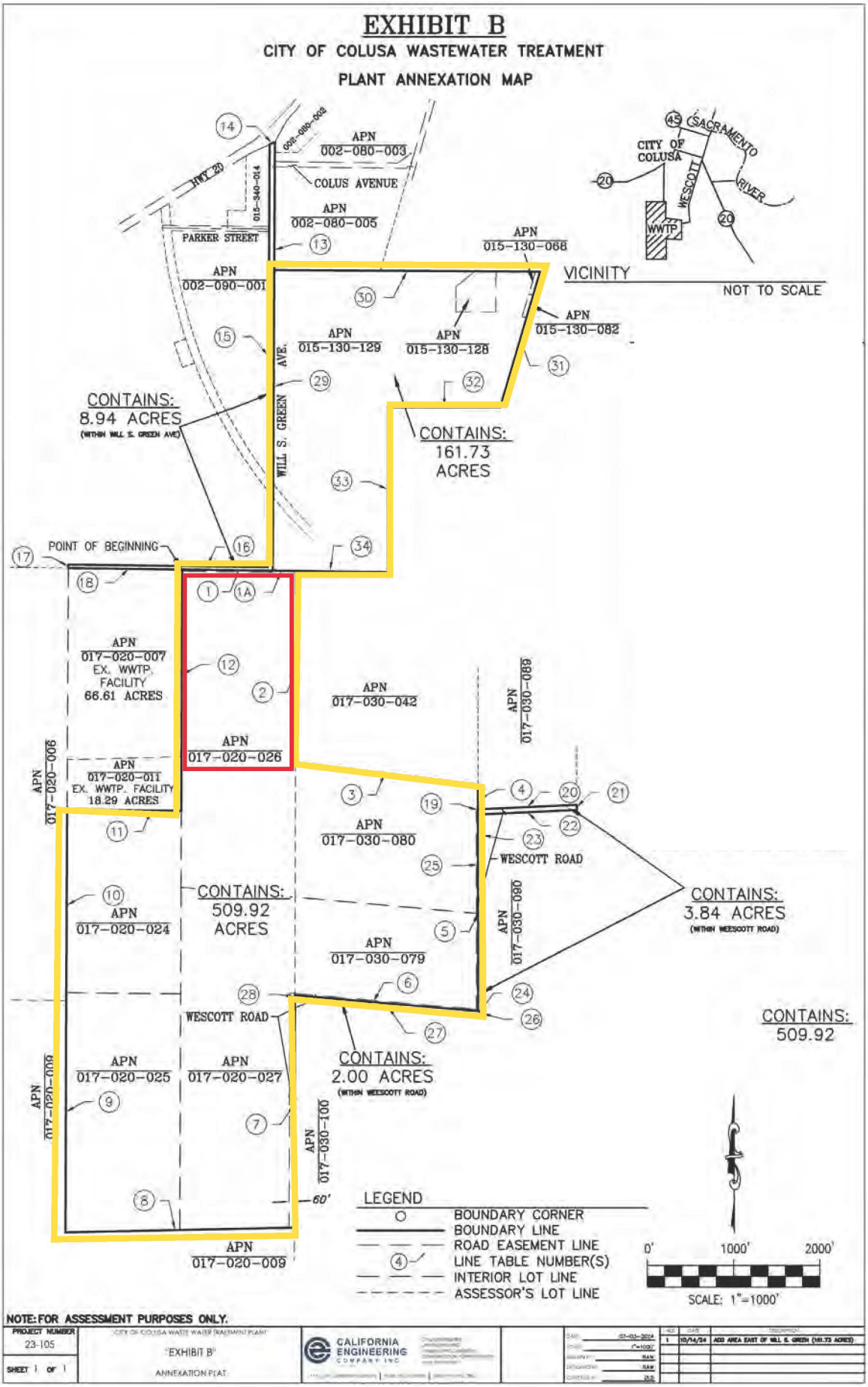
- Annexation Boundary

- Colusa Triple Crown Project Location

Figure 1

Wastewater Treatment Plant Annexation
Traffic Impact Study

Regional Project Location



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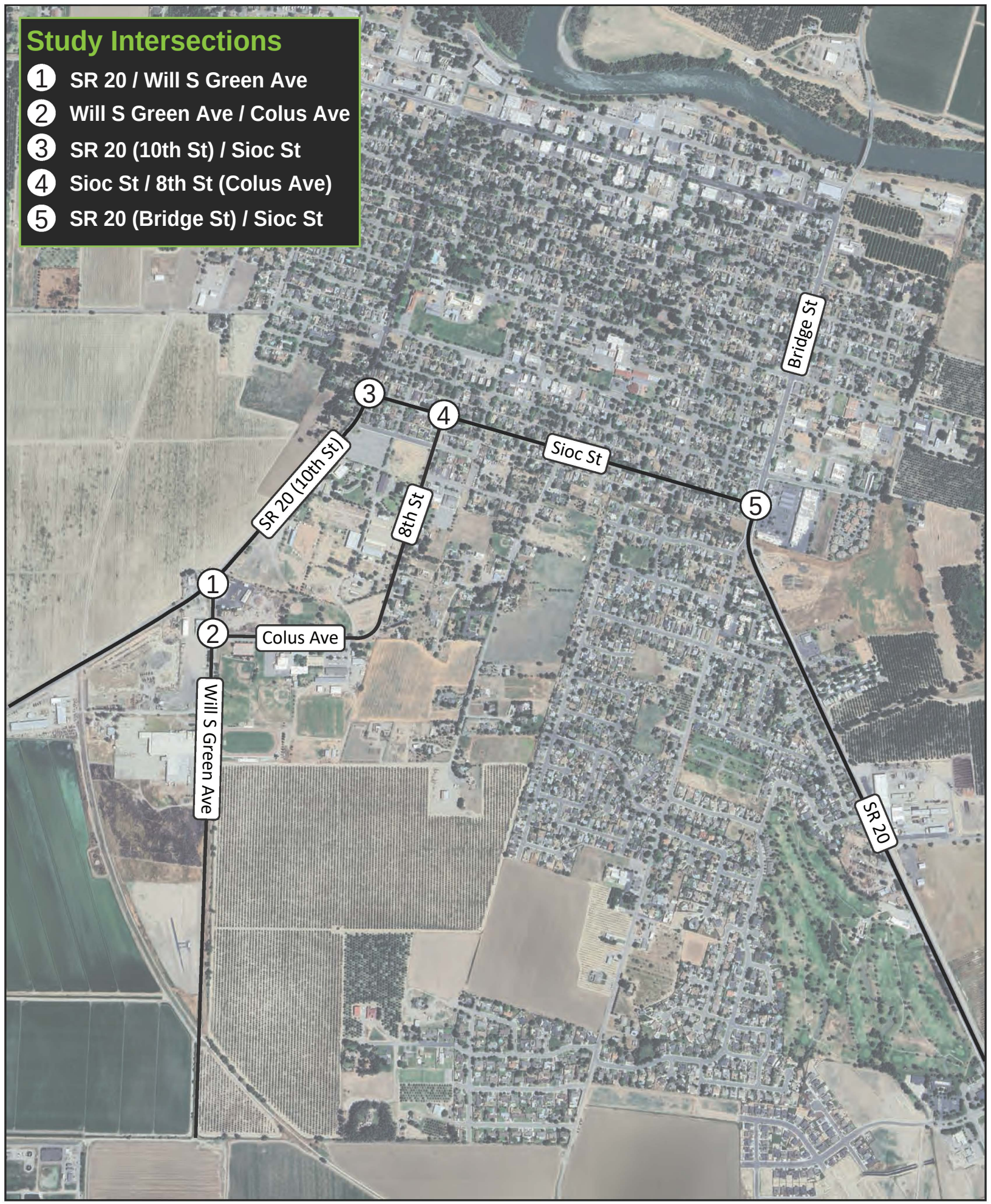
- Annexation Boundary

- Colusa Triple Crown Project Location

Figure 2

Wastewater Treatment Plant Annexation
Traffic Impact Study

Proposed Annexation Map



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(#) - Study Intersection

Figure 3

Wastewater Treatment Plant Annexation
Traffic Impact Study
Study Intersections

ANALYSIS METHODOLOGY

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term equates seconds of delay per vehicle at intersections to letter grades "A" through "F" with "A" representing optimum conditions and "F" representing breakdown or over capacity flows.

Intersections

The complete methodology for intersection level of service analysis is established in *the Highway Capacity Manual (HCM), 7th Edition* published by the Transportation Research Board (TRB). **Table 1** presents the delay thresholds for each level of service grade at signalized and unsignalized intersections.

Table 1: Level of Service Definition for Intersections

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles.	20 to 35	15 to 25
D	High density traffic conditions still with stable flow.	35 to 55	25 to 35
E	At or near capacity flows.	55 to 80	35 to 50
F	Over capacity conditions.	> 80	> 50

Source: *Highway Capacity Manual, 7th Edition*

Level of service calculations were performed for the study intersections using the Synchro 12 software package with analysis and results reported in accordance with *HCM* methodology.

Level of Service Policy

City of Colusa

"Chapter 4.0 – Circulation" of the *City of Colusa General Plan* (October 2007) provides the following level of service policy for City roadways and intersections:

> Policy CIR-1.1: The City shall ensure the maintenance of acceptable Levels of Service (LOS) of City streets and intersections when considering new development within Colusa.
>
> Implementing Action CIR-1.1.a: Streets and Roadways Master Plan
> The City will prepare, adopt, and periodically update a Streets and Roadways Master Plan that establishes LOS C as the minimum acceptable LOS for City streets and intersections, except in the

downtown area on SR 20/45 and SR 20 (Market, Bridge, 10th, and Main Streets), where LOS D is established as the minimum acceptable LOS, consistent with Caltrans LOS standards for state highways through urban areas. If conditions of LOS D or worse are already present, future proposed projects may not cause roadway volumes to increase by five percent or more and will be accompanied by other mitigation measures intended to reduce trip generation.

Three of the five study intersections are located on SR 20. The following threshold criteria was used for each intersection:

1. SR 20/Will S Green Avenue – LOS D
2. Will S Green Avenue/Colus Avenue – LOS C
3. SR 20 (10th Street)/Sioc Street – LOS D
4. Sioc Street/8th Street (Colus Avenue) – LOS C
5. SR 20 (Bridge Street)/Sioc Street – LOS D

This policy is understood to apply to overall intersection level of service, not individual approaches/movements.

EXISTING CONDITIONS

Roadway Facilities

A brief description of the key roadways in the study area is provided below.

State Route (SR) 20 is generally an east-west state highway that connects Highway 101 in the west to Yuba Pass on Interstate 80 (I-80) east of Grass Valley and Nevada City. In the immediate project vicinity, adjacent to Will S Green Avenue, SR 20 is an arterial roadway that runs in a northeast-southwest direction with two lanes (one lane in each direction). North of Will S Green Avenue, SR 20 is also called 10th Street in the City of Colusa. The posted speed limit on SR 20 at Will S Green Avenue is 50 mph. North of Will S Green Avenue, the speed limit is 35 mph.

Will S Green Avenue is a north-south collector roadway with two lanes (one lane in each direction) between SR 20 and Colusa High School. South of Colusa High School, Will S Green Avenue becomes a dirt road and provides access to agricultural land and the Colusa Wastewater Treatment Plant. South of Colusa High School, the *City of Colusa General Plan* classifies Will S Green Avenue as a "Future Collector." The existing condition of the roadway is poor with many potholes and rough driving surfaces on both the paved and unpaved portions of the roadway. Will S Green Avenue does not have a posted speed limit.

Colus Avenue is an east-west collector roadway from Will S Green Avenue to 8th Street. Colus Avenue is an unstriped two-lane roadway with parking on the south side of the roadway for Colusa High School. Colus Avenue does not have a posted speed limit. At the east end of the roadway, Colus Avenue turns north and becomes 8th Street.

8th Street is a north-south collector roadway from Colus Avenue to Fremont Street. 8th Street is a two-lane roadway with a posted speed limit of 25 mph. At the south end of the roadway, 8th Street turns west and becomes Colus Avenue. The existing condition of the roadway is very poor with numerous potholes and a rough driving surface for the entire length of the roadway. Where 8th Street crosses Harris Street (south of Sioc Street), the roadway surface is uneven with drainage ditches on the north and south sides of Harris Street and a high crest in the middle of the roadway.

Sioc Street is an east-west collector roadway that runs from SR 20 (10th Street) to SR 20 (Bridge Street). Sioc Street serves individual residences with driveways. The roadway does not currently have posted speed limit signs. Signs stating "No Trucks Allowed Over 4 Tons" are posted at the east and west ends of Sioc Street.

Bicycle & Pedestrian Facilities

Some bicycle and pedestrian facilities exist in the project area and near the study intersections, but in general there are not many facilities in Colusa. Sidewalk exists on the south side of Colus Avenue along the Colusa High School frontage. Separated sidewalks also exist sporadically along Sioc Street. Bridge Street (also called SR 20), north of Wescott Road, also has sidewalks on both sides of the roadway.

The *City of Colusa Bikeway Master Plan* (December 2012) identifies existing and proposed bicycle facilities in the City of Colusa. According to the *Bikeway Master Plan*, there are two roadways with existing facilities, neither of which are near the proposed project or study intersections. This was confirmed during field review for the proposed project.

Proposed bicycle facilities in the project vicinity include a Class I "Loop Trail" around the city. The southwest portion of the Loop Trail would follow the Abandoned Railroad and the northeast portion would follow the Sacramento River. Class II bicycle lanes are also proposed on 8th Street from Fremont Street to Colus Avenue, and Class III bicycle routes are proposed on Sioc Street from 3rd Street to Bridge Street and on Bridge Street from Carson Street to Sioc Street.

Transit Facilities

Colusa County Transit Agency (CCTA) provides demand responsive service with fixed time routes in Colusa County. Service is provided on weekdays from 7:00 AM to 5:00 PM in and between Colusa, Williams, Arbuckle, Princeton, Maxwell, Stonyford, Sites, and Grimes/Meridian.

Traffic Volumes

Existing traffic volumes were collected at the study intersections during the Morning and Afternoon peak periods on Tuesday, February 11, 2025 with Colusa High School in regular session. The Morning peak period counts were collected from 5:30 AM to 8:30 AM to capture the proposed shift change time of the Colusa Triple Crown project (at 7:00 AM) as well as the Colusa High School start time (at 8:10 AM). The

Afternoon peak period counts were collected from 1:00 PM to 4:00 PM to also capture the proposed shift change time of the Colusa Triple Crown project (at 2:00 PM) and the Colusa High School dismissal time (at 2:10 PM on Wednesdays and 3:10 PM all other days of the week). The existing Morning and Afternoon peak hour intersection turning movement volumes are shown on **Figure 4**. The traffic count data sheets are provided in **Appendix A**.

Intersection Level of Service Analysis

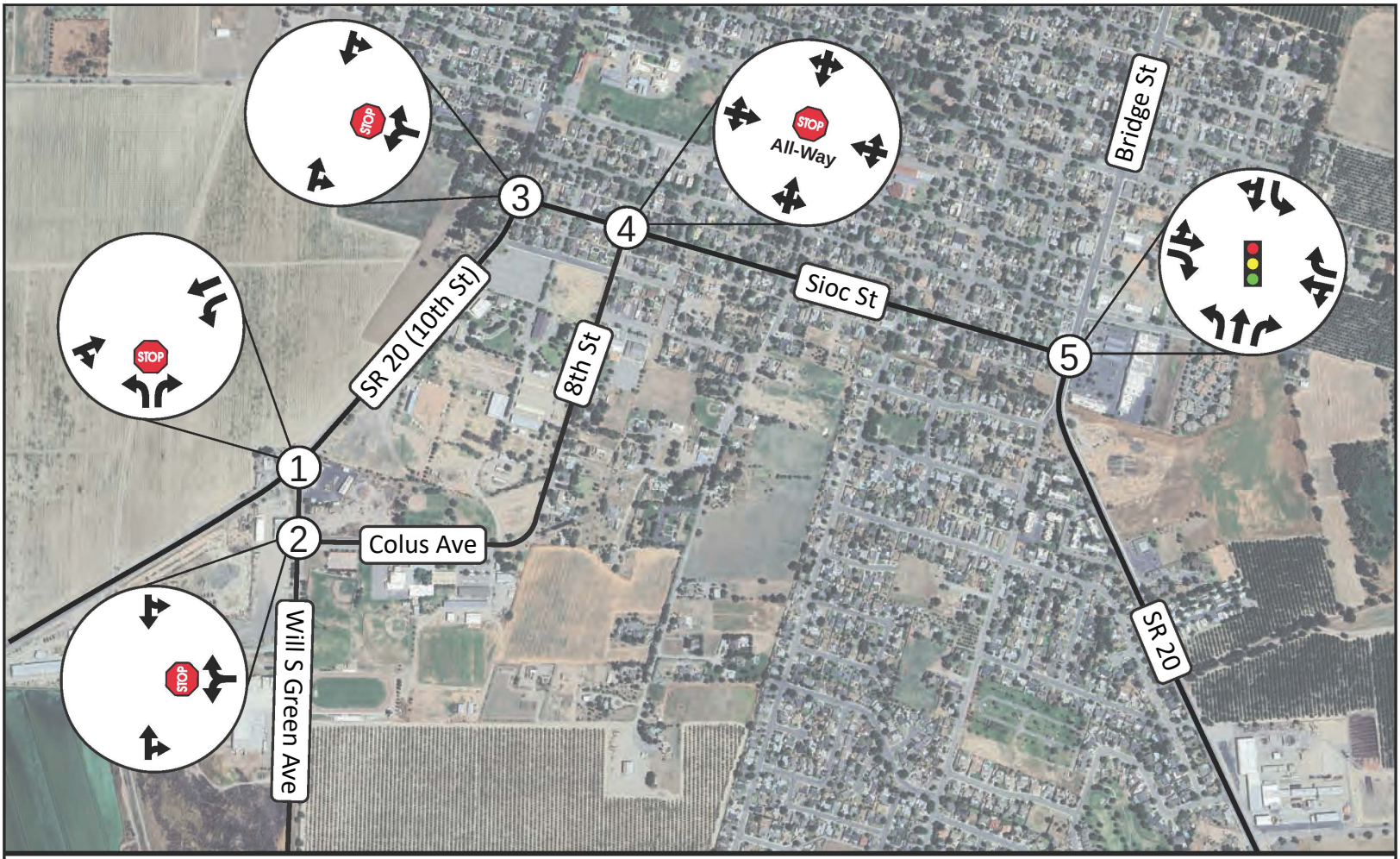
Existing Morning and Afternoon peak hour intersection level of service analysis was performed for the study intersections using Synchro 12 analysis software. The existing volumes, intersection lane configurations, and controls were used in the analysis and are shown on **Figure 4. Table 2** shows the existing conditions level of service results and the technical calculations are provided in **Appendix B**.

Table 2: Existing Intersection Level of Service

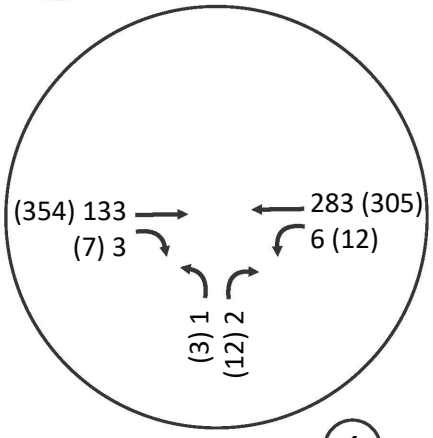
Int. ID	Intersection	Control	LOS Threshold	Morning[1]		Afternoon[2]	
				Delay[3]	LOS	Delay[3]	LOS
1	SR 20/Will S Green Ave	Side Street (NB) Stop	D				
	NB Approach			10	B	12	B
	WB Left			8	A	8	A
2	Will S Green Ave/Colus Ave	Side Street (WB) Stop	C				
	WB Approach			9	A	9	A
	SB Left			8	A	8	A
3	SR 20 (10th St)/Sioc St	Side Street (WB) Stop	D				
	WB Approach			12	B	17	C
	SB Left			8	A	8	A
4	Sioc St/8th St	All Way Stop	C				
	Overall			8	A	8	A
5	SR 20 (Bridge St)/Sioc St	Signal	D				
	Overall			9	A	19	B

Notes: 1. Morning Peak Hour = 5:30 AM to 6:30 AM
2. Afternoon Peak Hour = 1:30 PM to 2:30 PM
3. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
Source: GCW, 2025

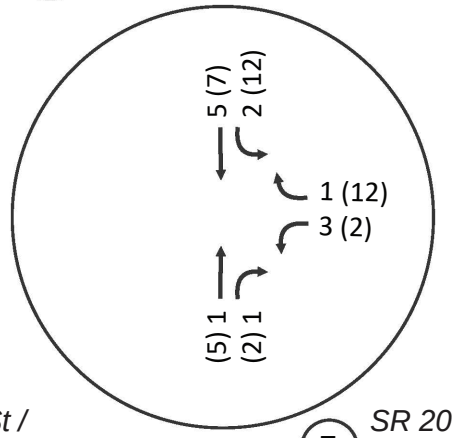
As shown in the table, the existing study intersections currently operate within policy level of service thresholds during the Morning and Afternoon peak hours.



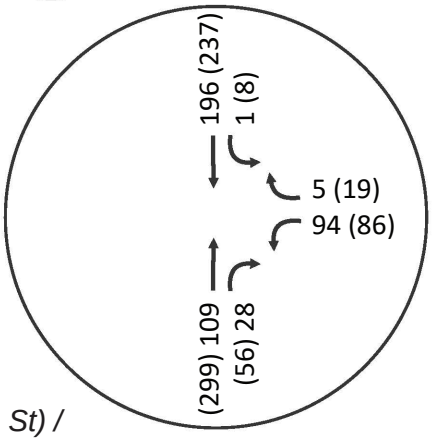
1 SR 20 / Will S Green Ave



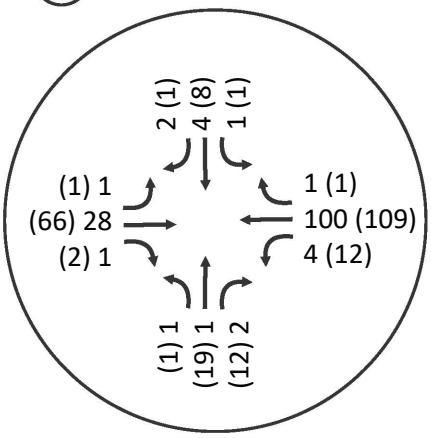
2 Will S Green Ave / Colus Ave



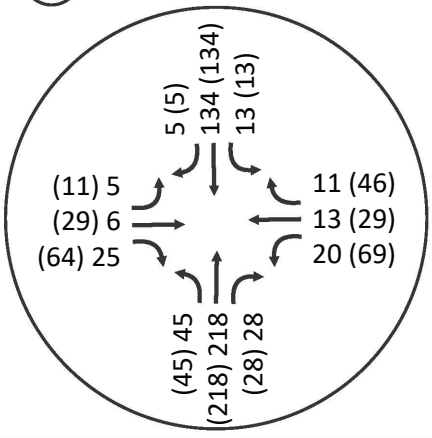
3 SR 20 (10th St) / Sioc St



4 Sioc St / 8th St



5 SR 20 (Bridge St) / Sioc St



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NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection

Figure 4

Wastewater Treatment Plant Annexation

Traffic Impact Study

Existing Traffic Volumes, Lane Configurations, and Controls

BASELINE CONDITIONS

The Baseline conditions analysis includes near-term planned/approved projects that are not yet built. Based on information provided by the City, there are two planned/approved projects that were included in the analysis. The Wescott Road Retail Center project includes a gas station, fast food restaurants, supermarket, and general retail space, and is located on the east and west sides of SR 20 at Wescott Road. The Wescott Ranch project includes 169 single family residential units located west of SR 20, east of Wescott Road, and south of Country Club Drive. These projects were reviewed, and estimated project traffic was added to the study intersections. The project trips from the planned/approved projects were adjusted to represent the peak hour analysis periods (5:30 AM to 6:30 AM and 1:30 PM to 2:30 PM) based on Vehicle Time of Day Distribution data from the Institute of Transportation Engineers (ITE). Additionally, the property included in the annexation boundary was analyzed based on existing land uses, which is captured in the existing traffic counts. No adjustments or increases in traffic volumes from the annexation are included in the Baseline scenario.

Traffic Volumes

Estimated traffic volumes generated by the Wescott Road Retail Center and Wescott Ranch projects were added to the existing turning movement volumes at the study intersections to develop Baseline conditions background traffic volumes. The Morning and Afternoon peak hour intersection turning movement volumes are shown on **Figure 5**.

Intersection Level of Service Analysis

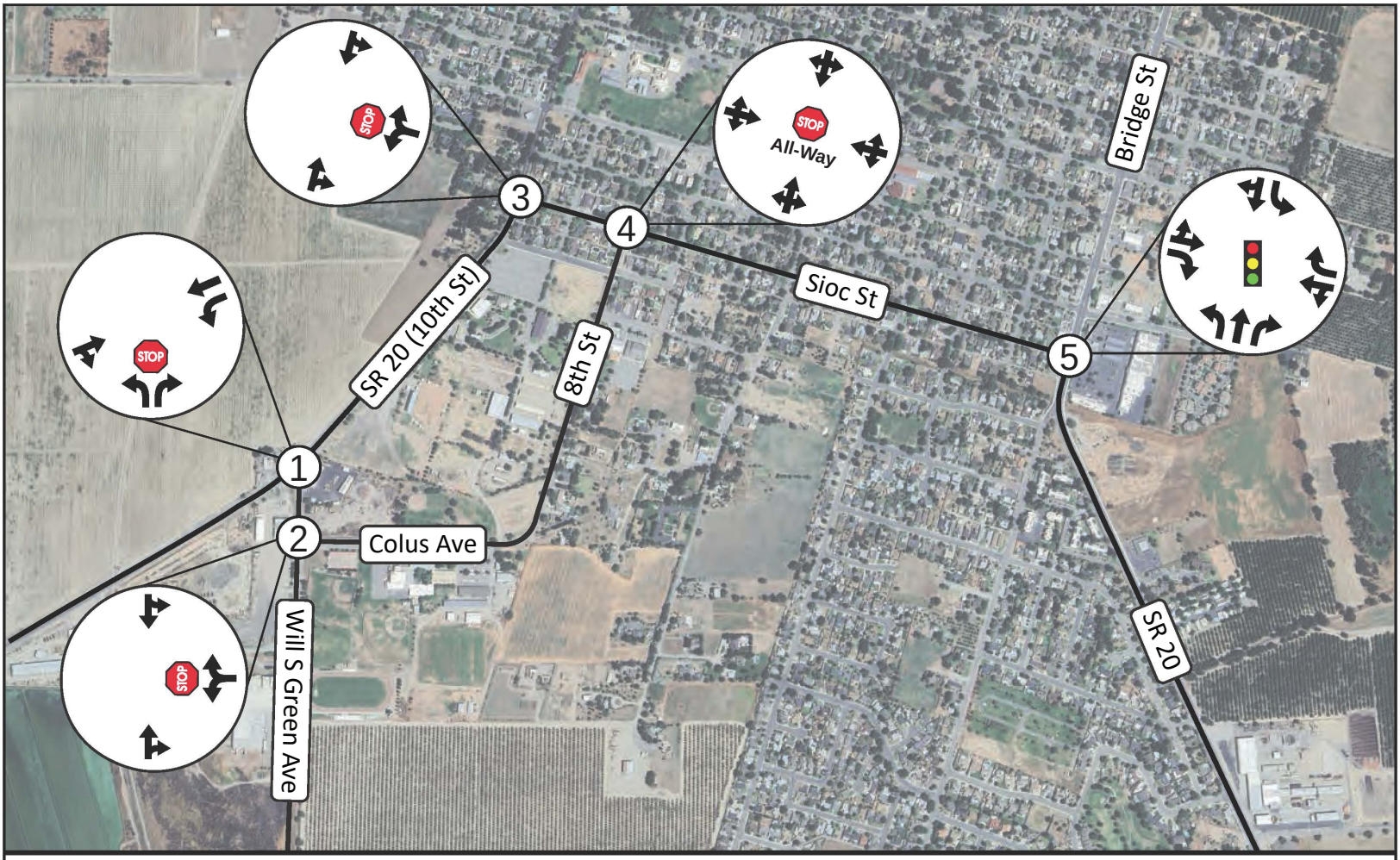
Baseline Morning and Afternoon peak hour intersection level of service analysis was performed for the study intersections. The existing peak hour factors and heavy vehicle percentages from the counts were used in the analysis. **Table 3** shows the Baseline conditions level of service results and the technical calculations are provided in **Appendix C**.

Table 3: Baseline Intersection Level of Service

Int. ID	Intersection	Control	LOS Threshold	Morning[1]		Afternoon[2]	
				Delay[3]	LOS	Delay[3]	LOS
1	SR 20/Will S Green Ave	Side Street (NB) Stop	D				
	NB Approach			11	B	12	B
	WB Left			8	A	8	A
2	Will S Green Ave/Colus Ave	Side Street (WB) Stop	C				
	WB Approach			9	A	9	A
	SB Left			8	A	8	A
3	SR 20 (10th St)/Sioc St	Side Street (WB) Stop	D				
	WB Approach			12	B	18	C
	SB Left			8	A	8	A
4	Sioc St/8th St	All Way Stop	C				
	Overall			8	A	8	A
5	SR 20 (Bridge St)/Sioc St	Signal	D				
	Overall			9	A	21	C

Notes: 1. Morning Peak Hour = 5:30 AM to 6:30 AM
2. Afternoon Peak Hour = 1:30 PM to 2:30 PM
3. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate within policy level of service thresholds during the Morning and Afternoon peak hours.



1 SR 20 / Will S Green Ave

(359) 135
(54) 9
285 (309)
18 (106)
(49) 23
(103) 47

2 Will S Green Ave / Colus Ave

23 (148)
2 (12)
1(12)
3 (2)
(142) 68
(2) 1

3 SR 20 (10th St) / Sioc St

202 (284)
3 (18)
8 (26)
102 (137)
(345) 132
(106) 52

4 Sioc St / 8th St

2 (1)
4 (8)
1 (3)
(1) 1
(126) 54
(2) 1
2 (3)
111 (167)
4 (14)
(1) 1
(19) 1
(14) 2

5 SR 20 (Bridge St) / Sioc St

6 (7)
151 (197)
13 (13)
(13) 6
(40) 12
(214) 77
11 (46)
14 (41)
21 (72)
(179) 77
(272) 236
(30) 29

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NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)
(#) - Study Intersection

Figure 5
Wastewater Treatment Plant Annexation
Traffic Impact Study
Baseline Traffic Volumes, Lane Configurations, and Controls

PROJECT CONDITIONS

For traffic operations analysis purposes, the Colusa Triple Crown facility is considered the "Project" as it is the element of the annexation that increases traffic in the near-term. Trip generation estimates, trip distribution, and assignment were developed for the Colusa Triple Crown facility and analyzed in the "Plus Project" scenarios.

Trip Generation

The Colusa Triple Crown project consists of a cannabis research and development facility with unique trip generation characteristics that are not represented by any standard trip generation rates presented in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition*. Therefore, trip generation estimates for the project were developed based on employee projections and project specific information provided by the project applicant. The project is expected to include up to 360 employees who would work during the following three shift times:

- Morning – 6:00 AM to 2:00 PM (210 – 240 employees)
- Afternoon – 2:00 PM to 10:00 PM (60 – 80 employees)
- Night – 10:00 PM to 7:00 AM (20 – 40 employees)

As shown above, the shift times have been intentionally structured to avoid peak commute periods (i.e. 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM) when traffic on the adjacent roadways would be the highest. Trip generation estimates were developed assuming employees arrive within the hour before their shift begins and leave within the hour after their shift ends. It was assumed that each employee would drive alone and make one trip to the site and one trip from the site (i.e. each employee makes two trips per day). It was also assumed that 10 percent of employees would make one additional round trip (i.e. two total trips) during their shift time for lunch or miscellaneous errands.

Approximately 20 deliveries are expected each day between 6:00 AM and 4:00 PM with the majority of deliveries between 6:00 AM and 1:00 PM. It is likely that deliveries would be spread out throughout the day. For analysis purposes it was assumed that 20 deliveries are made each day with approximately 50 percent arriving and departing during the AM peak hour (between 7:00 AM and 9:00 AM).

Table 4 shows the estimated Daily and peak hour project trip generation. Trip generation estimates are shown for the following highest trip generation/critical periods:

- Morning peak hour – 5:30 AM to 6:30 AM when morning shift employees are arriving
- Afternoon peak hour – 1:30 PM to 2:30 PM when morning shift employees are leaving and afternoon shift employees are arriving

Project trips were also estimated for the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak commute periods; however, intersection level of service analysis was not performed for these periods, since the project trip generation is much lower than the Morning and Afternoon peak hours.

Table 4: Trip Generation Estimates – Colusa Triple Crown

Trip Generator	Size/ Units	Trips[1]								
		Daily	Morning		AM		Afternoon		PM	
			Total	In/Out	Total	In/Out	Total	In/Out	Total	In/Out
Morning Shift (6AM-2PM)	240 employees	528	240	240 / 0	0	0 / 0	240	0 / 240	0	0 / 0
Afternoon Shift (2PM-10PM)	80 employees	176	0	0 / 0	0	0 / 0	80	80 / 0	16	8 / 8
Night Shift (10PM-7AM)	40 employees	88	0	0 / 0	40	0 / 40	0	0 / 0	0	0 / 0
Deliveries (6AM-4PM)	20 per day	40	4	2 / 2	20	10 / 10	4	2 / 2	0	0 / 0
Total		**832**	**244**	**242 / 2**	**60**	**10 / 50**	**324**	**82 / 242**	**16**	**8 / 8**

Notes: 1. Detailed trip generation calculations are provided in **Appendix D**.
Source: GCW, 2025

As shown in the table, the Colusa Triple Crown facility is expected to generate approximately 832 Daily, 244 Morning peak hour, 60 AM peak hour, 324 Afternoon peak hour, and 16 PM peak hour trips.

Trip Distribution

Project trips were distributed to the adjacent roadway network based on anticipated travel patterns and the majority of employees residing within the Colusa urban core. Project trips were distributed to the study intersections based on the following:

- 20% to/from the area west of Will S Green Avenue via SR 20
- 20% to/from the area south of Sioc Street via SR 20 (Bridge Street)
- 20% to/from the area north of Sioc Street via SR 20 (10th Street)
- 40% to/from downtown Colusa – it was assumed that trips would be dispersed throughout the urban core via local streets between 10th Street and Bridge Street

Figure 6 shows the project trip distribution and assignment.

Project Access

The property included in the City of Colusa annexation, including the Colusa Triple Crown facility, is accessed via Will S Green Avenue south of SR 20. Will S Green Avenue is a paved road from SR 20 to the southern property line of Colusa High School; south of the high school it becomes a dirt road.

The City has plans to pave/repave the roadway surface on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street and will post 35 mph or lower speed limit signs on Will S Green Avenue and 25 mph speed limit signs on Colus Avenue.

Other Project Features/Amenities

The Colusa Triple Crown project proposes to implement transportation demand management strategies that are intended to promote multi-modal activity, manage Vehicle Miles Traveled (VMT), and thereby reduce greenhouse gas (GHG) emissions, including:

- Providing shuttle service within the community for employees
- Assisting in the development of workforce housing within the City of Colusa
- Providing charging stations for electric vehicles on site
- Providing bicycle parking in various locations on site and providing shared bicycles
- Limiting on-site and off-site parking to encourage ride sharing and shuttle use
- Promoting car-share, bike-share, and ride-share programs to its employees
- Incentivizing carpooling by providing better parking locations within the project for carpool vehicles/drivers
- Providing golf carts and bicycles for employees to use within the project site
- Providing locker rooms with showers



1 SR 20 / Will S Green Ave

(16) 48
177 (60)
(48) 0
(177) 2

2 Will S Green Ave / Colus Ave

225 (76)
17 (6)
(225) 2
(17) 0

3 SR 20 (10th St) / Sioc St

61 (21)
116 (39)
(61) 1
(116) 1

4 Sioc St / 8th St

5 (2)
(116) 1
116 (39)
5 (2)
(5) 0
(5) 0

5 SR 20 (Bridge St) / Sioc St

12 (4)
(12) 0
(5) 0
(48) 0
5 (2)
(16) 48

ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)
(#) - Study Intersection ←XX%→ - Trip Distribution

Figure 6
Wastewater Treatment Plant Annexation
Traffic Impact Study
Project Trip Distribution and Assignment

BASELINE PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips (shown on **Figure 6**) generated by the Colusa Triple Crown facility (i.e. the "Project") were added to the Baseline traffic volumes (**Figure 5**) to develop the Baseline Plus Project conditions traffic volumes, shown on **Figure 7**.

Intersection Level of Service

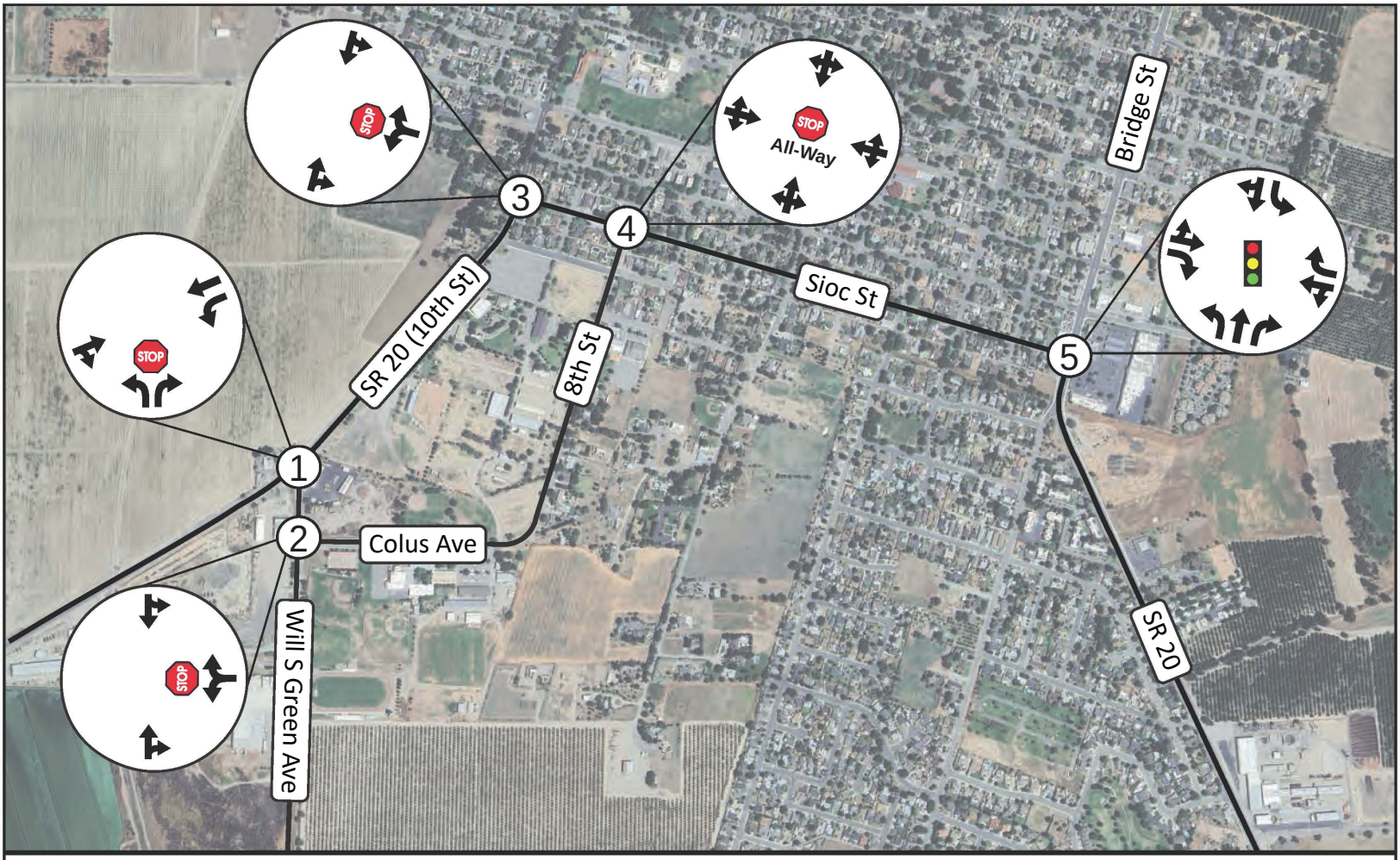
Morning (5:30 AM to 6:30 AM) and Afternoon (1:30 PM to 2:30 PM) peak hour intersection level of service analysis was performed for the study intersections based on the Baseline Plus Project traffic volumes and the lane configurations and controls shown on **Figure 7**. **Table 5** shows the level of service results and the technical calculations are provided in **Appendix E**.

Table 5: Baseline Plus Project Intersection Level of Service

Int. ID	Intersection	Control	LOS Threshold	Baseline				Baseline Plus Project			
				Morning[1]		Afternoon[2]		Morning[1]		Afternoon[2]	
				Delay[3]	LOS	Delay[3]	LOS	Delay[3]	LOS	Delay[3]	LOS
1	SR 20/Will S Green Ave	Side Street (NB) Stop	D								
	NB Approach			11	B	12	B	11	B	16	C
	WB Left			8	A	8	A	8	A	9	A
2	Will S Green Ave/ Colus Ave	Side Street (WB) Stop	C								
	WB Approach			9	A	9	A	13	B	13	B
	SB Left			8	A	8	A	8	A	9	A
3	SR 20 (10th St)/Sioc St	Side Street (WB) Stop	D								
	WB Approach			12	B	18	C	14	B	23	C
	SB Left			8	A	8	A	8	A	9	A
4	Sioc St/8th St	All Way Stop	C								
	Overall			8	A	8	A	9	A	9	A
5	SR 20 (Bridge St)/ Sioc St	Signal	D								
	Overall			9	A	21	C	10	A	24	C

Notes: 1. Morning Peak Hour = 5:30 AM to 6:30 AM
2. Afternoon Peak Hour = 1:30 PM to 2:30 PM
3. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate within policy level of service thresholds during the Morning and Afternoon peak hours.



1 SR 20 / Will S Green Ave

(359) 135
(23) 51
285 (309)
103 (45)
(51) 1
(109) 3

2 Will S Green Ave / Colus Ave

150 (56)
2 (12)
1 (12)
100 (35)
(150) 2
(99) 2

3 SR 20 (10th St) / Sioc St

257 (258)
3 (18)
8 (26)
132 (102)
(360) 110
(97) 30

4 Sioc St / 8th St

2 (1)
9 (10)
1 (3)
(1) 1
(117) 32
(2) 1
2 (3)
141 (132)
84 (41)
(1) 1
(24) 1
(94) 3

5 SR 20 (Bridge St) / Sioc St

17 (17)
151 (377)
13 (31)
(23) 5
(34) 6
(182) 38
11 (46)
18 (31)
21 (72)
(129) 115
(420) 236
(57) 29

GCV ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)
(#) - Study Intersection

Figure 7
Wastewater Treatment Plant Annexation
Traffic Impact Study
Baseline Plus Project Traffic Volumes, Lane Configurations, and Controls

FUTURE YEAR CONDITIONS

The Future Year analysis estimates operating conditions for the 20 year horizon. The Future Year analysis includes background regional growth on SR 20, build out of the Wescott Road Retail Center and Wescott Ranch projects, as detailed in the "Baseline Conditions" section of this report, and residential zoning for the Brookins Ranch property.

Traffic Volume Forecasts

Future Year traffic volume forecasts were developed by applying an annual growth rate to the existing traffic volumes at the study intersections, and then adding project trips from the Wescott Road Retail Center and Wescott Ranch projects. In addition to the planned/approved projects, the Brookins Ranch property currently consists of farmland, but the existing zoning is Low Density Residential. For analysis purposes, trip generation estimates were developed for the Brookins Ranch property based on the residential zoning and a development assumption of 5 single family units per acre. Estimated project trips from Brookins Ranch were also added to the study intersections.

An annual background growth rate of 1 percent per year was developed based on previous analysis performed in the City of Colusa. Previous traffic studies, including the *Traffic Impact Analysis for SR 20/Wescott Road Retail Center* (KD Anderson & Associates, Inc., January 2020) used the City's Transportation Master Plan traffic model and showed a general overall average growth rate of approximately 2 percent per year in the City of Colusa. Since planned/approved projects in the City are known and traffic generated by those projects was added to the study intersections, a background growth rate of 1 percent per year was applied to the through movement volumes on SR 20 at the study intersections to account for background regional growth.

Figure 8 shows the Future Year (without Colusa Triple Crown) traffic volumes at the study intersections.

Intersection Level of Service

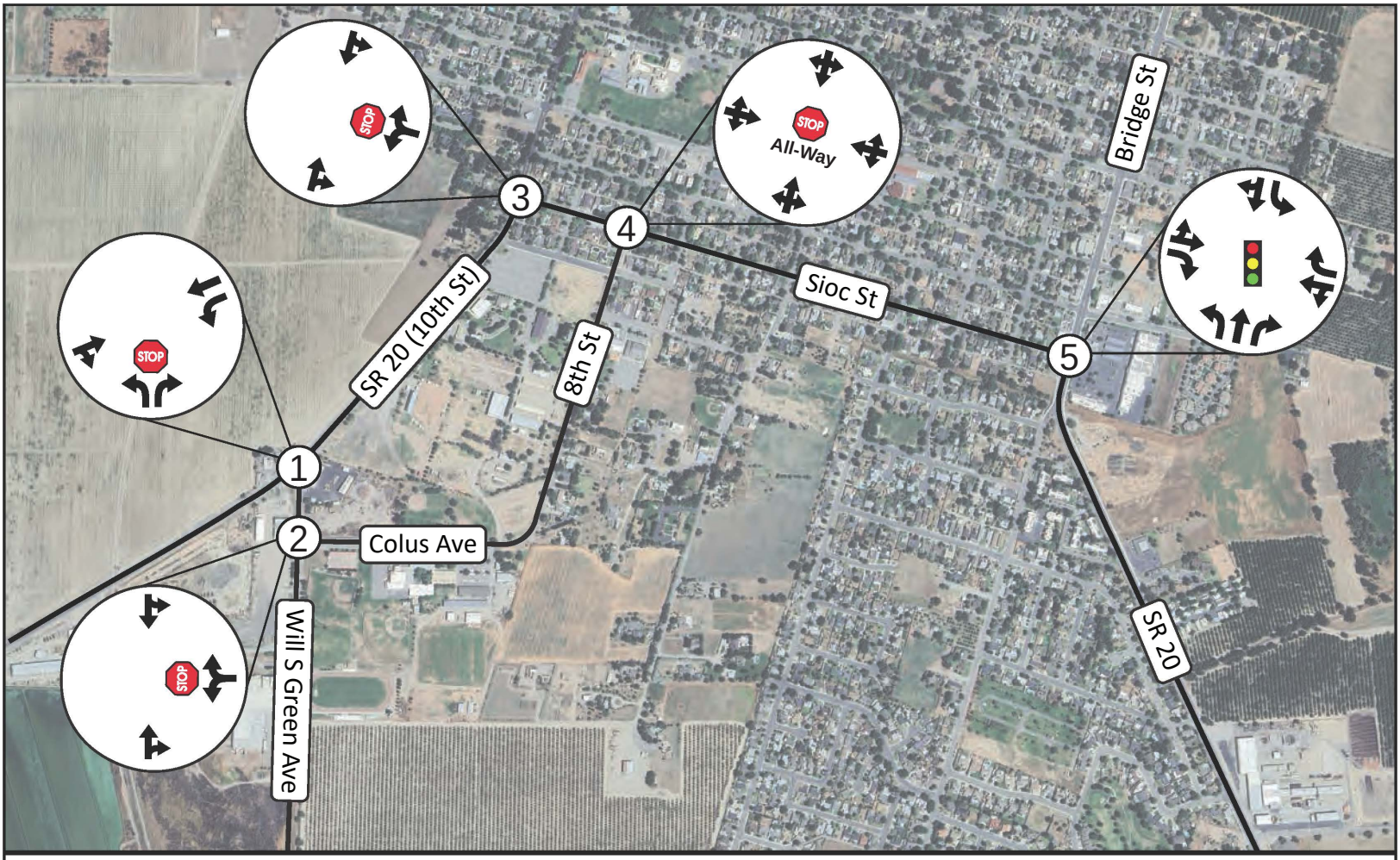
Morning and Afternoon peak hour intersection level of service analysis was performed for the study intersections using the Future Year traffic volumes and the existing intersection lane configurations and controls shown on **Figure 8**. **Table 7** shows the Future Year conditions level of service results and the technical calculations are provided in **Appendix F**.

Table 7: Future Year Intersection Level of Service

Int. ID	Intersection	Control	LOS Threshold	Morning[1]		Afternoon[2]	
				Delay[3]	LOS	Delay[3]	LOS
1	SR 20/Will S Green Ave	Side Street (NB) Stop	D				
	NB Approach			11	B	20	C
	WB Left			8	A	9	A
2	Will S Green Ave/Colus Ave	Side Street (WB) Stop	C				
	WB Approach			9	A	11	B
	SB Left			8	A	8	A
3	SR 20 (10th St)/Sioc St	Side Street (WB) Stop	D				
	WB Approach			14	B	28	D
	SB Left			8	A	9	A
4	Sioc St/8th St	All Way Stop	C				
	Overall			8	A	8	A
5	SR 20 (Bridge St)/Sioc St	Signal	D				
	Overall			9	A	32	C

Notes: 1. Morning Peak Hour = 5:30 AM to 6:30 AM
2. Afternoon Peak Hour = 1:30 PM to 2:30 PM
3. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate within policy level of service thresholds during the Morning and Afternoon peak hours.



1 *SR 20 / Will S Green Ave*

(435) 167
(57) 12
347 (374)
13 (70)
(49) 25
(65) 29

2 *Will S Green Ave / Colus Ave*

20 (112)
5 (15)
5 (15)
5 (5)
(99) 49
(5) 5

3 *SR 20 (10th St) / Sioc St*

252 (341)
7 (20)
8 (27)
103 (108)
(412) 155
(78) 41

4 *Sioc St / 8th St*

5 (5)
5 (10)
5 (7)
(5) 5
(93) 38
(5) 5
6 (7)
106 (130)
5 (17)
(5) 5
(20) 5
(17) 5

5 *SR 20 (Bridge St) / Sioc St*

5 (16)
183 (452)
15 (35)
(16) 6
(38) 14
(154) 47
15 (50)
16 (39)
21 (76)
(137) 70
(507) 290
(60) 32

GCV ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)
(#) - Study Intersection

Figure 8
Wastewater Treatment Plant Annexation
Traffic Impact Study
Future Year Traffic Volumes, Lane Configurations, and Controls

FUTURE YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips associated with the Colusa Triple Crown facility (**Figure 6**) were added to the Future Year traffic volumes (**Figure 8**) to develop the Future Year Plus Project conditions traffic volumes, shown on **Figure 9**.

Intersection Level of Service

Morning (5:30 AM to 6:30 AM) and Afternoon (1:30 PM to 2:30 PM) peak hour intersection level of service analysis was performed for the study intersections based on the Future Year Plus Project traffic volumes and the existing intersection lane configurations and controls shown on **Figure 9**. **Table 8** shows the level of service results and the technical calculations are provided in **Appendix G**.

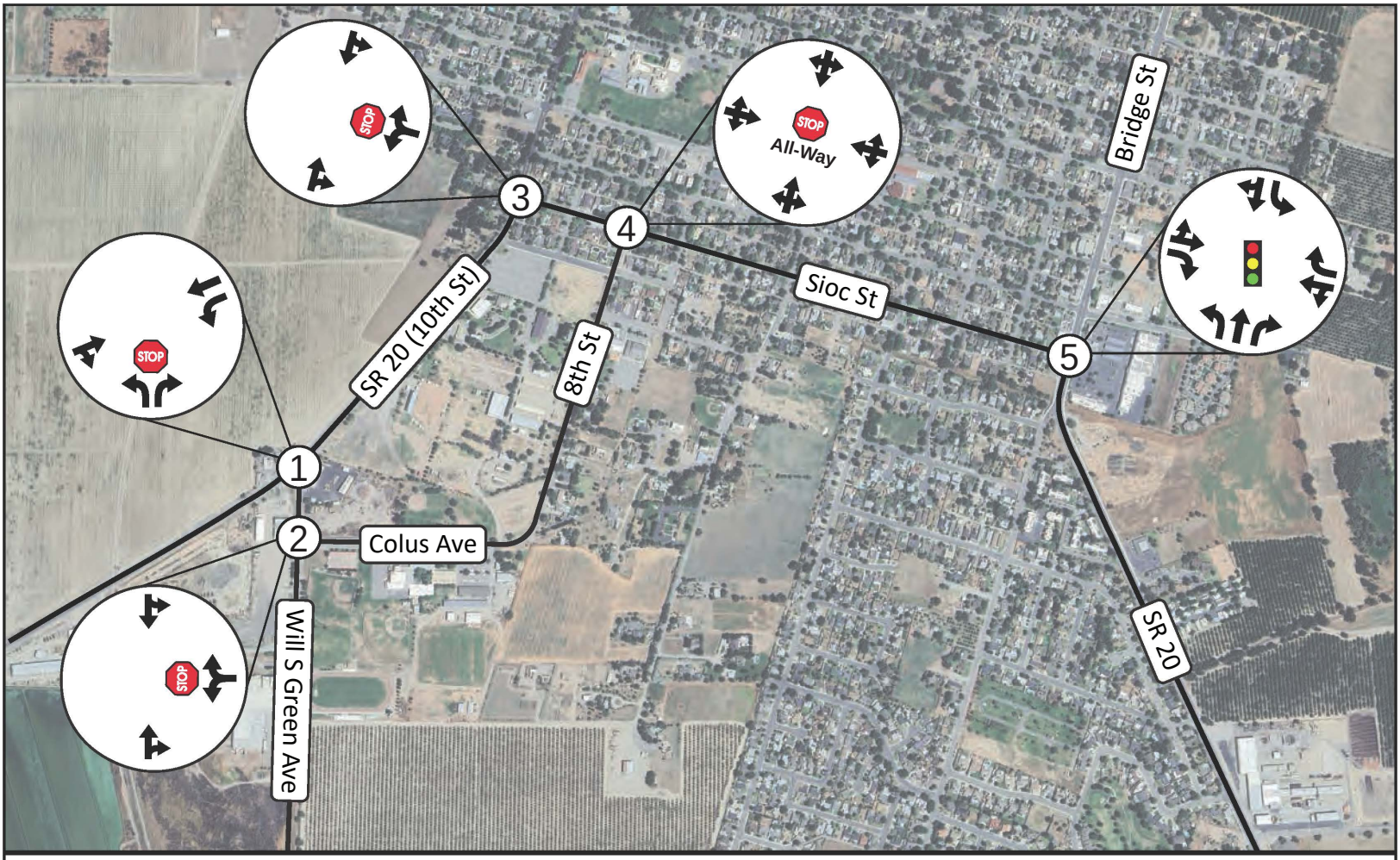
Table 8: Future Year Plus Project Intersection Level of Service

Int. ID	Intersection	Control	LOS Threshold	Future Year				Future Year Plus Project			
				Morning[1]		Afternoon[2]					
				Delay[3]	LOS	Delay[3]	LOS	Delay[3]	LOS	Delay[3]	LOS
1	SR 20/Will S Green Ave	Side Street (NB) Stop	D								
	NB Approach			11	B	20	C	14	B	31	D
	WB Left			8	A	9	A	8	A	9	A
2	Will S Green Ave/ Colus Ave	Side Street (WB) Stop	C								
	WB Approach			9	A	11	B	14	B	17	C
	SB Left			8	A	8	A	8	A	9	A
3	SR 20 (10th St)/Sioc St	Side Street (WB) Stop	D								
	WB Approach			14	B	28	D	16	C	42	E
	SB Left			8	A	9	A	8	A	9	A
4	Sioc St/8th St	All Way Stop	C								
	Overall			8	A	8	A	9	A	9	A
5	SR 20 (Bridge St)/ Sioc St	Signal	D								
	Overall			9	A	32	C	10	A	39	D

Notes: 1. Morning Peak Hour = 5:30 AM to 6:30 AM
2. Afternoon Peak Hour = 1:30 PM to 2:30 PM
3. Delay is reported in seconds per vehicle for the overall intersection for signalized and all way stop controlled intersections, and for the worst approach/movement for side street stop controlled intersections.
Source: GCW, 2025

As shown in the table, the westbound approach of the SR 20 (10th Street)/Sioc Street intersection is expected to operate at LOS E during the Afternoon peak hour, however the overall intersection is expected to operate at LOS A (within policy level of service thresholds) under Future Year Plus Project conditions. Traffic engineering practitioners recognize that LOS E/F conditions for the side street

approach, during the peak hour(s), does not indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and suburban areas and is manageable when there are alternate routes which drivers can use to avoid a particular movement with delay. No improvement or mitigation is recommended.



1 SR 20 / Will S Green Ave

(435) 167
(73) 60
347 (374)
110 (103)
(97) 25
(162) 30

2 Will S Green Ave / Colus Ave

165 (161)
5 (15)
5 (15)
102 (38)
(244) 50
(102) 6

3 SR 20 (10th St) / Sioc St

313 (362)
7 (20)
8 (27)
139 (120)
(473) 156
(114) 41

4 Sioc St / 8th St

5 (5)
10 (12)
5 (7)
(5) 5
(129) 38
(5) 5
6 (7)
142 (142)
85 (44)
(5) 5
(25) 5
(97) 6

5 SR 20 (Bridge St) / Sioc St

17 (20)
183 (452)
15 (35)
(28) 6
(43) 14
(202) 47
15 (50)
21 (41)
21 (76)
(153) 118
(507) 290
(60) 32

GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)
(#) - Study Intersection

Figure 9
Wastewater Treatment Plant Annexation
Traffic Impact Study
Future Year Plus Project Traffic Volumes, Lane Configurations, and Controls

CEQA THRESHOLDS OF SIGNIFICANCE

Based on criteria outlined in the CEQA Appendix G Environmental Checklist Form (included in **Appendix H**), the project would create a significant transportation impact if it would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses Vehicle Miles Traveled (VMT)
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access

IMPACT ANALYSIS

Public Transit Evaluation

The project has the potential to incrementally increase demand for public transit, but the increase is not likely to cause or necessitate changes to the transit system or facilities. The project would not conflict with any public transit programs or plans. Therefore, the project would have a less-than-significant impact on public transit.

Alternative Transportation Mode Evaluation

The project has the potential to incrementally increase bicycle and pedestrian activity in the project area. As discussed in the "Existing Conditions" section of this report, sidewalk exists on the south side of Colus Avenue along the Colusa High School frontage and sporadically along Sioc Street. The *City of Colusa Bikeway Master Plan* (December 2012) identifies proposed future bicycle facilities in the project vicinity including a Class I "Loop Trail" around the City. The southwest portion of the Loop Trail would follow the Abandoned Railroad that crosses Will S Green Avenue approximately 0.8 miles south of SR 20.

The project would not conflict with the City's multimodal (bicycle or pedestrian) transportation programs or plans (i.e. *Bikeway Master Plan*) and would therefore have a less-than-significant impact on bicycle or pedestrian travel.

Roadways / Vehicle Circulation Evaluation

The City has plans to pave/repave the roadway surface on Will S Green Avenue south of Colus Avenue, on Colus Avenue, and on 8th Street. The Colusa Triple Crown project will add notable traffic to Will S Green Avenue, Colus Avenue, and 8th Street, and should contribute a fair share contribution toward the roadway surface improvements on the roadways.

Traffic operations, level of service, and delay are no longer considered environmental impacts under the current CEQA guidelines.

The project would not conflict with any roadway programs, long-range planning, or vehicle circulation policies. Therefore, the project would have a less-than-significant impact on roadway programs and vehicle circulation.

Vehicle Miles Traveled (VMT) Evaluation

The *2018 Colusa County Regional Transportation Plan (RTP) Update* states:

> Colusa County has experienced relative slow growth (less than 2% per year) in population and employment over the past two decades and is forecast to continue this trend through 2042. Based on this trend and the guidelines established in the California Transportation Commission's 2010 RTP Guidelines, the County is not required to run a network travel demand model to determine VMT. The guidelines cite the lack of road congestion and the fact that emission changes from higher MPG vehicles will continue to help the County comply with future emission caps established by the California Air Resources Board as part of AB 32. The County does monitor VMT levels through Caltrans VMT and Mileage Reports. In 1990, VMT per capita was approximately 21,800 annually in the county. In 2007, this number increased to 22,300 annually. In 2010, the per capita VMT was calculated to be 21,821, which was almost at 1990 levels. The County will continue to monitor population and employment and VMT growth to remain consistent with the RTP and the County's General Plan policies.

Based on the RTP guidelines and County/City policy regarding VMT, the project would have a less-than-significant impact on Vehicle Miles Traveled.

Although the project is not required to perform a detailed VMT analysis per County policy, the following factors were considered in this evaluation:

<u>Project Proximity to the City of Colusa Urban Core</u>

As shown in **Exhibit 1**, the annexation area and Colusa Triple Crown project are located within an approximately 2.8 mile radius of downtown Colusa, where an estimated 78 percent of the Colusa Triple Crown labor force is expected to reside.

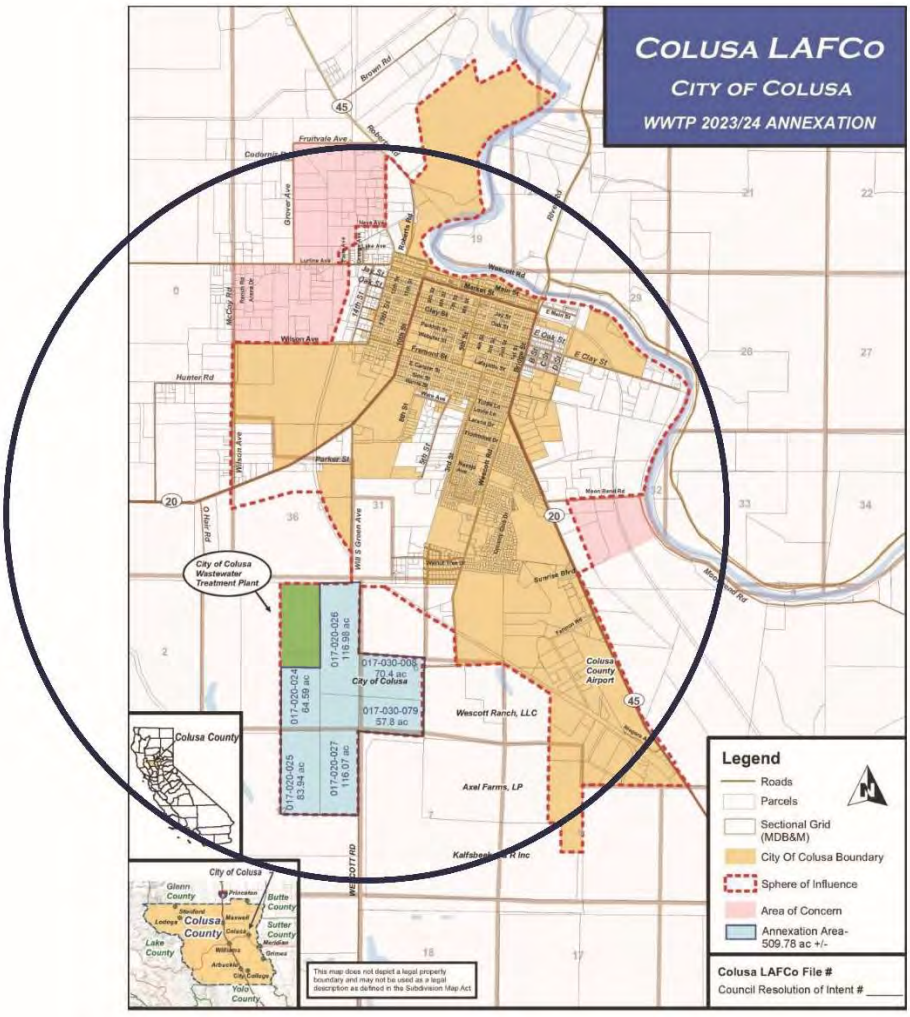


Exhibit 1: Proximity of Project to Downtown Colusa

The *Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018,* published by the Governor's Office of Planning and Research (OPR) states:

> In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis. Note, however, that clustered small towns and small town main streets may have substantial VMT benefits compared to isolated rural development.

The proximity of the annexation area and Colusa Triple Crown project to the downtown core of Colusa is consistent with the VMT reduction strategy of placing new development as close as feasible to an existing urban center. The project, which creates local jobs in Colusa, and project location are likely a benefit to reducing VMT since fewer Colusa residents would travel outside the City for employment.

It should be noted that the annexation area is entirely within the City of Colusa Sphere of Influence.

Proposed Transportation Demand Management Strategies

The Colusa Triple Crown project proposes to implement transportation demand management strategies that are intended to promote multi-modal activity, manage Vehicle Miles Traveled (VMT), and thereby reduce greenhouse gas (GHG) emissions, including:

- Providing shuttle service within the community for employees
- Assisting in the development of workforce housing within the City of Colusa
- Providing charging stations for electric vehicles on site
- Providing bicycle parking in various locations on site and providing shared bicycles
- Limiting on-site and off-site parking to encourage ride sharing and shuttle use
- Promoting car-share, bike-share, and ride-share programs to its employees
- Incentivizing carpooling by providing better parking locations within the project for carpool vehicles/drivers
- Providing golf carts and bicycles for employees to use within the project site
- Providing locker rooms with showers

All of these features are consistent with the strategies for reducing VMT outlined in the *Technical Advisory on Evaluating Transportation Impacts in CEQA, December 2018,* published by the Governor's Office of Planning and Research (OPR)

Considering the RTP guidelines and County/City policy regarding VMT, the project proximity to the existing urban core, and the proposed features of the project that will serve to reduce project VMT, the project is deemed to have a less-than-significant impact on Vehicle Miles Traveled.

Design Feature Evaluation

Access to the annexation property and the proposed Colusa Triple Crown facility is provided via Will S Green Avenue, Colus Avenue, and 8th Street. Will S Green Avenue is currently a dirt road south of Colusa High School. The City has plans to pave/repave the roadway surface on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street. Will S Green Avenue is adjacent to and serves agricultural land, which could result in some interaction between vehicles and off-highway or farm equipment. Colus Avenue is adjacent to and serves Colusa High School. As part of the paving project, the City will post 35 mph or lower speed limit signs on Will S Green Avenue and 25 mph speed limit signs on Colus Avenue to minimize the speeds of interactions between different types of vehicles. The City will also post a "No Public Access" sign on Will S Green Avenue south of Colus Avenue. The project would have a less-than-significant impact related to safety and design features.

Emergency Access Evaluation

Primary access to the annexation property and the proposed Colusa Triple Crown project is provided via Will S Green Avenue to the north. There are also numerous existing dirt roads to the east, west, and south

of the project site that could be used for emergency access which connect to other local and collector roadways. Therefore, the project would have a less-than-significant impact related to emergency access.

At least one alternate/emergency route should be identified, designated, and signed by the City from the annexation area to a collector roadway, not using Will S Green Avenue.

No significant impacts related to transportation have been identified, therefore no environmental mitigations are proposed.

CONCLUSIONS

The following is a list of our key findings:

- The project consists of the annexation of the agricultural land adjacent to and bordering the east and south sides of the Colusa Wastewater Treatment Plant, including the Brookins Ranch property, from Colusa County into the City of Colusa. The total land area to be annexed is approximately 672 acres. The land zoned as AG - Agricultural General consists of approximately 510 acres, while the Brookins Ranch property, currently zoned LD – Low Density Residential, consists of approximately 162 acres. In addition to the annexation, the City is evaluating the proposed development of approximately 86 acres of the AG zoned land, east of the Wastewater Treatment Plant, for the Colusa Triple Crown facility – a cannabis research and development park.
- For traffic operations analysis purposes, the “Project” consists of traffic generated by the Colusa Triple Crown cannabis research and development park. Additional traffic generated by all other property within the annexation boundary was included in the background traffic volumes.
- This study includes analysis of the weekday 5:30 AM to 6:30 AM Morning peak hour and the 1:30 PM to 2:30 PM Afternoon peak hour to capture the proposed employee shift changes of the Colusa Triple Crown operation, as these are the periods of time in which peak traffic is anticipated to occur. Analysis of the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak commute periods was not included because project traffic generated during these periods is much lower than the Morning and Afternoon peak hours. The worst case traffic volumes associated with the project are evaluated.
- The Colusa Triple Crown project is anticipated to generate approximately 832 Daily, 244 Morning peak hour, 60 AM peak hour, 324 Afternoon peak hour, and 16 PM peak hour trips.
- The Colusa Triple Crown project proposes to implement transportation demand management strategies that are intended to promote multi-modal activity, manage Vehicle Miles Traveled (VMT), and thereby reduce greenhouse gas (GHG) emissions associated with the project. The project proposes to provide shuttle service, bicycle parking, electric vehicle charging stations, and carpool/ride-share incentives for Colusa Triple Crown employees.

- Under Existing, Baseline, Baseline Plus Project and Future Year conditions, the study intersections operate within policy level of service thresholds during the Morning and Afternoon peak hours.
- Under Future Year Plus Project conditions, the westbound approach of the SR 20 (10th Street)/Sioc Street intersection is expected to operate at LOS E during the Afternoon peak hour, however the overall intersection is expected to operate at LOS A (within policy level of service thresholds). Traffic engineering practitioners recognize that LOS E/F conditions for the side street approach, during the peak hour(s), does not indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and suburban areas and is manageable when there are alternate routes which drivers can use to avoid a particular movement with delay. No improvement or mitigation is recommended.
- The City has plans to pave/repave the roadway surface on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street. As part of the paving project, the City will post 35 mph or lower speed limit signs on Will S Green Avenue and 25 mph speed limit signs on Colus Avenue. The City will also post a "No Public Access" sign on Will S Green Avenue south of Colus Avenue.
- The *City of Colusa Bikeway Master Plan* (December 2012) identifies existing and proposed bicycle facilities in the City of Colusa, including a Class I "Loop Trail" around the city. The southwest portion of the Loop Trail would follow the Abandoned Railroad and cross Will S Green Avenue south of Colus Avenue.
- The project would have a less-than-significant impact on public transit.
- The project would have a less-than-significant impact on alternative transportation modes.
- The project would have a less-than-significant impact on vehicle circulation.
- The project would have a less-than-significant impact on Vehicle Miles Traveled (VMT).
- The project would have a less-than-significant impact related to safety and design features.
- The project would have a less-than-significant impact related to emergency access.
- No significant environmental impacts related to transportation have been identified.

The following improvements (which are not environmental mitigations) are recommended:

- The Colusa Triple Crown shifts should be established to not overlap with Colusa High School traffic. Field observations indicate that high school traffic typically disperses within approximately 10 minutes of the release time; therefore, shift times should avoid heavy traffic generation during the 2:10 PM to 2:20 PM period on Wednesdays and the 3:10 PM to 3:20 PM period on other weekdays.
- The Colusa Triple Crown project will add notable traffic volumes to Will S Green Avenue, Colus Avenue, and 8th Street, and should contribute a fair share contribution toward the roadway

surface improvements on Will S Green Avenue south of Colus Avenue, Colus Avenue, and 8th Street.

- As part of the paving project, the City will post 35 mph or lower speed limit signs on Will S Green Avenue and 25 mph speed limit signs on Colus Avenue for safety and to minimize the speeds of interactions between different types of vehicles.
- As part of the paving project, the City will post a "No Public Access" sign on Will S Green Avenue south of Colus Avenue.
- There are numerous existing dirt roads to the east, west, and south of the project site that could be used for emergency access which connect to other local and collector roadways. At least one alternate/emergency route should be identified, designated, and signed by the City from the annexation area to a collector roadway, not using Will S Green Avenue (the primary project access).

Appendix A
Traffic Count Data Sheets

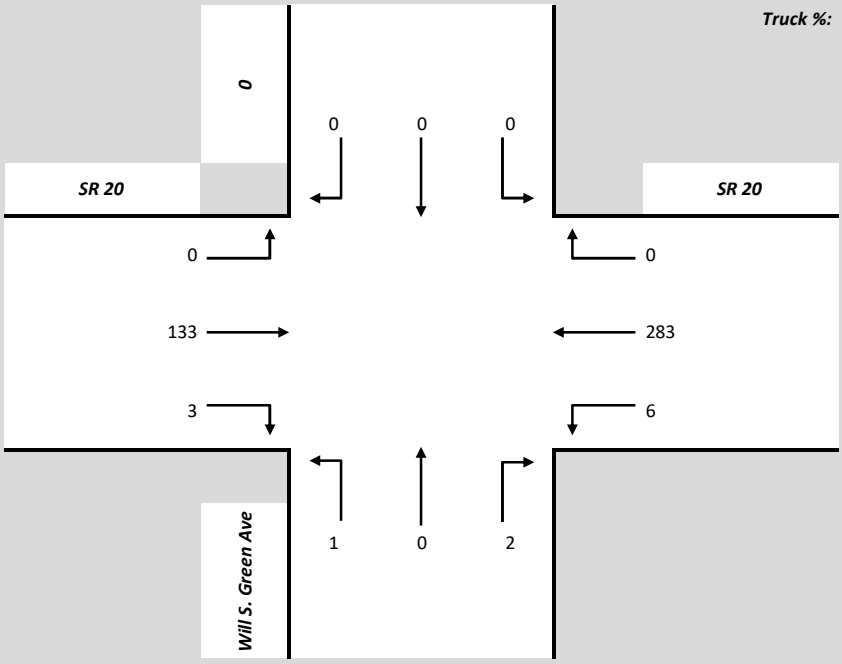
GCW
ENGINEERS \ SURVEYORS

Intersection: 01_SR 20 (10th St) & Will S Green Ave

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

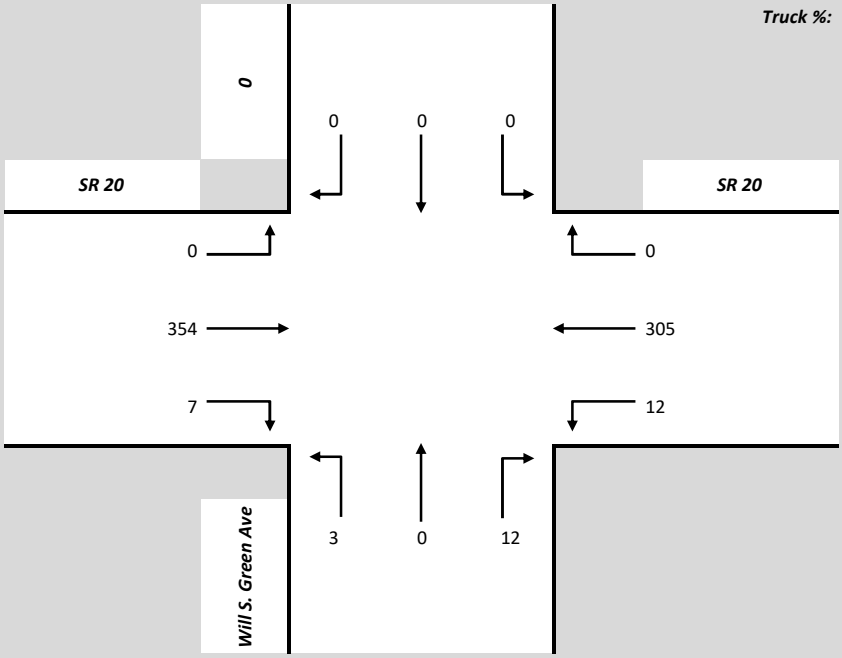
Peak Hour: 5:30 - 6:30
PHF: 0.88
Truck %: 11%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

Peak Hour: 1:30 - 2:30
PHF: 0.84
Truck %: 12%

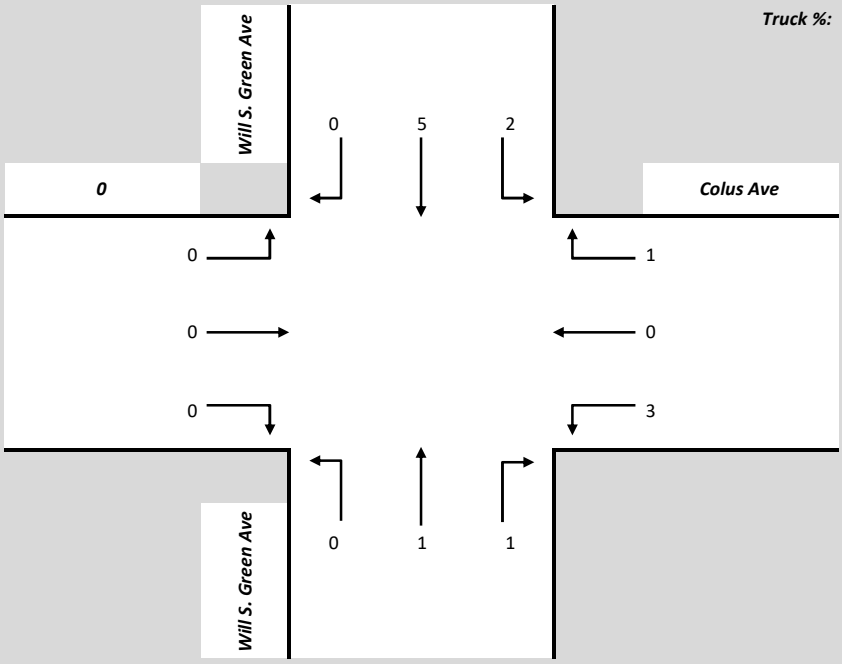


Intersection: 02_Will S Green Ave & Colus Ave

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

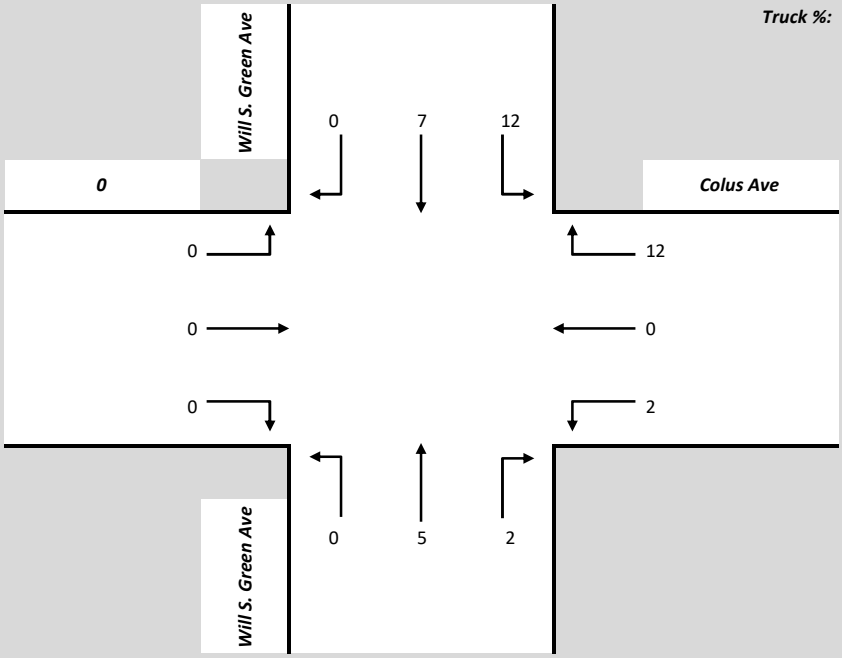
Peak Hour: 5:30 - 6:30
PHF: 0.54
Truck %: 38%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

Peak Hour: 1:30 - 2:30
PHF: 0.63
Truck %: 40%

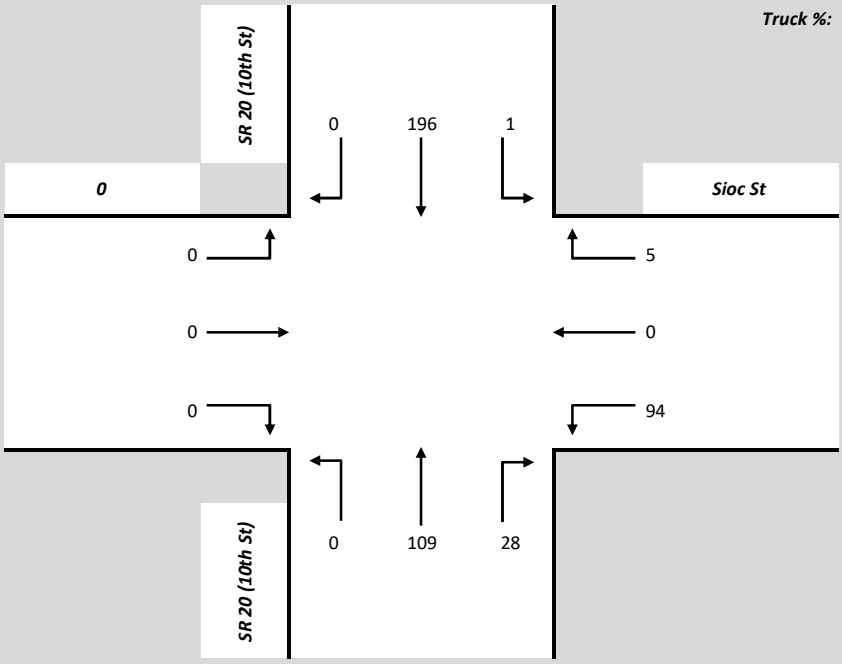


Intersection: 03_SR 20 (10th St) & Sioc St

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

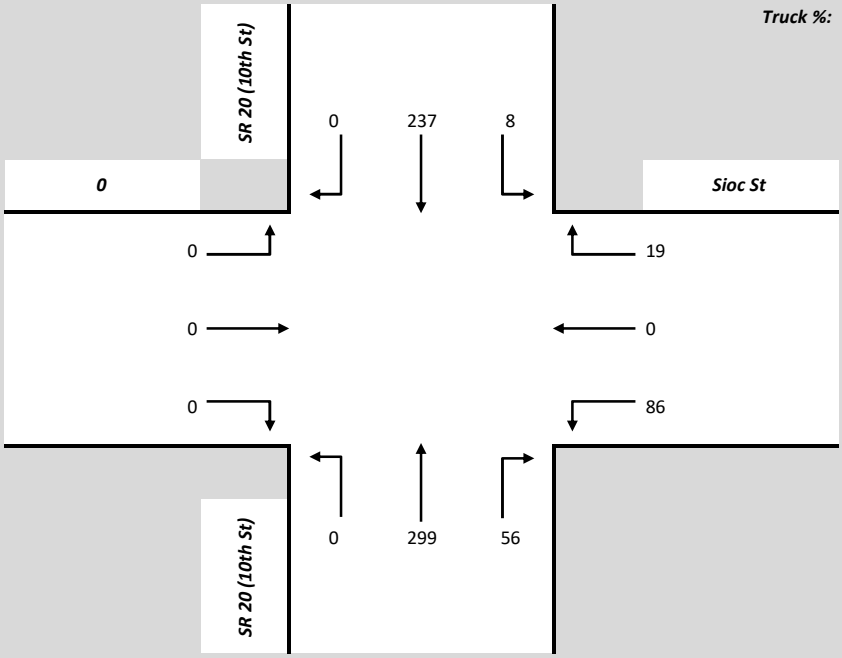
Peak Hour: 5:30 - 6:30
PHF: 0.89
Truck %: 12%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

Peak Hour: 1:30 - 2:30
PHF: 0.84
Truck %: 10%

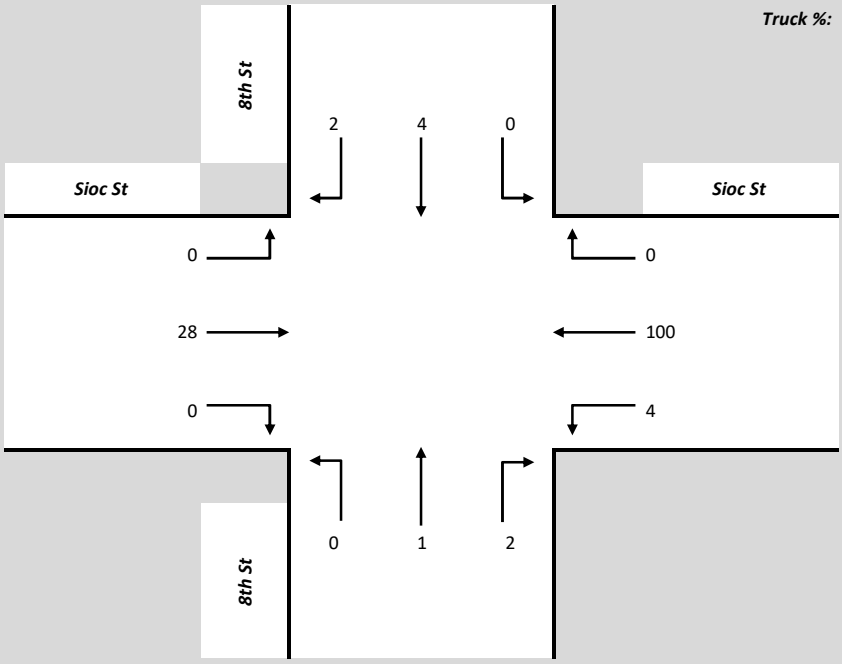


Intersection: 04_Sioc St & 8th St

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

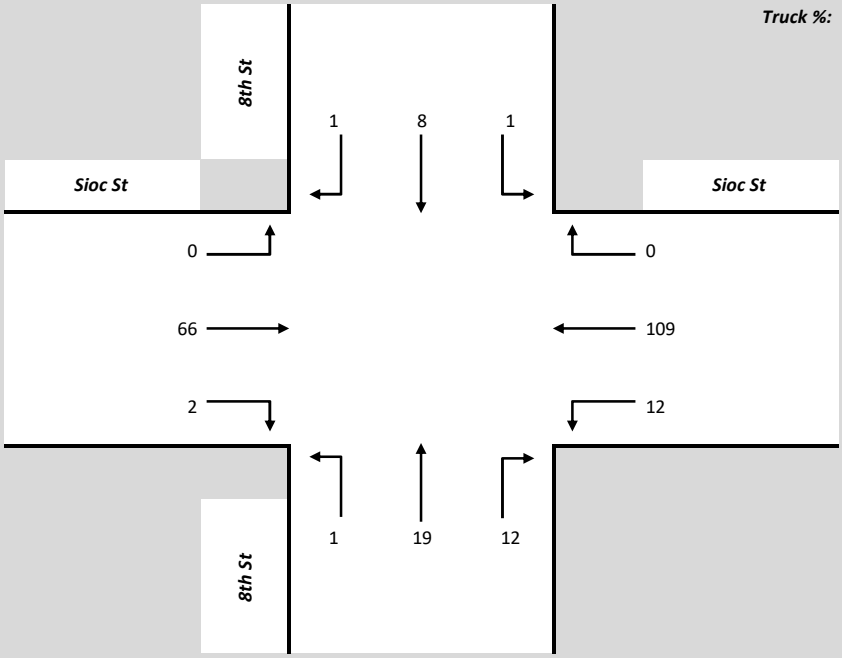
Peak Hour: 5:30 - 6:30
PHF: 0.95
Truck %: 6%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

Peak Hour: 1:30 - 2:30
PHF: 0.79
Truck %: 6%

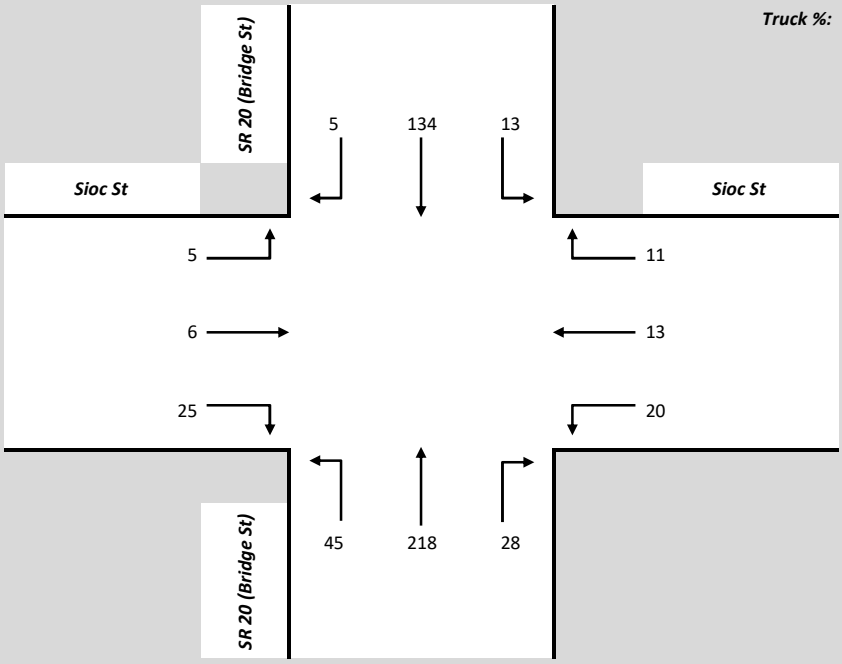


Intersection: 05_SR 20 (Bridge St) & Sioc St

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

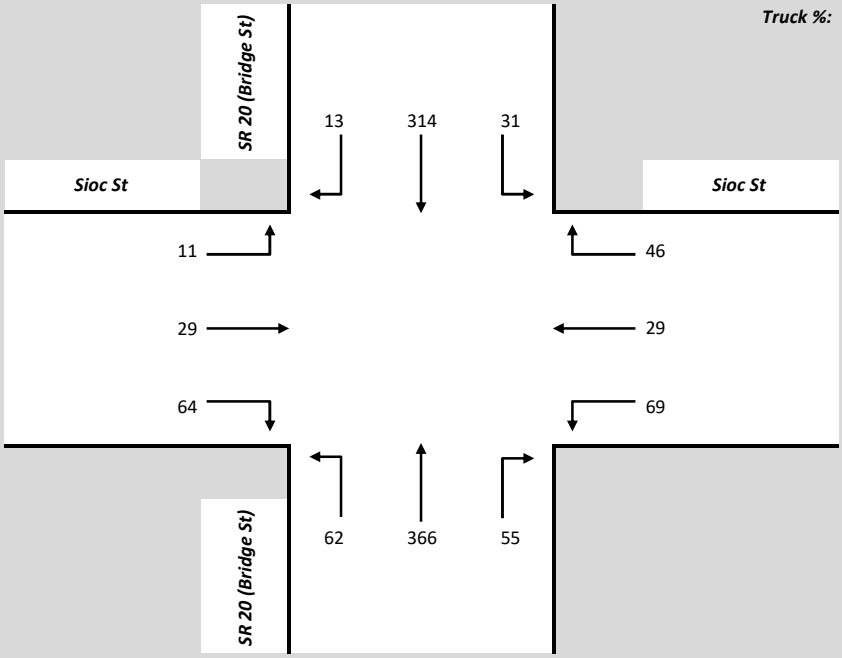
Peak Hour: 5:30 - 6:30
PHF: 0.85
Truck %: 11%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 2/11/2025
School in Session: Yes

Peak Hour: 1:30 - 2:30
PHF: 0.92
Truck %: 8%



Appendix B
Existing LOS Calculations

GCW
ENGINEERS \ SURVEYORS

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	133	3	6	283	1	2
Future Vol, veh/h	133	3	6	283	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	151	3	7	322	1	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	155	0	488	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	335	-
Critical Hdwy	-	-	4.21	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.299	-	3.599	3.399
Pot Cap-1 Maneuver	-	-	1373	-	523	870
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1373	-	520	870
Mov Cap-2 Maneuver	-	-	-	-	520	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.16	10.08
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	520	870	-	-	1373	-
HCM Lane V/C Ratio	0.002	0.003	-	-	0.005	-
HCM Control Delay (s/veh)	11.9	9.1	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	1	1	1	2	5
Future Vol, veh/h	3	1	1	1	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	54	54	54	54	54	54
Heavy Vehicles, %	38	38	38	38	38	38
Mvmt Flow	6	2	2	2	4	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	19	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	17	-	-	-	-	-
Critical Hdwy	6.78	6.58	-	-	4.48	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.642	-	-	2.542	-
Pot Cap-1 Maneuver	913	985	-	-	1412	-
Stage 1	934	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	910	985	-	-	1412	-
Mov Cap-2 Maneuver	910	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.91	0	2.16
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	928	514	-
HCM Lane V/C Ratio	-	-	0.008	0.003	-
HCM Control Delay (s/veh)	-	-	8.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	94	5	109	28	1	196
Future Vol, veh/h	94	5	109	28	1	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	106	6	122	31	1	220

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	361	138	0	0	154	0
Stage 1	138	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	619	884	-	-	1368	-
Stage 1	864	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	618	884	-	-	1368	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	791	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.97	0	0.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	628	9	-
HCM Lane V/C Ratio	-	-	0.177	0.001	-
HCM Control Delay (s/veh)	-	-	12	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	28	1	4	100	1	1	1	2	1	4	2
Future Vol, veh/h	1	28	1	4	100	1	1	1	2	1	4	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	29	1	4	105	1	1	1	2	1	4	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.3	7.6	7.1	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	3%	4%	14%
Vol Thru, %	25%	93%	95%	57%
Vol Right, %	50%	3%	1%	29%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	30	105	7
LT Vol	1	1	4	1
Through Vol	1	28	100	4
RT Vol	2	1	1	2
Lane Flow Rate	4	32	111	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.036	0.124	0.008
Departure Headway (Hd)	4.003	4.092	4.049	4.108
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	875	889	863
Service Time	2.069	2.118	2.06	2.174
HCM Lane V/C Ratio	0.005	0.037	0.125	0.008
HCM Control Delay, s/veh	7.1	7.3	7.6	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.4	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	6	25	20	13	11	45	218	28	13	134	5
Future Volume (veh/h)	5	6	25	20	13	11	45	218	28	13	134	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	6	7	23	24	15	11	53	256	27	15	158	6
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	235	0	136	260	0	136	104	494	419	33	402	15
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.06	0.28	0.28	0.02	0.24	0.24
Sat Flow, veh/h	0	0	1472	0	0	1472	1654	1737	1472	1654	1662	63
Grp Volume(v), veh/h	13	0	23	39	0	11	53	256	27	15	0	164
Grp Sat Flow(s),veh/h/ln	0	0	1472	0	0	1472	1654	1737	1472	1654	0	1726
Q Serve(g_s), s	0.0	0.0	0.3	0.0	0.0	0.2	0.7	2.8	0.3	0.2	0.0	1.8
Cycle Q Clear(g_c), s	2.1	0.0	0.3	2.1	0.0	0.2	0.7	2.8	0.3	0.2	0.0	1.8
Prop In Lane	0.46		1.00	0.62		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	235	0	136	260	0	136	104	494	419	33	0	417
V/C Ratio(X)	0.06	0.00	0.17	0.15	0.00	0.08	0.51	0.52	0.06	0.46	0.00	0.39
Avail Cap(c_a), veh/h	1867	0	1743	1815	0	1743	702	2289	1940	406	0	1966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	9.4	11.2	0.0	9.3	10.2	6.7	5.8	10.8	0.0	7.1
Incr Delay (d2), s/veh	0.1	0.0	0.6	0.3	0.0	0.3	3.8	0.8	0.1	9.5	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.0	0.0	0.3	0.6	0.1	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.3	0.0	9.9	11.5	0.0	9.5	14.0	7.6	5.9	20.4	0.0	7.7
LnGrp LOS	B		A	B		A	B	A	A	C		A
Approach Vol, veh/h		36			50			336			179	
Approach Delay, s/veh		10.4			11.0			8.4			8.8	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	10.9		6.6	5.9	9.9		6.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5				
Max Q Clear Time (g_c+I1), s	2.2	4.8		4.1	2.7	3.8		4.1				
Green Ext Time (p_c), s	0.0	1.6		0.1	0.0	0.8		0.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	8.9
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	354	7	12	305	3	12
Future Vol, veh/h	354	7	12	305	3	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	421	8	14	363	4	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	430	0	817	426
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	392	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1078	-	333	608
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1078	-	328	608
Mov Cap-2 Maneuver	-	-	-	-	328	-
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	653	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.32	12.07
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	328	608	-	-	1078	-
HCM Lane V/C Ratio	0.011	0.023	-	-	0.013	-
HCM Control Delay (s/veh)	16.1	11.1	-	-	8.4	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	12	5	2	12	7
Future Vol, veh/h	2	12	5	2	12	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	40	40	40	40	40	40
Mvmt Flow	3	19	8	3	19	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	59	10	0	0	11	0
Stage 1	10	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.8	6.6	-	-	4.5	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.66	-	-	2.56	-
Pot Cap-1 Maneuver	861	971	-	-	1392	-
Stage 1	923	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	849	971	-	-	1392	-
Mov Cap-2 Maneuver	849	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	872	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.87	0	4.81
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	952	1137	-
HCM Lane V/C Ratio	-	-	0.023	0.014	-
HCM Control Delay (s/veh)	-	-	8.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	19	299	56	8	237
Future Vol, veh/h	86	19	299	56	8	237
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	102	23	356	67	10	282

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	690	389	0	0	423	0
Stage 1	389	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.2	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.29	-
Pot Cap-1 Maneuver	399	642	-	-	1095	-
Stage 1	668	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	395	642	-	-	1095	-
Mov Cap-2 Maneuver	395	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	16.99	0	0.27
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	59	-
HCM Lane V/C Ratio	-	-	0.295	0.009	-
HCM Control Delay (s/veh)	-	-	17	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	66	2	12	109	1	1	19	12	1	8	1
Future Vol, veh/h	1	66	2	12	109	1	1	19	12	1	8	1
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	84	3	15	138	1	1	24	15	1	10	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.8	8.2	7.6	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	1%	10%	10%
Vol Thru, %	59%	96%	89%	80%
Vol Right, %	38%	3%	1%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	69	122	10
LT Vol	1	1	12	1
Through Vol	19	66	109	8
RT Vol	12	2	1	1
Lane Flow Rate	41	87	154	13
Geometry Grp	1	1	1	1
Degree of Util (X)	0.049	0.102	0.179	0.016
Departure Headway (Hd)	4.336	4.196	4.175	4.546
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	831	845	852	792
Service Time	2.336	2.269	2.232	2.548
HCM Lane V/C Ratio	0.049	0.103	0.181	0.016
HCM Control Delay, s/veh	7.6	7.8	8.2	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.6	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	64	69	29	46	62	366	55	31	314	13
Future Volume (veh/h)	11	29	64	69	29	46	62	366	55	31	314	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	12	32	65	75	32	48	67	398	55	34	341	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	101	205	607	151	42	607	101	510	433	62	448	18
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.06	0.29	0.29	0.04	0.26	0.26
Sat Flow, veh/h	18	510	1510	64	105	1510	1697	1781	1510	1697	1699	70
Grp Volume(v), veh/h	44	0	65	107	0	48	67	398	55	34	0	355
Grp Sat Flow(s),veh/h/ln	528	0	1510	169	0	1510	1697	1781	1510	1697	0	1769
Q Serve(g_s), s	0.4	0.0	1.3	1.3	0.0	1.0	1.9	10.1	1.3	1.0	0.0	9.1
Cycle Q Clear(g_c), s	19.3	0.0	1.3	19.7	0.0	1.0	1.9	10.1	1.3	1.0	0.0	9.1
Prop In Lane	0.27		1.00	0.70		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	306	0	607	193	0	607	101	510	433	62	0	466
V/C Ratio(X)	0.14	0.00	0.11	0.56	0.00	0.08	0.67	0.78	0.13	0.55	0.00	0.76
Avail Cap(c_a), veh/h	526	0	815	380	0	815	328	1071	907	190	0	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.0	0.0	9.2	18.7	0.0	9.1	22.6	16.1	13.0	23.3	0.0	16.6
Incr Delay (d2), s/veh	0.2	0.0	0.1	2.5	0.0	0.1	7.4	2.6	0.1	7.4	0.0	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	1.3	0.0	0.3	0.9	3.9	0.4	0.5	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.2	0.0	9.2	21.2	0.0	9.1	30.0	18.7	13.1	30.7	0.0	19.2
LnGrp LOS	B		A	C		A	C	B	B	C		B
Approach Vol, veh/h		109			155			520			389	
Approach Delay, s/veh		10.0			17.5			19.6			20.2	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	18.8		25.1	7.5	17.7		25.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5
Max Q Clear Time (g_c+I1), s	3.0	12.1		21.3	3.9	11.1		21.7
Green Ext Time (p_c), s	0.0	2.5		0.1	0.1	1.8		0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	18.6
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Appendix C
Baseline LOS Calculations

GCW
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Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	3	6	285	1	2
Future Vol, veh/h	135	3	6	285	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	153	3	7	324	1	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	157	0	493	155
Stage 1	-	-	-	-	155	-
Stage 2	-	-	-	-	338	-
Critical Hdwy	-	-	4.21	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.299	-	3.599	3.399
Pot Cap-1 Maneuver	-	-	1370	-	520	868
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1370	-	517	868
Mov Cap-2 Maneuver	-	-	-	-	517	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	700	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.16	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	517	868	-	-	1370	-
HCM Lane V/C Ratio	0.002	0.003	-	-	0.005	-
HCM Control Delay (s/veh)	12	9.2	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	1	1	1	2	5
Future Vol, veh/h	3	1	1	1	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	54	54	54	54	54	54
Heavy Vehicles, %	38	38	38	38	38	38
Mvmt Flow	6	2	2	2	4	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	19	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	17	-	-	-	-	-
Critical Hdwy	6.78	6.58	-	-	4.48	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.642	-	-	2.542	-
Pot Cap-1 Maneuver	913	985	-	-	1412	-
Stage 1	934	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	910	985	-	-	1412	-
Mov Cap-2 Maneuver	910	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.91	0	2.16
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	928	514	-
HCM Lane V/C Ratio	-	-	0.008	0.003	-
HCM Control Delay (s/veh)	-	-	8.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	8	109	30	3	196
Future Vol, veh/h	96	8	109	30	3	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	108	9	122	34	3	220

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	366	139	0	0	156	0
Stage 1	139	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	614	883	-	-	1365	-
Stage 1	863	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	612	883	-	-	1365	-
Mov Cap-2 Maneuver	612	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.05	0	0.12
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	27	-
HCM Lane V/C Ratio	-	-	0.186	0.002	-
HCM Control Delay (s/veh)	-	-	12.1	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	32	1	4	105	2	1	1	2	1	4	2
Future Vol, veh/h	1	32	1	4	105	2	1	1	2	1	4	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	34	1	4	111	2	1	1	2	1	4	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.3	7.7	7.1	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	3%	4%	14%
Vol Thru, %	25%	94%	95%	57%
Vol Right, %	50%	3%	2%	29%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	34	111	7
LT Vol	1	1	4	1
Through Vol	1	32	105	4
RT Vol	2	1	2	2
Lane Flow Rate	4	36	117	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.041	0.131	0.008
Departure Headway (Hd)	4.022	4.099	4.047	4.127
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	880	873	889	858
Service Time	2.092	2.126	2.058	2.197
HCM Lane V/C Ratio	0.005	0.041	0.132	0.008
HCM Control Delay, s/veh	7.1	7.3	7.7	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.5	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	6	38	21	13	11	67	236	29	13	151	5
Future Volume (veh/h)	5	6	38	21	13	11	67	236	29	13	151	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	6	7	39	25	15	11	79	278	28	15	178	6
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	226	17	154	251	0	154	142	513	435	33	383	13
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.30	0.30	0.02	0.23	0.23
Sat Flow, veh/h	0	165	1472	0	0	1472	1654	1737	1472	1654	1671	56
Grp Volume(v), veh/h	13	0	39	40	0	11	79	278	28	15	0	184
Grp Sat Flow(s),veh/h/ln	165	0	1472	0	0	1472	1654	1737	1472	1654	0	1727
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	0.2	1.1	3.1	0.3	0.2	0.0	2.1
Cycle Q Clear(g_c), s	2.4	0.0	0.6	2.4	0.0	0.2	1.1	3.1	0.3	0.2	0.0	2.1
Prop In Lane	0.46		1.00	0.62		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	243	0	154	251	0	154	142	513	435	33	0	396
V/C Ratio(X)	0.05	0.00	0.25	0.16	0.00	0.07	0.56	0.54	0.06	0.46	0.00	0.46
Avail Cap(c_a), veh/h	1790	0	1677	1707	0	1677	675	2202	1866	391	0	1893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.5	0.0	9.6	11.6	0.0	9.4	10.2	6.9	5.9	11.3	0.0	7.7
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.3	0.0	0.2	3.4	0.9	0.1	9.6	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	0.2	0.0	0.0	0.4	0.7	0.1	0.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.6	0.0	10.4	11.9	0.0	9.6	13.6	7.8	5.9	20.9	0.0	8.6
LnGrp LOS	A		B	B		A	B	A	A	C		A
Approach Vol, veh/h		52			51			385			199	
Approach Delay, s/veh		10.2			11.4			8.8			9.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	11.4		6.9	6.5	9.8		6.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5
Max Q Clear Time (g_c+I1), s	2.2	5.1		4.4	3.1	4.1		4.4
Green Ext Time (p_c), s	0.0	1.7		0.1	0.1	1.0		0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	9.3
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	359	7	12	309	3	12
Future Vol, veh/h	359	7	12	309	3	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	427	8	14	368	4	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	828	432
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	396	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1073	-	328	603
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	658	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1073	-	323	603
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.31	12.14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	323	603	-	-	1073	-
HCM Lane V/C Ratio	0.011	0.024	-	-	0.013	-
HCM Control Delay (s/veh)	16.3	11.1	-	-	8.4	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	12	5	2	12	7
Future Vol, veh/h	2	12	5	2	12	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	40	40	40	40	40	40
Mvmt Flow	3	19	8	3	19	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	59	10	0	0	11	0
Stage 1	10	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.8	6.6	-	-	4.5	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.66	-	-	2.56	-
Pot Cap-1 Maneuver	861	971	-	-	1392	-
Stage 1	923	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	849	971	-	-	1392	-
Mov Cap-2 Maneuver	849	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	872	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.87	0	4.81
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	952	1137	-
HCM Lane V/C Ratio	-	-	0.023	0.014	-
HCM Control Delay (s/veh)	-	-	8.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	26	299	61	18	237
Future Vol, veh/h	90	26	299	61	18	237
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	107	31	356	73	21	282

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	392	0	0	429	0
Stage 1	392	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.2	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.29	-
Pot Cap-1 Maneuver	384	639	-	-	1089	-
Stage 1	665	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	376	639	-	-	1089	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	18	0	0.59
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	414	127	-
HCM Lane V/C Ratio	-	-	0.334	0.02	-
HCM Control Delay (s/veh)	-	-	18	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.1	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	81	2	14	120	3	1	19	14	3	8	1
Future Vol, veh/h	1	81	2	14	120	3	1	19	14	3	8	1
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	103	3	18	152	4	1	24	18	4	10	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.9	8.3	7.6	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	1%	10%	25%
Vol Thru, %	56%	96%	88%	67%
Vol Right, %	41%	2%	2%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	84	137	12
LT Vol	1	1	14	3
Through Vol	19	81	120	8
RT Vol	14	2	3	1
Lane Flow Rate	43	106	173	15
Geometry Grp	1	1	1	1
Degree of Util (X)	0.053	0.125	0.202	0.02
Departure Headway (Hd)	4.402	4.224	4.192	4.677
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	818	838	848	770
Service Time	2.403	2.307	2.26	2.679
HCM Lane V/C Ratio	0.053	0.126	0.204	0.019
HCM Control Delay, s/veh	7.6	7.9	8.3	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0.8	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	29	134	72	29	46	113	420	57	31	377	13
Future Volume (veh/h)	11	29	134	72	29	46	113	420	57	31	377	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	12	32	138	78	32	48	123	457	57	34	410	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	91	188	581	141	39	581	148	600	509	60	487	17
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.09	0.34	0.34	0.04	0.28	0.28
Sat Flow, veh/h	22	489	1510	77	100	1510	1697	1781	1510	1697	1712	58
Grp Volume(v), veh/h	44	0	138	110	0	48	123	457	57	34	0	424
Grp Sat Flow(s),veh/h/ln	511	0	1510	178	0	1510	1697	1781	1510	1697	0	1771
Q Serve(g_s), s	0.4	0.0	3.4	1.8	0.0	1.1	4.0	12.7	1.4	1.1	0.0	12.5
Cycle Q Clear(g_c), s	20.7	0.0	3.4	21.3	0.0	1.1	4.0	12.7	1.4	1.1	0.0	12.5
Prop In Lane	0.27		1.00	0.71		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	279	0	581	179	0	581	148	600	509	60	0	504
V/C Ratio(X)	0.16	0.00	0.24	0.61	0.00	0.08	0.83	0.76	0.11	0.57	0.00	0.84
Avail Cap(c_a), veh/h	428	0	721	299	0	721	291	883	749	229	0	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.9	0.0	11.6	22.4	0.0	10.8	24.9	16.4	12.7	26.3	0.0	18.7
Incr Delay (d2), s/veh	0.3	0.0	0.2	3.4	0.0	0.1	11.1	2.3	0.1	8.3	0.0	4.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	1.5	0.0	0.3	1.9	4.9	0.4	0.6	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	0.0	11.8	25.8	0.0	10.9	36.0	18.7	12.8	34.6	0.0	23.1
LnGrp LOS	B		B	C		B	D	B	B	C		C
Approach Vol, veh/h		182			158			637			458	
Approach Delay, s/veh		12.1			21.2			21.5			24.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	23.6		26.9	9.5	20.6		26.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	27.5		26.5	9.5	25.5		26.5				
Max Q Clear Time (g_c+I1), s	3.1	14.7		22.7	6.0	14.5		23.3				
Green Ext Time (p_c), s	0.0	2.5		0.2	0.1	2.0		0.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	21.1
HCM 7th LOS	C

Appendix D
Trip Generation Calculations

GCW
ENGINEERS \ SURVEYORS

Appendix D - Trip Generation

Trip Generator	Size	Trips												
		Daily	Morning	Morning In	Morning Out	AM	AM In	AM Out	Afternoon	Afternoon In	Afternoon Out	PM	PM In	PM Out
Employees														
Morning Shift (6am-2pm)	240	528	240	240	0				240	0	240			
Afternoon Shift (2pm-10pm)	80	176							80	80	0	16	8	8
Night Shift (10pm-7am)	40	88				40	0	40						
Deliveries	20	40	4	2	2	20	10	10	4	2	2			
Total Trips		**832**	**244**	**242**	**2**	**60**	**10**	**50**	**324**	**82**	**242**	**16**	**8**	**8**

Appendix E
Baseline Plus Project LOS Calculations

GCW
ENGINEERS \ SURVEYORS

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	51	103	285	1	3
Future Vol, veh/h	135	51	103	285	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	153	58	117	324	1	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	211	0	740	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	558	-
Critical Hdwy	-	-	4.21	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.299	-	3.599	3.399
Pot Cap-1 Maneuver	-	-	1307	-	371	837
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	556	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1307	-	338	837
Mov Cap-2 Maneuver	-	-	-	-	338	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	506	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.13	10.91
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	338	837	-	-	1307	-
HCM Lane V/C Ratio	0.003	0.004	-	-	0.09	-
HCM Control Delay (s/veh)	15.7	9.3	-	-	8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0.3	-

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	1	2	2	2	150
Future Vol, veh/h	100	1	2	2	2	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	54	54	54	54	54	54
Heavy Vehicles, %	38	38	38	38	38	38
Mvmt Flow	185	2	4	4	4	278

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	291	6	0	0	7	0
Stage 1	6	-	-	-	-	-
Stage 2	285	-	-	-	-	-
Critical Hdwy	6.78	6.58	-	-	4.48	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.642	-	-	2.542	-
Pot Cap-1 Maneuver	630	981	-	-	1407	-
Stage 1	931	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	628	981	-	-	1407	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	24	-
HCM Lane V/C Ratio	-	-	0.297	0.003	-
HCM Control Delay (s/veh)	-	-	13.1	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	132	8	110	30	3	257
Future Vol, veh/h	132	8	110	30	3	257
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	148	9	124	34	3	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	436	140	0	0	157	0
Stage 1	140	-	-	-	-	-
Stage 2	296	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	559	882	-	-	1364	-
Stage 1	862	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	558	882	-	-	1364	-
Mov Cap-2 Maneuver	558	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.72	0	0.09
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	570	21	-
HCM Lane V/C Ratio	-	-	0.276	0.002	-
HCM Control Delay (s/veh)	-	-	13.7	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	32	1	84	141	2	1	1	3	1	9	2
Future Vol, veh/h	1	32	1	84	141	2	1	1	3	1	9	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	34	1	88	148	2	1	1	3	1	9	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.5	8.7	7.3	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	3%	37%	8%
Vol Thru, %	20%	94%	62%	75%
Vol Right, %	60%	3%	1%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	34	227	12
LT Vol	1	1	84	1
Through Vol	1	32	141	9
RT Vol	3	1	2	2
Lane Flow Rate	5	36	239	13
Geometry Grp	1	1	1	1
Degree of Util (X)	0.006	0.042	0.274	0.016
Departure Headway (Hd)	4.307	4.2	4.129	4.536
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	836	845	872	794
Service Time	2.308	2.264	2.149	2.536
HCM Lane V/C Ratio	0.006	0.043	0.274	0.016
HCM Control Delay, s/veh	7.3	7.5	8.7	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	1.1	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	6	38	21	18	11	115	236	29	13	151	17
Future Volume (veh/h)	5	6	38	21	18	11	115	236	29	13	151	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	6	7	39	25	21	11	135	278	28	15	178	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	213	29	157	225	4	157	202	569	482	33	346	39
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.33	0.33	0.02	0.23	0.23
Sat Flow, veh/h	0	270	1472	0	35	1472	1654	1737	1472	1654	1534	172
Grp Volume(v), veh/h	13	0	39	46	0	11	135	278	28	15	0	198
Grp Sat Flow(s),veh/h/ln	270	0	1472	36	0	1472	1654	1737	1472	1654	0	1706
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	0.2	1.9	3.2	0.3	0.2	0.0	2.5
Cycle Q Clear(g_c), s	2.6	0.0	0.6	2.6	0.0	0.2	1.9	3.2	0.3	0.2	0.0	2.5
Prop In Lane	0.46		1.00	0.54		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	242	0	157	228	0	157	202	569	482	33	0	384
V/C Ratio(X)	0.05	0.00	0.25	0.20	0.00	0.07	0.67	0.49	0.06	0.46	0.00	0.51
Avail Cap(c_a), veh/h	1680	0	1577	1621	0	1577	635	2072	1756	368	0	1759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	10.1	12.2	0.0	9.9	10.4	6.7	5.7	12.0	0.0	8.4
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.4	0.0	0.2	3.8	0.6	0.0	9.7	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.2	0.0	0.0	0.7	0.7	0.1	0.1	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.1	0.0	11.0	12.6	0.0	10.1	14.1	7.3	5.7	21.6	0.0	9.5
LnGrp LOS	B		B	B		B	B	A	A	C		A
Approach Vol, veh/h		52			57			441			213	
Approach Delay, s/veh		10.8			12.1			9.3			10.3	
Approach LOS		B			B			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	12.6		7.1	7.5	10.1		7.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5				
Max Q Clear Time (g_c+I1), s	2.2	5.2		4.6	3.9	4.5		4.6				
Green Ext Time (p_c), s	0.0	1.7		0.1	0.1	1.1		0.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	9.9
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	359	23	45	309	51	109
Future Vol, veh/h	359	23	45	309	51	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	427	27	54	368	61	130

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	455	0	916	441
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	475	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	1055	-	290	596
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	605	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1055	-	275	596
Mov Cap-2 Maneuver	-	-	-	-	275	-
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	575	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.09	15.59
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	275	596	-	-	1055	-
HCM Lane V/C Ratio	0.22	0.218	-	-	0.051	-
HCM Control Delay (s/veh)	21.7	12.7	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.8	-	-	0.2	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	12	150	99	12	56
Future Vol, veh/h	35	12	150	99	12	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	40	40	40	40	40	40
Mvmt Flow	56	19	238	157	19	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	444	317	0	0	395	0
Stage 1	317	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.8	6.6	-	-	4.5	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.66	-	-	2.56	-
Pot Cap-1 Maneuver	507	644	-	-	984	-
Stage 1	660	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	497	644	-	-	984	-
Mov Cap-2 Maneuver	497	-	-	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.95	0	1.54
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	527	318	-
HCM Lane V/C Ratio	-	-	0.141	0.019	-
HCM Control Delay (s/veh)	-	-	12.9	8.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	26	360	97	18	258
Future Vol, veh/h	102	26	360	97	18	258
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	121	31	429	115	21	307

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	836	486	0	0	544	0
Stage 1	486	-	-	-	-	-
Stage 2	350	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.2	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.29	-
Pot Cap-1 Maneuver	327	565	-	-	986	-
Stage 1	602	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	318	565	-	-	986	-
Mov Cap-2 Maneuver	318	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	23.07	0	0.57
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	349	117	-
HCM Lane V/C Ratio	-	-	0.437	0.022	-
HCM Control Delay (s/veh)	-	-	23.1	8.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.1	0.1	-

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	117	2	41	132	3	1	24	94	3	10	1
Future Vol, veh/h	1	117	2	41	132	3	1	24	94	3	10	1
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	148	3	52	167	4	1	30	119	4	13	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	9.5	8.5	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	1%	23%	21%
Vol Thru, %	20%	98%	75%	71%
Vol Right, %	79%	2%	2%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	120	176	14
LT Vol	1	1	41	3
Through Vol	24	117	132	10
RT Vol	94	2	3	1
Lane Flow Rate	151	152	223	18
Geometry Grp	1	1	1	1
Degree of Util (X)	0.185	0.196	0.285	0.025
Departure Headway (Hd)	4.425	4.634	4.598	5.066
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	810	773	782	705
Service Time	2.458	2.667	2.63	3.11
HCM Lane V/C Ratio	0.186	0.197	0.285	0.026
HCM Control Delay, s/veh	8.5	8.8	9.5	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.7	1.2	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	34	182	72	31	46	129	420	57	31	377	17
Future Volume (veh/h)	23	34	182	72	31	46	129	420	57	31	377	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	25	37	193	78	34	48	140	457	57	34	410	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	92	101	605	118	34	605	169	616	522	58	475	21
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.10	0.35	0.35	0.03	0.28	0.28
Sat Flow, veh/h	26	252	1510	48	84	1510	1697	1781	1510	1697	1694	74
Grp Volume(v), veh/h	62	0	193	112	0	48	140	457	57	34	0	428
Grp Sat Flow(s),veh/h/ln	278	0	1510	132	0	1510	1697	1781	1510	1697	0	1768
Q Serve(g_s), s	0.9	0.0	5.4	1.4	0.0	1.2	5.0	13.9	1.6	1.2	0.0	14.1
Cycle Q Clear(g_c), s	24.5	0.0	5.4	24.7	0.0	1.2	5.0	13.9	1.6	1.2	0.0	14.1
Prop In Lane	0.40		1.00	0.70		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	193	0	605	152	0	605	169	616	522	58	0	496
V/C Ratio(X)	0.32	0.00	0.32	0.74	0.00	0.08	0.83	0.74	0.11	0.58	0.00	0.86
Avail Cap(c_a), veh/h	239	0	650	189	0	650	262	853	723	152	0	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	0.0	12.7	25.2	0.0	11.4	27.2	17.7	13.7	29.3	0.0	21.0
Incr Delay (d2), s/veh	0.9	0.0	0.3	11.0	0.0	0.1	12.2	2.2	0.1	8.9	0.0	7.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.7	2.1	0.0	0.4	2.5	5.5	0.5	0.6	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.0	0.0	13.0	36.2	0.0	11.5	39.4	20.0	13.8	38.1	0.0	28.1
LnGrp LOS	B		B	D		B	D	B	B	D		C
Approach Vol, veh/h		255			160			654			462	
Approach Delay, s/veh		13.7			28.8			23.6			28.9	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	26.2		30.1	10.8	22.1		30.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5				
Max Q Clear Time (g_c+I1), s	3.2	15.9		26.5	7.0	16.1		26.7				
Green Ext Time (p_c), s	0.0	2.6		0.0	0.1	1.8		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	24.1
HCM 7th LOS	C

Appendix F
Future Year LOS Calculations

GCW
ENGINEERS \ SURVEYORS

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	12	13	347	25	29
Future Vol, veh/h	167	12	13	347	25	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	186	13	14	386	28	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	607	192
Stage 1	-	-	-	-	192	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	-	-	4.21	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.299	-	3.599	3.399
Pot Cap-1 Maneuver	-	-	1321	-	445	827
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	648	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1321	-	441	827
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.28	11.47
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	441	827	-	-	1321	-
HCM Lane V/C Ratio	0.063	0.039	-	-	0.011	-
HCM Control Delay (s/veh)	13.7	9.5	-	-	7.8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	5	49	5	5	20
Future Vol, veh/h	5	5	49	5	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	38	38	38	38	38	38
Mvmt Flow	8	8	82	8	8	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	136	86	0	0	90	0
Stage 1	86	-	-	-	-	-
Stage 2	50	-	-	-	-	-
Critical Hdwy	6.78	6.58	-	-	4.48	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.642	-	-	2.542	-
Pot Cap-1 Maneuver	779	882	-	-	1307	-
Stage 1	854	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	774	882	-	-	1307	-
Mov Cap-2 Maneuver	774	-	-	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.46	0	1.55
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	825	360	-
HCM Lane V/C Ratio	-	-	0.02	0.006	-
HCM Control Delay (s/veh)	-	-	9.5	7.8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	103	8	155	41	7	252
Future Vol, veh/h	103	8	155	41	7	252
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	112	9	168	45	8	274

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	480	191	0	0	213	0
Stage 1	191	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	527	826	-	-	1300	-
Stage 1	818	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	523	826	-	-	1300	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.62	0	0.21
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	538	49	-
HCM Lane V/C Ratio	-	-	0.224	0.006	-
HCM Control Delay (s/veh)	-	-	13.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	38	5	5	106	6	5	5	5	5	5	5
Future Vol, veh/h	5	38	5	5	106	6	5	5	5	5	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	5	40	5	5	112	6	5	5	5	5	5	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.4	7.8	7.3	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	10%	4%	33%
Vol Thru, %	33%	79%	91%	33%
Vol Right, %	33%	10%	5%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	48	117	15
LT Vol	5	5	5	5
Through Vol	5	38	106	5
RT Vol	5	5	6	5
Lane Flow Rate	16	51	123	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.058	0.139	0.018
Departure Headway (Hd)	4.18	4.107	4.073	4.18
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	869	881	844
Service Time	2.266	2.149	2.099	2.266
HCM Lane V/C Ratio	0.019	0.059	0.14	0.019
HCM Control Delay, s/veh	7.3	7.4	7.8	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.5	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	14	47	21	16	15	70	290	32	15	183	5
Future Volume (veh/h)	6	14	47	21	16	15	70	290	32	15	183	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	7	16	46	23	18	15	78	322	30	17	203	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	233	143	171	309	85	171	139	553	469	37	431	13
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.08	0.32	0.32	0.02	0.26	0.26
Sat Flow, veh/h	375	1227	1472	716	731	1472	1654	1737	1472	1654	1678	50
Grp Volume(v), veh/h	23	0	46	41	0	15	78	322	30	17	0	209
Grp Sat Flow(s),veh/h/ln	1602	0	1472	1447	0	1472	1654	1737	1472	1654	0	1728
Q Serve(g_s), s	0.0	0.0	0.7	0.3	0.0	0.2	1.1	3.9	0.4	0.3	0.0	2.5
Cycle Q Clear(g_c), s	0.3	0.0	0.7	0.6	0.0	0.2	1.1	3.9	0.4	0.3	0.0	2.5
Prop In Lane	0.30		1.00	0.56		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	375	0	171	394	0	171	139	553	469	37	0	444
V/C Ratio(X)	0.06	0.00	0.27	0.10	0.00	0.09	0.56	0.58	0.06	0.46	0.00	0.47
Avail Cap(c_a), veh/h	1862	0	1569	1744	0	1569	632	2061	1747	366	0	1773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	10.0	10.0	0.0	9.8	11.0	7.1	5.9	12.0	0.0	7.8
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.1	0.0	0.2	3.6	1.0	0.1	8.7	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.1	0.0	0.1	0.4	0.9	0.1	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.9	0.0	10.9	10.1	0.0	10.0	14.5	8.1	6.0	20.7	0.0	8.6
LnGrp LOS	A		B	B		B	B	A	A	C		A
Approach Vol, veh/h		69			56			430			226	
Approach Delay, s/veh		10.5			10.1			9.1			9.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	12.4		7.4	6.6	10.9		7.4
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5
Max Q Clear Time (g_c+I1), s	2.3	5.9		2.7	3.1	4.5		2.6
Green Ext Time (p_c), s	0.0	2.1		0.2	0.1	1.1		0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	9.4
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	435	57	70	374	49	65
Future Vol, veh/h	435	57	70	374	49	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	494	65	80	425	56	74

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	559	0	1111	527
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	584	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	964	-	221	532
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	538	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	964	-	203	532
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	494	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.43	19.93
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	203	532	-	-	964	-
HCM Lane V/C Ratio	0.274	0.139	-	-	0.083	-
HCM Control Delay (s/veh)	29.3	12.9	-	-	9.1	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	15	99	5	15	112
Future Vol, veh/h	5	15	99	5	15	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	40	40	40	40	40	40
Mvmt Flow	7	21	141	7	21	160

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	348	145	0	0	149	0
Stage 1	145	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6.8	6.6	-	-	4.5	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.66	-	-	2.56	-
Pot Cap-1 Maneuver	579	811	-	-	1231	-
Stage 1	797	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	568	811	-	-	1231	-
Mov Cap-2 Maneuver	568	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.11	0	0.94
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	733	213	-
HCM Lane V/C Ratio	-	-	0.039	0.017	-
HCM Control Delay (s/veh)	-	-	10.1	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	108	27	412	78	20	341
Future Vol, veh/h	108	27	412	78	20	341
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	123	31	468	89	23	388

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	945	513	0	0	557	0
Stage 1	513	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.2	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.29	-
Pot Cap-1 Maneuver	281	546	-	-	975	-
Stage 1	585	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	273	546	-	-	975	-
Mov Cap-2 Maneuver	273	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	28.47	0	0.49
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	303	100	-
HCM Lane V/C Ratio	-	-	0.506	0.023	-
HCM Control Delay (s/veh)	-	-	28.5	8.8	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	2.7	0.1	-

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	93	5	17	130	7	5	20	17	7	10	5
Future Vol, veh/h	5	93	5	17	130	7	5	20	17	7	10	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	6	109	6	20	153	8	6	24	20	8	12	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.1	8.5	7.8	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	5%	11%	32%
Vol Thru, %	48%	90%	84%	45%
Vol Right, %	40%	5%	5%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	103	154	22
LT Vol	5	5	17	7
Through Vol	20	93	130	10
RT Vol	17	5	7	5
Lane Flow Rate	49	121	181	26
Geometry Grp	1	1	1	1
Degree of Util (X)	0.062	0.147	0.212	0.034
Departure Headway (Hd)	4.49	4.355	4.221	4.664
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	801	829	837	771
Service Time	2.499	2.355	2.313	2.675
HCM Lane V/C Ratio	0.061	0.146	0.216	0.034
HCM Control Delay, s/veh	7.8	8.1	8.5	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.8	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	38	154	76	39	50	137	507	60	35	452	16
Future Volume (veh/h)	16	38	154	76	39	50	137	507	60	35	452	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	17	41	162	83	42	52	149	551	60	38	491	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	75	140	574	104	35	574	179	685	580	62	540	19
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.38	0.38	0.04	0.32	0.32
Sat Flow, veh/h	16	367	1510	42	91	1510	1697	1781	1510	1697	1712	59
Grp Volume(v), veh/h	58	0	162	125	0	52	149	551	60	38	0	508
Grp Sat Flow(s),veh/h/ln	383	0	1510	133	0	1510	1697	1781	1510	1697	0	1771
Q Serve(g_s), s	0.8	0.0	5.1	1.3	0.0	1.5	5.8	18.7	1.7	1.5	0.0	18.7
Cycle Q Clear(g_c), s	25.7	0.0	5.1	25.8	0.0	1.5	5.8	18.7	1.7	1.5	0.0	18.7
Prop In Lane	0.29		1.00	0.66		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	214	0	574	139	0	574	179	685	580	62	0	559
V/C Ratio(X)	0.27	0.00	0.28	0.90	0.00	0.09	0.83	0.80	0.10	0.61	0.00	0.91
Avail Cap(c_a), veh/h	231	0	590	152	0	590	238	774	656	138	0	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	14.6	28.4	0.0	13.5	29.8	18.6	13.4	32.2	0.0	22.3
Incr Delay (d2), s/veh	0.7	0.0	0.3	43.3	0.0	0.1	17.1	5.6	0.1	9.4	0.0	14.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.6	3.7	0.0	0.5	3.1	8.0	0.6	0.8	0.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.3	0.0	14.9	71.8	0.0	13.6	46.9	24.2	13.5	41.6	0.0	37.1
LnGrp LOS	B		B	E		B	D	C	B	D		D
Approach Vol, veh/h		220			177			760			546	
Approach Delay, s/veh		15.5			54.7			27.8			37.4	
Approach LOS		B			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	31.0		30.6	11.8	26.3		30.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5				
Max Q Clear Time (g_c+I1), s	3.5	20.7		27.7	7.8	20.7		27.8				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.1	1.4		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	32.1
HCM 7th LOS	C

Appendix G

Future Year Plus Project LOS Calculations

GCW

ENGINEERS \ SURVEYORS

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	60	110	347	25	30
Future Vol, veh/h	167	60	110	347	25	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	186	67	122	386	28	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	252	0	849	219
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	-	-	4.21	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.299	-	3.599	3.399
Pot Cap-1 Maneuver	-	-	1262	-	320	799
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	514	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	289	799
Mov Cap-2 Maneuver	-	-	-	-	289	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	464	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.96	13.83
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	289	799	-	-	1262	-
HCM Lane V/C Ratio	0.096	0.042	-	-	0.097	-
HCM Control Delay (s/veh)	18.8	9.7	-	-	8.2	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.3	-

Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	5	50	6	5	165
Future Vol, veh/h	102	5	50	6	5	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	38	38	38	38	38	38
Mvmt Flow	170	8	83	10	8	275

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	380	88	0	0	93	0
Stage 1	88	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.78	6.58	-	-	4.48	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.642	-	-	2.542	-
Pot Cap-1 Maneuver	557	879	-	-	1303	-
Stage 1	852	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	553	879	-	-	1303	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.34	0	0.23
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	563	53	-
HCM Lane V/C Ratio	-	-	0.317	0.006	-
HCM Control Delay (s/veh)	-	-	14.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	139	8	156	41	7	313
Future Vol, veh/h	139	8	156	41	7	313
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	151	9	170	45	8	340

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	547	192	0	0	214	0
Stage 1	192	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	481	825	-	-	1299	-
Stage 1	817	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	478	825	-	-	1299	-
Mov Cap-2 Maneuver	478	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.9	0	0.17
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	489	39	-
HCM Lane V/C Ratio	-	-	0.327	0.006	-
HCM Control Delay (s/veh)	-	-	15.9	7.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	38	5	85	142	6	5	5	6	5	10	5
Future Vol, veh/h	5	38	5	85	142	6	5	5	6	5	10	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	5	40	5	89	149	6	5	5	6	5	11	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.6	8.9	7.6	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	10%	36%	25%
Vol Thru, %	31%	79%	61%	50%
Vol Right, %	38%	10%	3%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	48	233	20
LT Vol	5	5	85	5
Through Vol	5	38	142	10
RT Vol	6	5	6	5
Lane Flow Rate	17	51	245	21
Geometry Grp	1	1	1	1
Degree of Util (X)	0.021	0.059	0.284	0.027
Departure Headway (Hd)	4.526	4.212	4.164	4.583
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	839	861	786
Service Time	2.527	2.297	2.204	2.584
HCM Lane V/C Ratio	0.021	0.061	0.285	0.027
HCM Control Delay, s/veh	7.6	7.6	8.9	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	1.2	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	14	47	21	21	15	118	290	32	15	183	17
Future Volume (veh/h)	6	14	47	21	21	15	118	290	32	15	183	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737	1737
Adj Flow Rate, veh/h	7	16	46	23	23	15	131	322	30	17	203	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	11	11	11	11	11	11	11	11	11	11	11	11
Cap, veh/h	225	146	173	285	100	173	196	581	492	37	373	35
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.33	0.33	0.02	0.24	0.24
Sat Flow, veh/h	361	1244	1472	635	850	1472	1654	1737	1472	1654	1564	146
Grp Volume(v), veh/h	23	0	46	46	0	15	131	322	30	17	0	222
Grp Sat Flow(s),veh/h/ln	1605	0	1472	1486	0	1472	1654	1737	1472	1654	0	1711
Q Serve(g_s), s	0.0	0.0	0.7	0.3	0.0	0.2	1.9	3.9	0.4	0.3	0.0	2.9
Cycle Q Clear(g_c), s	0.3	0.0	0.7	0.7	0.0	0.2	1.9	3.9	0.4	0.3	0.0	2.9
Prop In Lane	0.30		1.00	0.50		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	372	0	173	385	0	173	196	581	492	37	0	408
V/C Ratio(X)	0.06	0.00	0.27	0.12	0.00	0.09	0.67	0.55	0.06	0.46	0.00	0.54
Avail Cap(c_a), veh/h	1801	0	1519	1711	0	1519	612	1995	1691	354	0	1699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	0.0	10.3	10.3	0.0	10.1	10.8	7.0	5.8	12.4	0.0	8.6
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.1	0.0	0.2	3.9	0.8	0.1	8.8	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.2	0.0	0.1	0.7	0.9	0.1	0.2	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.2	0.0	11.1	10.4	0.0	10.3	14.8	7.8	5.9	21.2	0.0	9.7
LnGrp LOS	B		B	B		B	B	A	A	C		A
Approach Vol, veh/h		69			61			483			239	
Approach Delay, s/veh		10.8			10.4			9.6			10.5	
Approach LOS		B			B			A			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	13.1		7.5	7.5	10.6		7.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5
Max Q Clear Time (g_c+I1), s	2.3	5.9		2.7	3.9	4.9		2.7
Green Ext Time (p_c), s	0.0	2.1		0.2	0.1	1.2		0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	10.0
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	435	73	103	374	97	162
Future Vol, veh/h	435	73	103	374	97	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	280	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	494	83	117	425	110	184

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	577	0	1195	536
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	659	-
Critical Hdwy	-	-	4.22	-	6.52	6.32
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	5.52	-
Follow-up Hdwy	-	-	2.308	-	3.608	3.408
Pot Cap-1 Maneuver	-	-	949	-	197	526
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	496	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	949	-	172	526
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	435	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.01	31.03
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	172	526	-	-	949	-
HCM Lane V/C Ratio	0.64	0.35	-	-	0.123	-
HCM Control Delay (s/veh)	57	15.5	-	-	9.3	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	3.6	1.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	15	244	102	15	161
Future Vol, veh/h	38	15	244	102	15	161
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	40	40	40	40	40	40
Mvmt Flow	54	21	349	146	21	230

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	694	421	0	0	494	0
Stage 1	421	-	-	-	-	-
Stage 2	273	-	-	-	-	-
Critical Hdwy	6.8	6.6	-	-	4.5	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.86	3.66	-	-	2.56	-
Pot Cap-1 Maneuver	356	558	-	-	899	-
Stage 1	588	-	-	-	-	-
Stage 2	693	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	347	558	-	-	899	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	16.5	0	0.78
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	388	153	-
HCM Lane V/C Ratio	-	-	0.195	0.024	-
HCM Control Delay (s/veh)	-	-	16.5	9.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	120	27	473	114	20	362
Future Vol, veh/h	120	27	473	114	20	362
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	136	31	538	130	23	411

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1059	602	0	0	667	0
Stage 1	602	-	-	-	-	-
Stage 2	457	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.2	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.29	-
Pot Cap-1 Maneuver	240	485	-	-	886	-
Stage 1	532	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	232	485	-	-	886	-
Mov Cap-2 Maneuver	232	-	-	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	41.9	0	0.48
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	257	94	-
HCM Lane V/C Ratio	-	-	0.651	0.026	-
HCM Control Delay (s/veh)	-	-	41.9	9.2	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	4.1	0.1	-

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	129	5	44	142	7	5	25	97	7	12	5
Future Vol, veh/h	5	129	5	44	142	7	5	25	97	7	12	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	6	152	6	52	167	8	6	29	114	8	14	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9	9.6	8.6	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	4%	23%	29%
Vol Thru, %	20%	93%	74%	50%
Vol Right, %	76%	4%	4%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	127	139	193	24
LT Vol	5	5	44	7
Through Vol	25	129	142	12
RT Vol	97	5	7	5
Lane Flow Rate	149	164	227	28
Geometry Grp	1	1	1	1
Degree of Util (X)	0.187	0.212	0.292	0.04
Departure Headway (Hd)	4.5	4.664	4.629	5.04
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	769	774	708
Service Time	2.538	2.702	2.665	3.089
HCM Lane V/C Ratio	0.187	0.213	0.293	0.04
HCM Control Delay, s/veh	8.6	9	9.6	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.8	1.2	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	43	202	76	41	50	153	507	60	35	452	20
Future Volume (veh/h)	28	43	202	76	41	50	153	507	60	35	452	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	30	47	215	83	45	52	166	551	60	38	491	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	8	8	8	8	8	8	8	8	8	8	8
Cap, veh/h	70	78	560	83	27	560	202	718	609	63	543	24
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.12	0.40	0.40	0.04	0.32	0.32
Sat Flow, veh/h	0	211	1510	0	73	1510	1697	1781	1510	1697	1692	76
Grp Volume(v), veh/h	77	0	215	128	0	52	166	551	60	38	0	513
Grp Sat Flow(s),veh/h/ln	211	0	1510	74	0	1510	1697	1781	1510	1697	0	1768
Q Serve(g_s), s	0.0	0.0	7.5	0.0	0.0	1.6	6.8	19.1	1.8	1.6	0.0	19.8
Cycle Q Clear(g_c), s	26.5	0.0	7.5	26.5	0.0	1.6	6.8	19.1	1.8	1.6	0.0	19.8
Prop In Lane	0.39		1.00	0.65		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	148	0	560	110	0	560	202	718	609	63	0	568
V/C Ratio(X)	0.52	0.00	0.38	1.16	0.00	0.09	0.82	0.77	0.10	0.61	0.00	0.90
Avail Cap(c_a), veh/h	148	0	560	110	0	560	226	735	623	131	0	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	16.5	29.4	0.0	14.7	30.7	18.4	13.2	33.9	0.0	23.2
Incr Delay (d2), s/veh	3.2	0.0	0.4	135.2	0.0	0.1	19.3	4.8	0.1	9.0	0.0	15.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.5	6.0	0.0	0.5	3.8	8.1	0.6	0.8	0.0	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.8	0.0	16.9	164.5	0.0	14.7	50.0	23.2	13.3	42.9	0.0	38.7
LnGrp LOS	C		B	F		B	D	C	B	D		D
Approach Vol, veh/h		292			180			777			551	
Approach Delay, s/veh		18.2			121.3			28.2			39.0	
Approach LOS		B			F			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	33.3		31.0	13.0	27.5		31.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	29.5		26.5	9.5	25.5		26.5				
Max Q Clear Time (g_c+I1), s	3.6	21.1		28.5	8.8	21.8		28.5				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	1.1		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	39.2
HCM 7th LOS	D

Appendix H
CEQA Appendix G Checklist

GCW
ENGINEERS \ SURVEYORS

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	☐	☐	☐	☐
Police protection?	☐	☐	☐	☐
Schools?	☐	☐	☐	☐
Parks?	☐	☐	☐	☐
Other public facilities?	☐	☐	☐	☐
XVI. RECREATION.				
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?	☐	☐	☐	☐
XVII. TRANSPORTATION. 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 § 15064.3, subdivision (b)?	☐	☐	☐	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☐
d) Result in inadequate emergency access?	☐	☐	☐	☐
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, 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:	☐	☐	☐	☐
i) 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), or	☐	☐	☐	☐
ii) 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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☐
XIX. UTILITIES AND SERVICE SYSTEMS. 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?	☐	☐	☐	☐

Air Quality & Greenhouse Gas Emissions Assessment
Triple Crown Cannabis Research and Development Center Project

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City of Colusa, California

Prepared For:

City of Colusa
425 Webster Street
Colusa, CA 95932

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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LIST OF ATTACHMENTS

Attachment A – CalEEMod Output File for Air Quality Emissions and Greenhouse Gas Emissions

LIST OF ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	Micrograms per cubic meter; ppm = parts per million
1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
2021 AQAP	Northern Sacramento Valley Planning Area 2021 Triennial Air Quality Attainment Plan
AB	Assembly Bill
ATCM	airborne toxics control measure
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAPCD	Colusa County Air Pollution Control District
CEQA	California Environmental Quality Act
CH_4	Methane
City	Colusa
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalents
DPM	Diesel particulate matter
EO	Executive Order
GHG	Greenhouse gas emissions
HVAC	Heating, Ventilation, and Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
N_2O	Nitrous oxide

LIST OF ACRONYMS AND ABBREVIATIONS

NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NO_x	Nitrous oxides
NSVAB	Northern Sacramento Valley Air Basin
OEHHA	Office of Environmental Health Hazard Assessment
O_3	Ozone
PG&E	Pacific Gas & Electric Company
ppm	parts per million
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
PM	Particulate Matter
Project	Triple Crown Cannabis Research and Development Center Project
ROG	Reactive organic gases
SB	Senate Bill
SF	Square Feet
SIP	State Implementation Plan
SOx	Sulfur oxides
SO_2	Sulfur dioxide
TACs	Toxic air contaminants
VOC	Volatile organic compounds
ZEV	Zero-Emission Vehicles

1.0 INTRODUCTION

This report documents the results of an Air Quality and Greenhouse Gas (GHG) Emissions Assessment completed for the Triple Crown Cannabis Research and Development Center Project (Project), which proposes the construction and operation of a 2,120,000-square-foot cannabis research and development business park, along with associated facilities and infrastructure, on 86 acres in the City of Colusa. Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate criteria air pollutants and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment.

1.1 Location and Setting

The Proposed Project is located on an approximately 86-acre parcel situated at the northwestern edge of the City of Colusa (City) in Colusa County, California. The Site is bordered by the City of Colusa's Wastewater Treatment Plant to the west and by agricultural land to the north, south, and east. The Site is currently undeveloped, generally flat, with an elevation of approximately 55 feet above mean sea level and has historically been used for row crop agriculture.

The Project Site is proposed to be annexed into the City limits and subdivided into 10 parcels through a tentative parcel map. Utility services, including domestic water, sewer, electricity, and natural gas, will be provided by the City of Colusa and Pacific Gas & Electric (PG&E). The nearest roadway access is via Will South Green Road to the north, with a planned connection to State Route 20. An abandoned railroad line lies approximately 450 feet northeast of the Project Site.

1.2 Project Description

The Project Applicant proposes the phased construction and operation of the Triple Crown Cannabis Business Park, a cannabis research, development, and production campus encompassing approximately 2,120,000 square feet (SF) of floor area and 1,900 parking spaces at full buildout. The Project will include ten energy-efficient buildings dedicated to indoor cannabis cultivation, processing, product manufacturing, distribution, research and development, and administrative functions. The Project also includes a non-storefront (delivery-only) dispensary, employee facilities, secure parking areas, and utility infrastructure.

The Project would be constructed in five distinct phases over an estimated 5-year period. Each phase will include the construction of two buildings totaling 440,000 SF and 380 parking spaces and include combination of cultivation facilities, processing and trimming spaces, administrative offices, research labs, and support infrastructure. Key program elements include:

- Indoor cannabis cultivation buildings optimized for climate control, fertigation, and pest management.
- Manufacturing facilities for cannabis product infusion and packaging.
- A distribution and warehousing facility with staging, loading bays, and fleet operations.
- A research and development center with laboratories and training facilities.

- A nursery facility dedicated to plant genetics and propagation.
- Non-storefront delivery facilities for retail product distribution.
- Employee support spaces including lounges, restrooms, and food service areas.

At full operation, the business park is expected to support up to 310 full-time employees across three daily shifts as well as twenty daily deliveries associated with the non-storefront retail dispensary.

2.0 AIR QUALITY

2.1 Air Quality Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the Colusa County portion of the Northern Sacramento Valley Air Basin (NSVAB), which encompasses the Project Site.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

2.1.1 Northern Sacramento Valley Air Basin

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The City of Colusa lies in the NSVAB, which includes Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta counties. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above mean sea level, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area.

The environmental conditions of Colusa County are conducive to potentially adverse air quality conditions. The basin area traps pollutants between two mountain ranges to the east and the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are generally from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas.

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. Particulate matter (PM) is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Criteria Air Pollutants - Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_x) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

2.1.2.1 Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the NSVAB are in compliance with the state and federal one- and eight-hour standards.

2.1.2.2 Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

2.1.2.3 Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

2.1.2.4 Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease.

According to the USEPA, some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

CARB identified diesel particulate matter (DPM) as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.4 Ambient Air Quality

Ambient air quality at the Project Site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. Colusa-Sunrise Boulevard air quality monitoring station (100 Sunrise Boulevard, Colusa) monitors ambient concentrations of O_3, $PM_{2.5}$ and PM_{10}. Ambient emission concentrations will vary due to localized variations

in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project Area.

Table 2-2 summarizes the published data concerning O_3, PM_{10} and $PM_{2.5}$ since 2021 for each year that the monitoring data is provided.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2021	2022	2023
O_3			
Max 1-hour concentration (ppm)	0.074	0.068	0.072
Max 8-hour concentration (ppm) (state/federal)	0.064 / 0.064	0.063 / 0.062	0.065 / 0.064
Number of days above 1-hour standard (state)	0	0	0
Number of days above 8-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
PM_{10}			
Max 24-hour concentration (µg/m^3) (state/federal)	183.7 / 184.5	76.0 / 75.2	79.5 / 79.1
Number of days above 24-hour standard (state/federal)	48.3 / 1.0	17.0 / 0	* / *
$PM_{2.5}$			
Max 24-hour concentration (µg/m^3) (state/federal)	86.6 / 86.6	37.0 / 37.0	32.5 / 32.5
Number of days above federal 24-hour standard	*	1.0	*

Source: CARB 2024a
Notes: µg/m^3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the Colusa County portion of the NSVAB, which encompasses the Project Site, is included in Table 2-3.

Table 2-3. Attainment Status of Criteria Pollutants in the Colusa County Portion of the NSVAB

Pollutant	State Designation	Federal Designation
O_3	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2023

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the state standard for PM_{10} and is designated as unclassified/attainment for all federal standards (CARB 2023).

2.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The Project Area is rural, with minimal nearby sensitive land uses, and located adjacent to the City of Colusa's Wastewater Treatment Plant and agricultural land. The nearest sensitive receptor is a rural residence located northeast of the Proposed Project approximately 1,277 feet (0.24 mile) distant.

2.2 Regulatory Framework

2.2.1 Federal

2.2.1.1 Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the NSVAB for the criteria pollutants.

2.2.2 State

2.2.2.1 California Clean Air Act

The California Clean Air Act (CCAA) allows the State to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

2.2.2.2 California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to

attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The Colusa County Air Pollution Control District (CCAPCD) is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the Colusa County portion of the NSVAB. In an attempt to achieve NAAQS and CAAQS and maintain air quality, the air district, in coordination with the other air districts of the NSVAB, has completed several air quality attainment plans and reports, which together constitute the SIP for the NSVAB. Specifically, all of the air districts in the NSVAB including the CCAPCD prepared an air quality attainment plan for O_3 in 1994. Updated every three years since adoption, the current *Northern Sacramento Valley Planning Area 2021 Triennial Air Quality Attainment Plan* (2021 AQAP) includes forecast ROG and NO_x emissions (O_3 precursors) for the entire NSVAB through the year 2025. The 2021 AQAP provides local guidance for air basins to achieve attainment of the California ambient air quality O_3 standard.

2.2.2.3 Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the State's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 Local

2.2.3.1 Colusa County Air Pollution Control District

In the City of Colusa, the air quality regulating authority is the CCAPCD, which adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs. The district also regulates agricultural burning. Other responsibilities include monitoring air quality, preparing clean air

plans, and responding to citizen complaints concerning air quality. The CCAPCD develops regulations to improve air quality and protect the health and welfare of Colusa County residents and their environment.

The following is a list of noteworthy CCAPCD rules and regulations that are required of activities associated with the Proposed Project:

- **Rule 200 (Nuisance)** – This rule prohibits the discharge from any non-vehicular source such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- **Rule 201 (Visible Emissions)** – As provided by Section 41701 of the California Health and Safety Code, a person shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminants for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringelmann Chart as published by the U.S. Bureau of Mines.
- **Rule 230 (Architectural Coatings)** – This rule requires manufacturers, distributors, and users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings by placing limits on the VOC content of various coating categories.
- **Rule 231 (Cutback and Emulsified Asphalt)** –The purpose of this Rule is to limit emissions of volatile organic compounds (VOCs) from the use of cutback and emulsified asphalt in paving, construction, or maintenance of parking lots, driveways, streets, and highways. This rule prohibits the use or application for paving, construction or maintenance of parking lots, driveways, streets, or highways any rapid or medium cure cutback asphalt or slow cure cutback asphalt containing more than 0.5 percent by volume of VOCs which evaporate at 260°C (500°F) or less. This rule also prohibits any emulsified asphalt material containing more than 3.0 percent by volume of VOCs which evaporate at 260°C (500°F) or less.
- **Rule 252 (Stationary Internal Combustion Engines)** – To limit emissions of NOx and CO from stationary internal combustion engines any gaseous, diesel, or any other liquid-fueled stationary internal combustion engine within Colusa County shall not be operated in a manner that results in emissions exceeding limits established by the CCAPCD.
- **Rule 430 (New Source Review)** – The CCAPCD has established pre-construction review requirements for new and modified stationary sources of air pollution in order to analyze air quality impacts and insure that the operation of such sources does not interfere with the attainment or maintenance of ambient air quality standards. This rule applies to all new and modified stationary sources which are subject to CCAPCD permit requirements and, after construction, emit or may emit any affected pollutants. Rule 430 provides for no net increase in emissions, pursuant to Section 40918 of the California Health & Safety Code (HSC), from new or modified stationary sources which emit, or have the potential to emit, 25 tons per year or more of any non-attainment pollutant or its precursors.

- **Rule 431 (Emission Reduction Credits and Banking) –** This rule provides a mechanism for permitted and non-permitted emission sources to deposit, transfer, and use Emission Reduction Credits (ERCs) as offsets as allowed by applicable laws and regulations. All uses of emission reductions that are required under the CCAPCD's Rule 430 shall be processed in accordance with this Rule. The provisions of this rule apply to the deposit, transfer, and use of ERCs from stationary sources and open biomass burning sources of air pollution emissions.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

Implementation of the Proposed Project could result in air quality impacts during construction and operations. Neither the City of Colusa nor the CCAPCD have established air pollution thresholds under the California Environmental Quality Act (CEQA) for the assessment of air quality impacts. However, CCAPCD staff has recommended that the CEQA documents use CCAPCD Rule 403, *New Source Review*, Best Available Control Technology thresholds as CEQA significance threshold for criteria pollutant emissions. The thresholds of significance are summarized in Table 2-4.

Table 2-4. Significance Thresholds	
Air Pollutant	**Average Daily Emissions (pounds per day)**
ROG	25
NO_x	25
SO_x	80
PM_{10}	80
CO	500

Source: CCAPCD 2024

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable.

2.3.2 Methodology

Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for Colusa County and Project land use type, and square footage as well as construction phasing, duration, vehicle trips, and equipment provided by the Project applicant. Operational emissions are calculated using CalEEMod model defaults for Colusa County, building and land use square footage estimates identified in the by the Project applicant, and daily trips provided by GCW Engineers and Surveyors (2025).

2.3.3 Impact Analysis

2.3.3.1 Project Construction-Generated Criteria Air Quality Emissions

Regional Construction Significance Analysis

Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. The basic sources of short-term emissions that will be generated through construction of the Proposed Project would be from ground-disturbing activities and from the operation of the construction vehicles (i.e., trenchers, dump trucks). Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place,

and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation.

Construction-generated emissions associated with the Proposed Project are calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Construction was modeled occurring in five phases over five years.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 2-5. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the applicable thresholds of significance.

Table 2-5. Unmitigated Construction-Related Criteria Air Pollutant Emissions

Construction Year	Pollutant (pounds per day)				
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**
Construction Phase One	5.75	48.00	48.40	0.12	19.50
Construction Phase Two	5.60	45.10	47.80	0.12	19.40
Construction Phase Three	5.49	42.70	47.60	0.12	19.30
Construction Phase Four	5.33	39.70	46.90	0.12	19.20
Construction Phase Five	5.21	37.70	46.90	0.12	19.10
Potentially Significant Impact Threshold	*25*	*25*	*500*	*80*	*80*
Exceed Threshold?	**No**	**Yes**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.

Notes: Emissions taken of the season, summer or winter, with the highest outputs. Project-specific assumptions provided by the applicant were incorporated into the CalEEMod modeling, including the construction schedule (five phases over a five-year period), phase durations, vehicle trip, and construction equipment.

As shown in Table 2-5, criteria air pollutant emissions generated during Project construction would result in significant concentrations of NO_x emissions for every year of construction. Therefore, Mitigation Measure AQ-1 is required in order to reduce NO_x emissions to levels below the significance thresholds.

Mitigation Measure AQ-1 would mandate the use of Tier 4 Certified engines for all dozers, scrapers, and graders used during Project construction. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier

1 standards for equipment under 50 horsepower and increasingly more stringent Tier 2, Tier 3, and Tier 4 standards for all equipment with phase-in schedules from 2000 to 2015. As a result, all off-road, diesel-fueled construction equipment manufactured from 2006 to 2015 has been manufactured to Tier 3 standards. The Tier 3 standards can reduce NO_x emissions by as much as 64 percent and PM emissions by as much as 39 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which are currently phased-in over the period of 2008-2015. The Tier 4 standards require that NO_x emissions be further reduced by about 90 percent. This, as a result, decreases ROG emissions as well. All off-road, diesel-fueled construction equipment manufactured in 2015 or later have been manufactured to Tier 4 standards.

Mitigation Measure

AQ-1: Prior to the certificate of construction-related permits for the Triple Crown Cannabis Research and Development Center Project, the Project Applicant shall demonstrate to the satisfaction of the City of Colusa Planning Division that the following measure would be implemented during Project construction.

- All dozers, scrapers, and graders used in Project construction shall be CARB Tier 4 Certified, as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.

Table 2-6 shows the results of construction emissions with implementation of Mitigation Measure AQ-1.

Table 2-6. Mitigated Construction-Related Criteria Air Pollutant Emissions

Construction Year	**Pollutant (pounds per day)**				
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**
Construction Phase One	2.05	11.90	59.80	0.12	17.90
Construction Phase Two	2.05	11.60	59.70	0.12	17.90
Construction Phase Three	2.03	11.20	59.70	0.12	17.90
Construction Phase Four	2.00	10.80	59.50	0.12	17.90
Construction Phase Five	1.98	10.50	59.50	0.12	17.90
Potentially Significant Impact Threshold	*25*	*25*	*500*	*80*	*80*
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.
Notes: Emissions taken of the season, summer or winter, with the highest outputs. Project-specific assumptions provided by the applicant were incorporated into the CalEEMod modeling, including the construction schedule (five phases over a five-year period), phase durations, vehicle trip, and construction equipment. All dozers, scrapers, and graders modeled with Tier 4 certified engines.

As shown in Table 2-6, adherence to Mitigation Measure AQ-1 would ensure that the Proposed Project would be constructed in a manner that daily pollutants would be generated at levels below the potentially significant threshold. With implementation of Mitigation Measure AQ-1, criteria pollutant emissions generated during construction of the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. Further, since the Project's emissions do not exceed significance thresholds, no exceedance of the ambient air quality standards would occur, and no regional health effects from Project criteria pollutants would occur.

2.3.3.2 Project Operations Criteria Air Quality Emissions

Regional Operational Significance Analysis

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROGs and NO_X. Project-generated increases in emissions would be primarily associated with energy use from cannabis cultivation and mobile sources, including employee and delivery trips to the Project Site. Operational air pollutant emissions were estimated based on the building square footage and water usage data provided by the Project Proponent, along with traffic information from CGW (2025). Long-term operational emissions attributable to the Project are identified in Table 2-7 and compared to the significance threshold.

Table 2-7. Operational Criteria Air Pollutant Emissions

Emission Source	Pollutant (pounds per day)				
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**
Mobile	1.58	0.86	16.00	0.04	4.94
Area	0.20	0.00	0.00	0.00	0.00
Energy	1.30	23.60	19.80	0.14	1.79
Total:	**3.08**	**24.46**	**35.80**	**0.18**	**6.70**
Potentially Significance Threshold	*25*	*25*	*500*	*80*	*80*
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.

Notes: Emissions projections were primarily based on CalEEMod default assumptions for Colusa County, spatial estimates of onsite land uses derived from the Project Site Plan, and daily trip data (832 daily trips) provided by GCW (2025) to inform calculations of operational mobile source emissions. Operational energy-related emissions also account for water demand estimates provided by the Project applicant, including increased usage during the summer months (four months).

As shown in Table 2-7, the Project's emissions would not exceed any thresholds for any criteria air pollutants during operation.

2.3.3.3 Conflict with Air Quality Planning

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. As previously stated, the Colusa County portion of the NSVAB, which encompasses the Project Site, is classified as attainment for all federal standards. As such, Colusa County is not subject to a SIP.

The CCAPCD attains and maintains air quality conditions in the City of Colusa through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. In an attempt to achieve and maintain air quality standards, the air district has participated in the preparation of air quality attainment plans and reports. Specifically, all of the air districts in the NSVAB including the CCAPCD, prepared an air quality attainment plan for O_3 in 1994. Updated every three years since adoption, the current *Northern Sacramento Valley Planning Area 2021 Triennial Air Quality Attainment Plan* includes forecast ROG and NO_x emissions (O_3 precursors) for the entire NSVAB. The 2021 AQAP provides local guidance for air basins to achieve and maintain attainment of the California O_3 standard. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions, and updated emission inventory methodologies for various source categories.

A Project would not be consistent with the 2021 AQAP if it would result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQAP. The Project would not exceed the short-term construction standards (see Table 2-6) or long-term operational standards (see Table 2-7) with implementation of mitigation measure AQ-1.

Therefore, the Project would not conflict with or obstruct reduction measures presented in the 2021 AQAP.

2.3.3.4 Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined 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 people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. Sensitive receptors are defined as any residence including private homes, condominiums, apartments, and living quarters, schools, preschools, daycare centers, and health facilities such as hospitals or retirement and nursing homes, long term care hospitals, hospices, prisons, and dormitories or similar live-in housing. The nearest sensitive receptor is a rural residence located northeast of the Proposed Project approximately 1,277 feet (0.24 mile) distant.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of DPM, ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); truck traffic; paving; and other miscellaneous activities. The Colusa County portion of the NSVAB is listed as an attainment area for the state standard for PM_{10} (CARB 2023). Thus, PM_{10} levels in the Colusa County portion of the NSVAB are at unhealthy levels during certain periods. However, as shown in Table 2-6, the Project would not exceed the significance thresholds for any criteria air pollutant emissions, including PM_{10} with implementation of mitigation measure AQ-1.

The health effects associated with O_3 are generally associated with reduced lung function. O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of ROG and NOx in the presence of sunlight. The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term O_3 exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to O_3 may increase the risk of respiratory-related deaths. The concentration of O_3 at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of O_3 and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggests that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum O_3 concentration reaches 80 parts per billion. Because the Project would not involve construction activities that would result in O_3 precursor emissions (i.e., ROG or NO_x) in excess of the thresholds with the implementation of AQ-1 the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. With implementation of AQ-1, the Project would not involve construction activities that would result in CO emissions in excess of the thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory

symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM and it contains $PM_{2.5}$ exhaust as a subset. As with O_3 and NO_x, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the thresholds within implementation of AQ-1. The increases of these pollutants generated by the Proposed Project would not on their own generate an increase in the number of days exceeding the NAAQS or CAAQS standards. Therefore, PM_{10} and $PM_{2.5}$ emissions, when combined with the existing PM emitted regionally, would have minimal health effect on people located in the immediate vicinity of the Project Site. Additionally, the Project would be required to comply with Rule 403 for fugitive dust control, as described above, which limits the amount of fugitive dust generated during construction. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants with implementation of mitigation measure AQ-1and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract additional mobile sources that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The Project would not have a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the NSVAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the

SCAQMD's 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 AQMP can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District, the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The Proposed Project is anticipated to result in an approximate maximum of 832 daily trips (GCW 2025). Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Proposed Project traffic exceeding CO values.

2.3.3.5 Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. It is expected that the odors associated with the Project's construction would not be concentrated or stagnant near any of the sensitive receptors. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any of these types of odor-generating uses. Although cannabis cultivation and processing have the potential to generate odors, these operations would occur entirely indoors within enclosed, climate-controlled structures. Such facilities are typically equipped with odor control systems, including carbon filtration or other air treatment technologies, to prevent the release of noticeable odors beyond the building envelope. As a result, the Proposed Project is not expected to generate objectionable odors that would affect surrounding land uses.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. More specifically, experts agree that human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. (Intergovernmental Panel on Climate Change [IPCC] 2023).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weigh each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Despite the sequestration of CO_2, human-caused climate

change is already causing damaging effects, including weather and climate extremes in every region across the globe (IPCC 2023).

Table 3-1. Summary of Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: (1) USEPA 2023b; (2) USEPA 2023c; (3) USEPA 2023d

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In 2024, CARB released the 2024 edition of the *California GHG Emissions from 2000 to 2022: trends of Emissions and Other Indicators* report. In 2022, California emitted 371.1 million metric tons of CO_2e. This inventory is 2.4 percent lower than in 2021. The 2022 emissions data shows that the State of California is continuing its established long-term trend of GHG emission declines, despite the anomalous emissions trends from 2019 through 2021, due in large part to the impacts of the COVID-19 pandemic. Overall trends

in the Inventory continue to demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross state product (GSP)) is declining. California's GSP increased by 0.7 percent in 2022, and emissions per GSP declined by 3.1 percent from 2021 to 2022. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2022, accounting for approximately 37.7 percent of total GHG emissions in the state. Transportation emissions have decreased 3.6 percent from 2021 levels due to reductions from on-road, rail and, to a lesser extent, intrastate aviation transportation. Emissions from the electricity sector account for 16.1 percent of the Inventory, which is a decrease of 4.1 percent since 2021, despite the growth of in-state solar, wind, and hydropower energy generation. California's industrial sector accounts for the second largest source of the state's GHG emissions in 2022, accounting for 19.6 percent, which saw a decrease of 2 percent since 2021 (CARB 2024b).

3.2 Regulatory Framework

3.2.1 State

3.2.1.1 Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

3.2.1.2 Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2022 Scoping Plan Update, outlines strategies and actions to reduce GHG emissions in California. The plan focuses on achieving the state's goal of reaching carbon neutrality by 2045 and reducing GHG emissions to 40 percent below 1990 levels by 2030. The plan includes a range of strategies across various sectors, including transportation, industry, energy, and agriculture. Some of the key strategies include transitioning to zero-emission vehicles, expanding renewable energy sources, promoting sustainable land use practices, implementing a low-carbon fuel standard, and reducing emissions from buildings. Additionally, the plan addresses equity and environmental justice by prioritizing investments in communities most impacted by pollution and climate change. The plan also aims to promote economic growth and job creation through the transition to a low-carbon economy.

3.2.1.3 Senate Bill 32 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030 (the other provisions of AB 32 remained unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provided a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies. The 2017 Scoping Plan also placed an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with Statewide per capita goals of no more than 6 metric tons of CO_2e by 2030 and 2 metric tons of CO_2e by 2050.

3.2.1.4 Assembly Bill 197 of 2016

AB 197 is a bill linked to SB 32 and was signed on September 8, 2016. AB 197 prioritizes efforts to cut GHG emissions in low-income or minority communities. AB 197 requires CARB to make available, and update at least annually, the emissions of GHGs, criteria pollutants, and toxic air contaminants for each facility that reports to CARB and air districts. In addition, AB 197 adds two Members of the Legislature to the CARB board as ex officio, non-voting members and creates the Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the Legislature and the houses of the Legislature concerning the State's programs, policies, and investments related to climate change.

3.2.1.5 Assembly Bill 1279 of 2022

In September 2022, Governor Brown signed AB 1279, The California Climate Crisis Act, which requires California to achieve carbon neutrality as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. AB 1279 also requires that by 2045 statewide anthropogenic GHG emissions be reduced to at least 85 percent below 1990 levels and directs CARB to ensure that its scoping plan identifies and recommends measures to achieve these goals. AB 1279 also directs CARB to identify policies and strategies to enable carbon capture, utilization, and storage and CO_2 removal technologies to meet emission reduction goals. In addition, CARB is required to submit an annual report on progress in achieving the 2022 Scoping Plan's goals.

In response to the passage of AB 1279 and the identification of the 2045 GHG emissions reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (2022 Update). The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying a new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan; addresses recent legislation and direction from Governor Newsom; extends and expands upon these earlier plans; and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Update, "the plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the State's natural and working lands and using a variety of mechanical approaches." Specifically, the 2022 Update achieves the following:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands to the State's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Update includes emissions and carbon sequestration in natural and working lands and explores how they contribute to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet these GHG emissions reduction goals and achieve carbon neutrality no later than 2045. The 2022 Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

3.2.1.6 Executive Order N-79-20

Governor Gavin Newsom signed an executive order on September 23, 2020, that would phase out sales of new gas-powered passenger cars by 2035 with an additional 10-year transition period for heavy vehicles. The State would not restrict used car sales, nor forbid residents from owning gas-powered vehicles, meaning that the overall reduction in GHG emissions would likely not substantially reduce GHG emissions from vehicles for many years after the ban goes into effect.

3.2.1.7 Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

3.2.1.8 Senate Bill 1020 of 2022

SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022, adds interim targets to the policy framework originally established in SB 100 to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040. Additionally, the bill requires all state agencies to rely on 100 percent renewable energy and zero-carbon resources to serve their own facilities by 2035. This bill also requires that CARB's Scoping Plan workshops be held in non-attainment areas and requires the California Public Utilities Commission, the California Energy Commission, and CARB to create a joint report on electricity reliability.

3.2.1.9 Senate Bill 375 of 2008

SB 375 set forth a mechanism for coordinating land use and transportation on a regional level for the purpose of reducing GHG emissions. SB 375 was adopted with a goal of reducing fuel consumption and GHG emissions from cars and light trucks. Under SB 375, CARB was required to set GHG reduction targets for each metropolitan region for 2020 and 2035, and each of California's metropolitan planning organizations was responsible to prepare a sustainable communities strategy that demonstrates how the region will meet its GHG reduction target through integrated land use, housing, and transportation planning.

3.2.1.10 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2022 California Building Codes include provisions related to energy efficiency to reduce energy consumption and GHG emissions from buildings. Some of the key energy efficiency components of the codes are:

1. Energy Performance Requirements: The codes specify minimum energy performance standards for the building envelope, lighting, heating and cooling systems, and other components.

2. Lighting Efficiency: The codes require that lighting systems meet minimum efficiency standards, such as the use of energy-efficient light bulbs and fixtures.
3. HVAC Systems: The codes establish requirements for heating, ventilation, and air conditioning (HVAC) systems, including the use of high-efficiency equipment, duct sealing, and controls.
4. Building Envelope: The codes include provisions for insulation, air sealing, glazing, and other building envelope components to reduce energy loss and improve indoor comfort.
5. Renewable Energy: The codes encourage the use of renewable energy systems, such as photovoltaic panels and wind turbines, to reduce dependence on non-renewable energy sources.
6. Commissioning: The codes require the commissioning of building energy systems to ensure that they are installed and operate correctly and efficiently.

Overall, the energy efficiency provisions of the 2022 California Building Codes aim to reduce the energy consumption of buildings, lower energy costs for building owners and occupants, and reduce the environmental impact of the built environment. The 2022 Building Energy Efficiency Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The exact amount by which the 2022 Building Codes are more efficient compared to the 2019 Building Codes would depend on the specific provisions that have been updated and the specific building being considered. However, in general, the 2022 Building Codes have been updated to include increased requirements for energy efficiency, such as higher insulation and air sealing standards, which are intended to result in more efficient buildings. The 2022 standards are a major step toward meeting Zero Net Energy.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to greenhouse gas emissions if it would:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note

that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Neither the City of Colusa nor the CCAPCD promulgate GHG emission thresholds or have

adopted plans intended to reduce GHG emissions. Therefore, the Project will be assessed for consistency with the 2022 Scoping Plan.

3.3.2 Methodology

Where GHG emission quantification was required, emissions were modeled using CalEEMod, version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction-generated GHG emissions were calculated using CalEEMod model defaults for Colusa County and Project land use type, and square footage as well as construction phasing, duration, vehicle trips, and equipment provided by the Project applicant. Operational GHG emissions are calculated using CalEEMod model defaults for Colusa County, building and land use square footage estimates identified in the by the Project applicant, and daily trips provided by GCW Engineers and Surveyors (2025).

3.3.3 Generation of GHG Emissions

Project Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 3-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Construction Phase One	467
Construction Phase Two	466
Construction Phase Three	472
Construction Phase Four	465
Construction Phase Five	465
Total Construction Emissions	**2,335**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.

Notes: Project construction generated GHG emissions were calculated using CalEEMod model defaults for Colusa County. Project-specific assumptions provided by the applicant were incorporated into the CalEEMod modeling, including the construction schedule (five phases over a five-year period), phase durations, vehicle trip, and construction equipment. Construction GHG emissions account for the implementation of mitigation measure AQ-1.

As shown in Table 3-2, Project construction would result in the temporary generation of approximately 2,335 metric tons of CO_2e over the course of construction. These emissions are short-term in nature and will cease entirely once construction is complete. Climate change is a cumulative issue driven by global

emissions over time, short-lived construction emissions are not expected to result in a measurable impact on climate conditions. Moreover, the use of newer equipment and state mandates on construction equipment help minimize construction-related GHG emissions.

Project Operations

Operation of the Project would result in an increase in GHG emissions primarily associated with energy and water sources. Long-term operational GHG emissions attributed to the Project are identified in Table 3-3.

Table 3-3. Operational-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Mobile	627
Area	0
Energy	6,784
Water	1,176
Waste	821
Refrigeration	91
Total	**9,499**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.
Notes: Emissions projections were primarily based on CalEEMod default assumptions for Colusa County, spatial estimates of onsite land uses derived from the Project Site Plan, and daily trip data (832 daily trips) provided by GCW (2025) to inform calculations of operational mobile source emissions. Operational energy-related emissions also account for water demand estimates provided by the Project applicant, including increased usage during the summer months (four months).

As shown in Table 3-3, the Project would generate 9,499 metric tons of CO_2e annually. Long-term operational GHG emissions would result primarily from electricity use associated with indoor cannabis cultivation. Although these emissions would continue over the life of the Project, GHG emissions are global in nature and any single project's contribution is not expected to cause a measurable impact on climate change. The Project does not include stationary combustion sources or other high-emitting industrial processes. Project operational GHG emissions are not considered substantial in the context of statewide emissions inventories and do not represent a cumulatively considerable contribution to climate change.

3.3.4 Impact Analysis

3.3.4.1 Generation of Greenhouse Gas Emissions Resulting in Conflicts with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

CARB's 2022 Scoping Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. The 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and

buildings; reducing chemical and refrigerants with high global warming potential; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (i.e., Climate Action Plan) consistent with CEQA Guidelines Section 15183.5.

Statewide strategies to reduce GHG emissions in the latest 2022 Scoping Plan include implementing SB 100, which would achieve 100 percent clean electricity by 2045; achieving 100 percent zero emission vehicle sales in 2035 through Advanced Clean Cars II; and implementing the Advanced Clean Fleets regulation to deploy zero-emission vehicles (ZEV) buses and trucks. Additional transportation policies include the Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, In-use Off-Road Diesel-Fueled Fleets Regulation, Clean Off-Road Fleet Recognition Program, and Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation. The 2022 Scoping Plan would continue to implement SB 375. GHGs would be further reduced through the Cap-and-Trade Program carbon pricing and SB 905. SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate carbon dioxide removal projects and technology.

GHG reductions are also achieved as a result of State of California energy and water efficiency requirements for new residential developments. These efficiency improvements correspond to reductions in secondary GHG emissions. For example, in California, most of the electricity that powers homes are derived from natural gas combustion. Therefore, energy saving measures, such as Title 24, reduces GHG emissions from the power generation facilities by reducing load demand.

The 2022 Scoping Plan Appendix D provides local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan.

The 2022 Scoping Plan Appendix D lists potential actions that support the state's climate goals. However, the 2022 Scoping Plan notes that the applicability and performance of the actions may vary across the regions. The document is organized into two categories (A) examples of plan-level GHG reduction actions that could be implemented by local governments and (B) examples of on-site project design features, mitigation measures, that could be required of individual projects under CEQA, if feasible, when the local jurisdiction is the lead agency.

The Project would include a number of the 2022 Scoping Plan standard conditions and mitigation measures for construction and operation. For example, the 2022 Scoping Plan's construction actions include enforcing idling time restrictions on construction vehicles and requiring construction vehicles to operate highest tier engines commercially available.

As identified in Table 3-4 below, the Project would be consistent with all applicable plan goals and applicable regulatory programs designed to reduce GHG emissions generated by land use projects. The Project would be subject to compliance with all building codes in effect at the time of construction, which include energy conservation measures mandated by California Building Standards Code Title 24 – Energy Efficiency Standards. Because Title 24 standards require energy conservation features in new construction

(e.g., high- efficiency lighting, high-efficiency HVAC systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures), they indirectly regulate and reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle.

As shown in Table 3-3, approximately 78 percent of the Project's emissions are from energy and mobile sources, which would be further reduced by the 2022 Scoping Plan actions described above. The City has no control over vehicle emissions (approximately 7 percent of the Project's total emissions). However, these emissions would decline in the future due to statewide measures, as well as cleaner technology and fleet turnover. Several of the state's plans and policies would contribute to a reduction in the Project's mobile source emissions, including the following:

- CARB's Advanced Clean Truck Regulation: Adopted in June 2020, CARB's Advanced Clean Truck Regulation requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California is required to be zero-emission. The Advanced Clean Truck Regulation accelerates the transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8.

- Executive Order N-79-20: This Executive Order establishes the goal for all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, to be zero-emission by 2035 and all medium and heavy-duty vehicles to be zero-emission by 2045. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium- and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new ZEVs "towards the target of 100 percent."

- CARB's Mobile Source Strategy: CARB's Mobile Source Strategy takes an integrated planning approach to identify the level of transition to cleaner mobile source technologies needed to achieve all of California's targets by increasing the adoption of ZEV buses and trucks.

- CARB's Sustainable Freight Action Plan: The Sustainable Freight Action Plan which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks. This Plan applies to all trucks accessing the Project Site and may include existing trucks or new trucks that are part of the Statewide goods movement sector.

- CARB's Emissions Reduction Plan for Ports and Goods Movement: CARB's Emissions Reduction Plan for Ports and Goods Movement identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories.

While these measures are not directly applicable to the Project, any activity associated with goods movement would be required to comply with these measures as adopted. The Project would not obstruct or interfere with efforts to increase ZEVs or state efforts to improve system efficiency. Compliance with applicable state standards (e.g., continuation of the Cap-and-Trade regulation; CARB's Mobile Source Strategy, Sustainable Freight Action Plan, and Advanced Clean Truck Regulation; Executive Order N-79-20;

SB 100/renewable electricity portfolio improvements that require 60 percent renewable electricity by 2030 and 100 percent renewable by 2045, etc.) would ensure consistency with state and regional GHG reduction planning efforts, including the 2022 Scoping Plan. It is also noted that the Project would not convert any or decrease the state's urban forest carbon stock, which is an area of emphasis in the 2022 Scoping Plan.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that Project operations would benefit from applicable measures enacted to meet state GHG reduction goals. The Project would not impede the state's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. Table 3-4 below shows the Projects consistency with the 2022 Scoping Plan.

Table 3-4. Project Consistency with the Applicable Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on GHG Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. The Proposed Project would not conflict with implementation of the Cap-and-Trade Program and would indirectly be consistent with regard to the use of electricity and fuel.

	California Light-Duty Vehicle GHG Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with Project construction and operation would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent**. The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with Project construction and operations would be required to comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve GHG Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The Project would not conflict with implementation of this measure. It is assumed that any motor vehicles associated with Project construction and operations would be consistent with the measure and utilize low carbon transportation fuels.
	Goods Movement	Goods Movement Action Plan January 2007	**Not Applicable.** The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer GHG Regulation	**Consistent**. This measure applies to medium- and heavy-duty vehicles that operate in the state. The Project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with Project construction would be required to comply with this regulation
	High Speed Rail	Funded under SB 862	**Not Applicable.** This is a Statewide measure that cannot be implemented by a project applicant or Lead Agency

Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	**Consistent.** The Project would not conflict with implementation of this measure, as it would be subject to compliance with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent.** The Project would obtain electricity from the PG&E. PG&E delivers approximately 40 percent of the electricity that they provide from renewable resources. PG&E also offers a program to customers to purchase up to 100 percent of their electricity from either solar or regional renewable energy sources. Therefore, the utility would provide power to the Project that would be is comprised of a greater percentage of renewable sources.
	Million Solar Roofs Program	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
	Million Solar Roofs Program	Tax Incentive Program	**Consistent.** This measure is to increase solar use throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The state is required to increase use of green building practices. The Project would implement required green building strategies through existing regulations that require the Project to comply with various CALGreen Code standards.
Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	**Not Applicable.** The Mandatory Reporting Regulation requires facilities and entities with more than 10,000 metric tons of CO_2e per year of combustion and process emissions, all facilities belonging to certain

			industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. The Project is not considered a "facility" and would emit less than 10,000 metric tons of CO_{2e} per year. Therefore, this regulation would not apply.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The Project would not conflict with implementation of these measures. The Project is required to achieve the recycling mandates via compliance with the CALGreen Code.
		AB 341 Statewide 75 Percent Diversion Goal	
Forests	Sustainable Forests	Cap-and-Trade Offset Projects	**Not Applicable.** No forested lands exist on the site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	**Consistent.** The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage systems. The Project would not conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap-and-Trade Offset Projects for Livestock and Rice Cultivation	**Not Applicable**. No grazing, feedlot, or other agricultural activities that generate manure occur currently on site or are proposed by the Project.

In conclusion, the Project does not conflict with the applicable plans and regulatory programs that are discussed above.

4.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – CalEEMod Output File for Air Quality Emissions and Greenhouse Gas Emissions

ATTACHMENT A

CalEEMod Output File for Air Quality Emissions and Greenhouse Gas Emissions

CONSTRUCTION PHASE 1 CALEEMOD OUTPUTS

Triple Crown- Construction Phase 1 Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Triple Crown- Construction Phase 1
Construction Start Date	1/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.18629186944287, -122.02889407786444
County	Colusa
City	Colusa
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	229
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Manufacturing	220	1000sqft	13.8	220,000	0.00	—	—	—
Parking Lot	380	Space	3.42	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.46	27.6	28.4	0.06	1.22	14.4	15.6	1.12	6.91	8.03	—	7,001	7,001	0.27	0.10	1.87	7,038
Mit.	1.69	9.94	28.4	0.06	0.40	14.4	14.7	0.37	6.91	7.15	—	7,001	7,001	0.27	0.10	1.87	7,038
% Reduced	51%	64%	< 0.5%	—	67%	—	6%	67%	—	11%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.75	48.0	48.4	0.12	2.01	17.5	19.5	1.85	7.23	9.08	—	12,976	12,976	0.52	0.11	0.03	13,022
Mit.	2.05	11.9	59.8	0.12	0.43	17.5	17.9	0.41	7.23	7.64	—	12,976	12,976	0.52	0.11	0.03	13,022
% Reduced	64%	75%	-24%	—	79%	—	8%	78%	—	16%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.30	10.3	10.8	0.02	0.44	3.88	4.32	0.40	1.75	2.15	—	2,807	2,807	0.11	0.04	0.25	2,821
Mit.	0.64	3.98	11.7	0.02	0.15	3.88	4.03	0.14	1.75	1.89	—	2,807	2,807	0.11	0.04	0.25	2,821
% Reduced	50%	61%	-9%	—	66%	—	7%	65%	—	12%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	1.87	1.97	< 0.005	0.08	0.71	0.79	0.07	0.32	0.39	—	465	465	0.02	0.01	0.04	467
Mit.	0.12	0.73	2.14	< 0.005	0.03	0.71	0.74	0.03	0.32	0.34	—	465	465	0.02	0.01	0.04	467
% Reduced	50%	61%	-9%	—	66%	—	7%	65%	—	12%	—	—	—	—	—	—	—

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.46	27.6	28.4	0.06	1.22	14.4	15.6	1.12	6.91	8.03	—	7,001	7,001	0.27	0.10	1.87	7,038
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	5.75	48.0	48.4	0.12	2.01	17.5	19.5	1.85	7.23	9.08	—	12,976	12,976	0.52	0.11	0.03	13,022
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.30	10.3	10.8	0.02	0.44	3.88	4.32	0.40	1.75	2.15	—	2,807	2,807	0.11	0.04	0.25	2,821
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.24	1.87	1.97	< 0.005	0.08	0.71	0.79	0.07	0.32	0.39	—	465	465	0.02	0.01	0.04	467

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.69	9.94	28.4	0.06	0.40	14.4	14.7	0.37	6.91	7.15	—	7,001	7,001	0.27	0.10	1.87	7,038

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.05	11.9	59.8	0.12	0.43	17.5	17.9	0.41	7.23	7.64	—	12,976	12,976	0.52	0.11	0.03	13,022
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.64	3.98	11.7	0.02	0.15	3.88	4.03	0.14	1.75	1.89	—	2,807	2,807	0.11	0.04	0.25	2,821
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.12	0.73	2.14	< 0.005	0.03	0.71	0.74	0.03	0.32	0.34	—	465	465	0.02	0.01	0.04	467

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.43	5.43	< 0.005	< 0.005	—	5.45

Demoliti	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.06	6.06	< 0.005	< 0.005	0.01	6.15
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.02
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
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

3.2. Demolition (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.43	5.43	< 0.005	< 0.005	—	5.45
Demolition	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.06	6.06	< 0.005	< 0.005	0.01	6.15
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.02
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
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

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	5.69	48.0	47.7	0.12	2.01	—	2.01	1.85	—	1.85	—	12,823	12,823	0.52	0.10	—	12,867
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—

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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	3.94	3.92	0.01	0.17	—	0.17	0.15	—	0.15	—	1,054	1,054	0.04	0.01	—	1,058
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.72	0.72	< 0.005	0.03	—	0.03	0.03	—	0.03	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
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

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.15	2.15	< 0.005	< 0.005	< 0.005	2.18
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
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

3.4. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.99	11.9	59.1	0.12	0.43	—	0.43	0.41	—	0.41	—	12,823	12,823	0.52	0.10	—	12,867
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.97	4.86	0.01	0.04	—	0.04	0.03	—	0.03	—	1,054	1,054	0.04	0.01	—	1,058
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.18	0.89	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.15	2.15	< 0.005	< 0.005	< 0.005	2.18
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
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

3.5. Road Construction & Graveling (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	3.38	27.2	27.3	0.06	1.22	—	1.22	1.12	—	1.12	—	6,561	6,561	0.27	0.05	—	6,583
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.38	27.2	27.3	0.06	1.22	—	1.22	1.12	—	1.12	—	6,561	6,561	0.27	0.05	—	6,583
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.47	4.49	0.01	0.20	—	0.20	0.18	—	0.18	—	1,078	1,078	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.82	0.82	< 0.005	0.04	—	0.04	0.03	—	0.03	—	179	179	0.01	< 0.005	—	179

Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.99	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	174	174	0.01	0.01	0.59	177
Vendor	0.01	0.33	0.11	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	266	266	< 0.005	0.04	0.69	278
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
Vendor	0.01	0.36	0.11	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	266	266	< 0.005	0.04	0.02	278
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.0	26.0	< 0.005	< 0.005	0.04	26.3
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	< 0.005	0.01	0.05	45.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.30	4.30	< 0.005	< 0.005	0.01	4.36
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.24	7.24	< 0.005	< 0.005	0.01	7.56
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

3.6. Road Construction & Graveling (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.25	7.00	27.3	0.06	0.25	—	0.25	0.24	—	0.24	—	6,561	6,561	0.27	0.05	—	6,583
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.25	7.00	27.3	0.06	0.25	—	0.25	0.24	—	0.24	—	6,561	6,561	0.27	0.05	—	6,583
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	1.15	4.49	0.01	0.04	—	0.04	0.04	—	0.04	—	1,078	1,078	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.21	0.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	179	179	0.01	< 0.005	—	179
Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.99	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	174	174	0.01	0.01	0.59	177
Vendor	0.01	0.33	0.11	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	266	266	< 0.005	0.04	0.69	278
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
Vendor	0.01	0.36	0.11	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	266	266	< 0.005	0.04	0.02	278
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.0	26.0	< 0.005	< 0.005	0.04	26.3
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	< 0.005	0.01	0.05	45.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.30	4.30	< 0.005	< 0.005	0.01	4.36
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.24	7.24	< 0.005	< 0.005	0.01	7.56
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

3.7. 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	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	0.40	3.69	3.72	0.01	0.16	—	0.16	0.14	—	0.14	—	1,019	1,019	0.04	0.01	—	1,022
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.69	3.72	0.01	0.16	—	0.16	0.14	—	0.14	—	1,019	1,019	0.04	0.01	—	1,022
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.21	1.22	< 0.005	0.05	—	0.05	0.05	—	0.05	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.22	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.6
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.99	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	174	174	0.01	0.01	0.59	177
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

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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	52.0	52.0	< 0.005	< 0.005	0.08	52.7
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.60	8.60	< 0.005	< 0.005	0.01	8.72
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
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

3.8. 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	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	0.40	3.69	3.72	0.01	0.16	—	0.16	0.14	—	0.14	—	1,019	1,019	0.04	0.01	—	1,022
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.40	3.69	3.72	0.01	0.16	—	0.16	0.14	—	0.14	—	1,019	1,019	0.04	0.01	—	1,022
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.21	1.22	< 0.005	0.05	—	0.05	0.05	—	0.05	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.22	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.6
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.99	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	174	174	0.01	0.01	0.59	177
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	153	153	< 0.005	0.01	0.02	155
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	52.0	52.0	< 0.005	< 0.005	0.08	52.7
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
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.60	8.60	< 0.005	< 0.005	0.01	8.72
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
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

3.9. Paving & Utilities (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.85	5.81	7.00	0.02	0.24	—	0.24	0.22	—	0.22	—	1,932	1,932	0.08	0.02	—	1,939
Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.48	0.58	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.99	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	174	174	0.01	0.01	0.59	177
Vendor	0.01	0.33	0.11	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	266	266	< 0.005	0.04	0.69	278
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.02	22.8
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.15	2.15	< 0.005	< 0.005	< 0.005	2.18
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.62	3.62	< 0.005	< 0.005	< 0.005	3.78
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

3.10. Paving & Utilities (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.85	5.81	7.00	0.02	0.24	—	0.24	0.22	—	0.22	—	1,932	1,932	0.08	0.02	—	1,939

Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.48	0.58	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.99	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	174	174	0.01	0.01	0.59	177
Vendor	0.01	0.33	0.11	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	266	266	< 0.005	0.04	0.69	278
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	0.02	13.2
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.02	22.8

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.15	2.15	< 0.005	< 0.005	< 0.005	2.18
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.62	3.62	< 0.005	< 0.005	< 0.005	3.78
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

4. Operations Emissions Details

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	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	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	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	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	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	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	1/1/2026	1/20/2026	5.00	14.0	—
Site Preparation	Site Preparation	1/21/2026	3/3/2026	5.00	30.0	—

Road Construction & Graveling	Grading	3/4/2026	5/26/2026	5.00	60.0	—
Building Construction	Building Construction	5/27/2026	11/10/2026	5.00	120	—
Paving & Utilities	Paving	5/27/2026	7/7/2026	5.00	30.0	—

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	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Average	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Average	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Final	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

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	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	150	0.00	—
Road Construction & Graveling	—	—	120	0.00	—
Paving & Utilities	0.00	0.00	0.00	0.00	3.42

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
Manufacturing	0.00	0%
Parking Lot	3.42	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005

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	26.1	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	10.5	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	3	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3

Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	40.0
AQ-PM	23.6
AQ-DPM	14.9
Drinking Water	8.53
Lead Risk Housing	57.6
Pesticides	92.1
Toxic Releases	5.96
Traffic	2.81
Effect Indicators	—

CleanUp Sites	81.9
Groundwater	84.7
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	91.9
Solid Waste	83.3
Sensitive Population	—
Asthma	44.7
Cardio-vascular	91.2
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	62.4
Housing	22.1
Linguistic	64.1
Poverty	65.4
Unemployment	14.4

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	34.05620429
Employed	22.03259335
Median HI	33.85089183
Education	—
Bachelor's or higher	36.60977801
High school enrollment	11.18952906
Preschool enrollment	63.87783909
Transportation	—

Auto Access	35.49339151
Active commuting	26.67778776
Social	—
2-parent households	15.50109072
Voting	78.08289491
Neighborhood	—
Alcohol availability	56.64057487
Park access	34.21018863
Retail density	3.054022841
Supermarket access	55.34453997
Tree canopy	68.09957654
Housing	—
Homeownership	59.19414859
Housing habitability	86.46220968
Low-inc homeowner severe housing cost burden	96.34287181
Low-inc renter severe housing cost burden	71.48723213
Uncrowded housing	57.46182471
Health Outcomes	—
Insured adults	36.77659438
Arthritis	0.0
Asthma ER Admissions	37.9
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	53.5

Cognitively Disabled	43.0
Physically Disabled	23.7
Heart Attack ER Admissions	4.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	10.6
Elderly	29.3
English Speaking	70.0
Foreign-born	29.8
Outdoor Workers	9.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.0
Traffic Density	2.1
Traffic Access	0.0
Other Indices	—
Hardship	61.9
Other Decision Support	—

2016 Voting	73.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	61.0
Healthy Places Index Score for Project Location (b)	35.0
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
Construction: Construction Phases	Construction phasing and timing updated to match the Project Description. Building construction along with paving and utilities assumed to occur simultaneously.
Construction: Off-Road Equipment	Equipment list updated to match the Project Description. Excavator added to demolition phase.
Construction: Trips and VMT	Worker, vendor and hauling trips updated to match the Project Description.
Land Use	Lot acreage adjusted to match the Project. Half of the total size (440,00 SF) accounted for in the modeling as the buildings will be premanufactured.

CONSTRUCTION PHASE 2 CALEEMOD OUTPUTS

Triple Crown- Construction Phase 2 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Triple Crown- Construction Phase 2
Construction Start Date	1/1/2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.18629186944287, -122.02889407786444
County	Colusa
City	Colusa
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	229
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Manufacturing	220	1000sqft	13.8	220,000	0.00	—	—	—
Parking Lot	380	Space	3.42	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.37	26.1	28.0	0.06	1.15	14.4	15.5	1.06	6.91	7.96	—	6,992	6,992	0.27	0.10	1.69	7,029
Mit.	1.66	9.54	28.3	0.06	0.38	14.4	14.6	0.35	6.91	7.14	—	6,992	6,992	0.27	0.10	1.69	7,029
% Reduced	51%	63%	-1%	—	67%	—	6%	67%	—	10%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.60	45.1	47.8	0.12	1.89	17.5	19.4	1.74	7.23	8.97	—	12,972	12,972	0.52	0.11	0.03	13,018
Mit.	2.05	11.6	59.7	0.12	0.41	17.5	17.9	0.39	7.23	7.62	—	12,972	12,972	0.52	0.11	0.03	13,018
% Reduced	63%	74%	-25%	—	78%	—	8%	77%	—	15%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.26	9.70	10.6	0.02	0.41	3.88	4.29	0.38	1.75	2.13	—	2,804	2,804	0.11	0.04	0.23	2,817
Mit.	0.64	3.82	11.7	0.02	0.14	3.88	4.02	0.13	1.75	1.88	—	2,804	2,804	0.11	0.04	0.23	2,817
% Reduced	50%	61%	-10%	—	65%	—	6%	65%	—	12%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	1.77	1.94	< 0.005	0.08	0.71	0.78	0.07	0.32	0.39	—	464	464	0.02	0.01	0.04	466
Mit.	0.12	0.70	2.13	< 0.005	0.03	0.71	0.73	0.02	0.32	0.34	—	464	464	0.02	0.01	0.04	466
% Reduced	50%	61%	-10%	—	65%	—	6%	65%	—	12%	—	—	—	—	—	—	—

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	3.37	26.1	28.0	0.06	1.15	14.4	15.5	1.06	6.91	7.96	—	6,992	6,992	0.27	0.10	1.69	7,029
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	5.60	45.1	47.8	0.12	1.89	17.5	19.4	1.74	7.23	8.97	—	12,972	12,972	0.52	0.11	0.03	13,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.26	9.70	10.6	0.02	0.41	3.88	4.29	0.38	1.75	2.13	—	2,804	2,804	0.11	0.04	0.23	2,817
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.23	1.77	1.94	< 0.005	0.08	0.71	0.78	0.07	0.32	0.39	—	464	464	0.02	0.01	0.04	466

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.66	9.54	28.3	0.06	0.38	14.4	14.6	0.35	6.91	7.14	—	6,992	6,992	0.27	0.10	1.69	7,029

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	2.05	11.6	59.7	0.12	0.41	17.5	17.9	0.39	7.23	7.62	—	12,972	12,972	0.52	0.11	0.03	13,018
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.64	3.82	11.7	0.02	0.14	3.88	4.02	0.13	1.75	1.88	—	2,804	2,804	0.11	0.04	0.23	2,817
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.12	0.70	2.13	< 0.005	0.03	0.71	0.73	0.02	0.32	0.34	—	464	464	0.02	0.01	0.04	466

3. Construction Emissions Details

3.1. Demolition (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.81	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.45

Demoliti	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.94	5.94	< 0.005	< 0.005	0.01	6.02
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.98	0.98	< 0.005	< 0.005	< 0.005	1.00
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
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

3.2. Demolition (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.81	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.45
Demolition	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.94	5.94	< 0.005	< 0.005	0.01	6.02
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.98	0.98	< 0.005	< 0.005	< 0.005	1.00
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
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

3.3. Site Preparation (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	5.54	45.0	47.2	0.12	1.89	—	1.89	1.74	—	1.74	—	12,822	12,822	0.52	0.10	—	12,866
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—

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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	3.70	3.88	0.01	0.16	—	0.16	0.14	—	0.14	—	1,054	1,054	0.04	0.01	—	1,057
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.68	0.71	< 0.005	0.03	—	0.03	0.03	—	0.03	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
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

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.11	2.11	< 0.005	< 0.005	< 0.005	2.14
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
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

3.4. Site Preparation (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.99	11.5	59.1	0.12	0.41	—	0.41	0.39	—	0.39	—	12,822	12,822	0.52	0.10	—	12,866
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.95	4.86	0.01	0.03	—	0.03	0.03	—	0.03	—	1,054	1,054	0.04	0.01	—	1,057
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.17	0.89	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.11	2.11	< 0.005	< 0.005	< 0.005	2.14
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
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

3.5. Road Construction & Graveling (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	3.30	25.8	27.0	0.06	1.15	—	1.15	1.05	—	1.05	—	6,561	6,561	0.27	0.05	—	6,584
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.30	25.8	27.0	0.06	1.15	—	1.15	1.05	—	1.05	—	6,561	6,561	0.27	0.05	—	6,584
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	4.23	4.44	0.01	0.19	—	0.19	0.17	—	0.17	—	1,079	1,079	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.77	0.81	< 0.005	0.03	—	0.03	0.03	—	0.03	—	179	179	0.01	< 0.005	—	179

Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.92	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.53	173
Vendor	0.01	0.32	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	260	260	< 0.005	0.04	0.63	272
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
Vendor	0.01	0.34	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	261	261	< 0.005	0.04	0.02	272
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.5	25.5	< 0.005	< 0.005	0.04	25.8
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.8	42.8	< 0.005	0.01	0.04	44.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.22	4.22	< 0.005	< 0.005	0.01	4.27
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.09	7.09	< 0.005	< 0.005	0.01	7.41
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

3.6. Road Construction & Graveling (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.26	6.77	27.3	0.06	0.25	—	0.25	0.23	—	0.23	—	6,561	6,561	0.27	0.05	—	6,584
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.26	6.77	27.3	0.06	0.25	—	0.25	0.23	—	0.23	—	6,561	6,561	0.27	0.05	—	6,584
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	1.11	4.49	0.01	0.04	—	0.04	0.04	—	0.04	—	1,079	1,079	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.20	0.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	179	179	0.01	< 0.005	—	179
Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.92	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.53	173
Vendor	0.01	0.32	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	260	260	< 0.005	0.04	0.63	272
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
Vendor	0.01	0.34	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	261	261	< 0.005	0.04	0.02	272
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.5	25.5	< 0.005	< 0.005	0.04	25.8
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.8	42.8	< 0.005	0.01	0.04	44.7
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.22	4.22	< 0.005	< 0.005	0.01	4.27
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.09	7.09	< 0.005	< 0.005	0.01	7.41
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

3.7. 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	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	0.39	3.49	3.71	0.01	0.14	—	0.14	0.13	—	0.13	—	1,019	1,019	0.04	0.01	—	1,022
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.39	3.49	3.71	0.01	0.14	—	0.14	0.13	—	0.13	—	1,019	1,019	0.04	0.01	—	1,022
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.15	1.22	< 0.005	0.05	—	0.05	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.6
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.92	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.53	173
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

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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.9	50.9	< 0.005	< 0.005	0.08	51.6
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.43	8.43	< 0.005	< 0.005	0.01	8.55
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
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

3.8. 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	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	0.39	3.49	3.71	0.01	0.14	—	0.14	0.13	—	0.13	—	1,019	1,019	0.04	0.01	—	1,022
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.39	3.49	3.71	0.01	0.14	—	0.14	0.13	—	0.13	—	1,019	1,019	0.04	0.01	—	1,022
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.15	1.22	< 0.005	0.05	—	0.05	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.6
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.92	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.53	173
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.66	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	150	150	< 0.005	0.01	0.01	152
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.9	50.9	< 0.005	< 0.005	0.08	51.6
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
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.43	8.43	< 0.005	< 0.005	0.01	8.55
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
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

3.9. Paving & Utilities (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.84	5.63	7.01	0.02	0.23	—	0.23	0.21	—	0.21	—	1,932	1,932	0.08	0.02	—	1,939
Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.46	0.58	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.92	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.53	173
Vendor	0.01	0.32	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	260	260	< 0.005	0.04	0.63	272
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.02	22.4
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.11	2.11	< 0.005	< 0.005	< 0.005	2.14
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.55	3.55	< 0.005	< 0.005	< 0.005	3.70
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

3.10. Paving & Utilities (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.84	5.63	7.01	0.02	0.23	—	0.23	0.21	—	0.21	—	1,932	1,932	0.08	0.02	—	1,939

Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.46	0.58	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.92	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	171	171	< 0.005	0.01	0.53	173
Vendor	0.01	0.32	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	260	260	< 0.005	0.04	0.63	272
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.02	22.4

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.11	2.11	< 0.005	< 0.005	< 0.005	2.14
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.55	3.55	< 0.005	< 0.005	< 0.005	3.70
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

4. Operations Emissions Details

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	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	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	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	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	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	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	1/1/2027	1/20/2027	5.00	14.0	—
Site Preparation	Site Preparation	1/21/2027	3/3/2027	5.00	30.0	—

Road Construction & Graveling	Grading	3/4/2027	5/26/2027	5.00	60.0	—
Building Construction	Building Construction	5/27/2027	11/10/2027	5.00	120	—
Paving & Utilities	Paving	5/27/2027	7/7/2027	5.00	30.0	—

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	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Average	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Average	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Final	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

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	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	150	0.00	—
Road Construction & Graveling	—	—	120	0.00	—
Paving & Utilities	0.00	0.00	0.00	0.00	3.42

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
Manufacturing	0.00	0%
Parking Lot	3.42	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	0.00	204	0.03	< 0.005

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	26.1	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	10.5	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	3	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3

Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	40.0
AQ-PM	23.6
AQ-DPM	14.9
Drinking Water	8.53
Lead Risk Housing	57.6
Pesticides	92.1
Toxic Releases	5.96
Traffic	2.81
Effect Indicators	—

CleanUp Sites	81.9
Groundwater	84.7
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	91.9
Solid Waste	83.3
Sensitive Population	—
Asthma	44.7
Cardio-vascular	91.2
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	62.4
Housing	22.1
Linguistic	64.1
Poverty	65.4
Unemployment	14.4

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	34.05620429
Employed	22.03259335
Median HI	33.85089183
Education	—
Bachelor's or higher	36.60977801
High school enrollment	11.18952906
Preschool enrollment	63.87783909
Transportation	—

Auto Access	35.49339151
Active commuting	26.67778776
Social	—
2-parent households	15.50109072
Voting	78.08289491
Neighborhood	—
Alcohol availability	56.64057487
Park access	34.21018863
Retail density	3.054022841
Supermarket access	55.34453997
Tree canopy	68.09957654
Housing	—
Homeownership	59.19414859
Housing habitability	86.46220968
Low-inc homeowner severe housing cost burden	96.34287181
Low-inc renter severe housing cost burden	71.48723213
Uncrowded housing	57.46182471
Health Outcomes	—
Insured adults	36.77659438
Arthritis	0.0
Asthma ER Admissions	37.9
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	53.5

Cognitively Disabled	43.0
Physically Disabled	23.7
Heart Attack ER Admissions	4.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	10.6
Elderly	29.3
English Speaking	70.0
Foreign-born	29.8
Outdoor Workers	9.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.0
Traffic Density	2.1
Traffic Access	0.0
Other Indices	—
Hardship	61.9
Other Decision Support	—

2016 Voting	73.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	61.0
Healthy Places Index Score for Project Location (b)	35.0
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
Construction: Construction Phases	Construction phasing and timing updated to match the Project Description. Building construction along with paving and utilities assumed to occur simultaneously.
Construction: Off-Road Equipment	Equipment list updated to match the Project Description. Excavator added to demolition phase.
Construction: Trips and VMT	Worker, vendor and hauling trips updated to match the Project Description.
Land Use	Lot acreage adjusted to match the Project. Half of the total size (440,00 SF) accounted for in the modeling as the buildings will be premanufactured.

CONSTRUCTION PHASE 3 CALEEMOD OUTPUTS

Triple Crown- Construction Phase 3 Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Triple Crown- Construction Phase 3
Construction Start Date	1/1/2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.18629186944287, -122.02889407786444
County	Colusa
City	Colusa
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	229
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Manufacturing	220	1000sqft	13.8	220,000	0.00	—	—	—
Parking Lot	380	Space	3.42	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.33	25.0	28.0	0.06	1.10	14.4	15.5	1.01	6.91	7.92	—	6,986	6,986	0.27	0.10	1.52	7,022
Mit.	1.62	8.95	28.2	0.06	0.34	14.4	14.6	0.31	6.91	7.13	—	6,986	6,986	0.27	0.10	1.52	7,022
% Reduced	51%	64%	-1%	—	69%	—	6%	69%	—	10%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.49	42.7	47.6	0.12	1.79	17.5	19.3	1.64	7.23	8.87	—	12,971	12,971	0.52	0.11	0.03	13,017
Mit.	2.03	11.2	59.7	0.12	0.39	17.5	17.9	0.38	7.23	7.61	—	12,971	12,971	0.52	0.11	0.03	13,017
% Reduced	63%	74%	-25%	—	78%	—	7%	77%	—	14%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.25	9.32	10.7	0.03	0.39	3.93	4.32	0.36	1.77	2.13	—	2,836	2,836	0.11	0.03	0.20	2,850
Mit.	0.63	3.63	11.8	0.03	0.13	3.93	4.06	0.12	1.77	1.89	—	2,836	2,836	0.11	0.03	0.20	2,850
% Reduced	50%	61%	-10%	—	66%	—	6%	66%	—	11%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	1.70	1.96	< 0.005	0.07	0.72	0.79	0.07	0.32	0.39	—	470	470	0.02	0.01	0.03	472
Mit.	0.12	0.66	2.15	< 0.005	0.02	0.72	0.74	0.02	0.32	0.35	—	470	470	0.02	0.01	0.03	472
% Reduced	50%	61%	-10%	—	66%	—	6%	66%	—	11%	—	—	—	—	—	—	—

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	3.33	25.0	28.0	0.06	1.10	14.4	15.5	1.01	6.91	7.92	—	6,986	6,986	0.27	0.10	1.52	7,022
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	5.49	42.7	47.6	0.12	1.79	17.5	19.3	1.64	7.23	8.87	—	12,971	12,971	0.52	0.11	0.03	13,017
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.25	9.32	10.7	0.03	0.39	3.93	4.32	0.36	1.77	2.13	—	2,836	2,836	0.11	0.03	0.20	2,850
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.23	1.70	1.96	< 0.005	0.07	0.72	0.79	0.07	0.32	0.39	—	470	470	0.02	0.01	0.03	472

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.62	8.95	28.2	0.06	0.34	14.4	14.6	0.31	6.91	7.13	—	6,986	6,986	0.27	0.10	1.52	7,022

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	2.03	11.2	59.7	0.12	0.39	17.5	17.9	0.38	7.23	7.61	—	12,971	12,971	0.52	0.11	0.03	13,017
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.63	3.63	11.8	0.03	0.13	3.93	4.06	0.12	1.77	1.89	—	2,836	2,836	0.11	0.03	0.20	2,850
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.12	0.66	2.15	< 0.005	0.02	0.72	0.74	0.02	0.32	0.35	—	470	470	0.02	0.01	0.03	472

3. Construction Emissions Details

3.1. Demolition (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.81	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46

Demoliti	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.83	5.83	< 0.005	< 0.005	0.01	5.91
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.97	0.97	< 0.005	< 0.005	< 0.005	0.98
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
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

3.2. Demolition (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.81	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46
Demolition	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.83	5.83	< 0.005	< 0.005	0.01	5.91
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.97	0.97	< 0.005	< 0.005	< 0.005	0.98
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
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

3.3. Site Preparation (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	5.43	42.7	47.0	0.12	1.79	—	1.79	1.64	—	1.64	—	12,824	12,824	0.52	0.10	—	12,868
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—

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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	3.62	3.99	0.01	0.15	—	0.15	0.14	—	0.14	—	1,089	1,089	0.04	0.01	—	1,093
Dust From Material Movement	—	—	—	—	—	1.47	1.47	—	0.61	0.61	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.66	0.73	< 0.005	0.03	—	0.03	0.03	—	0.03	—	180	180	0.01	< 0.005	—	181
Dust From Material Movement	—	—	—	—	—	0.27	0.27	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.1
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

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.14	2.14	< 0.005	< 0.005	< 0.005	2.17
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
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

3.4. Site Preparation (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.97	11.1	59.0	0.12	0.39	—	0.39	0.38	—	0.38	—	12,824	12,824	0.52	0.10	—	12,868
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.94	5.01	0.01	0.03	—	0.03	0.03	—	0.03	—	1,089	1,089	0.04	0.01	—	1,093
Dust From Material Movement	—	—	—	—	—	1.47	1.47	—	0.61	0.61	—	—	—	—	—	—	—
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.17	0.92	< 0.005	0.01	—	0.01	0.01	—	0.01	—	180	180	0.01	< 0.005	—	181
Dust From Material Movement	—	—	—	—	—	0.27	0.27	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.1
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.14	2.14	< 0.005	< 0.005	< 0.005	2.17
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
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

3.5. Road Construction & Graveling (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	3.25	24.7	27.0	0.06	1.10	—	1.10	1.01	—	1.01	—	6,564	6,564	0.27	0.05	—	6,587
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.25	24.7	27.0	0.06	1.10	—	1.10	1.01	—	1.01	—	6,564	6,564	0.27	0.05	—	6,587
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.53	4.06	4.44	0.01	0.18	—	0.18	0.17	—	0.17	—	1,079	1,079	0.04	0.01	—	1,083
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.74	0.81	< 0.005	0.03	—	0.03	0.03	—	0.03	—	179	179	0.01	< 0.005	—	179

Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.85	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.48	170
Vendor	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	< 0.005	0.04	0.57	265
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
Vendor	0.01	0.33	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	< 0.005	0.04	0.01	265
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.0	25.0	< 0.005	< 0.005	0.03	25.3
Vendor	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.8	41.8	< 0.005	0.01	0.04	43.6
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.14	4.14	< 0.005	< 0.005	0.01	4.19
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.92	6.92	< 0.005	< 0.005	0.01	7.22
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

3.6. Road Construction & Graveling (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.25	6.39	27.3	0.06	0.23	—	0.23	0.22	—	0.22	—	6,564	6,564	0.27	0.05	—	6,587
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.25	6.39	27.3	0.06	0.23	—	0.23	0.22	—	0.22	—	6,564	6,564	0.27	0.05	—	6,587
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.05	4.48	0.01	0.04	—	0.04	0.04	—	0.04	—	1,079	1,079	0.04	0.01	—	1,083
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.19	0.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	179	179	0.01	< 0.005	—	179
Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.85	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.48	170
Vendor	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	< 0.005	0.04	0.57	265
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
Vendor	0.01	0.33	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	< 0.005	0.04	0.01	265
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.0	25.0	< 0.005	< 0.005	0.03	25.3
Vendor	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.8	41.8	< 0.005	0.01	0.04	43.6
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.14	4.14	< 0.005	< 0.005	0.01	4.19
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.92	6.92	< 0.005	< 0.005	0.01	7.22
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

3.7. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.37	3.22	3.70	0.01	0.13	—	0.13	0.12	—	0.12	—	1,019	1,019	0.04	0.01	—	1,023
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	3.22	3.70	0.01	0.13	—	0.13	0.12	—	0.12	—	1,019	1,019	0.04	0.01	—	1,023
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.06	1.22	< 0.005	0.04	—	0.04	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.19	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.7
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.85	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.48	170
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

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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.21	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.0	50.0	< 0.005	< 0.005	0.07	50.6
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.38
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
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

3.8. Building Construction (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.37	3.22	3.70	0.01	0.13	—	0.13	0.12	—	0.12	—	1,019	1,019	0.04	0.01	—	1,023
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.37	3.22	3.70	0.01	0.13	—	0.13	0.12	—	0.12	—	1,019	1,019	0.04	0.01	—	1,023
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.06	1.22	< 0.005	0.04	—	0.04	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.19	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.7
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.85	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.48	170
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	< 0.005	0.01	0.01	149
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.21	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.0	50.0	< 0.005	< 0.005	0.07	50.6
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
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.38
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
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

3.9. Paving & Utilities (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.81	5.34	6.98	0.02	0.21	—	0.21	0.19	—	0.19	—	1,933	1,933	0.08	0.02	—	1,939
Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.44	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.85	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.48	170
Vendor	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	< 0.005	0.04	0.57	265
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.02	12.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.8
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.07	2.07	< 0.005	< 0.005	< 0.005	2.10
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.46	3.46	< 0.005	< 0.005	< 0.005	3.61
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

3.10. Paving & Utilities (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.81	5.34	6.98	0.02	0.21	—	0.21	0.19	—	0.19	—	1,933	1,933	0.08	0.02	—	1,939

Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.44	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.85	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.48	170
Vendor	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	< 0.005	0.04	0.57	265
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.02	12.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.8

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.07	2.07	< 0.005	< 0.005	< 0.005	2.10
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.46	3.46	< 0.005	< 0.005	< 0.005	3.61
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

4. Operations Emissions Details

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	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	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	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	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	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	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	1/1/2028	1/20/2028	5.00	14.0	—
Site Preparation	Site Preparation	1/21/2028	3/3/2028	5.00	31.0	—

Road Construction & Graveling	Grading	3/4/2028	5/26/2028	5.00	60.0	—
Building Construction	Building Construction	5/27/2028	11/10/2028	5.00	120	—
Paving & Utilities	Paving	5/27/2028	7/7/2028	5.00	30.0	—

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	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Average	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Average	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Final	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

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	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	155	0.00	—
Road Construction & Graveling	—	—	120	0.00	—
Paving & Utilities	0.00	0.00	0.00	0.00	3.42

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
Manufacturing	0.00	0%
Parking Lot	3.42	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	204	0.03	< 0.005

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	26.1	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	10.5	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	3	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3

Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	40.0
AQ-PM	23.6
AQ-DPM	14.9
Drinking Water	8.53
Lead Risk Housing	57.6
Pesticides	92.1
Toxic Releases	5.96
Traffic	2.81
Effect Indicators	—

CleanUp Sites	81.9
Groundwater	84.7
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	91.9
Solid Waste	83.3
Sensitive Population	—
Asthma	44.7
Cardio-vascular	91.2
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	62.4
Housing	22.1
Linguistic	64.1
Poverty	65.4
Unemployment	14.4

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	34.05620429
Employed	22.03259335
Median HI	33.85089183
Education	—
Bachelor's or higher	36.60977801
High school enrollment	11.18952906
Preschool enrollment	63.87783909
Transportation	—

Auto Access	35.49339151
Active commuting	26.67778776
Social	—
2-parent households	15.50109072
Voting	78.08289491
Neighborhood	—
Alcohol availability	56.64057487
Park access	34.21018863
Retail density	3.054022841
Supermarket access	55.34453997
Tree canopy	68.09957654
Housing	—
Homeownership	59.19414859
Housing habitability	86.46220968
Low-inc homeowner severe housing cost burden	96.34287181
Low-inc renter severe housing cost burden	71.48723213
Uncrowded housing	57.46182471
Health Outcomes	—
Insured adults	36.77659438
Arthritis	0.0
Asthma ER Admissions	37.9
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	53.5

Cognitively Disabled	43.0
Physically Disabled	23.7
Heart Attack ER Admissions	4.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	10.6
Elderly	29.3
English Speaking	70.0
Foreign-born	29.8
Outdoor Workers	9.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.0
Traffic Density	2.1
Traffic Access	0.0
Other Indices	—
Hardship	61.9
Other Decision Support	—

2016 Voting	73.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	61.0
Healthy Places Index Score for Project Location (b)	35.0
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
Construction: Construction Phases	Construction phasing and timing updated to match the Project Description. Building construction along with paving and utilities assumed to occur simultaneously.
Construction: Off-Road Equipment	Equipment list updated to match the Project Description. Excavator added to demolition phase.
Construction: Trips and VMT	Worker, vendor and hauling trips updated to match the Project Description.
Land Use	Lot acreage adjusted to match the Project. Half of the total size (440,00 SF) accounted for in the modeling as the buildings will be premanufactured.

CONSTRUCTION PHASE 4 CALEEMOD OUTPUTS

Triple Crown- Construction Phase 4 Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Triple Crown- Construction Phase 4
Construction Start Date	1/1/2029
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.18629186944287, -122.02889407786444
County	Colusa
City	Colusa
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	229
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Manufacturing	220	1000sqft	13.8	220,000	0.00	—	—	—
Parking Lot	380	Space	3.42	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.23	23.3	27.6	0.06	1.03	14.4	15.4	0.95	6.91	7.86	—	6,974	6,974	0.27	0.09	1.36	7,010
Mit.	1.58	8.47	28.1	0.06	0.32	14.4	14.6	0.29	6.91	7.12	—	6,974	6,974	0.27	0.09	1.36	7,010
% Reduced	51%	64%	-2%	—	69%	—	5%	69%	—	9%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.33	39.7	46.9	0.12	1.66	17.5	19.2	1.53	7.23	8.76	—	12,965	12,965	0.52	0.11	0.02	13,011
Mit.	2.00	10.8	59.5	0.12	0.38	17.5	17.9	0.36	7.23	7.59	—	12,965	12,965	0.52	0.11	0.02	13,011
% Reduced	62%	73%	-27%	—	77%	—	7%	76%	—	13%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.20	8.58	10.5	0.02	0.36	3.88	4.25	0.33	1.75	2.08	—	2,798	2,798	0.11	0.03	0.18	2,811
Mit.	0.61	3.42	11.6	0.02	0.12	3.88	4.01	0.12	1.75	1.87	—	2,798	2,798	0.11	0.03	0.18	2,811
% Reduced	49%	60%	-11%	—	66%	—	6%	65%	—	10%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.22	1.57	1.91	< 0.005	0.07	0.71	0.78	0.06	0.32	0.38	—	463	463	0.02	0.01	0.03	465
Mit.	0.11	0.62	2.11	< 0.005	0.02	0.71	0.73	0.02	0.32	0.34	—	463	463	0.02	0.01	0.03	465
% Reduced	49%	60%	-11%	—	66%	—	6%	65%	—	10%	—	—	—	—	—	—	—

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	3.23	23.3	27.6	0.06	1.03	14.4	15.4	0.95	6.91	7.86	—	6,974	6,974	0.27	0.09	1.36	7,010
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	5.33	39.7	46.9	0.12	1.66	17.5	19.2	1.53	7.23	8.76	—	12,965	12,965	0.52	0.11	0.02	13,011
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	1.20	8.58	10.5	0.02	0.36	3.88	4.25	0.33	1.75	2.08	—	2,798	2,798	0.11	0.03	0.18	2,811
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	0.22	1.57	1.91	< 0.005	0.07	0.71	0.78	0.06	0.32	0.38	—	463	463	0.02	0.01	0.03	465

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	1.58	8.47	28.1	0.06	0.32	14.4	14.6	0.29	6.91	7.12	—	6,974	6,974	0.27	0.09	1.36	7,010

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	2.00	10.8	59.5	0.12	0.38	17.5	17.9	0.36	7.23	7.59	—	12,965	12,965	0.52	0.11	0.02	13,011
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	0.61	3.42	11.6	0.02	0.12	3.88	4.01	0.12	1.75	1.87	—	2,798	2,798	0.11	0.03	0.18	2,811
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	0.11	0.62	2.11	< 0.005	0.02	0.71	0.73	0.02	0.32	0.34	—	463	463	0.02	0.01	0.03	465

3. Construction Emissions Details

3.1. Demolition (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.80	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.83	5.83	< 0.005	< 0.005	—	5.85

Demoliti	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.97	0.97	< 0.005	< 0.005	—	0.97
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.13	6.13	< 0.005	< 0.005	0.01	6.22
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.02	1.02	< 0.005	< 0.005	< 0.005	1.03
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
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

3.2. Demolition (2029) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.09	0.80	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.83	5.83	< 0.005	< 0.005	—	5.85
Demolition	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.97	0.97	< 0.005	< 0.005	—	0.97
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.13	6.13	< 0.005	< 0.005	0.01	6.22
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.02	1.02	< 0.005	< 0.005	< 0.005	1.03
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
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

3.3. Site Preparation (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	5.28	39.6	46.4	0.12	1.66	—	1.66	1.53	—	1.53	—	12,821	12,821	0.52	0.10	—	12,865
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—

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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	3.26	3.81	0.01	0.14	—	0.14	0.13	—	0.13	—	1,054	1,054	0.04	0.01	—	1,057
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.59	0.70	< 0.005	0.02	—	0.02	0.02	—	0.02	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.02	12.4
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

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.06
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
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

3.4. Site Preparation (2029) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.96	10.7	59.0	0.12	0.38	—	0.38	0.36	—	0.36	—	12,821	12,821	0.52	0.10	—	12,865
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.88	4.85	0.01	0.03	—	0.03	0.03	—	0.03	—	1,054	1,054	0.04	0.01	—	1,057
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.16	0.88	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.02	12.4
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.06
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
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

3.5. Road Construction & Graveling (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	3.16	23.0	26.8	0.06	1.03	—	1.03	0.95	—	0.95	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.16	23.0	26.8	0.06	1.03	—	1.03	0.95	—	0.95	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	3.78	4.40	0.01	0.17	—	0.17	0.16	—	0.16	—	1,079	1,079	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.69	0.80	< 0.005	0.03	—	0.03	0.03	—	0.03	—	179	179	0.01	< 0.005	—	179

Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.79	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.43	167
Vendor	0.01	0.29	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	247	247	< 0.005	0.04	0.51	259
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
Vendor	0.01	0.31	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	248	248	< 0.005	0.04	0.01	258
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.5	24.5	< 0.005	< 0.005	0.03	24.9
Vendor	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.7	40.7	< 0.005	0.01	0.04	42.5
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	0.01	4.12
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.73	6.73	< 0.005	< 0.005	0.01	7.03
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

3.6. Road Construction & Graveling (2029) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.23	6.05	27.2	0.06	0.22	—	0.22	0.21	—	0.21	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	6.05	27.2	0.06	0.22	—	0.22	0.21	—	0.21	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.99	4.47	0.01	0.04	—	0.04	0.03	—	0.03	—	1,079	1,079	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.18	0.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	179	179	0.01	< 0.005	—	179
Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.79	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.43	167
Vendor	0.01	0.29	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	247	247	< 0.005	0.04	0.51	259
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
Vendor	0.01	0.31	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	248	248	< 0.005	0.04	0.01	258
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.5	24.5	< 0.005	< 0.005	0.03	24.9
Vendor	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.7	40.7	< 0.005	0.01	0.04	42.5
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	0.01	4.12
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.73	6.73	< 0.005	< 0.005	0.01	7.03
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

3.7. Building Construction (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.36	3.00	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	3.00	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.99	1.21	< 0.005	0.04	—	0.04	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.18	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.7
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.79	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.43	167
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

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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.1	49.1	< 0.005	< 0.005	0.06	49.7
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.12	8.12	< 0.005	< 0.005	0.01	8.23
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
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

3.8. Building Construction (2029) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.36	3.00	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.36	3.00	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.99	1.21	< 0.005	0.04	—	0.04	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.18	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.7
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.79	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.43	167
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.57	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	145	145	< 0.005	0.01	0.01	147
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.1	49.1	< 0.005	< 0.005	0.06	49.7
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
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.12	8.12	< 0.005	< 0.005	0.01	8.23
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
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

3.9. Paving & Utilities (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.79	5.10	6.95	0.02	0.19	—	0.19	0.18	—	0.18	—	1,933	1,933	0.08	0.02	—	1,940
Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.42	0.57	< 0.005	0.02	—	0.02	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.79	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.43	167
Vendor	0.01	0.29	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	247	247	< 0.005	0.04	0.51	259
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.02	12.4
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.3	20.3	< 0.005	< 0.005	0.02	21.2
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.37	3.37	< 0.005	< 0.005	< 0.005	3.52
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

3.10. Paving & Utilities (2029) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.79	5.10	6.95	0.02	0.19	—	0.19	0.18	—	0.18	—	1,933	1,933	0.08	0.02	—	1,940

Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.42	0.57	< 0.005	0.02	—	0.02	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.79	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.43	167
Vendor	0.01	0.29	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	247	247	< 0.005	0.04	0.51	259
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.02	12.4
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.3	20.3	< 0.005	< 0.005	0.02	21.2

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.37	3.37	< 0.005	< 0.005	< 0.005	3.52
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

4. Operations Emissions Details

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	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	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	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	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	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	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	1/1/2029	1/20/2029	5.00	15.0	—
Site Preparation	Site Preparation	1/21/2029	3/3/2029	5.00	30.0	—

Road Construction & Graveling	Grading	3/4/2029	5/26/2029	5.00	60.0	—
Building Construction	Building Construction	5/27/2029	11/10/2029	5.00	120	—
Paving & Utilities	Paving	5/27/2029	7/7/2029	5.00	30.0	—

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	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Average	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Average	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Final	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

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	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	150	0.00	—
Road Construction & Graveling	—	—	120	0.00	—
Paving & Utilities	0.00	0.00	0.00	0.00	3.42

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
Manufacturing	0.00	0%
Parking Lot	3.42	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2029	0.00	204	0.03	< 0.005

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	26.1	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	10.5	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	3	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3

Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	40.0
AQ-PM	23.6
AQ-DPM	14.9
Drinking Water	8.53
Lead Risk Housing	57.6
Pesticides	92.1
Toxic Releases	5.96
Traffic	2.81
Effect Indicators	—

CleanUp Sites	81.9
Groundwater	84.7
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	91.9
Solid Waste	83.3
Sensitive Population	—
Asthma	44.7
Cardio-vascular	91.2
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	62.4
Housing	22.1
Linguistic	64.1
Poverty	65.4
Unemployment	14.4

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	34.05620429
Employed	22.03259335
Median HI	33.85089183
Education	—
Bachelor's or higher	36.60977801
High school enrollment	11.18952906
Preschool enrollment	63.87783909
Transportation	—

Auto Access	35.49339151
Active commuting	26.67778776
Social	—
2-parent households	15.50109072
Voting	78.08289491
Neighborhood	—
Alcohol availability	56.64057487
Park access	34.21018863
Retail density	3.054022841
Supermarket access	55.34453997
Tree canopy	68.09957654
Housing	—
Homeownership	59.19414859
Housing habitability	86.46220968
Low-inc homeowner severe housing cost burden	96.34287181
Low-inc renter severe housing cost burden	71.48723213
Uncrowded housing	57.46182471
Health Outcomes	—
Insured adults	36.77659438
Arthritis	0.0
Asthma ER Admissions	37.9
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	53.5

Cognitively Disabled	43.0
Physically Disabled	23.7
Heart Attack ER Admissions	4.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	10.6
Elderly	29.3
English Speaking	70.0
Foreign-born	29.8
Outdoor Workers	9.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.0
Traffic Density	2.1
Traffic Access	0.0
Other Indices	—
Hardship	61.9
Other Decision Support	—

2016 Voting	73.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	61.0
Healthy Places Index Score for Project Location (b)	35.0
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
Construction: Construction Phases	Construction phasing and timing updated to match the Project Description. Building construction along with paving and utilities assumed to occur simultaneously.
Construction: Off-Road Equipment	Equipment list updated to match the Project Description. Excavator added to demolition phase.
Construction: Trips and VMT	Worker, vendor and hauling trips updated to match the Project Description.
Land Use	Lot acreage adjusted to match the Project. Half of the total size (440,00 SF) accounted for in the modeling as the buildings will be premanufactured.

CONSTRUCTION PHASE 5 CALEEMOD OUTPUTS

Triple Crown- Construction Phase 5 Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Triple Crown- Construction Phase 5
Construction Start Date	1/1/2030
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.18629186944287, -122.02889407786444
County	Colusa
City	Colusa
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	229
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Manufacturing	220	1000sqft	13.8	220,000	0.00	—	—	—
Parking Lot	380	Space	3.42	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.16	22.4	27.8	0.06	1.01	14.4	15.4	0.93	6.91	7.83	—	6,964	6,964	0.27	0.09	1.21	6,999
Mit.	1.53	8.16	28.0	0.06	0.30	14.4	14.6	0.28	6.91	7.11	—	6,964	6,964	0.27	0.09	1.21	6,999
% Reduced	52%	64%	-1%	—	70%	—	5%	70%	—	9%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.21	37.7	46.9	0.12	1.61	17.5	19.1	1.49	7.23	8.72	—	12,963	12,963	0.52	0.11	0.02	13,009
Mit.	1.98	10.5	59.5	0.12	0.37	17.5	17.9	0.35	7.23	7.58	—	12,963	12,963	0.52	0.11	0.02	13,009
% Reduced	62%	72%	-27%	—	77%	—	7%	76%	—	13%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.17	8.21	10.5	0.02	0.35	3.88	4.24	0.32	1.75	2.07	—	2,793	2,793	0.11	0.03	0.16	2,806
Mit.	0.60	3.31	11.5	0.02	0.12	3.88	4.00	0.11	1.75	1.86	—	2,793	2,793	0.11	0.03	0.16	2,806
% Reduced	49%	60%	-10%	—	66%	—	5%	65%	—	10%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.21	1.50	1.91	< 0.005	0.06	0.71	0.77	0.06	0.32	0.38	—	462	462	0.02	0.01	0.03	465
Mit.	0.11	0.60	2.10	< 0.005	0.02	0.71	0.73	0.02	0.32	0.34	—	462	462	0.02	0.01	0.03	465
% Reduced	49%	60%	-10%	—	66%	—	5%	65%	—	10%	—	—	—	—	—	—	—

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	3.16	22.4	27.8	0.06	1.01	14.4	15.4	0.93	6.91	7.83	—	6,964	6,964	0.27	0.09	1.21	6,999
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	5.21	37.7	46.9	0.12	1.61	17.5	19.1	1.49	7.23	8.72	—	12,963	12,963	0.52	0.11	0.02	13,009
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	1.17	8.21	10.5	0.02	0.35	3.88	4.24	0.32	1.75	2.07	—	2,793	2,793	0.11	0.03	0.16	2,806
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	0.21	1.50	1.91	< 0.005	0.06	0.71	0.77	0.06	0.32	0.38	—	462	462	0.02	0.01	0.03	465

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	1.53	8.16	28.0	0.06	0.30	14.4	14.6	0.28	6.91	7.11	—	6,964	6,964	0.27	0.09	1.21	6,999

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	1.98	10.5	59.5	0.12	0.37	17.5	17.9	0.35	7.23	7.58	—	12,963	12,963	0.52	0.11	0.02	13,009
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	0.60	3.31	11.5	0.02	0.12	3.88	4.00	0.11	1.75	1.86	—	2,793	2,793	0.11	0.03	0.16	2,806
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2030	0.11	0.60	2.10	< 0.005	0.02	0.71	0.73	0.02	0.32	0.34	—	462	462	0.02	0.01	0.03	465

3. Construction Emissions Details

3.1. Demolition (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.08	0.80	1.01	< 0.005	0.02	—	0.02	0.01	—	0.01	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46

Demoliti	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.62	5.62	< 0.005	< 0.005	0.01	5.70
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.94
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
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

3.2. Demolition (2030) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.08	0.80	1.01	< 0.005	0.02	—	0.02	0.01	—	0.01	—	142	142	0.01	< 0.005	—	142
Demolition	—	—	—	—	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.46
Demolition	—	—	—	—	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Demolition	—	—	—	—	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.62	5.62	< 0.005	< 0.005	0.01	5.70
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.94
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
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

3.3. Site Preparation (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	5.16	37.6	46.4	0.12	1.61	—	1.61	1.49	—	1.49	—	12,820	12,820	0.52	0.10	—	12,864
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—

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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	3.09	3.81	0.01	0.13	—	0.13	0.12	—	0.12	—	1,054	1,054	0.04	0.01	—	1,057
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.56	0.70	< 0.005	0.02	—	0.02	0.02	—	0.02	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.01	12.2
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

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.00	2.00	< 0.005	< 0.005	< 0.005	2.02
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
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

3.4. Site Preparation (2030) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.94	10.5	59.0	0.12	0.37	—	0.37	0.35	—	0.35	—	12,820	12,820	0.52	0.10	—	12,864
Dust From Material Movement	—	—	—	—	—	17.3	17.3	—	7.19	7.19	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.86	4.85	0.01	0.03	—	0.03	0.03	—	0.03	—	1,054	1,054	0.04	0.01	—	1,057
Dust From Material Movement	—	—	—	—	—	1.43	1.43	—	0.59	0.59	—	—	—	—	—	—	—
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.16	0.88	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.01	< 0.005	—	175
Dust From Material Movement	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.01	12.2
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.00	2.00	< 0.005	< 0.005	< 0.005	2.02
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
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

3.5. Road Construction & Graveling (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	3.10	22.1	27.0	0.06	1.00	—	1.00	0.92	—	0.92	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.10	22.1	27.0	0.06	1.00	—	1.00	0.92	—	0.92	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	3.63	4.43	0.01	0.17	—	0.17	0.15	—	0.15	—	1,079	1,079	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.66	0.81	< 0.005	0.03	—	0.03	0.03	—	0.03	—	179	179	0.01	< 0.005	—	179

Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.74	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	< 0.005	0.01	0.38	164
Vendor	0.01	0.28	0.08	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	240	240	< 0.005	0.03	0.45	251
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
Vendor	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	240	240	< 0.005	0.03	0.01	251
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.1	24.1	< 0.005	< 0.005	0.03	24.4
Vendor	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.5	39.5	< 0.005	0.01	0.03	41.2
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.99	3.99	< 0.005	< 0.005	< 0.005	4.04
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.54	6.54	< 0.005	< 0.005	0.01	6.82
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

3.6. Road Construction & Graveling (2030) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	1.22	5.83	27.2	0.06	0.22	—	0.22	0.20	—	0.20	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.22	5.83	27.2	0.06	0.22	—	0.22	0.20	—	0.20	—	6,562	6,562	0.27	0.05	—	6,585
Dust From Material Movement	—	—	—	—	—	14.2	14.2	—	6.85	6.85	—	—	—	—	—	—	—
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.96	4.47	0.01	0.04	—	0.04	0.03	—	0.03	—	1,079	1,079	0.04	0.01	—	1,082
Dust From Material Movement	—	—	—	—	—	2.33	2.33	—	1.13	1.13	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.17	0.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	179	179	0.01	< 0.005	—	179
Dust From Material Movement	—	—	—	—	—	0.42	0.42	—	0.21	0.21	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.74	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	< 0.005	0.01	0.38	164
Vendor	0.01	0.28	0.08	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	240	240	< 0.005	0.03	0.45	251
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
Vendor	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	240	240	< 0.005	0.03	0.01	251
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.1	24.1	< 0.005	< 0.005	0.03	24.4
Vendor	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.5	39.5	< 0.005	0.01	0.03	41.2
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.99	3.99	< 0.005	< 0.005	< 0.005	4.04
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.54	6.54	< 0.005	< 0.005	0.01	6.82
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

3.7. Building Construction (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.35	2.90	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	2.90	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.95	1.21	< 0.005	0.04	—	0.04	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.7
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.74	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	< 0.005	0.01	0.38	164
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

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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.18	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.2	48.2	< 0.005	< 0.005	0.05	48.9
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.98	7.98	< 0.005	< 0.005	0.01	8.09
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
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

3.8. Building Construction (2030) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.35	2.90	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.35	2.90	3.67	0.01	0.12	—	0.12	0.11	—	0.11	—	1,019	1,019	0.04	0.01	—	1,023
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.95	1.21	< 0.005	0.04	—	0.04	0.04	—	0.04	—	335	335	0.01	< 0.005	—	336
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.5	55.5	< 0.005	< 0.005	—	55.7
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.74	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	< 0.005	0.01	0.38	164
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.53	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	142	142	< 0.005	0.01	0.01	144
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.18	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.2	48.2	< 0.005	< 0.005	0.05	48.9
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
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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.98	7.98	< 0.005	< 0.005	0.01	8.09
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
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

3.9. Paving & Utilities (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.77	4.91	6.92	0.02	0.18	—	0.18	0.17	—	0.17	—	1,933	1,933	0.08	0.02	—	1,940
Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.40	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.74	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	< 0.005	0.01	0.38	164
Vendor	0.01	0.28	0.08	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	240	240	< 0.005	0.03	0.45	251
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.01	12.2
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.8	19.8	< 0.005	< 0.005	0.02	20.6
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.00	2.00	< 0.005	< 0.005	< 0.005	2.02
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.27	3.27	< 0.005	< 0.005	< 0.005	3.41
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

3.10. Paving & Utilities (2030) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	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	0.77	4.91	6.92	0.02	0.18	—	0.18	0.17	—	0.17	—	1,933	1,933	0.08	0.02	—	1,940

Paving	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.40	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.3	26.3	< 0.005	< 0.005	—	26.4
Paving	< 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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.03	0.74	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	< 0.005	0.01	0.38	164
Vendor	0.01	0.28	0.08	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	240	240	< 0.005	0.03	0.45	251
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.01	12.2
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.8	19.8	< 0.005	< 0.005	0.02	20.6

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.00	2.00	< 0.005	< 0.005	< 0.005	2.02
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.27	3.27	< 0.005	< 0.005	< 0.005	3.41
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

4. Operations Emissions Details

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	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	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	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	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	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	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	1/1/2030	1/20/2030	5.00	14.0	—
Site Preparation	Site Preparation	1/21/2030	3/3/2030	5.00	30.0	—

Road Construction & Graveling	Grading	3/4/2030	5/26/2030	5.00	60.0	—
Building Construction	Building Construction	5/27/2030	11/10/2030	5.00	120	—
Paving & Utilities	Paving	5/27/2030	7/7/2030	5.00	30.0	—

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	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Average	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Average	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Final	3.00	8.00	423	0.48
Site Preparation	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Road Construction & Graveling	Graders	Diesel	Tier 4 Final	2.00	8.00	148	0.41
Road Construction & Graveling	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Road Construction & Graveling	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Paving & Utilities	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving & Utilities	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving & Utilities	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38

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	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.9	LDA,LDT1,LDT2
Demolition	Vendor	—	10.8	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	15.0	14.9	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.8	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Road Construction & Graveling	—	—	—	—
Road Construction & Graveling	Worker	15.0	14.9	LDA,LDT1,LDT2
Road Construction & Graveling	Vendor	8.00	10.8	HHDT,MHDT
Road Construction & Graveling	Hauling	0.00	20.0	HHDT
Road Construction & Graveling	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	15.0	14.9	LDA,LDT1,LDT2
Building Construction	Vendor	0.00	10.8	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving & Utilities	—	—	—	—
Paving & Utilities	Worker	15.0	14.9	LDA,LDT1,LDT2
Paving & Utilities	Vendor	8.00	10.8	HHDT,MHDT
Paving & Utilities	Hauling	0.00	20.0	HHDT
Paving & Utilities	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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	150	0.00	—
Road Construction & Graveling	—	—	120	0.00	—
Paving & Utilities	0.00	0.00	0.00	0.00	3.42

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
Manufacturing	0.00	0%
Parking Lot	3.42	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2030	0.00	204	0.03	< 0.005

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	26.1	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	10.5	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	3	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3

Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	40.0
AQ-PM	23.6
AQ-DPM	14.9
Drinking Water	8.53
Lead Risk Housing	57.6
Pesticides	92.1
Toxic Releases	5.96
Traffic	2.81
Effect Indicators	—

CleanUp Sites	81.9
Groundwater	84.7
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	91.9
Solid Waste	83.3
Sensitive Population	—
Asthma	44.7
Cardio-vascular	91.2
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	62.4
Housing	22.1
Linguistic	64.1
Poverty	65.4
Unemployment	14.4

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	34.05620429
Employed	22.03259335
Median HI	33.85089183
Education	—
Bachelor's or higher	36.60977801
High school enrollment	11.18952906
Preschool enrollment	63.87783909
Transportation	—

Auto Access	35.49339151
Active commuting	26.67778776
Social	—
2-parent households	15.50109072
Voting	78.08289491
Neighborhood	—
Alcohol availability	56.64057487
Park access	34.21018863
Retail density	3.054022841
Supermarket access	55.34453997
Tree canopy	68.09957654
Housing	—
Homeownership	59.19414859
Housing habitability	86.46220968
Low-inc homeowner severe housing cost burden	96.34287181
Low-inc renter severe housing cost burden	71.48723213
Uncrowded housing	57.46182471
Health Outcomes	—
Insured adults	36.77659438
Arthritis	0.0
Asthma ER Admissions	37.9
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	53.5

Cognitively Disabled	43.0
Physically Disabled	23.7
Heart Attack ER Admissions	4.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	10.6
Elderly	29.3
English Speaking	70.0
Foreign-born	29.8
Outdoor Workers	9.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.0
Traffic Density	2.1
Traffic Access	0.0
Other Indices	—
Hardship	61.9
Other Decision Support	—

2016 Voting	73.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	61.0
Healthy Places Index Score for Project Location (b)	35.0
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
Construction: Construction Phases	Construction phasing and timing updated to match the Project Description. Building construction along with paving and utilities assumed to occur simultaneously.
Construction: Off-Road Equipment	Equipment list updated to match the Project Description. Excavator added to demolition phase.
Construction: Trips and VMT	Worker, vendor and hauling trips updated to match the Project Description.
Land Use	Lot acreage adjusted to match the Project. Half of the total size (440,00 SF) accounted for in the modeling as the buildings will be premanufactured.

OPERATIONAL CALEEMOD OUTPUTS

Triple Crown- Operations Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Triple Crown- Operations
Operational Year	2031
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.18629186944287, -122.02889407786444
County	Colusa
City	Colusa
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	229
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
Manufacturing	2,120	1000sqft	68.9	2,120,000	0.00	—	—	—
Parking Lot	1,900	Space	17.1	760,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.08	24.3	35.8	0.18	1.81	4.92	6.73	1.81	1.24	3.05	2,779	46,187	48,967	286	3.74	560	57,795
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.90	24.5	32.4	0.18	1.81	4.92	6.73	1.81	1.24	3.05	2,779	45,647	48,427	286	3.76	552	57,253
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.90	24.4	32.3	0.18	1.81	4.92	6.73	1.81	1.24	3.05	2,779	45,768	48,548	286	3.75	555	57,374
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.53	4.45	5.90	0.03	0.33	0.90	1.23	0.33	0.23	0.56	460	7,577	8,038	47.4	0.62	92.0	9,499

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.58	0.68	16.0	0.04	0.02	4.92	4.94	0.01	1.24	1.25	—	4,171	4,171	0.10	0.10	8.34	4,211

Area	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	1.30	23.6	19.8	0.14	1.79	—	1.79	1.79	—	1.79	—	40,772	40,772	4.53	0.30	—	40,974
Water	—	—	—	—	—	—	—	—	—	—	1,363	1,245	2,607	140	3.34	—	7,102
Waste	—	—	—	—	—	—	—	—	—	—	1,417	0.00	1,417	142	0.00	—	4,957
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	552	552
Total	3.08	24.3	35.8	0.18	1.81	4.92	6.73	1.81	1.24	3.05	2,779	46,187	48,967	286	3.74	560	57,795
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.40	0.86	12.6	0.04	0.02	4.92	4.94	0.01	1.24	1.25	—	3,631	3,631	0.13	0.11	0.22	3,668
Area	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	1.30	23.6	19.8	0.14	1.79	—	1.79	1.79	—	1.79	—	40,772	40,772	4.53	0.30	—	40,974
Water	—	—	—	—	—	—	—	—	—	—	1,363	1,245	2,607	140	3.34	—	7,102
Waste	—	—	—	—	—	—	—	—	—	—	1,417	0.00	1,417	142	0.00	—	4,957
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	552	552
Total	2.90	24.5	32.4	0.18	1.81	4.92	6.73	1.81	1.24	3.05	2,779	45,647	48,427	286	3.76	552	57,253
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.41	0.76	12.5	0.04	0.02	4.92	4.93	0.01	1.24	1.25	—	3,752	3,752	0.11	0.10	3.60	3,789
Area	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	1.30	23.6	19.8	0.14	1.79	—	1.79	1.79	—	1.79	—	40,772	40,772	4.53	0.30	—	40,974
Water	—	—	—	—	—	—	—	—	—	—	1,363	1,245	2,607	140	3.34	—	7,102
Waste	—	—	—	—	—	—	—	—	—	—	1,417	0.00	1,417	142	0.00	—	4,957
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	552	552
Total	2.90	24.4	32.3	0.18	1.81	4.92	6.73	1.81	1.24	3.05	2,779	45,768	48,548	286	3.75	555	57,374
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.26	0.14	2.28	0.01	< 0.005	0.90	0.90	< 0.005	0.23	0.23	—	621	621	0.02	0.02	0.60	627
Area	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.24	4.31	3.62	0.03	0.33	—	0.33	0.33	—	0.33	—	6,750	6,750	0.75	0.05	—	6,784

Water	—	—	—	—	—	—	—	—	—	—	226	206	432	23.2	0.55	—	1,176
Waste	—	—	—	—	—	—	—	—	—	—	235	0.00	235	23.4	0.00	—	821
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91.4	91.4
Total	0.53	4.45	5.90	0.03	0.33	0.90	1.23	0.33	0.23	0.56	460	7,577	8,038	47.4	0.62	92.0	9,499

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	1.58	0.68	16.0	0.04	0.02	4.92	4.94	0.01	1.24	1.25	—	4,171	4,171	0.10	0.10	8.34	4,211
Parking Lot	0.00	0.00	0.00	0.00	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	1.58	0.68	16.0	0.04	0.02	4.92	4.94	0.01	1.24	1.25	—	4,171	4,171	0.10	0.10	8.34	4,211
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	1.40	0.86	12.6	0.04	0.02	4.92	4.94	0.01	1.24	1.25	—	3,631	3,631	0.13	0.11	0.22	3,668
Parking Lot	0.00	0.00	0.00	0.00	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	1.40	0.86	12.6	0.04	0.02	4.92	4.94	0.01	1.24	1.25	—	3,631	3,631	0.13	0.11	0.22	3,668
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.26	0.14	2.28	0.01	< 0.005	0.90	0.90	< 0.005	0.23	0.23	—	621	621	0.02	0.02	0.60	627

Parking Lot	0.00	0.00	0.00	0.00	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	0.26	0.14	2.28	0.01	< 0.005	0.90	0.90	< 0.005	0.23	0.23	—	621	621	0.02	0.02	0.60	627

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	12,239	12,239	1.98	0.24	—	12,360
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	365	365	0.06	0.01	—	368
Total	—	—	—	—	—	—	—	—	—	—	—	12,603	12,603	2.04	0.25	—	12,728
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	12,239	12,239	1.98	0.24	—	12,360
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	365	365	0.06	0.01	—	368
Total	—	—	—	—	—	—	—	—	—	—	—	12,603	12,603	2.04	0.25	—	12,728
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	2,026	2,026	0.33	0.04	—	2,046
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	60.4	60.4	0.01	< 0.005	—	61.0
Total	—	—	—	—	—	—	—	—	—	—	—	2,087	2,087	0.34	0.04	—	2,107

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	1.30	23.6	19.8	0.14	1.79	—	1.79	1.79	—	1.79	—	28,168	28,168	2.49	0.05	—	28,246
Parking Lot	0.00	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	1.30	23.6	19.8	0.14	1.79	—	1.79	1.79	—	1.79	—	28,168	28,168	2.49	0.05	—	28,246
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	1.30	23.6	19.8	0.14	1.79	—	1.79	1.79	—	1.79	—	28,168	28,168	2.49	0.05	—	28,246
Parking Lot	0.00	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	1.30	23.6	19.8	0.14	1.79	—	1.79	1.79	—	1.79	—	28,168	28,168	2.49	0.05	—	28,246
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.24	4.31	3.62	0.03	0.33	—	0.33	0.33	—	0.33	—	4,664	4,664	0.41	0.01	—	4,676
Parking Lot	0.00	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	0.24	4.31	3.62	0.03	0.33	—	0.33	0.33	—	0.33	—	4,664	4,664	0.41	0.01	—	4,676

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,363	1,245	2,607	140	3.34	—	7,102
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,363	1,245	2,607	140	3.34	—	7,102
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,363	1,245	2,607	140	3.34	—	7,102
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,363	1,245	2,607	140	3.34	—	7,102
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	226	206	432	23.2	0.55	—	1,176
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	226	206	432	23.2	0.55	—	1,176

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,417	0.00	1,417	142	0.00	—	4,957

Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,417	0.00	1,417	142	0.00	—	4,957
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,417	0.00	1,417	142	0.00	—	4,957
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,417	0.00	1,417	142	0.00	—	4,957
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	235	0.00	235	23.4	0.00	—	821
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	235	0.00	235	23.4	0.00	—	821

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	552	552
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	552	552
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufact	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	552	552
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	552	552
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91.4	91.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91.4	91.4

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	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	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. 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	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	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	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	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

5.9. 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
Manufacturing	846	846	846	308,746	7,095	7,095	7,095	2,589,682
Parking Lot	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

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)
0	0.00	0.00	0.00	44,693

5.10.3. Landscape Equipment

Equipment Type	Fuel Type	Number Per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

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)
Manufacturing	21,899,510	204	0.0330	0.0040	87,892,248
Parking Lot	652,511	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Manufacturing	711,072,000	0.00
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Manufacturing	2,629	—
Parking Lot	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
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088	0.30	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

5.16. 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

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. Biomass Cover Type

5.18.1.1. Unmitigated

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)

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	26.1	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	10.5	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	3	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A

Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3
Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	40.0
AQ-PM	23.6
AQ-DPM	14.9
Drinking Water	8.53
Lead Risk Housing	57.6
Pesticides	92.1
Toxic Releases	5.96
Traffic	2.81
Effect Indicators	—
CleanUp Sites	81.9
Groundwater	84.7
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	91.9
Solid Waste	83.3
Sensitive Population	—
Asthma	44.7
Cardio-vascular	91.2
Low Birth Weights	46.5
Socioeconomic Factor Indicators	—
Education	62.4
Housing	22.1
Linguistic	64.1
Poverty	65.4
Unemployment	14.4

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	34.05620429
Employed	22.03259335
Median HI	33.85089183
Education	—
Bachelor's or higher	36.60977801
High school enrollment	11.18952906
Preschool enrollment	63.87783909
Transportation	—
Auto Access	35.49339151
Active commuting	26.67778776
Social	—
2-parent households	15.50109072
Voting	78.08289491
Neighborhood	—
Alcohol availability	56.64057487
Park access	34.21018863
Retail density	3.054022841
Supermarket access	55.34453997
Tree canopy	68.09957654
Housing	—
Homeownership	59.19414859
Housing habitability	86.46220968
Low-inc homeowner severe housing cost burden	96.34287181
Low-inc renter severe housing cost burden	71.48723213

Uncrowded housing	57.46182471
Health Outcomes	—
Insured adults	36.77659438
Arthritis	0.0
Asthma ER Admissions	37.9
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	53.5
Cognitively Disabled	43.0
Physically Disabled	23.7
Heart Attack ER Admissions	4.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	10.6
Elderly	29.3
English Speaking	70.0
Foreign-born	29.8
Outdoor Workers	9.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.0
Traffic Density	2.1
Traffic Access	0.0
Other Indices	—
Hardship	61.9
Other Decision Support	—
2016 Voting	73.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	61.0
Healthy Places Index Score for Project Location (b)	35.0
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	Lot acreage of manufacturing updated to match the acreage provided in the Project Description.
Operations: Vehicle Data	832 trips per the Project Traffic Report.
Operations: Fleet Mix	Project Traffic Report states 832 trips with 792 (95.2%) from employees and 40 (4.8%) from deliveries.
Operations: Consumer Products	No consumer products associated with general or city park.
Operations: Architectural Coatings	Buildings are prefabricated and do not require repainting.
Operations: Water and Waste Water	Water use provided in the Project Description. Assumed 4 months of high water use.

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BIOLOGICAL RESOURCE ASSESSMENT

Aquatic, Terrestrial, and Botanical Resources

Colusa Triple Crown Project

Colusa County, California

October 2025



Prepared for:

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EXECUTIVE SUMMARY

This biological resource assessment (BRA) summarizes an overall evaluation of (1) the existing biological and botanical conditions of the Colusa Triple Crown Project (Project) site, (2) the potential for special-status species to occur in or near the Project site, and (3) the measures of avoidance to minimize the potential impacts to special-status species during Project activities.

The proposed project involves the construction of a cannabis research and development business park. It would encompass approximately 2,130,000 square feet on 88.9 acres. The Colusa Triple Crown Project (Project) is located approximately 2 miles southwest of the City of Colusa, Colusa County, California. The primary objective of the Project is to construct up to ten (10) steel warehouse buildings on permanent rebar and concrete foundations. Additional improvement measures consist of providing localized drainage improvements, installation of water, sewer, and electrical lines to supply the new buildings, as well as fencing surrounding all new Project facilities.

Land within the biological survey area (BSA) is characterized by cropland, barren, and man-made riverine habitats. There is suitable habitat within the BSA for federal and state listed species. Special-status plants that have the potential to occur within the BSA include heartscale (*Atriplex cordulata var. cordulata*). Special-status animals, including proposed and candidate species, that have the potential to occur within the BSA include Crotch's bumble bee (*Bombus crotchii*), monarch butterfly (*Danaus plexippus*), giant garter snake (*Thamnophis gigas*), northwestern pond turtle (*Actinemys marmorata*), western burrowing owl (*Athene cunicularia ssp. hypugaea*), tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), and a variety of migratory bird and raptor species protected by the Migratory Bird Treaty Act (MBTA). There is no designated United States Fish and Wildlife Service (USFWS) critical habitat within the BSA for any federally listed species.

BIOLOGICAL RESOURCE ASSESSMENT

Colusa Triple Crown

Colusa County, California
USGS "Colusa" 7.5' Quadrangle
Section 11 Township 15N Range 02W

INTRODUCTION

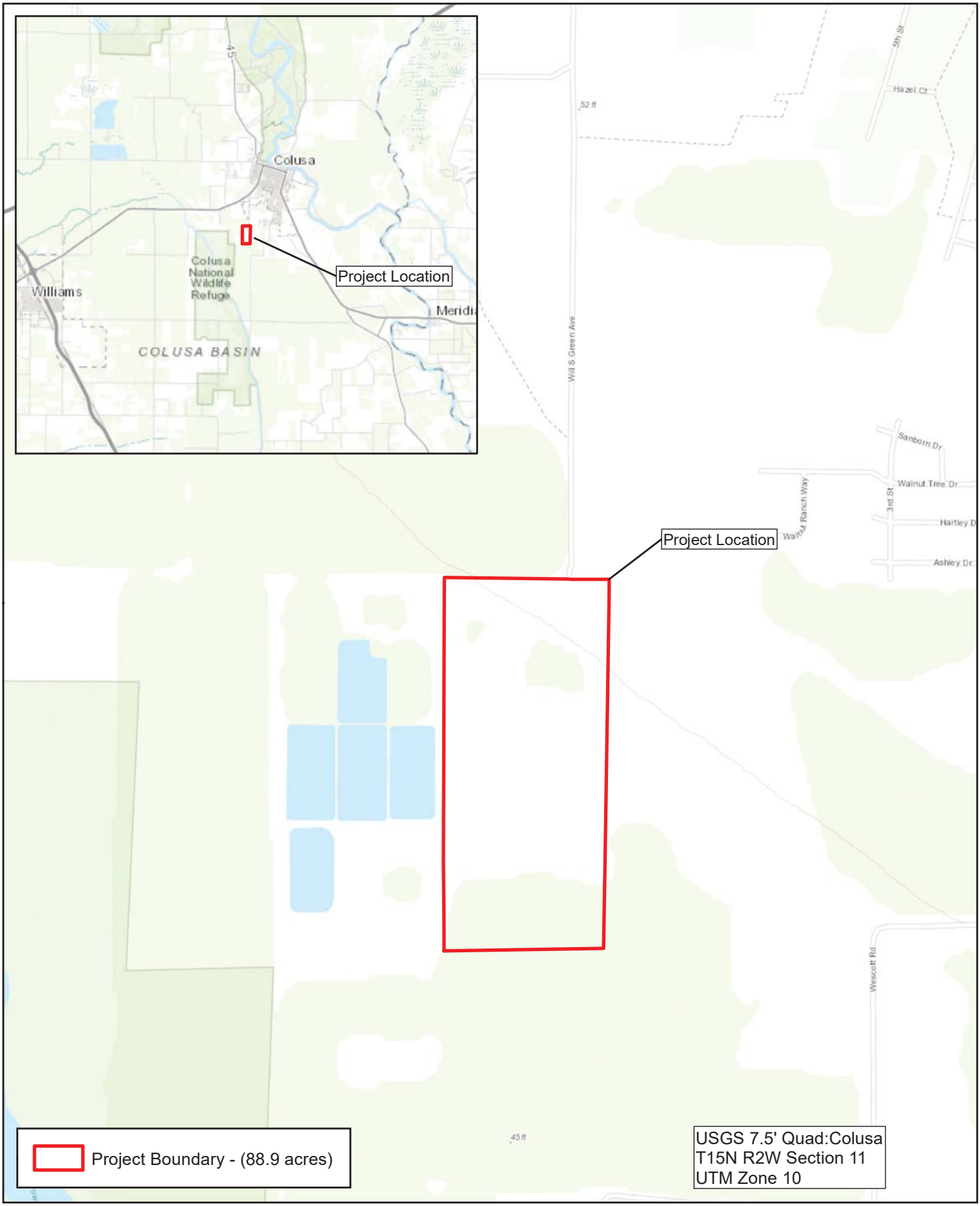
Purpose and Overview

The purpose of this biological resource assessment (BRA) is to document the endangered, threatened, sensitive, and rare species and their habitats that occur or may occur in the biological survey area (BSA) of the Triple Crown Project (Project), near the City of Colusa, Colusa County, California (**Figure 1**). The proposed Project includes the construction and operation of a cannabis research and development business park. It would encompass approximately 2,130,000 square feet on 88.9 acres.

The BSA is the area where the focus of biological surveying is conducted (**Figure 2**). Gallaway Enterprises conducted biological and botanical habitat assessments within the BSA to evaluate site conditions and the potential for special-status wildlife and botanical species to occur. Other primary references consulted include species lists and information gathered using the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), the National Oceanic and Atmospheric Administration (NOAA) Fisheries/National Marine Fisheries Service (NMFS) consultation online tools, California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), the California Native Plant Society (CNPS) inventory of rare and endangered plants, and literature review. The BRA results are the findings of habitat assessments and surveys, and recommendations for avoidance and minimization measures.

Project Location and Environmental Setting

The Project is located in the Sacramento Valley, the northern portion of California's Central Valley. The BSA is located on the west side of Will S. Green Avenue and Westcott Road, just south of the city limits of Colusa, Colusa County, California, Latitude 39.187932, Longitude -122.026729, within the United States Geological Survey (USGS) "Colusa" 7.5-minute quadrangle, Section 11, Township 15N, Range 02W. The Property is bounded by Will S. Green Ave. to the east and is surrounded by rural agricultural land to the east, north and south, and a county-operated maintenance building and water treatment facility to the west. The BSA has an elevation of approximately 50 feet and is approximately 2.5 miles west of the Sacramento River. It consists of flat terrain that is currently used for raising several rotating crops, most recently safflower. There are several wetland features throughout the property, characterized as agricultural ditches and canals/levees. The area's average annual precipitation is 16.2 inches, and the average annual temperature is 61.3° F (WRCC 2025) in the region where the BSA is located. Soil type within the BSA is a Scribner silt loam, 0 to 1 percent slope, subject to occasional flooding, with a depth to restrictive layer of more than 80 inches (USDA 2025).



NORTH

1:12,000

0 250 500 Feet

Data Sources: ESRI, World Topographic Map

Colusa Triple Crown
Regional Location
Figure 1

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GE: #25-053 Map Date: 09/12/2025



1:8,000

0 150 300 Feet

NORTH

Data Sources: ESRI, Maxar 05/11/2023

Colusa Triple Crown
Biological Survey Area
Figure 2

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GE: #25-053 Date: 9/12/2025

Project Description

The proposed Project will involve construction and operation of a cannabis research and development business park in a rural agricultural area outside of the city limits of Colusa. It would encompass approximately 2,130,000 square feet on 88.9 acres

Proposed improvements include the construction of up to ten (10) steel warehouse buildings on permanent rebar and concrete foundations. Construction is planned as a five-phased approach. There are no trees within the BSA, and the area at the time of the habitat assessments was open and free of vegetation, except for the vegetation that is lining the irrigation ditches and canals; thus, no tree removals or extensive vegetation removals will be required for the project. Some maintenance clearing of the agricultural ditches may be required to connect new systems to the existing irrigation system on site. Additional improvement measures consist of providing localized drainage improvements, installation of water, sewer, and electrical lines to supply the new buildings, as well as fencing surrounding all of the new Project facilities.

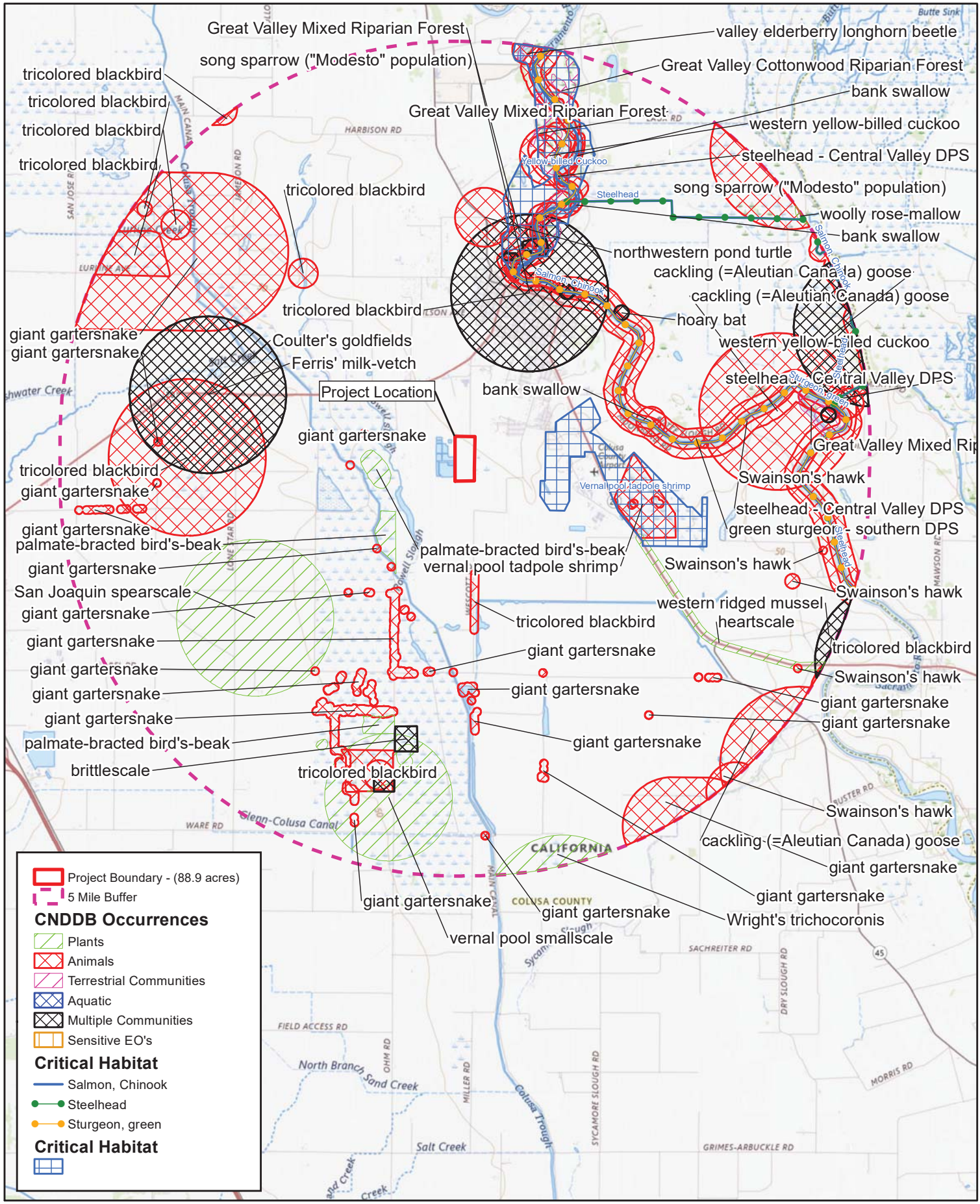
It is anticipated that excavators, dozers, cranes, pavers, dump trucks, concrete trucks, concrete pumps, excavation shoring systems, concrete formwork systems, and drilling equipment may be required to construct the improvements. It is not anticipated that the improvements would impede traffic, as the Project will not require staging equipment on the street, and Will S. Green Ave. is an unpaved road typically only used by industrial or county vehicles.

METHODS

References Consulted

Gallaway Enterprises obtained lists of special-status species that occur in the vicinity of the BSA. The CNDDB Rarefind 5 database was also consulted to identify special-status species occurrences within a 5-mile radius of the BSA (**Figure 3**). Primary sources of information regarding the occurrence of federally listed threatened, endangered, proposed and candidate species, and their habitats within the BSA used in the preparation of this BRA are:

- The USFWS IPaC Official Species List for the BSA, Project Code 2025-0144325, September 3, 2025 (**Appendix A**);
- Results of a species record search of the CDFW CNDDB RareFind 5 for the USGS 7.5-minute “Colusa” and eight surrounding quadrangles, September 3, 2025 (**Appendix A**);
- Review of the CNPS Inventory of Rare and Endangered Vascular Plants of California for the USGS 7.5-minute “Colusa” and eight surrounding quadrangles, September 3, 2025 (**Appendix A**);
- Review of the USFWS and NOAA Fisheries critical habitat online maps, September 3, 2025; and,
- Results from the habitat assessments conducted by Gallaway Enterprises on September 16, 2025. (**Appendix B**).



1:100,000

0 1 2 Miles

NORTH

Data Sources: ESRI, CDFW, CNDDB, USGS

Colusa Triple Crown
CNDDB Occurrences and Critical Habitat
Figure 3

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GE: #25-053 Map Date: 09/12/2025

Special-Status Species

Special-status species that have potential to occur in the BSA are those that fall into one of the following categories:

- Listed as threatened or endangered, or are proposed or candidates for listing under the California Endangered Species Act (CESA, 14 California Code of Regulations 670.5) or the Federal Endangered Species Act (ESA, 50 Code of Federal Regulations 17.12);
- Listed as a Species of Special Concern (SSC) by CDFW or protected under the California Fish and Game Code (CFGC; i.e., Fully Protected Species);
- Ranked by the CNPS as 1A, 1B, or 2;
- Protected under the Migratory Bird Treaty Act (MBTA);
- Protected under the Bald and Golden Eagle Protection Act; or
- Species that are otherwise protected under policies or ordinances at the local or regional level as required by the California Environmental Quality Act (CEQA; §15380).

Sensitive Natural Communities

Sensitive Natural Communities (SNCs) are monitored by CDFW with the goal of preserving these areas of habitat that are rare or ecologically important. Many SNCs are designated as such because they represent a historical landscape and are typically preserved as valued components of California's diverse habitat assemblage. The CDFW CNDDB was accessed on September 3, 2025, to determine if the BSA occurred within an SNC.

Critical Habitat

The ESA requires that critical habitat be designated for all species listed under the ESA. Critical habitat is designated for areas that provide essential habitat elements that enable a species' survival, and which are occupied by the species during the species' listing under the ESA. Areas outside of the species range of occupancy during the time of its listing can also be determined as critical habitat if the agency decides that the area is essential to the conservation of the species.

The USFWS Critical Habitat on-line mapper was accessed on September 3, 2025, to determine if critical habitat occurs within the BSA. Appropriate Federal Registers were also used to confirm the presence or absence of critical habitat. The NOAA Fisheries Critical Habitat Mapper App for the West Coast Region was accessed on September 3, 2025, to determine if critical habitat for ESA listed fish occurs within the BSA.

It was determined that there is no critical habitat overlapping the BSA for any special-status species.

Habitat Assessment

Habitat assessments were conducted by Gallaway Enterprises staff on September 16, 2025, by Associate Biologist Kaela Gamio and Senior Botanist Cheryl Ballantyne. Habitat assessments for botanical and wildlife species were conducted to determine if suitable habitat elements for special-status species occur within the BSA. The habitat assessments were conducted by walking the entire BSA and recording observed species or their sign along with specific habitat types and elements. If habitat was observed for

special-status species, it was then evaluated for quality based on vegetation composition and structure, physical features (e.g., soils, elevation), microclimate, surrounding area, presence of predatory species and available resources (e.g., prey items, nesting substrates), and land use patterns. Wildlife species and botanical species observed during the site assessment are included in **Appendix B**.

RESULTS

Habitat Types

The habitat types and vegetation communities that are present within the BSA are detailed below as described in the current classification scheme identified in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). A map depicting the approximate extent of the habitat types within the BSA is included (**Figure 4**). For the full lists of animal and plant species observed within these various habitat types during site evaluations, please refer to **Appendix B**.

Cropland

Vegetation in cropland habitat includes a variety of sizes, shapes, and growing patterns. Most croplands support annuals, planted in spring and harvested during summer or fall. In many areas, second crops are commonly planted after harvesting the first. Soils often dictate the crops grown. Cropland vegetation is grown as a monoculture, using tillage or herbicides to eliminate unwanted vegetation. Croplands are established on the State's most fertile soils, which historically supported an abundance of wildlife unequalled in other sites. Croplands have greatly reduced the wildlife richness and diversity of California. Many species of rodents and birds have adapted to croplands and are controlled by fencing, trapping, and poisoning to prevent excessive crop losses (California Department of Food and Agriculture 1975). Except for insectivores, raptors, doves, and pheasants, avian wildlife that becomes numerous and uses crops before they are harvested are generally not welcome by growers. Wildlife such as waterfowl, sandhill cranes, and other species that use waste grain after harvest are usually not discouraged. Croplands flooded for weed control, leaching, irrigation, or waterfowl hunting serve as freshwater wetlands for a variety of associated wetland wildlife, including shorebirds, wading birds, and gulls. A variety of plants may occupy the periphery of cropland, where drainage or irrigation ditches harbor moisture for longer periods, and the soils are not as frequently disturbed. At the time the habitat assessment was performed, the cropland within the BSA was not being utilized for production, and the only plants within the mostly barren rows was the occasional stinkwort weed (*Dittrichia graveolens*). However, a larger variety of plant species were observed within the drainage ditch on the western edge of the field, including prickly lettuce (*Lactuca serriola*), black nightshade (*Solanum nigrum*), Russian thistle (*Salsola tragus*), perennial pepperweed (*Lepidium latifolium*), European heliotrope (*Heliotropium europaeum*), and even some tomato (*Lycopersicon asculentum*) deposited there from a previous crop cycle. Similarly, no animals were seen within the designated cropland of the BSA; they were only found on the periphery within the irrigation ditch, and included several species of pollinators (butterflies, wasps, and honey bees) as well as western fence lizards (*Sceloporus occidentalis*), black phoebes (*Sayornis nigricans*), and lesser goldfinch (*Spinus psaltria*).



NORTH

1:6,000

0 100 200 Feet

Data Sources: ESRI, Maxar 05/11/2023

Colusa Triple Crown
Habitat Types
Figure 4

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GE: #25-053 Date: 9/23/2025

Barren

Barren habitat is typified by non-vegetated soil, rock, and gravel. Access paths, parking, unpaved roads, and storage areas associated with existing buildings are classified as barren habitat within the BSA. Barren habitat typically provides low quality habitat to wildlife. Some ground-nesting birds, such as killdeer (*Charadrius vociferus*), will nest in gravelly, barren substrate, and reptile species may use this habitat for thermoregulation.

Riverine

Intermittent or continually running water distinguishes rivers and streams. With increasing temperatures, decreasing velocities and accumulating bottom sediment, organisms of the fast water are replaced by organisms adapted to slower moving water. Mollusks and crustaceans replace the rubble-dwelling insect larvae. Backswimmers, water boatmen and diving beetles inhabit sluggish stretches and backwaters. Emergent vegetation grows along the banks, and duckweed floats on the surface. Abundant decaying matter on the river bottom promotes the growth of plankton populations that are not usually found in fast water. Most natural riverine systems are relatively stable over long periods of time as long as there is no human interference. The building of dams and the dredging and straightening of stream channels are the most important factors controlling the duration of stream and river types. Riverine habitats can occur in association with many terrestrial habitats. The temperature of the riverine habitat is not constant. In general, small, shallow streams tend to follow, but lag behind air temperatures, warming and cooling with the seasons. Waters provide food for waterfowl, herons, shorebirds, belted kingfisher, and American dipper. Many species of insectivorous birds (swallows, swifts, flycatchers) hawk their prey over water. The riverine habitat within the BSA was dominated by a thick, dead stand of cattail (*Typha sp.*) within the larger irrigation ditches that had not had continuous flow of water for some time.

Sensitive Natural Communities

There are no designated SNCs that occur within the BSA.

Critical Habitat

It was confirmed that the BSA does not overlap proposed critical habitat for any federally listed species.

Special-Status Species

A summary of special-status species assessed for potential occurrence within the BSA based on the USFWS IPaC species list, CNDDB list of occurrences, and the CNPS list of rare and endangered plants within the USGS 7.5-minute “Colusa” and eight surrounding quadrangles, and their potential to occur within the BSA are described in **Table 1**. Potential for occurrence was determined by reviewing database queries from federal and state agencies and evaluating habitat characteristics. The following special-status species have potential to occur within the BSA based on the presence of suitable habitat and/or known records of species occurrence within the vicinity of the BSA.

Table 1. Special-Status Species and Sensitive Natural Communities and Their Potential to Occur in the BSA

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence**
SENSITIVE NATURAL COMMUNITIES			
Coastal and Valley Freshwater Marsh	_/SNC/_	Freshwater marsh.	None. Does not occur within the BSA.
Great Valley Cottonwood Riparian Forest	_/SNC/_	Cottonwood dominant riparian forest.	None. Does not occur within the BSA.
Great Valley Mixed Riparian Forest	_/SNC/_	Mixed riparian forest.	None. Does not occur within the BSA.
Great Valley Willow Scrub	_/SNC/_	Willow scrub.	None. Does not occur within the BSA.
PLANTS			
Baker's navarretia *(Navarretia leucocephala ssp. bakeri)*	_/_/1B.1	Adobe or alkaline soils; Cismontane woodland, meadows, seeps, vernal pools & swales, valley & foothill grassland, lower montane coniferous forest. (BP: Apr - July)	None. There is no suitable habitat within the BSA.
Bent-flowered fiddleneck *(Amsinckia lunaris)*	_/_/1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub; often on serpentine. (BP: Mar-Jun)	None. There is no suitable habitat within the BSA.
Brittlescale *(Atriplex depressa)*	_/_/1B.2	Alkali scalds or alkali clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. (BP: Apr-Oct)	None. There is no suitable habitat within the BSA.
California alkali grass *(Puccinellia simplex)*	_/_/1B.2	Alkaline, vernally mesic. Sinks, flats, and lake margins; meadows, grassland, vernal pools, & chenopod scrub. (BP: Mar-May)	None. There is no suitable habitat within the BSA.
Colusa layia *(Layia septentrionalis)*	_/_/1B.2	Sandy or serpentine soil in chaparral, cismontane woodland, or grasslands. (BP: Apr-May)	None. There is no suitable habitat within the BSA.
Coulter's goldfields *(Lasthenia glabrata ssp. coulteri)*	_/_/1B.1	Usually on alkali soils; coastal salt marshes, playas, vernal pools. (BP: Feb-Jun)	None. There is no suitable habitat within the BSA.
Ferris' milk-vetch *(Astragalus tener var. ferrisiae)*	_/_/1B.1	Subalkaline flats on overflow land in the Central Valley; usually in dry, adobe soil in meadows and seeps. (BP: Apr-May)	None. One historical (1926) CNDDB occurrence 2.5 miles away. Since then, agricultural development has resulted in unsuitable habitat within the BSA.
Heartscale *(Atriplex cordulata var. cordulata)*	_/_/1B.2	Alkaline flats/scalds in the Central Valley, sandy soils; chenopod scrub, grasslands, meadows, seeps. (BP: Apr-Oct)	**Low.** One CNDDB occurrence 2.3 miles SE of BSA, from 2002.

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence**
PLANTS			
Palmate-bracted bird's-beak *(Chloropyron palmatum)*	FE/SE/1B.1	Usually on alkaline Pescadero silty clay in chenopod scrub or valley and foothill grassland. (BP: May-Oct)	None. Several extant CNDDB occurrences within 1 – 4.25 mi from the BSA; all within the undeveloped Colusa National Wildlife Refuge to the WSW. No suitable habitat within the BSA.
Peruvian dodder *(Cuscuta obtusiflora var. glandulosa)*	_/_/2B.2	Freshwater marshes and swamps. (BP: Jul-Oct)	None. There is no suitable habitat within the BSA.
San Joaquin spearscale *(Extriplex joaquinana)*	_/_/1B.2	Seasonal alkali wetlands or alkali sink scrub. (BP: Apr-Oct)	None. Two CNDDB occurrences within 3.5 miles, but neither are recent (1993 & 1916). No suitable habitat within the BSA.
Vernal pool smallscale *(Atriplex persistens)*	_/_/1B.2	Alkaline vernal pools or wetlands below 400 ft elevation. (BP: Jun-Oct)	None. There is no suitable habitat within the BSA.
Water star-grass *(Heteranthera dubia)*	_/_/2B.2	Alkaline, still or slow-moving water with pH of 7 or higher, usually in slightly eutrophic waters of marshes and swamps. (BP: Jul-Oct)	None. There are no CNDDB occurrences within a 5-mile radius of the BSA.
Watershield *(Brasenia schreber)*	_/_/2B.3	Aquatic; known from water bodies both natural and artificial in California. (BP: Jun-Sep)	None. There are no CNDDB occurrences within a 5-mile radius of the BSA.
Woolly rose-mallow *(Hibiscus lasiocarpos var. occidentalis)*	_/_/1B.2	Moist, freshwater-soaked river banks and low peat islands in sloughs; can also occur on riprap and levees. In California, known from the delta watershed. (BP: Jun-Sep)	None. There are no CNDDB occurrences within a 5-mile radius of the BSA.
Wright's trichocoronis *(Trichocoronis wrightii var. wrightii)*	_/_/2B.1	Mud flats of vernal lakes, drying river beds, marshes & swamps, alkali meadows or seeps in riparian forest. (BP: May-Sep)	None. There are no CNDDB occurrences within a 5-mile radius of the BSA.
INVERTEBRATES			
Crotch's bumble bee *(Bombus crotchii)*	_/(C)SE/_	Coastal California east to the Sierra-Cascade crest and south into Mexico; native grasslands and shrublands generally featuring Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	**Low.** The BSA may contain areas with suitable foraging habitat on the fringes; an occurrence approximately 14 miles from the BSA recorded in 2007.

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence**
INVERTEBRATES			
Monarch butterfly *(Danaus plexippus)*	(P)FT/_/_	Egg and larval stage dependent upon milkweed. Adults migrate seasonally, amassing in in dense tree canopy, e.g., eucalyptus.	**Low.** In the nearby wildlife refuge, documented breeding as recently as 2018; an observation of milkweed was documented 0.8 mi southeast from the BSA in 2024, and there are suitable floral foraging resources within the BSA.
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	FT/_/_	Blue elderberry shrubs; usually associated with riparian areas.	None. There are no elderberry shrubs within the BSA.
Conservancy Fairy Shrimp *(Branchinecta conservatio)*	FE/_/_	Vernal pools.	None. There is no vernal pool habitat within the BSA.
Vernal pool tadpole shrimp *(Lepidurus packardi)*	FE/_/_	Deep vernal pools.	None. There is no vernal pool habitat within the BSA.
Vernal pool fairy shrimp *(Branchinecta lynchi)*	FT/_/_	Inhabit small, clear-water sandstone-vernal pools and grassed swale, earth slump, or basalt-flow vernal pools.	None. There is no vernal pool habitat within the BSA.
FISH: The potential of occurrence for **green sturgeon - southern DPS** *(Acipenser medirostris pop. 1)*, **longfin smelt - San Francisco Bay-Delta DPS** *(Spirinchus thaleichthys pop. 2)*, and **steelhead - Central Valley DPS** *(Oncorhynchus mykiss irideus pop. 11)* is **None** because these species can only be found in natural riverine habitat, and are not within the artificial irrigation/riverine habitat found in the BSA.			
HERPTILES			
Giant garter snake *(Thamnophis gigas)*	FT/ST/_	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	**Moderate.** Although habitat within the BSA is marginal, and the upland habitat frequently disturbed, there is a drainage ditch within the Project that could provide aquatic habitat, and over one dozen (19 total) occurrences within 5 miles of the BSA.
Northwestern pond turtle *(Actinemys marmorata)*	(P)FT/SSC/ _	Perennial bodies of water with deep pools, locations for haul out, and locations for oviposition.	**Low.** Suitable habitat is present in the canals of the BSA, and the Project site could provide suitable upland nesting habitat; one occurrence approximately 2.75 miles N of the BSA recorded in 2017.
Western spadefoot *(Spea hammondii)*	(P)FT/SSC/ _	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Open, intermittent pools are essential for breeding (January through May).	None. There is no suitable breeding habitat (i.e. vernal pools) near the BSA, and the nearest CNDDB occurrence is over 12 miles south.

Common Name *(Scientific Name)*	**Status** Fed/State/ CNPS	**Associated Habitats**	**Potential for Occurrence**
BIRDS			
Bald eagle *(Haliaeetus leucocphealus)*	_/SE, FP/_	Coast, large lakes and river systems, with open forests with large trees and snags.	None. There is no suitable habitat within the BSA.
Western burrowing owl *(Athene cunicularia)*	_/(C)SE, SSC/_	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation; dependent upon burrowing mammals, most notably, the CA ground squirrel.	**Low.** Although there are no CNDDB occurrences within a 5-mile radius of the BSA, there was an anecdotal observation of a burrowing owl nest in 2024 reported as 'near the irrigation canal' within the BSA (pers. Comm.).
California black rail *(Laterallus jamaicensis coturniculus)*	_/ST, FP/_	Freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays; needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting.	None. There is no suitable habitat present within the BSA.
Greater sandhill crane *(Antigone canadensis tabida)*	_/ST, FP/_	Winters in the Central Valley; prefers grain fields within 4 miles of a shallow body of water used as communal roost sites; irrigated pasture used as loafing sites.	None. There is only one (1) historical occurrence, from 1924, approximately 8.25 miles ESE of the BSA.
Northern harrier *(Circus hudsonius)*	_/SSC/_	Coastal salt and freshwater marsh. Forage in grasslands, nests on ground in shrubby vegetation, usually at marsh edge.	None. There is no suitable habitat within the BSA and the only CNDDB occurrence is over 14 miles away, from 1993.
Song sparrow ("Modesto" population) *(Melospiza melodia)* pop. 1	_/SSC/_	Freshwater marshes, riparian thickets, sparsely vegetated irrigation canals, & Valley Oak restoration sites. Cover consists of willow/nettle thickets, growths of tules/cattails, & riparian oak forests with blackberry understory.	None. The BSA contains suitable foraging area and cover, however, the three nearest CNDDB occurrences are historical, the most recent being last seen in 1931.
Swainson's hawk *(Buteo swainsoni)*	_/ST/_	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees.	**Low.** There is suitable foraging habitat within the BSA, and one semi-recent (2016) CNDDB occurrence less than 10 miles from the Project boundary.
Tricolored blackbird *(Agelaius tricolor)*	_/ST, SSC/_	Highly colonial species, most numerous in Central Valley; requires open water, protected nesting substrate, and foraging area with insect prey	**Low.** There is some suitable foraging habitat within the BSA, and seven (7) CNDDB occurrences within a 5-mile radius.

Common Name *(Scientific Name)*	Status Fed/State/ CNPS	Associated Habitats	Potential for Occurrence
MAMMALS			
American badger *(Taxidea taxus)*	_/SSC/_	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils and open, uncultivated ground.	None. There is no suitable habitat present within the BSA.
Western red bat *(Lasiurus blossevillii)*	_/SSC/_	Solitary, family groups roost together, nursery colonies found with many females and young, usually does not roost with other species. Roosts primarily in trees, often in edge habitats adjacent to streams, fields, or urban areas. Preferred roost sites are protected from above, open below, and located above dark groundcover, 2-40 ft high. Roost in leaf litter in the winter.	None. The BSA contains suitable foraging habitat; there are several CNDDB occurrences within a 5-miles radius, but no roosting habitat within the BSA.

CODE DESIGNATIONS

FE = Federally listed Endangered
FT = Federally listed Threatened
NEEP = Non-Essential Experimental Population
SE = State-listed Endangered
ST = State-listed Threatened
SR = State-listed Rare
(C) =Candidate for listing
(P) = Proposed for listing
SSC = State Species of Special Concern
FP =CDFW Fully Protected Species
SNC = CDFW Sensitive Natural Community
CH = USFWS Critical Habitat **CRPR 1B** = Rare or Endangered in California or elsewhere
CRPR 2 = Rare, Threatened or Endangered in California, more common elsewhere
CRPR 3 = More information is needed
CRPR 4 = Plants with limited distribution, not considered rare, threatened, or endangered
0.1 = Seriously Threatened
0.2 = Fairly Threatened
0.3 = Not very Threatened

Potential for Occurrence: for plants it is considered the potential to occur during the survey period; for birds and bats it is considered the potential to breed, forage, roost, or over-winter in the BSA during migration. Any bird or bat species could fly over the BSA, but this is not considered a potential occurrence. The categories for the potential for occurrence include:

None: The species or natural community is known not to occur and has no potential to occur in the BSA based on sufficient surveys, the lack suitable habitat, and/or the BSA is well outside of the known distribution of the species.

Low: Potential habitat in the BSA is sub-marginal and/or the species is known to occur in the vicinity of the BSA.

Moderate: Suitable habitat is present in the BSA and/or the species is known to occur in the vicinity of the BSA. Pre-construction surveys may be required.

High: Habitat in the BSA is highly suitable for the species and there are reliable records close to the BSA, but the species was not observed. Pre-construction surveys required, except for indicators for foraging habitat.

Known: Species was detected in the BSA, or a recent reliable record exists for the BSA.

Endangered, Threatened, and Rare Plants

A botanical assessment was conducted on September 16, 2025. A full list of observed botanical species can be found in **Appendix B**. During these field assessments, it was determined that there is potentially suitable habitat for one of the special-status plants:

- Heartscale *(Atriplex cordulata var. cordulata)*

It should be noted that while suitable habitat may be present, this species was not discovered during the botanical assessment.

HEARTSCALE

Heartscale is a California endemic species in the Chenopodiaceae family with a CA Rare Plant Rank of 1B.2. It occurs in Central Valley, from Colusa County in the north to Kern County in the south. It prefers sandy or clay saline or alkaline soils in Chenopod scrub, valley and foothill grassland, meadows and seeps. It is an annual herb that produces one or more erect stems to heights between 10 and 50 centimeters. The branches are scaly gray and have woolly fibers toward the ends. The gray scaly leaves are no bigger than 1. 5 centimeters long and most have heart-shaped bases. The plant has male and female inflorescences which are small hard clusters of flowers, blooming from April to October.

CNDDB Occurrences

There is one (1) CNDDB occurrence within Colusa County. The occurrence (#80) was recorded in 1998, approximately 2.35 miles away from the BSA, along State Highway 20, approximately 3-6 miles east of the Coty of Colusa. It was observed in 2002.

Status of Occurrence in the BSA

The irrigation ditches that run along three of the four peripheries of the BSA offer potentially suitable habitat, although the habitat is low quality and marginal at best. Because there is suitable habitat within or immediately adjacent to the BSA, and at least one relatively recent occurrence documented within a five-mile radius of the BSA, thus there is **low** potential for Heartscale to occur within the BSA.

Endangered, Threatened, and Special-Status Wildlife

A wildlife habitat assessment was conducted within the BSA on September 16, 2025. Potentially suitable habitat was identified for the following species:

- Crotch's bumble bee *(Bombus crotchii)*
- Monarch butterfly *(Danaus plexippus)*
- Giant garter snake (*Thamnophis gigas*)
- Northwestern pond turtle *(Actinemys marmorata)*
- Western burrowing owl (*Athene cunicularia*)
- Tricolored blackbird (*Agelaius tricolor*)
- Swainson's hawk (*Buteo swainsoni*)
- Other: nesting avian species protected under the MBTA & CFGC.

CROTCH'S BUMBLE BEE

On June 12, 2019, the California Fish and Game Commission voted to accept a petition from the Xerces Society to consider listing four (4) subspecies of bumble bee, including the Crotch's bumble bee (CBB, *Bombus crotchii*), under CESA. As a result of this decision, the CBB is a state candidate endangered species; as such, it is afforded the same protection as state-listed threatened or endangered species. California is home to more than half (27) of the fifty (50) bumble bee species in North America. The CBB is largely endemic to California, historically known throughout California's Central Valley, which once contained vast prairies rich with wildflowers. The range of this species historically extended throughout the southern two-thirds of California, from coastal California east to the Sierra-Cascade crest and south into Mexico. This species is found in open grassland and scrub, and can persist in semi-natural habitats surrounded by intensely modified landscapes, but recent data indicates that this species is absent from the center of its historical range due to extensive agricultural intensification and urbanization (Xerces 2018). This species occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. It has also been documented in southwest Nevada, near the California border. This species was historically common in the Central Valley of California but now appears to be absent from most of it.

Suitable bee habitat is based on three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens (Xerces 2018). Most species of bumble bees are eusocial, meaning they primarily reside in colonies of related individuals that cooperate to support the colony for food, rearing offspring, and defending the nest. This cooperative lifestyle, with many individuals centered around a single nest, influences the habitat that they require for foraging, nesting, and overwintering. Bumble bees have an annual life cycle, meaning most individuals in the colony live about one year or less. Reproductive females are the only caste that overwinters. A mated queen starts a new colony in early spring by selecting a nest site, laying her first generation of eggs, and collecting resources (pollen and nectar) to support her future offspring. Once female offspring have emerged, they take over to tending the nest and foraging. At the end of the summer, the colony produces reproductive males and females that will leave to mate. Following mating, the males die, and the newly mated queens continue to forage and build up fat reserves for the winter, while returning to the nest. Eventually, they search out a hibernacula, usually a shallow hole in the ground they excavate, where they undergo diapause (period of suspended development) through the winter (Xerces 2023). Crotch's bumble bees, like most bumble bee species, nest underground (e.g., in abandoned rodent holes) (Williams et al. 2014 cited in Xerxes 2018). Little is known about the hibernacula utilized by CBB queens in the winter; however, bumble bees generally overwinter in soft, disturbed soil, leaf litter, or abandoned small mammal burrows (Williams et al. 2014; Xerces 2018). The flight period for queens is from late February to late October, peaking in early April and again in July. The flight period for workers and males extends between late March and September (Xerces 2018). It is a nonmigratory species of bumblebee.

Crotch's bumble bees are generalist foragers (i.e., they do not depend on any one flower type) and have been reported visiting a wide variety of flowering plants.. The CBB has a short tongue and thus is best suited to forage at open flowers with short corollas. The plant families most visited in California include

Fabaceae, Apocynacea, Asteraceae, Lamiacea, Hydrophyllacae, Asclepiadaceae, and Boraginaceae (Thorp et al. 1983; Richardson 2017). Documented food plants for Crotch bumble bees include *Asclepias sp*. (milkweed), *Chaenactis sp*. (dustymaidens), *Lupinus sp*. (lupin), *Medicago sp*. (medick/burclover), *Phacelia sp*. (phacelia/heliotrope/borage), and *Salvia sp*. (sage) (Xerces 2018). The CBB is also associated with flowering plants in the *Antirrhinum* (dragon flowers), *Phacelia* (borage), *Clarkia* (godetia), *Dendromecon* (tree poppy), *Eschscholzia* (poppy), and *Eriogonum* (wild buckwheat) genuses (CNDDB 2024). Note that these floral associations do not necessarily represent preference for these plants over other flowering plants, but may rather represent the prevalence of these flowers in the landscape where this species occurs (Xerces 2018).

The major threats to bumble bees include spread of pests and diseases by the commercial bumble bee industry, other pests and diseases, habitat destruction or alteration, intense urbanization, habitat fragmentation, agricultural and residential pesticides, invasive species, natural pest or predator population cycles, and climate change. Bumble bees are threatened by many kinds of habitat alterations which may destroy, alter, fragment, degrade or reduce their food supply (flowers that produce the nectar and pollen they require), nest sites (e.g. abandoned rodent burrows and bird nests), and hibernation sites for over-wintering queens. Major threats that alter landscapes and habitat required by bumble bees include agricultural and urban development. Livestock grazing also may pose a threat to bumble bees, as animals remove flowering food sources, alter the vegetation community, and could crush or disturb nest sites. As bumble bee habitats become increasingly fragmented, the size of each population diminishes, and inbreeding becomes more prevalent. Inbred populations of bumble bees show decreased genetic diversity and increased risk of decline (Xerces 2024).

CNDDB Occurrences

There are two (2) CNDDB occurrences of CBB within Colusa County, but only one of the occurrences has been documented within twenty (20) miles of the BSA and the 'Colusa' 7.5 Quad. The occurrence (#9) is approximately fourteen (14) miles southeast of the BSA, along Highway 45, east of Arbuckle. It was documented in May 2007.

Status of Occurrence in the BSA

The BSA contains and is adjacent to patches of native grassland and flowering species that could provide foraging opportunities for CBB. Though the documented flowering species that are utilized by CBB were not observed within the BSA, this species is a generalist forager, not depending on any one flower type (Xeres 2018), thus the observed black nightshade (*Solanum nigrum*), Russian thistle (*Salsola tragus),* white horehound (*Marrubium vulgare)*, mallow (*Malva sp.),* and yellow starthistle (*Centaurea solstitialis)* offer potential foraging habitat for this species within the BSA. Soft soils were observed within the BSA that could be utilized as overwintering habitat, and small mammal burrows were observed that could be utilized as nesting habitat along the periphery of the BSA. Several flowering species were observed within the BSA, offering potential foraging opportunities, and although there are few occurrences and the nearest one is approximately fourteen (14) miles from the BSA, the occurrence is relatively recent. Additionally, it is likely that robust surveying for this species is lacking, as surveying and identifying bees is difficult, time consuming, and sometimes lethal for observed specimens. Thus, we conclude that the potential for CBB to occur within the BSA is **low** but cannot be ruled out.

MONARCH BUTTERFLY

On December 12, 2024, the monarch butterfly (*Danaus plexippus*) was proposed for listing as threatened under the ESA, and 4,395 acres in Alameda, Marin, Monterey, San Luis Obispo, Santa Barbara, Santa Cruz, and Ventura Counties, California, were proposed as critical habitat (USFWS 2025). North American migratory monarchs are divided into eastern and western populations. The Rocky Mountains limit contact between these two populations, however, the populations are not completely isolated from each other and still occasionally interbreed. The Eastern North American migratory monarch population is the largest population of monarchs, in both individuals and range, encompassing upwards of 70% of the total North American monarch range, and can have an annual migration that stretches over 2,000 miles. The western populations migrate annually from 300 to 1,000 miles (about 500 to 1,600 km) and overwinters in hundreds of groves (clusters of trees) along the California coast and into northern Baja California, Mexico. There are also non-migratory monarchs that remain year-round at the southern end of their breeding range in North America, including parts of Florida, the Gulf Coast and California, where temperatures and weather are suitable for year-long growth of milkweed (USFWS 2025). Over the past two decades, monarch numbers in North America have declined, prompting the U.S. Fish and Wildlife Service to join Tribes, state agencies, other federal agencies, and non-government groups to identify threats to the monarch and take steps to conserve monarchs throughout their range. (USFWS 2025).

With its iconic orange and black markings, the monarch butterfly is one of the most recognizable species in North America. A monarch's markings indicate its toxicity to predators; toxins that accumulate when they are caterpillars as a result of feeding on their singular host plants, milkweed (*Asclepias sp.)*. Each fall, the eastern and western North American monarchs go into a state of suspended reproduction, known as diapause, and begin migrating to their respective overwintering sites. In early spring, surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds. After several generations of monarch offspring in the spring and summer, a new generation begins the fall migration for the first time (USFWS 2025). Spring and summer generations have an average adult lifespan of one month, but the overwintering migratory generation lives far longer, up to nine months (MJV 2025).

Both male and female adult monarchs can mate several times during their lives. Once mated (3-8 days after emergence from pupae), a female monarch immediately begins to lay eggs. Over a period ranging from two to five weeks, female monarchs will search out milkweed plants to lay their eggs on, typically depositing a single egg per plant. Monarchs lay an average of 300 to 500 eggs but sometimes lay more. During the summer generations, eggs hatch in 3-5 days. Caterpillars go through stages of growth and molting called instars, with the number of instars varying by species. Monarchs spend approximately two weeks as caterpillars and have five instars; the first four stages of development last only 1-3 days each, and the fifth and final instar stage lasts 3-5 days; time to molting is temperature dependent. Once a fifth instar forms a pupa, or chrysalis, it will complete the process of metamorphosis and emerge as an adult monarch in eight (8) to fifteen (15) days under normal summer conditions, with the time required for this transformation also being temperature dependent. Eggs laid in the spring (March – April) by monarchs who have migrated and overwintered in Mexico and the southern United States can take much longer to

fully develop. They often spend 40 to 50 days, or sometimes longer, transitioning from eggs into their adult stage. (USFWS 2025; MJV).

Loss of breeding, migrating, and overwintering habitat is the greatest threat facing monarchs. Other major threats include residential and commercial pesticide use, parasitoids, and habitat fragmentation. The loss of milkweed in agricultural fields across the U.S. is a major cause of the decline in monarchs, though there are other factors contributing to the decline in milkweed availability. Herbicide application and increased mowing in roadside ditches and agricultural margins is eradicating milkweed habitat, even from more rural areas (MJV). In addition, herbicides kill species of native flowering plants that would otherwise be used as foraging habitat for migrating monarchs, contributing to habitat fragmentation. Losses of overwintering habitats are caused by municipal and commercial development, legal and illegal logging, land conversion for agricultural use, and climate change events like severe storms and extended drought (Nature Conservancy 2022). Pesticides are often used to prevent infestation of only a few crop-damaging pests, but their effects are indiscriminate, and many pollinators are lethally affected by their use. There are also several species of Tachinidae fly and a protozoan (*Ophryocystis elektroscirrha* (OE)) that are parasites of monarchs. OE is of particular concern in the west because the average infection prevalence is four times higher in western compared to eastern populations, and because infections lower flight performance and increase mortality (Majewska et. al. 2019). This is thought to be primarily because the non-native tropical milkweed (*A. curassavica)*, a popular choice for landscaping because of its prolific, colorful blooms, can persist year-round in temperate climates. OE persists in higher numbers on tropical milkweed, which increases transmission rates (MJV). Insects exposed to environmental stressors such as pesticides or thermal stress can become more susceptible to pathogen-mediated declines (Majewska et. al.).

As for other pollinator species, such as the bumble bees discussed above, encouraging land managers and homeowners to foster an increase in native floral diversity across the landscape would be greatly beneficial for migrating monarchs, especially if the mix of floral resources includes native milkweeds for reproduction. If managed appropriately, roadsides could provide millions of acres of habitat suitable for monarchs and other pollinators and would be beneficial despite the increased risk for vehicle collisions. Reducing or eliminating pesticide and herbicide use at these sites will further reduce risk of lethal exposures.

CNDDB Occurrences

There are no occurrences documented on CNDDB of monarch butterflies within Colusa County. Although there are no CNDDB observations of monarchs, there are documented occurrences of their host plants, evidence of breeding, and individual butterfly sightings recorded with websites and mapping applications such as iNaturalist and the Western Monarch Milkweed Mapper. In Colusa County, the mapped observations occur primarily within the Colusa National Wildlife Refuge that is less than one (1) mile east of the BSA. Observations include individuals, breeding, and host plants (milkweed), and dates range from 2015 to 2019.

The monarch migration range covers all of California and parts of New Mexico, Arizona, Nevada, Oregon, Washington, and Canada. Overwintering monarchs are monitored through annual large-scale efforts of researchers and citizen scientists to better understand changes in their migration patterns and population

dynamics. Monarchs are tagged with geographic information that can be recovered later to inform researchers about where the monarch originated. In California, it is illegal to tag monarchs without the appropriate handling permit. Since the monarch was proposed for listing there have been efforts to increase the scale and intensity of monitoring for this species.

Status of Occurrence in the BSA

While it is highly unlikely that milkweed would be found within the BSA, there are still floral foraging resources along the periphery of the BSA that were being visited by other butterfly pollinators during the habitat assessment, and that could be visited by migrating monarchs. Because there are potential foraging resources for adult monarchs, documented occurrences of all life stages of monarch and of milkweed within one mile, and because the range of migrating monarchs extends over the entire BSA, there is a **low** potential for monarchs to occur in the BSA. If a tagged monarch is recovered, information from the tag should be used to contact the individual or group who tagged that individual.

GIANT GARTER SNAKE

Giant garter snakes (GGS, *Thamnophis gigas*) are listed as threatened under the ESA and CESA. Giant garter snakes are found in the low-elevation (0-400 feet) wetlands of the Sacramento and San Joaquin Valleys from Chico, Butte County to Mendota Wildlife Area, Fresno County. Suitable habitat includes marshes, sloughs, back waters of rivers, irrigation ditches, drainage canals, agricultural wetlands, flooded rice fields, and occasionally streams with low gradient and slow to stagnant waters. They prefer areas with vegetation close to the water for basking. (USFWS 2022, CalHerps 2025). They are highly aquatic, and tend to always remain within 30 meters of a water source (Halstead et al. 2015). Daily activity for GGS is described as emerging from burrows after sunrise, basking and then foraging or courting activities for the remainder of the day. The home range of GGS is typically small, 42- to 109-acres average, with individuals demonstrating site fidelity, especially females.

Giant garter snakes are the largest species of garter snake in the world, reaching lengths of up to 64 inches. They are olive to brown with a cream, yellow or orange stripe running down their back, and two light colored stripes running along each side. They can also have a checkered pattern of black spots between the back and side stripes. Individuals in the northern Sacramento Valley tend to be darker with more pronounced stripes. The snake's underside ranges in color from cream to orange to olive brown to pale blue, with or without markings. When giant garter snakes are about to shed their skin, their patterns and coloration may be obscured. Their typically muted/dull striping colors and wide head, and of course larger size if in the adult stage, are features that most commonly distinguish GGS from other species of garter snake (USFWS 2022). When threatened or picked up, this snake will release its cloacal contents and excrete a foul-smelling musk (CalHerps 2025).

Giant garter snakes stay active when temperatures are warm and start to move underground into small upland mammal burrows or crevices when their environment begins to cool, usually sometime in October or November, to brumate (a semi-dormant state; torpor) and avoid potentially lethal autumn and winter temperatures (CalHerps 2025). They breed from March to April, soon after emergence. Females are ovoviviparous: they carry their eggs within their body until they hatch, and then they give birth to the live young from July to early September. Litter size ranges from 10 to 46 individuals, and the young

immediately scatter, absorb their yolk sacs, and begin foraging on their own (USFWS 2022). Giant garter snake is an elusive species that is sensitive to disturbance and will shelter within underground burrows while not basking or hunting in aquatic habitat during the active season.

Historical prey (native species of fish, frogs, and tadpoles) have been extirpated in much of this snake's range, leaving it to consume introduced bullfrogs and introduced species of fish. Non-native species are now thought to be the predominant food items for GGS (CalHerps 2025). Current threats facing these snakes are habitat loss and fragmentation as a result of urbanization and conversion of wetlands, agricultural conversion, changes in water availability, levee and canal maintenance, invasive aquatic plants and removal techniques including herbicides and mowing, water management and water deliveries that do not account for GGS, small populations, drought, and invasive predatory fish (USFWS 2022, CalHerps 2025).

CNDDB Occurrences

There are fifty-three (53) documented occurrences in Colusa County, fourteen (14) of which are within the "Colusa" 7.5 Quad. The Colusa National Wildlife Refuge is central to most of the observations within this quad, and the refuge is approximately 0.50 mile from the western edge of the Project. This area has been surveyed numerous times between 1996 and 2015, with most occurrences having multiple site visits in that timeframe. Numbers vary from single individuals to dozens at different sites. Additional detections have been made in the upper reaches of Lucine Creek and the Colusa Trough and along multiple other neighboring tributaries, sloughs, and canals which are part of the system that supplies the Project's canals with water. From the details noted for all the observations, it appears likely that most breeding and overwintering occurs in the refuge, as these sites have more consistent wetland features and are less disturbed.

Status of Occurrence in the BSA

Giant garter snakes are known to occur in the canals and sloughs that are hydrologically connected to the Project area, as well as in the nearby wildlife refuge. The riverine areas in the BSA are directly adjacent to the open or otherwise barren areas that are being proposed for construction and staging. No in-water work is expected to be required for this Project, which decreases the chance of an encounter with GGS, but snakes utilizing upland habitat could be encountered, thus there is still a **moderate** potential for GGS to be encountered within the BSA.

NORTHWESTERN POND TURTLE

The northwestern pond turtle (NPT, *Actinemys marmorata*) is a California Species of Special Concern and is proposed for federal listing as threatened under the ESA as of October 3, 2023. They are a medium-sized (4.33 to 7.05 inches) semi-aquatic turtle that are drab, darkish colored usually with a network of spots, lines, or dashes of brown or black and a yellowing plastron (underside of shell) that may have blackish or dark brown blotches. Males and females are sexually dimorphic. They are omnivorous and considered dietary generalists, consuming a wide variety of food items including small aquatic invertebrates, fish, tadpoles, frogs, carrion, and plant material. In California, the NPT is found from sea-level to 6,500 feet in elevation in areas of the Coast Range from Oregon-California border down to northern Monterey County, the lower elevation and foothills of the southern Cascades and Sierra Nevada

Mountains, and areas within Sacramento and San Joaquin Valleys. The home range of NPT is normally quite restricted, typically less than 0.31 miles (500 meters) needed for movements between aquatic and upland habitats. Most dispersal of NPT occurs within drainages or watersheds and can vary from 1.6 to 4.3 miles within aquatic habitats and overland dispersal distances occurring in less than 3 miles under optimal conditions.

The NPT needs a network of appropriate aquatic breeding, feeding, and basking habitat that has sufficient upland nesting and overwinter/aestivation sites that are connected by suitable habitat. Habitat needs to include (1) aquatic features such as ponds, lakes, and streams for breeding, feeding, overwintering, sheltering and dispersal; (2) basking sites such as submerged logs, rocks, mats of floating vegetation, or open banks that allow for thermoregulation; and (3) terrestrial or upland features adjacent to the aquatic habitat for nesting, overwintering and aestivation, and dispersal. Water bodies at a variety of depths can provide NPT with habitat necessary for overwintering and hatchling growth. Primary habitat for hatchlings and young juveniles is shallow water with dense submerged vegetation and logs that provide shelter, prey, and thermoregulatory requirements for survival. Overwintering habitat typically is within 500 feet of an aquatic resource and may be classified as terrestrial refuge with a cool north- and east- facing slope (Reese and Welsh 1997) or lentic bodies of waters. Turtles found in lentic aquatic habitats, such as ponds, lakes, and slack water habitats, often overwinter within the aquatic environment by burying themselves within the bottom substrate. (USFWS 2023). Upland nesting habitat needs to be near an aquatic resource; on average nests are found within 820 feet (250 meters). This habitat typically has sparse vegetation with short grasses and forbs, and little or no canopy to allow for exposure to direct sunlight. Upland overwintering habitat usually occurs above the high-water elevation of the aquatic habitat and beyond any riparian zone. Open areas are typically avoided, and leaf litter is preferred with partial exposure to sun for overwintering habitat. It has been recorded that turtles may spend up to seven months of the year in their overwintering habitats (Reese and Welsh 1997). Evidence of nest site fidelity is strong.

Courtship and mating behaviors have been observed from April through November, and nesting behaviors and oviposition usually occur from May through July. Females will excavate nests in compact, dry soils and lay 6 to 10 eggs before covering the nest over with vegetation and wet soil. Incubation periods range from 75-134 days (USFWS 2023) and nest temperature during incubation determines hatchling sex (NPS 2025). Hatchlings emerge from the nest the following March (eight months later). Hatchlings do not immediately leave the nest area after emerging, spending as many as nine days under leaves (Reese and Welsh 1997).

Habitat loss and fragmentation, altered hydrology, predation, competition from non-native species, road impacts, collection, contaminants, disease, and the effects of climate changes have been identified by USFWS as the greatest threats to individuals and the population as a whole (UFSFW 2023). Turtles that travel between water and uplands are doubly vulnerable to habitat loss, as well as barriers to movement. Urbanization and land conversion have taken up much of the northwestern pond turtles' upland habitat (NPS 2025). Turtle eggs are a highly sought after meal for mammals like skunks, raccoons, and foxes, who predate many nests and hatchlings. Once hatchlings emerge and make it to a nearby body of water, they are at risk of predation by invasive species such as bullfrogs and bass fish. Red-eared slider turtles, a common pet that is sometimes illegally released into the wild, compete with northwestern pond turtles

for prime habitat. Invasive red-eared sliders cause negative impacts in the ecosystems they are introduced to because they have certain advantages over the native populations, such as a lower age at maturity, higher fecundity rates, and larger body size, which gives them a competitive advantage at basking and nesting sites, as well as when exploiting food resources (Parry 2025). They also transmit diseases and displace the other turtle species with which they compete for food and breeding space.

CNDDB Occurrences

There are two (2) CNDDB occurrences within Colusa County, and only one (1) documented occurrence of NPT within the "Colusa" 7.5 Quad. The nearest CNDDB occurrence (#1478) is approximately 2.75 miles north of the BSA, when an NPT was found attempting to cross Highway 45 where it passes through an agricultural area, and is from 2017. The next nearest occurrence (#166) was documented over fourteen (14) miles north in Butte Creek, and is from 2001.

Status of Occurrence in the BSA

The BSA is situated within a complex of suitable aquatic resources including man-made irrigation levees, canals, and ditches, and perennial and ephemeral tributaries and the riverine habitat of the Sacramento River, all providing suitable aquatic habitat for NPT. The thick vegetation found along the banks of the canal within the BSA may provide suitable nesting habitat for NPT, though it is more likely that NPT would only use these areas of aquatic habitat as migration corridors and foraging habitat. Because there is suitable aquatic habitat within the BSA, habitat could provide NPT nesting areas, and there is one CNDDB occurrence within 3 miles of the BSA, there is **low** potential for the NPT to occur within the BSA.

WESTERN BURROWING OWL

Western burrowing owls (WEBO, *Athene cunicularia ssp. hypugaea*) are listed as species of special concern in California, and as of October 10, 2024, has been listed as a candidate species for protection under CESA and receives full protections of CESA including the prohibition of "take" (i.e., hunt, pursue, catch, capture, kill, or attempt to do so) without proper authorization from CDFW. They are also listed as Endangered in Canada and Threatened in Mexico. The WEBO can be found from the southern portions of western Canada, through the western half of the United States, and throughout Mexica down to western Panama. Historically WEBO were found broadly across California in wide lowland valley bottoms, flat coastal lowlands and interior deserts. Currently, the WEBO population is most abundant in the Imperial Valley and parts of the Central Valley.

They are one of the smallest species of owls, measuring about 9-11 inches tall and weighing about four ounces. They have no ear tufts, yellow eyes, short tail, and distinctively long legs. The stilt-like legs are exceptionally long for an owl, but are well designed for running around on the ground after insect prey. Unlike most owls, males tend to be slightly larger than females. WEBO nest in abandoned underground burrows, most often those of ground squirrels, and thus a population of ground squirrels is typically present in high-quality WEBO habitat. They are diurnal, meaning they are active both day and night, with most activity occurring at dusk and dawn. They occupy grasslands, deserts, sagebrush scrub, agricultural areas (including pastures and untilled margins of cropland), earthen levees and berms, coastal uplands, and urban vacant lots, as well as the margins of airports, golf courses, and roads (CDFW 2024).

Burrowing owls require habitat with three basic attributes: open, well-drained terrain; short, sparse vegetation; and unoccupied underground burrows or burrow facsimiles (Klute et al. 2003). They have high site fidelity, often returning to the same location each year. They can also be relatively tolerant of human activity, and are occasionally known to forage or nest in areas with high levels of disturbance. During the breeding season, they may also need permanent cover and taller vegetation within their foraging range to provide them with sufficient prey (Holroyd and Wellicome 1997). Foraging occurs primarily within 600 meters of their nests during the breeding season. Burrows and the associated surrounding habitat are essential ecological requisites for WEBO throughout the year and especially during the breeding season. During the non-breeding season, WEBOs remain closely associated with burrows, as they continue to use them as refuge from predators, shelter from weather and roost sites (DFG 2012). In conclusion, essential habitat for WEBO in California must include suitable year-round habitat, primarily for breeding, foraging, wintering and dispersal habitat consisting of short or sparse vegetation, presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant available prey within close proximity to the burrow (DFG 2012).

These opportunistic feeders will consume arthropods, small mammals, birds, amphibians, and reptiles. Insects are often taken during the day, while small mammals are taken at night. In California, crickets and meadow voles were found to be the most common food items (Thomsen 1971). In urban areas, WEBO are often attracted to streetlights, where insect prey congregates. Burrowing owls in California typically begin pair formation and courtship in February or early March, when adult males attempt to attract a mate. Breeding behavior includes nest site selection by the male, pair formation, copulation, egg laying, hatching, fledging, and post-fledgling care of young by the parents. The peak of the breeding season occurs between 15 April and 15 July and is the period when most WEBO have active nests (eggs or young). The incubation period lasts 29 days and young fledge after 44 days. Burrowing owls may change burrows several times during the breeding season, starting when nestlings are about three weeks old. The WEBO may use “satellite” or non-nesting burrows, moving young at 10-14 days, presumably to reduce risk of predation and possible to avoid nest parasites. (DFG 2012). They are considered a sedentary species, showing strong fidelity to their nest site from year to year. Despite the high nest fidelity rates, dispersal distances may be considerable for both juveniles and adults. Distances of 53 km to roughly 150 km have been observed in California for adult and natal dispersal, respectively (DFG 2012).

CNDDB Occurrences

There are only three (3) CNDDB occurrences of WEBO in Colusa County, and none within the “Colusa” 7.5 Quad, although we did receive one anecdotal report of a burrowing owl nesting in the canal just outside of the BSA in 2024 (via conversation with a worker on site during the habitat assessment). All of the CNDDB occurrences were last verified in 1992. The nearest of the three occurrences (#156) is approximately 11.3 miles southwest, with the other two also to the southwest and between 11.5 and 13 miles away. The habitat of occurrence #156 is described as being surrounded by agricultural fields.

Status of Occurrence in the BSA

The BSA contains some habitat elements that could meet the roosting and foraging needs of this species, although the habitat can become more or less suitable based upon the activity and crops in the BSA and surrounding area. No WEBO has been officially documented near the BSA, but there was one anecdotal

report of WEBO having nested adjacent to the BSA as recently as 2024. Because habitat exists within the BSA, and because there was a recent observation near the BSA, there is a **low** potential for WEBO to occur within the BSA.

TRICOLORED BLACKBIRD

The tricolored blackbird (TRBL, *Agelaius tricolor*) is listed as threatened under CESA. They range from southern Oregon through the Central Valley, and coastal regions of California into the northern part of Mexico. Tricolored blackbirds are medium-size birds with black plumage and distinctive red marginal coverts, bordered by whitish feathers. Tricolored blackbirds' nest in large colonies within agricultural fields, marshes with thick herbaceous vegetation, or in clusters of large blackberry bushes near a source of water and suitable foraging habitat. They are nomadic migrators, so documenting occurrence at any location does not mean that they will necessarily return to that area.

The TRBL is a California native, with 90% of all breeding adults occurring in the Central Valley (Hamilton 2000). This species also breeds locally in other lowland areas of California west of the Cascade-Sierra axis and in valleys at higher elevations in northeastern California. Durin winter, virtually all birds from outside the state, except a few in Oregon, withdraw to concentrate in the California breeding range. The TRBL is a permanent resident of California, but birds make extensive migrations and movement, both in the breeding season and in winter, within their restricted range. Studies have shown that some TRBL reside in the Central Valley throughout the year. Breeding extends from mid-March through early August, although autumnal breeding (Sep through Nov) has been documented at several sites in the Central Valley and at Point Reyes, Marin County. During the breeding season, the species often exhibit itinerant breeding. Individuals usually move north after first nesting efforts (Mar – Apr) in the San Joaquin Valley and Sacramento Valley to new breeding locations in the Sacramento Valley, northeastern California, and rarely Oregon, Nevada, and Washington.

Historical breeding range in California included the Sacramento and San Joaquin valleys, the foothills of the Sierra Nevada south to Kern County, the coastal slop from Sonoma County south to the Mexican border, and, sporadically, the Modoc Plateau. Recent documentation includes local populations at the periphery of the range, such as those on the coast north to Humboldt County, in northeastern California, and in the western Mojave Desert, and of new colony sites within the overall historic range. Since 1980, active breeding colonies have been observed in 46 California counties; all of the largest (>20,000 adults) were in the Central Valley or at the Toledo Pit, Riverside County. Recent statewide censuses have shown dramatic declines in TRBL numbers in the Central Valley. Although resident in California, wintering TRBL populations move extensively throughout their range in the nonbreeding season. Major wintering concentrations occur in and around the Sacramento-San Joaquin River Delta and coastal areas, including Monterey and Marin counties, where they are often associated with dairies. They are rare in winter in the southern San Joaquin Valley and in the Sacramento Valley north of Sacramento County.

The TRBL forms the largest breeding colonies of any North American land bird. As many as 20,000 to 30,000 nests have been recorded in cattail (*Typha* spp.) marshes of 4 ha or less. The basic requirements for selecting breeding sites are open accessible water; a protected nesting substrate, including either

flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony.

Historically, before rivers were dammed and channelized, the Central Valley flooded in many years, forming a vast mosaic of seasonal wetlands, freshwater marches, alkali flats, native grasslands, riparian forests, and oak savannas, supporting nesting or foraging for TRBL. Historically, most colonies were in freshwater marches dominated by cattails or tules (*Scirpus* spp.), but some were in nettles (*Urtica* spp.), thistles (*Cirsium* spp.) and willows (*Salix* spp.). However, the use of freshwater marshes as breeding colony sites decreased and an increasing percentage of colonies since the 1970s have been reported in Himalayan blackberry (*Rubus discolor*) and thistles, and some of the largest recent colonies were in silage and grain fields near diaries in the San Joaquin Valley. Less commonly used nesting substrates include Safflower *(Carthamus tinctorius*), tamarisk (*Tamarix* spp.), elderberry/Western poison oak (*Sambucus* spp. And *Toxicodendron diversilobrum*), giant reed (*Arundo donax*), and riparian scrublands and forests (e.g., *Salix* spp., *Populus* spp., *Fraxinus* spp.). With the loss of natural flooding cycle and most native wetland and upland habitats in the Central Valley, TRBL now forage primarily in artificial habitats such as rice, alfalfa, and irrigated pastures crops and ripening or cut grain fields (e.g., oats, wheat, silage) as well as annual grasslands, cattle feedlots, and dairies. Most TRBL forage within 5 km of their colony site. (Shuford and Gardali 2008).

The greatest threats to this species are the direct loss and degradation of habitat from human activities. Most native habitats that once supported nesting and foraging TRBL in the Central Valley have been replaced by urbanization and agricultural croplands unsuited to their needs.

CNDDB Occurrences

There are thirty-four (34) CNDDB occurrences within Colusa County, and seven (7) of those were documented within a 5-mile radius of the BSA. The nearest CNDDB occurrence (#214) is approximately 1.3 miles south of the BSA, from 1992, when approximately 1,000 birds were observed nesting among cattails in an agricultural canal and foraging near Wescott Road and Abel Road. The next nearest occurrences (#'s 525, 215, 2, and 264) were documented 2, 3, 3.5 and 4 miles away, respectively. These sites have been observed several times over the years; none of them had any birds observed in their last observation year, with the exception of the one that is nearest the Project.

Status of Occurrence in the BSA

The BSA contains some habitat elements that could meet the roosting and foraging needs of this species, although the habitat can become more or less suitable based upon the activity and crops in the BSA and surrounding area. No TRBL has been documented near the BSA since 1992, with most other nearby occurrences having been checked since then (between 1992 and 2014) and found not to contain TRBL. Because habitat exists within the BSA, this species is known to travel extensively throughout their range at all times of year, and because there was a reported occurrence of a breeding colony within 1.5 miles of the Project boundary, there is a **low** potential for TRBL to occur within the BSA.

SWAINSON'S HAWK

Swainson's hawks (*Buteo* swainsoni) are listed as threatened in the state of California and are also federally protected under the Migratory Bird Treaty Act of 1918. They are found throughout the western

United States and from Canada to Mexico. Most Central Valley populations overwinter in Central and South America. California's Swainson's hawk summering population grew rapidly between 2005 and 2018 at a rate of 13.9% per year (95% CI: 7.8–19.2%). Despite strong evidence that the species has rebounded overall in California, Swainson's hawks remain largely extirpated from Southern California where they were historically common. Further, the increase in Swainson's hawks has been coincident with expanded orchard and vineyard cultivation which is not considered suitable for nesting (Furnas 2022).

Swainson's hawks are a large, slender hawk with three (3) different color morphs. The most common morph in northern California is the dark morph, which demonstrates black to dark brown under coverts and flight feathers. Suitable habitat includes open grasslands or agricultural fields that are adjacent to a riparian forest or oak woodland. Swainson's hawks primarily nest in riparian forests next to open fields that provide foraging opportunities. Common foraging habitats include alfalfa, fallow fields, low-growing row or field crops, dry-land and irrigated pasture, rice land (when not flooded) and cereal grain crops (including corn after harvest) (CDFW 2016). Major prey items include small mammals, birds, reptiles, and insects. Courtship begins in early March, with nesting beginning typically in early April.

Swainson's hawks are documented to utilize a ten-mile radius for standard flight distance between active (and successful) nest sites and suitable foraging habitats (Estep 1989, Babcock 1993). According to the CDFW 1994 *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California,* an active Swainson's hawk nest is defined as being used during one or more of the last 5 years. If a project is proposing to impact potential Swainson's hawk foraging habitat and there is not an active nest within a 10-mile radius of the project, then there is no foraging habitat within the Project Boundary that is being used by Swainson's hawks.

CNDDB Occurrences

There are sixty-seven (67) documented CNDDB occurrences within 10 miles of the BSA, but all are old enough to be considered 'inactive' as they were all last surveyed over five (5) years ago. Dates for the occurrences range from 1979 to 2009, with just one more recently documented (2016). However, it should be noted that, as far as could be determined, there has been no recent concentrated survey effort in this area that has been uploaded into the CNDDB database, and thus there is potential for an undocumented nest or an 'inactive' nest to be in use without our knowledge. The 2016 occurrence (#2079) is located approximately seven (7) miles southwest of the BSA, on the east side of Interstate 5, when a nesting pair was observed. The nearest occurrence (#2082) was documented along the Sacramento River approximately 2.2 miles northeast of the BSA in 2003.

Status of Occurrence in the BSA

Although marginally suitable foraging habitat could be present in the BSA in the form of cropland, there is **low** potential for Swainson's hawk to occur within BSA because all the CNDDB occurrences within 10 miles of the BSA were last confirmed active over five (5) years ago.

MIGRATORY BIRDS AND RAPTORS

Nesting birds are protected under the MBTA (16 USC 703) and the CFGC (§3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS for "activities such as falconry, raptor propagation,

scientific collecting, special purposes (rehabilitation, educational, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal."

The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

The CFGC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

CNDDB Occurrences

The majority of migratory birds and raptors protected under the MBTA and CFGC are not recorded on the CNDDB because they are abundant and widespread.

Status of Occurrence in the BSA

There is suitable nesting habitat for ground-nesting avian species in some areas on the periphery of the BSA, where the vegetation is abundant enough to provide cover and is less frequently disturbed, however the BSA is more likely to be utilized by migratory birds as foraging habitat for insects or other prey. There are nearby trees and shrubs around the BSA that would offer suitable nesting habitat for a variety of avian species. Additionally, the BSA offers sufficient foraging habitat for raptors that may prey upon larger animals, including other bird species.

REGULATORY FRAMEWORK

The following describes federal, state, and local environmental laws and policies that may be relevant if the BSA were to be developed or modified.

Federal Regulations

Federal Endangered Species Act

The United States Congress passed the ESA in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

Under the ESA, species may be listed as either "endangered" or "threatened." Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. All species of plants and animals, except non-native species and pest insects, are eligible for listing as endangered or threatened. The USFWS also maintains a list of "candidate" species. Candidate species are species for which there is enough information to warrant proposing them for listing,

but that have not yet been proposed. “Proposed” species are those that have been proposed for listing but have not yet been listed.

The ESA makes it unlawful to “take” a listed animal without a permit. Take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” Through regulations, the term “harm” is defined as “an act which kills or injures wildlife. Such an act may include significant habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.”

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) is a federal law that implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS for “activities such as falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, educational, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal.” California Fish and Game Code Sections 3503 and 3503.5 (protection of birds’ nests) and 3513 (taking Migratory Bird Treaty Act birds) also prohibit the destruction of any nest, egg, or nestling. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations §10.13).

Activities that involve (1) the removal of vegetation including trees, shrubs, grasses, and forbs or (2) ground disturbance have the potential to affect bird species protected by the MBTA. Thus, vegetation removal and ground disturbance in areas with breeding birds should be conducted outside of the breeding season (approximately March 1 through August 31 in the Central Valley). If vegetation removal or ground disturbance activities are conducted during the breeding season, then a qualified biologist must determine if there are any nests of bird species protected under the MBTA present in the construction area prior to commencement of construction. If active nests are located or presumed present, then appropriate avoidance measures (e.g., spatial or temporal buffers) must be implemented.

State of California Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA, but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the California Environmental Quality Act (CEQA). The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, “species of special concern” receive consideration by CDFW. Species of special concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Game Code (§3503.5)

The CFGC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes; or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

Rare and Endangered Plants

The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS California Rare Plant Rank (CRPR) plants receive consideration under CEQA review. The CNPS CRPR categorizes plants as follows:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
- Rank 2A: Plants presumed extirpated or extinct in California, but not elsewhere;
- Rank 2B: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- Rank 3: Plants about which we need more information; and
- Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGC §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and game Code §1913 exempts from the 'take' prohibition "the removal of endangered or rare native plants from a canal, lateral channel, building site, or road, or other right of way."

California Environmental Quality Act Guidelines §15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGC dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g., candidate species, Species of Special Concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CONCLUSIONS AND RECOMMENDATIONS

The following are the recommended minimization and mitigation measures to further reduce or eliminate Project-associated impacts to special-status plant and wildlife species. These proposed measures may be amended or superseded by the Project-specific permits issued by the regulatory agencies.

Endangered, Threatened, and Rare Plants

Special-Status Botanical Species

- A qualified botanist should conduct a protocol-level botanical survey during the appropriate survey window (i.e. blooming period) for special-status botanical species (i.e. heartscale) to determine presence or absence within the BSA.
- If special-status botanical species are observed within the BSA, then mitigation measures that are recognized by CDFW will be implemented based on the level of potential impacts. Mitigation options recognized include:
    - The Project should be designed to avoid or minimize impacts to areas where special-status botanical species occur and maintain protective elements such as, fencing, open space or conservation easements, and/or buffer zones around suitable habitat where special-status botanical species occur prior to construction activities and throughout construction activities and/or;
    - If the Project design cannot completely avoid impacts to special-status botanical species, then consultation with the CDFW should be conducted and on-site or off-site compensation (such as through a mitigation bank) may be required to mitigate for impacts.

Endangered, Threatened, and Special-Status Wildlife

Crotch's Bumble Bee

To avoid impacts to Crotch's bumble bee, the following are recommended avoidance and minimization measures:

- A qualified biologist should conduct a bumble bee survey during the worker bee active period; (for Crotch's bumble bee: April-August).
    - If CBB are discovered to be present at the site, then it is advised that a CESA incidental Take Permit (ITP) is obtained prior to construction activities occurring in the buffer area defined by the biologist in coordination with CDFW.
- Assume all bumble bees are special-status bees. If CBB or other species of bumble bees are observed during Project activities, allow the bumble bee to leave the work area under its own volition and notify a qualified biologist of the observation to determine appropriate avoidance measures.
- If a CBB nest is discovered during surveys or construction activities, the qualified biologist should establish a non-disturbance buffer around the suitable nesting habitat and CDFW should be consulted. No work should occur within the buffer until the nest is confirmed to be inactive.

Monarch Butterfly

In the event that monarch butterfly is formally listed by USFWS during development of the project site, the following avoidance and minimization measures are recommended:

- If monarch butterfly is observed consult with the USFWS on appropriate avoidance, minimization and mitigation measures.
- If any milkweed plants are discovered during survey efforts, then protection buffers should be established around the milkweed plants, as determined by a qualified biologist and consultation with the USFWS should be initiated.
- If a monarch butterfly is observed during Project activities, allow the monarch butterfly to leave the work area on its own accord.

Giant Garter Snake

If the proposed project does not involve work in or within 200 feet of the canal/riverine habitat the following avoidance and minimization measures are recommended:

- A pre-construction survey shall be conducted 24 hours before any ground disturbance activities around the canal channel. The survey should be repeated if there is a lapse in construction for two weeks or more.
- A qualified biologist shall be present on-site during vegetation removal to monitor for GGS.
- If a GGS is encountered during construction activities, then construction shall stop within the area of the sighting until the snake has left the work area, or a qualified biologist has determined that there will be no harm to the snake. Any sightings or incidental take shall be reported to USFWS and CDFW within 24 hours.
- Before initiating any ground disturbances, restrictive silt fencing will be installed along the construction boundaries to prevent wildlife (i.e., reptiles, mammals, birds, etc.) from entering the construction site from the adjacent aquatic settings and to prevent construction equipment and personnel from entering potential habitat from the construction site.
- Prior to commencement of construction, contractors and work crews that are onsite for more than 30 minutes, shall go through a worker environmental awareness training (WEAT) regarding avoidance of GGS and the possible penalties for not complying with these requirements. The training can be given by a qualified biologist or the Foreman that has been trained by the qualified biologist to conduct the WEAT.

If work is proposed to occur in or within 200 feet of the canal/riverine habitat, then consultation with the USFWS and CDFW will be required prior to any ground disturbance or in-water work. Any avoidance, minimization and mitigation measures identified by the results of the consultation with USFWS and CDFW shall be incorporated into the project conditions.

Northwestern Pond Turtle

The following are avoidance and minimization measures recommended in order to avoid and minimize potential impacts to northwestern pond turtle:

- Immediately prior to conducting vegetation removal or ground-disturbing activities in suitable northwestern pond turtle habitat, a qualified biologist shall conduct a survey to determine the presence or absence of western pond turtles. If NPT are observed where they could be potentially impacted by project activities, as determined by the onsite biologist, then work shall not be conducted within 100 feet of the sighting until the turtle has left the project site or a qualified biologist has relocated the turtle to suitable habitat outside of the project boundary.
- If turtle eggs are uncovered during construction activities, then all work shall stop within a 25-foot radius of the nest and the qualified biologist should be notified immediately. The 25-foot buffer should be marked with identifiable markers that do not consist of fencing or materials that may block the migration of young turtles to the water or attract predators to the nest site. No work will be allowed within the 25-foot buffer until consultation with CDFW has occurred.
- All portions of the project site that could result in inadvertently trapping turtles, such as open pits, trenches, and dewatered areas will be covered and/or exclusion fencing will be installed to prevent turtles from entering these areas.
- In the event that northwestern pond turtle is formally listed by USFWS prior to or during development of the project site, consultation with USFWS shall be conducted and any avoidance, minimization and mitigation measures identified by the results of the consultation shall be incorporated into the project conditions.

Western Burrowing Owl

To avoid impacts to WEBO from Project activities, the following are recommended avoidance and minimization measures:

- Per the CDFW Staff Report on Burrowing Owl Mitigation, direct impacts will be avoided by conducting a preconstruction survey within 14 days of the start of Project activities.
    - A qualified biologist will conduct the preconstruction survey. The biologist will have familiarity with the species and its local ecology, experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor; familiarity with the appropriate state and federal statutes related to burrowing owls, scientific research, and conservation; and experience with analyzing impacts of development on burrowing owls and their habitat.
- If a burrowing owl or its burrow is observed within the Project limits or within 500 feet of the Project limits, work will stop within 500 feet of the observation, and a no disturbance buffer will be established and consultation with CDFW shall be initiated to identify appropriate avoidance, minimization and mitigation measures, which may include the acquisition of an Incidental Take Permit.

Tricolored Blackbird

To avoid impacts to TRBL from Project activities, the following are recommended avoidance and minimization measures:

- Conduct a pre-construction survey to determine presence or absence of nesting tricolored blackbird within 500 feet of mapped potentially suitable habitat. The pre-construction survey will be conducted within 7 days prior to ground-disturbing activities.
- If any tricolored blackbirds' nests are observed within 500 feet of the Project Boundary, the City will be notified and will then consult with CDFW for further guidance.

Swainson's Hawk

To avoid impacts to Swainson's hawks from Project activities, the following are recommended avoidance and minimization measures:

- If Project activities cannot begin prior to the avian breeding season (March 1 – August 31), then a pre-construction survey will be conducted to determine presence or absence of nesting Swainson's hawks within a quarter-mile of the Project Boundary. The pre-construction survey will be conducted within 7 days prior to ground-disturbing activities.
- If a Swainson's hawk nest is observed within a quarter-mile radius of the Project Boundary, the City will be notified and will then consult with CDFW for further guidance.

Migratory Birds and Raptors

To avoid impacts to avian species protected under the MBTA and the CFGC, the following avoidance and minimization measures are recommended:

- Project activities, including site grubbing and vegetation removal, should be initiated outside of the bird nesting season (February 1 – August 31) whenever feasible.
- If Project activities cannot be initiated outside of the bird nesting season, then the following will occur:
    - A qualified biologist shall conduct a nesting bird survey within 250 feet of the BSA, where accessible, within 7 days prior to the start of Project activities.
    - If an active nest (i.e., containing egg[s] or young) is observed within the BSA or in an area adjacent to the BSA where impacts could occur, then a species protection buffer will be established by the qualified biologist and in consultation with appropriate agencies. The species protection buffer will be defined by a qualified biologist based on the species, nest type, and tolerance to disturbance. Construction activity shall be prohibited within the buffer zones until the young have fledged, or the nest fails, as determined by a qualified biologist. Nests shall be monitored by a qualified biologist once per week and a report submitted to the CEQA lead agency weekly.

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LIST OF PREPARERS

Kaela Gamio. Biologist, B.S. in Biological Sciences, Cal Poly, San Luis Obispo, CA. Her range of expertise encompasses survey, monitoring, and handling protocols for northwestern pond turtle, Yosemite toad, western spadefoot, California red-legged frog, foothill yellow-legged frog, Sierra Nevada yellow-legged frog, cascades frog, relictual slender salamander, McCloud redband trout, yellow-billed cuckoo, Least Bell's vireo, bald eagle, golden eagle, California spotted owl, fisher, as well as bat acoustic monitoring and botanical surveys. In addition, she has field and husbandry experience in wildlife rehabilitation, captive rearing of northwestern pond turtles, wildlife monitoring, population management, species recovery efforts, invasive species management, and wildlife capture and handling.

Cheryl Ballantyne. Botanist and GIS Analyst. B.S. in Plant Science, University of California, Davis. Ms. Ballantyne has 10 years of experience conducting spatial protocol level botanical surveys, wetland delineations, data analysis, spatial analysis and preparing botanical assessments, technical documents, and maps.

Appendix A

Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 09/03/2025 18:21:15 UTC
Project Code: 2025-0144325
Project Name: City of Colusa Triple Crown Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0144325
Project Name: City of Colusa Triple Crown Project
Project Type: Acquisition of Lands
Project Description: City of Colusa annexation 88 acres of land total, northern 88 acres of parcel no. 017-020-026

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.18162425,-122.02483316185669,14z



Counties: Colusa County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Western Spadefoot *Spea hammondii* Population: Northern DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

CRUSTACEANS

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

FLOWERING PLANTS

NAME	STATUS
Palmate-bracted Bird's Beak *Cordylanthus palmatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1616	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Colusa city
Name:	Kaela Gamio
Address:	117 Meyers St
Address Line 2:	STE 120
City:	Chico
State:	CA
Zip:	95928
Email	kaela.gamio@gmail.com
Phone:	5303511158

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Colusa (3912221) OR Meridian (3912128) OR Williams (3912222) OR Maxwell (3912232) OR Moulton Weir (3912231) OR Sanborn Slough (3912138) OR Cortina Creek (3912212) OR Arbuckle (3912211) OR Grimes (3912118))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	PDPLM0C0E1	None	None	G4T2	S2	1B.1
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S3	FP
bank swallow *Riparia riparia*	ABPAU08010	None	Threatened	G5	S3	
bent-flowered fiddleneck *Amsinckia lunaris*	PDBOR01070	None	None	G3	S3	1B.2
black-crowned night heron *Nycticorax nycticorax*	ABNGA11010	None	None	G5	S4	
brittlescale *Atriplex depressa*	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl *Athene cunicularia*	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
cackling (=Aleutian Canada) goose *Branta hutchinsii leucopareia*	ABNJB05035	Delisted	None	G5T3	S3	WL
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G2	S2	1B.2
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3T1	S2	FP
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
Colusa layia *Layia septentrionalis*	PDAST5N0F0	None	None	G2	S2	1B.2
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Crotch's bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
Ferris' milk-vetch *Astragalus tener var. ferrisiae*	PDFAB0F8R3	None	None	G2T1	S1	1B.1
foothill yellow-legged frog - north coast DPS *Rana boylii pop. 1*	AAABH01051	None	None	G3T4	S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
Great Valley Cottonwood Riparian Forest *Great Valley Cottonwood Riparian Forest*	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest *Great Valley Mixed Riparian Forest*	CTT61420CA	None	None	G2	S2.2	
Great Valley Willow Scrub *Great Valley Willow Scrub*	CTT63410CA	None	None	G3	S3.2	
greater sandhill crane *Antigone canadensis tabida*	ABNMK01014	None	Threatened	G5T5	S2	FP
green sturgeon - southern DPS *Acipenser medirostris pop. 1*	AFCAA01031	Threatened	None	G2T1	S1	SSC
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	GNRT2	S2	1B.2
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	
longfin smelt - San Francisco Bay-Delta DPS *Spirinchus thaleichthys pop. 2*	AFCHB03040	Endangered	Threatened	G5TNRQ	S1	
northern harrier *Circus hudsonius*	ABNKC11011	None	None	G5	S3	SSC
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
palmate-bracted bird's-beak *Chloropyron palmatum*	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
Peruvian dodder *Cuscuta obtusiflora var. glandulosa*	PDCUS01111	None	None	G5T4?	SH	2B.2
Sacramento Valley tiger beetle *Cicindela hirticollis abrupta*	IICOL02106	None	None	G5TH	SH	
San Joaquin pocket mouse *Perognathus inornatus*	AMAFD01060	None	None	G3	S2S3	
San Joaquin spearscale *Extriplex joaquinana*	PDCHE041F3	None	None	G2	S2	1B.2
snowy egret *Egretta thula*	ABNGA06030	None	None	G5	S4	
song sparrow ("Modesto" population) *Melospiza melodia pop. 1*	ABPBXA3013	None	None	G5T3?Q	S3?	SSC
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	SSC
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool smallscale *Atriplex persistens*	PDCHE042P0	None	None	G2	S2	1B.2
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G3	S3	
water star-grass *Heteranthera dubia*	PMPON03010	None	None	G5	S2	2B.2
watershield *Brasenia schreberi*	PDCAB01010	None	None	G5	S3	2B.3
western red bat *Lasiurus frantzii*	AMACC05080	None	None	G4	S3	SSC
western ridged mussel *Gonidea angulata*	IMBIV19010	None	None	G3	S2	
western small-footed myotis *Myotis ciliolabrum*	AMACC01230	None	None	G5	S3	
western spadefoot *Spea hammondii*	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white-faced ibis *Plegadis chihi*	ABNGE02020	None	None	G5	S3S4	WL
woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Wright's trichocoronis *Trichocoronis wrightii var. wrightii*	PDAST9F031	None	None	G4T3	S1	2B.1
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 55

CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

20 matches found. Click on scientific name for details

Search Criteria: , 9-Quad include [3912221:3912232:3912212:3912211:3912118:3912231:3912138:3912128:3912222]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	None	None	S3	1B.2	Yes
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	S1	1B.1	Yes
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	S2	1B.2	Yes
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	None	None	S2	1B.2	Yes
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	None	S2	1B.2	Yes
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	None	None	S3	2B.3	
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	S3	4.2	Yes

Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	FE	CE	S1	1B.1	Yes
Cuscuta obtusiflora var. *glandulosa*	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	None	None	SH	2B.2	
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	S2	1B.2	Yes
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	S3	4.2	Yes
Heteranthera dubia	water star-grass	Pontederiaceae	perennial herb (aquatic)	Jul-Oct	None	None	S2	2B.2	
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	S3	1B.2	Yes
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	S3	4.2	Yes
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	S2	1B.1	
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	None	None	S2	1B.2	Yes
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	S2	3.1	
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	S2	1B.1	Yes
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	S2	1B.2	

Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	S1	2B.1

Showing 1 to 20 of 20 entries

Go to top

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website https://www.rareplants.cnps.org [accessed 3 September 2025].
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Appendix B

Observed Species List

25-053 Colusa Triple Crown: Observed Animal List
09/16/2025

Scientific Name	**Common Name**
Agelaius phoeniceus	Red-winged blackbird
Cathartes aura	Turkey vulture
Sceloporus occidentalis	Western fence lizard
Spinus psaltria	Lesser goldfinch
Sayornis nigricans	Black phoebe
Passerculus sandwichensis	Savannah sparrow
Polistes sp.	Paper wasp
Apis mellifera	European honey bee
Pieris sp.	Garden white butterfly
Strymon melinus	Gray hairstreak butterfly
Hylephila phyleus	Fiery skipper butterfly
Setophaga petechia	Yellow warbler
Zonotrichia leucophrys	White-crowned sparrow
Charadrius vociferus	Killdeer

Evidence of Occupancy (i.e. scat, footprints, etc.) seen for:

Vulpes sp.	Fox
Lepus sp.	Rabbit

25-053 Colusa Triple Crown Observed plant List 9/16/2025	
Scientific Name	**Common Name**
Amaranthus albus	Tumbleweed
Amaranthus blitoides	Prostrate pigweed
Centaurea solstitialis	Yellow starthistle
Centromadia parryi	Tarweed
Chenopodium album	Lambs quarter
Convolvulus arvensis	Field bindweed
Cyperus odoratus	Fragrant flatsedge
Cyperus difformus	Variable flatsedge
Dittrichia graveolens	Stinkwort
Erigeron bonariensis	Flax leaved horseweed
Fraximus latifolia	Oregon Ash
Heliotropium europaeum	European heliotrope
Hirschfeldia incana	Hoary mustard
Lactuca serriola	Prickly lettuce
Lepidium latifolium	Perennial pepperweed
Leptochloa fusca	Sprangletop
Lycopersicon asculentum	Tomato
Malva sp	Mallow
Marrubium vulgare	White horehound
Salsola tragus	Russian thistle
Solanum nigrum	Black nightshade
Sorghum halepense	Johnsongrass
Xanthium strumarium	Cocklebur

Appendix C

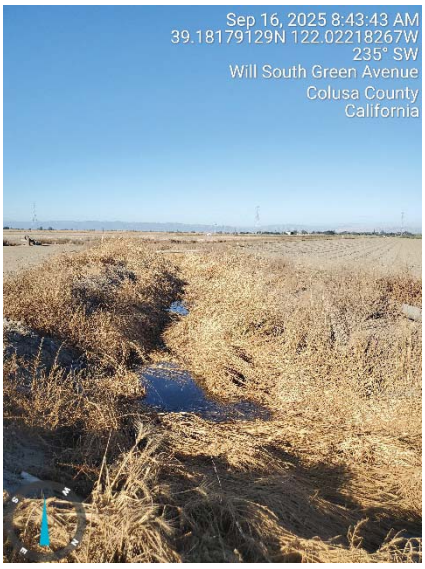
Project Site Photos

Project Site Photos

Taken September 16, 2025



Northwest corner looking south



Eastern boundary looking southwest at the canal



Northeast corner looking west



Northeast corner near Will S Green Ave looking west.