Bonadelle Neighborhoods
TM6467 and PDP2024-003

Initial Study and Mitigated Negative Declaration

October 2024

PREPARED BY:

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INITIAL STUDY

This Initial Study was prepared pursuant to the California Environmental Quality Act (CEQA) Public Resources Code Sections 21000 *et seq*., CEQA Guidelines Title 14, Section 15000 et seq. of the California Code of Regulations.

PROJECT TITLE:	TM6467 and PDP2024-003
LEAD AGENCY NAME AND ADDRESS:	City of Clovis Planning & Development Services 1033 Fifth Street Clovis, CA 93612
CONTACT PERSON AND PHONE NUMBER:	Marissa Jensen, Assistant Planner (559) 324-2338 marissaj@clovisca.gov
PROJECT LOCATION:	South of E. Perrin Avenue, east of N. Minnewawa Avenue and west of the N. Clovis Avenue Alignment.
PROJECT SPONSOR'S NAME AND ADDRESS:	Bonadelle Neighborhoods 7030 Fruit Avenue #101 Fresno, CA 93711
LAND USE DESIGNATION:	Existing – M (Medium) & MH (Medium High)
ZONING DESIGNATION:	Existing – AE-20 (Fresno County, Exclusive Agricultural) Proposed – R-1-PRD (Single-Family Planned Residential Development) (through separate entitlement, R2024-005)
PROJECT DESCRIPTION	See page 7 of this Initial Study
SURROUNDING LAND USES AND SETTING:	See page 6 and 7 of this Initial Study
REQUIRED APPROVALS:	See page 9 of this Initial Study
HAVE CALIFORNIA NATIVE AMERICAN TRIBES REQUESTED CONSULTATION? IF SO, HAS CONSULTATION BEGUN?	Yes, consultation meeting held September 30, 2024.

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LIST OF FIGURES

A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and corresponding discussion in this Initial Study.

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

Determination

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 proponents. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environmental, and an ENVIRONMENTAL IMPACT REPORT (EIR) will be prepared.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environmental, 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 EIR 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 analyzed 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.

Prepared By:

______________________________ 11/1/2024

Marissa Jensen, MA, Assistant Planner — Date
Planning & Development Services
City of Clovis

Approved By:

______________________________ 11/1/2024

Lily Cha, MPA, Senior Planner — Date
Planning & Development Services
City of Clovis

B. PROJECT OVERVIEW

John A. Bonadelle of Bonadelle Homes (applicant) proposes to subdivide the subject property to facilitate the development of a 162-lot single-family subdivision, Tract Map 6467 (TM6467). Currently, the property is located within Fresno County's jurisdiction and is zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size). The property will be annexed into the City Limits and Prezoned to the R-1-PRD (Single-Family Planned Residential Development) zone district, through separate entitlements, Reorganization 310 (RO310) and Rezone (Prezone) 2024-005 (R2024-005). TM6467 is inclusive of a Planned Development Permit (PDP2024-003) for enhanced development. The project will include site improvements (i.e., landscaping, parking, external sidewalks, and utility infrastructure). The project shall be referred to throughout the document as "proposed Project" and/or "Project." Details regarding the Project and operations are described more throughout the Initial Study, beginning under Section E.

C. PROJECT LOCATION

As shown in Figure 1 below, the project boundary consists of ±14.57 acres and is located south of E. Perrin Avenue, east of N. Minnewawa Avenue and west of the N. Clovis Avenue Alignment in the County of Fresno, California. The Project is situated adjacent to primarily vacant and agricultural properties designated for future residential at varying densities, a future park, and existing single-family residences to the southeast. The Project will occupy the entire parcels with Accessor's Parcel Numbers (APNs) 556-030-04, 06, 08, and 09.

The Project is within the City's Heritage Grove planned growth area. Heritage Grove encompasses ±2,560 acres of land bounded by Willow Avenue to the west, Sunnyside Avenue to the east, Copper Avenue to the north and the Shepherd Avenue to the south. This area has been examined programmatically in the City's current General Plan EIR. This document evaluates potential environmental impacts in detail.

D. EXISTING SETTING

This section describes the existing conditions, surrounding conditions, as well as the General Plan land use and zoning designations.

1. EXISTING CONDITIONS

As shown in Figure 1 below, the Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities and a future park.

2. SURROUNDING CONDITIONS

As referenced below in Table 1, and shown on Figure 1, the Project site is surrounded primarily by current agricultural uses, vacant properties, and rural residential homes. The Project is situated adjacent to agricultural lands and vacant properties designated for future medium to high density residential housing, a future park, and existing single-family residences ±700 feet to the southeast. The areas adjacent to the project site include the following uses.

Table 1: Surrounding Land Uses

	Land Use Designation	Existing Zoning*	Existing Land Use
North	Medium Density Residential	AE-20	Rural Residential Properties, Orchards
East	Medium Density Residential	AE-20	Vacant
South	Medium Density Residential	AE-20	Vacant
West	Medium High Density Residential + Park	AE-20	Rural Residential Property, Orchards
*AE-20 (Exclusive Agricultural, 20-acre parcel minimum)			

3. LAND USE DESIGNATION

As shown in Figure 2, the Project site has an existing General Plan Land Use designation of Medium and Medium-High Density Residential. Medium Density Residential allows for single-family residential development at a density of 4.1-7.0 dwelling units per acre, whereas Medium High Density Residential designation allows for single-family residential development at a density of 7.1-20.0 dwelling units per acre. The Project proposes to blend the Medium and Medium High Densities to obtain the maximum units allowed based on the acreage. The resulting project density is 11.6 dwelling units per acre.

4. ZONING DESIGNATION

As shown on Figure 3, the Project site is currently zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) in the County of Fresno, however, proposes a prezone to the R-1-PRD Zone District (Single-Family Planned Residential Development) through a separate entitlement, R2024-005. The R-1-PRD Zone District is consistent with the existing Medium and Medium High Density land use designation.

E. PROJECT DESCRIPTION

The project site is made up of four (4) parcels totaling ±14.57-acres and is designated for Medium and Medium High-Density Residential development in the City of Clovis General Plan. The applicant is proposing the development of a planned single-family residential development with unique development standards. The Project proposes 162 single-family residences with two (2) pocket parks totaling 21,997 square feet, associated parking, landscaping, and utility and pedestrian infrastructure. This section describes the components of the proposed Project in more detail, including site preparations, proposed structures, and on- and off- site improvements.

1. PROJECT ENTITLEMENTS

The Project includes multiple planning entitlements, including a vesting tentative tract map, and planned development permit. The tentative tract map is required to subdivide the property in accordance with City standards, the planned development permit is to evaluate the enhanced development of the including features such as architecture, landscaping, parking and additional amenities, and the residential site plan review is required to memorialize the design and layout of the homes.

2. PROJECT CONSTRUCTION AND PHASING

The Project is anticipated to begin construction early 2025 with full buildout by winter of 2028. This schedule is an estimation only and is contingent upon entitlements, and the market, among other factors.

3. SITE PREPARATION

Site preparation would include the demolition of the existing three (3) residences and accessory structures. Typical grading activities would occur to ensure an adequately graded site for drainage purposes. Part of the preparation would include the removal of any other vegetation and trees necessary to accommodate the Project. Other site preparation activities would include minor excavation for the installation of utility infrastructure, for conveyance of water, sewer, stormwater, and irrigation.

4. PROJECT COMPONENTS

This section describes the overall components of the Project, such as the proposed buildings, landscape, vehicle and pedestrian circulation, and utilities.

DEMOLITION

The existing three (3) residences, accessory structures, and landscaping will be demolished to accommodate the Project.

SITE LAYOUT AND CIRCULATION

The Project is proposing 162 lots, ranging from ±2,219 square feet to ±2,928 square feet, with an average of ±2,364 square feet, and two (2) pocket parks totaling ±21,997 square feet. The project is bound by E. Perrin Avenue to the north, N. Minnewawa Avenue to the west, and the N. Clovis alignment to the east. The applicant will be required to install N. Clovis Avenue and improve E. Perrin and N. Minnewawa Avenues to City standards. Along with improvements to the surrounding streets, the applicant is also proposing a network of internal private streets. The Project would be accessed via two (2) ingress/egress access points, one (1) from N. Minnewawa Avenue and one (1) from E. Perrin Avenue. The installation of pedestrian paths of travel from the Minnewawa, Perrin and Clovis frontages would be required as part of the Project. Per the Heritage Grove Master Plan, a community corner paseo / gateway feature is required at the corner of Clovis and Perrin Avenues.

PARKING

The CMC requires that residential planned unit developments provide a minimum of two (2) covered spaces plus one (1) covered or uncovered guest space for each dwelling unit; therefore, the Project shall provide a minimum of 324 covered spaces and 162 covered of uncovered guest spaces. The Project is proposing 104 of the 162 lots to provide two car garages, the remaining 58 lots provide a one-car garage. Each garage would be required to have an interior dimension of 20 feet by 20 feet for two car garages and 10 feet by 20 feet for single-car garages. In addition to garages, the applicant is proposing an additional 78 parking stalls around the two (2) proposed parks and other locations throughout the site to accommodate a designated second space for the 58 units that propose a one-car garage. The remaining 142 guest spaces will be accommodated through on-street parking. The Planned Development Permit may adjust or modify, where necessary and justifiable, all applicable development standards. The proposed parking deviation will be reviewed thoroughly as part of the Residential Site Plan Review (RSPR) process for compliance.

LANDSCAPE

The Project would include landscape throughout the site. Landscaped areas would generally be located along the frontage of each structure where a variety of ornamental shrubs, plants, and trees would be planted, as well as landscape in areas throughout the parking lots, consistent with the CMC. Landscape plans are typically provided during the City's RSPR process at which time the proposed landscape would be reviewed for compliance with the City's water efficient landscape regulations and guidelines. As an amenity to the project, the applicant is providing two pocket parks (see Figure 5 for the conceptual designs).

UTILITIES

Utilities for the site would consist of water, sewer, electric, cable, gas, and stormwater infrastructure. Minor trenching and digging activities would be required for the installation of necessary pipelines typical of development. All utility plans would be required to be reviewed and approved by the appropriate agency, and/or department to ensure that installation occurs to pertinent codes and regulations. Other infrastructure would include new fire hydrants as required by the City of Clovis Fire Department.

Utilities are provided by and managed from a combination of agencies, including the Fresno Irrigation District (FID), which provides the City's water supply which is then supplied to customers by the City of Clovis, Fresno Metropolitan Flood Control District (FMFCD) which has responsibility for storm water management, and the City's public utilities department which provides for solid waste collection, and sewer collection services. Pacific Gas & Electric (PG&E) provides electricity and natural gas within the City of Clovis.

F. REQUIRED PROJECT APPROVALS

The City of Clovis requires the following review, permits, and/or approvals for the proposed Project; however, other approvals not listed below may be required as identified throughout the entitlement process:

- Tentative Tract Map
- Planned Development Permit
- Residential Site Plan Review
- Grading Permit
- Building Permit
- San Joaquin Air Pollution Control District
- Fresno Metropolitan Flood Control District

G. TECHNICAL STUDIES

The analysis of the Project throughout this Initial Study relied in part on the technical studies listed below prepared for the Project, as well as other sources, including, but not limited to, the 2014 Clovis General Plan EIR, departmental staff, California Department of Conservation, and the California Department of Toxic Control Substances.

- **Appendix A:** Air Quality and Greenhouse Gas Emissions Technical Memo dated December 27, 2023
- **Appendix B:** Biological Resources Evaluation dated November 22, 2023
- **Appendix C:** Cultural Resource Assessment dated December 15, 2023
- **Appendix D:** Traffic Impact Analysis Report dated April 17, 2024
- **Appendix E:** Vehicle Miles Traveled Analysis dated April 19, 2024

Figure 1: Project Location and Existing Conditions

Figure 2: General Plan Land Use Designations

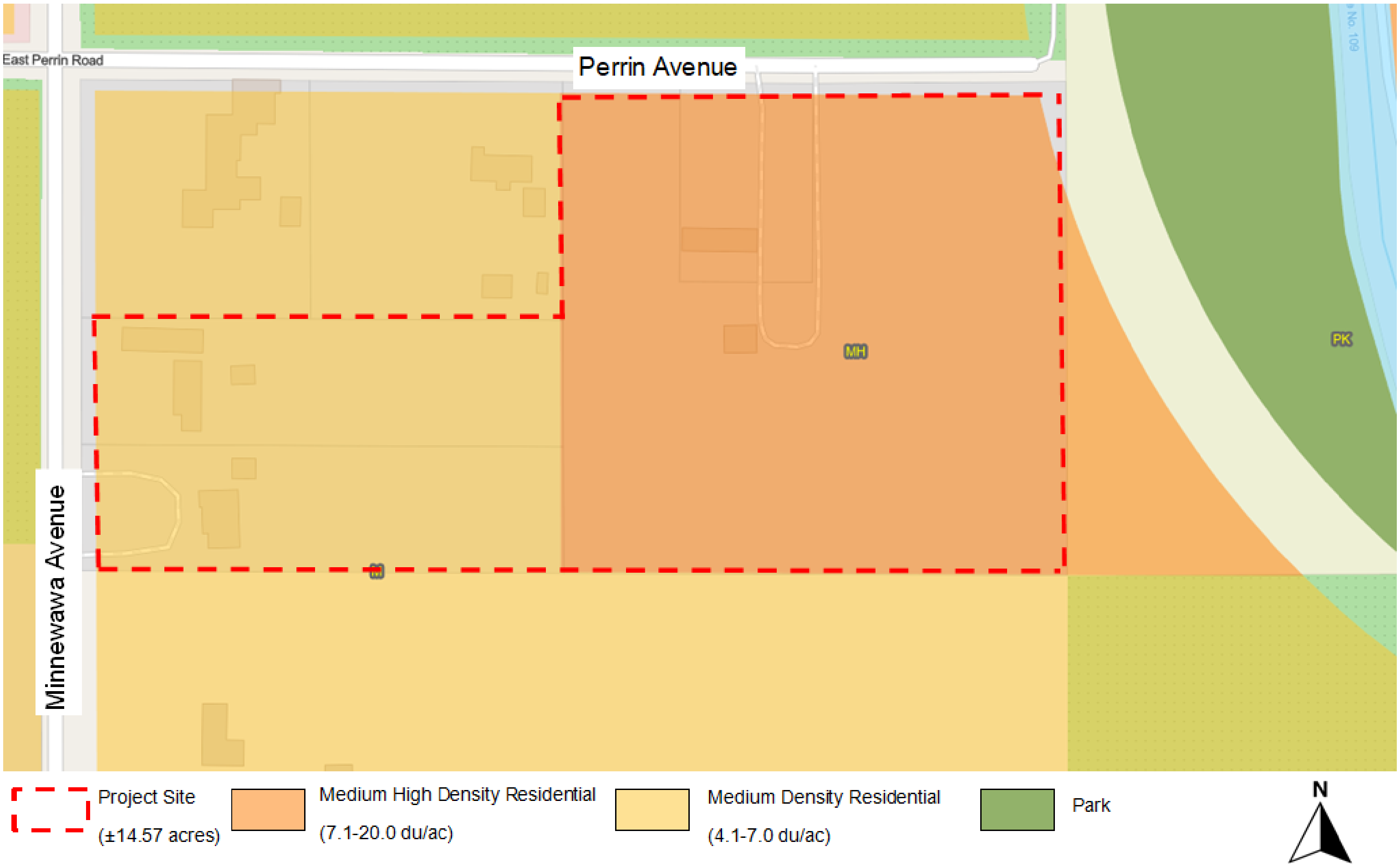


Figure 3: Current Zoning

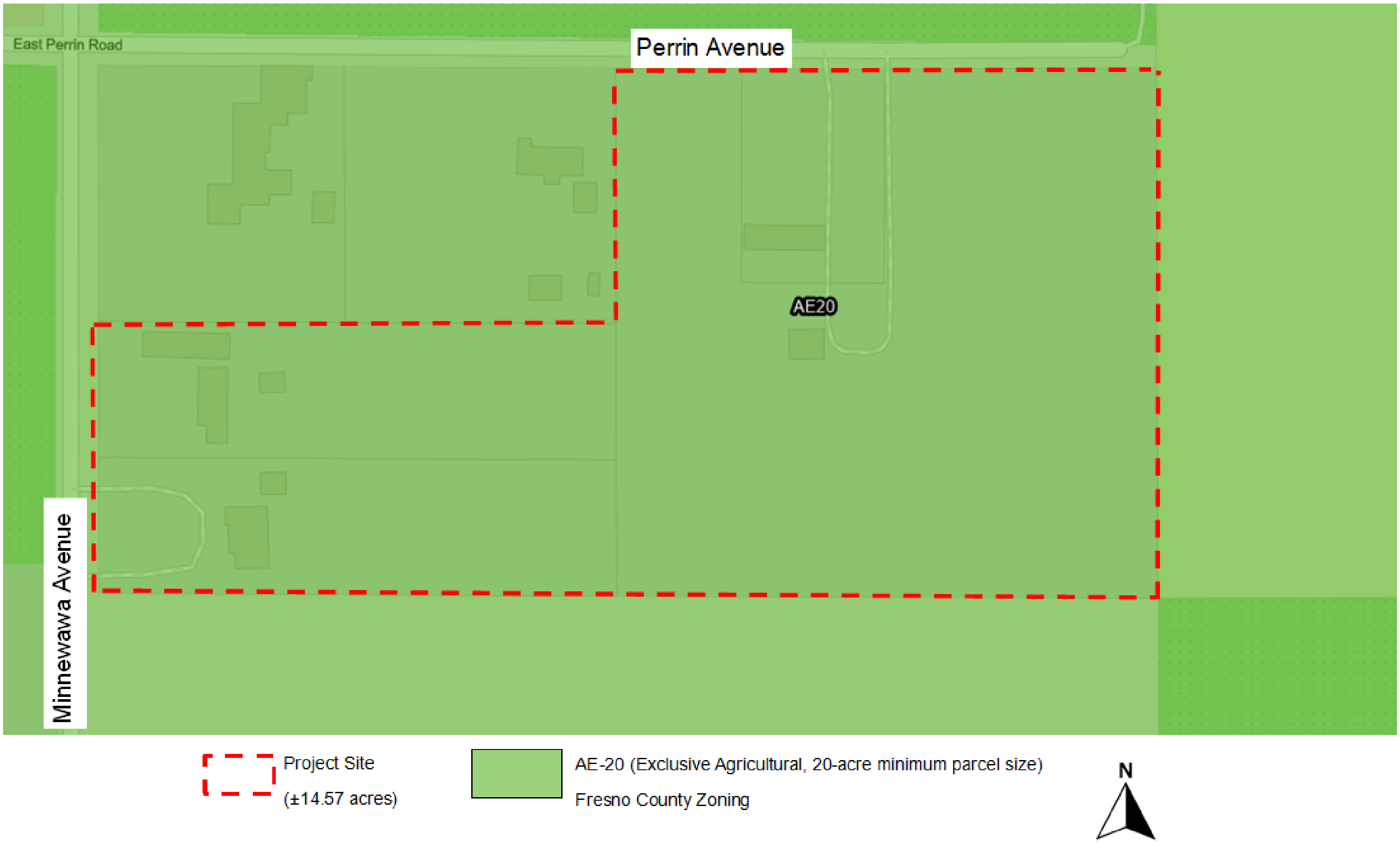


Figure 4: Conceptual Tract Map

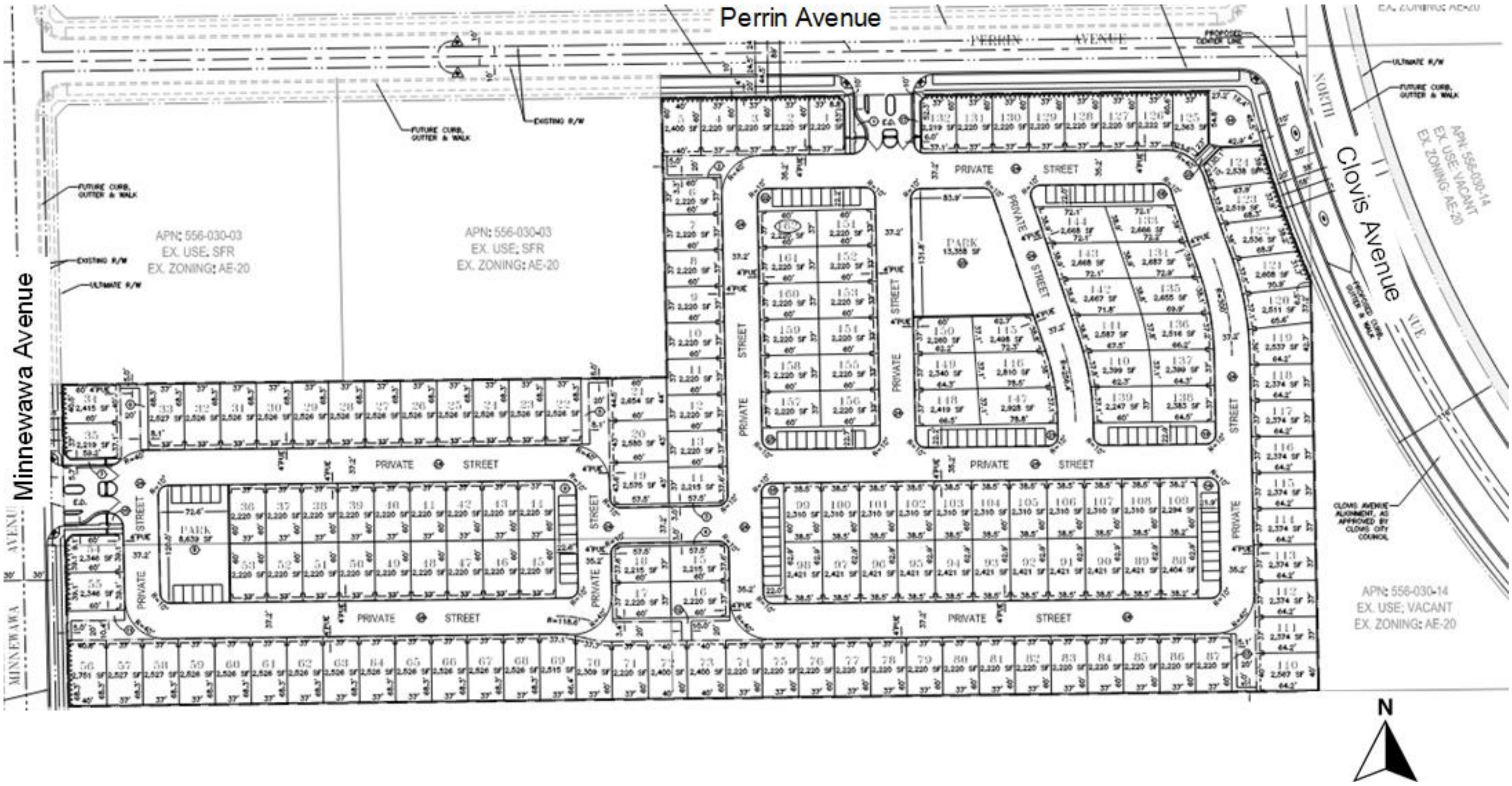
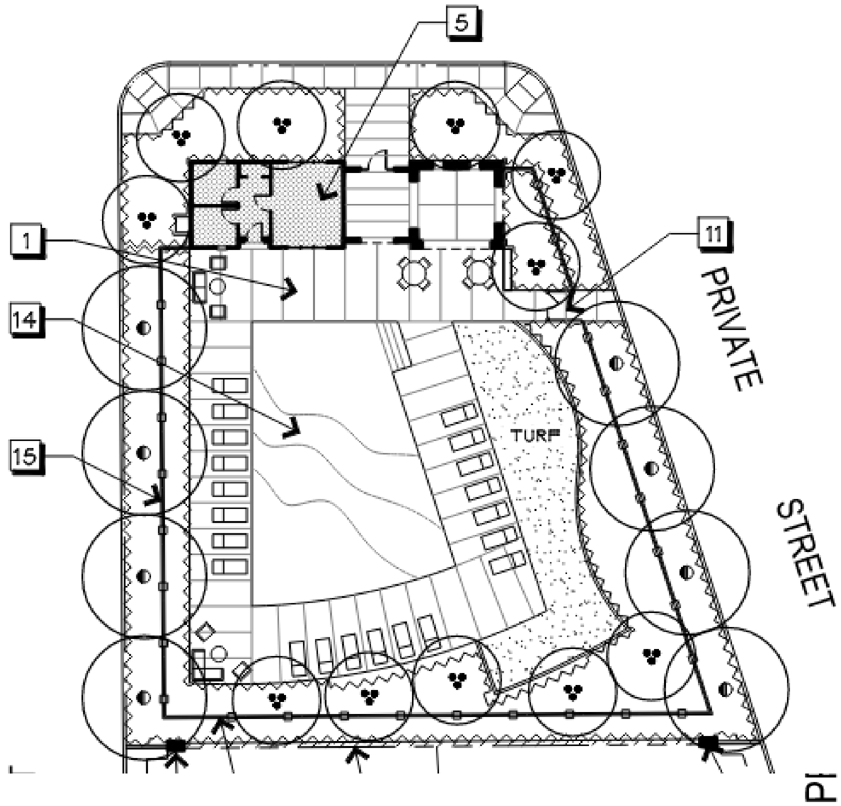


Figure 5: Conceptual Park Designs



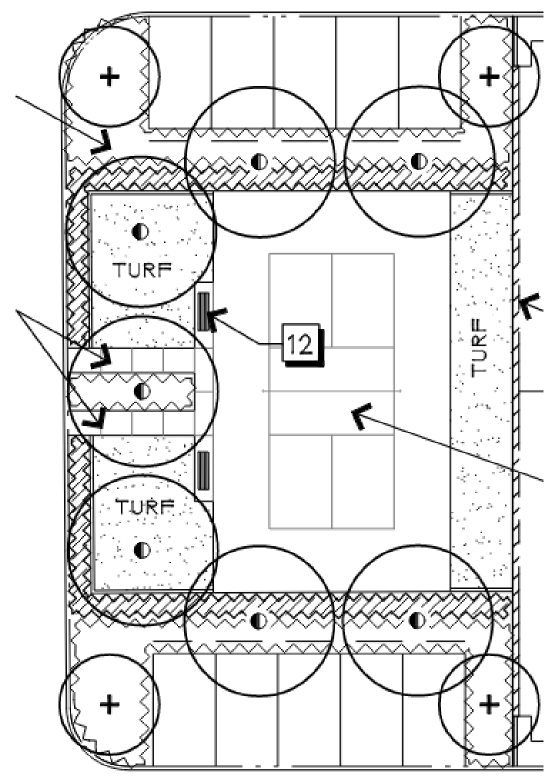


Figure 6: Conceptual Elevations

H. ENVIRONMENTAL CHECKLIST

This section provides an evaluation of the potential environmental impacts of the proposed project and are based on CEQA Guidelines Appendix G. For each issue area, one of four conclusions is made:

- **No Impact**: No project-related impact to the environment would occur with project development.
- **Less Than Significant Impact:** The proposed project would not result in a substantial and adverse change in the environment. This impact level does not require mitigation measures.
- **Less Than Significant with Mitigation Incorporated**: The proposed project would result in an environmental impact or effect that is potentially significant, but the incorporation of mitigation measure(s) would reduce the project-related impact to a less than significant level.
- **Potentially Significant Impact**: The proposed project would result in an environmental impact or effect that is potentially significant, and no mitigation can be identified that would reduce the impact to a less than significant level.

1. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. 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?			X	
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?			X	

ENVIRONMENTAL SETTING

The City of Clovis is located within the San Joaquin Valley. Thus, much of the City and its surrounding areas are predominately flat. As a result, on clear days, the Sierra Nevada Mountains are visible to the east depending on your location. Aside from Sierra Nevada, there are no officially designated focal points or viewsheds within the City. However, Policy 2.3, Visual Resources, of the Open Space Element of the 2014 Clovis General Plan, requires maintaining public views of open spaces, parks, and natural features and to preserve Clovis' viewshed of the surrounding foothills.

As mentioned above in the Project Description, the Project consists of ±14.57 acres and is located south of E. Perrin Avenue, east of N. Minnewawa Avenue and west of the N. Clovis Avenue Alignment in the County of Fresno, California. The Project is situated adjacent to primarily vacant and agricultural properties designated for future residential at varying densities, a future park, and existing single-family residences to the southeast. In general, the Project site will be in the fringes of Clovis following annexation.

DISCUSSION

a) *Would the project have a substantial effect on a scenic vista?*

No Impact. As mentioned above, there are no officially designated scenic vistas or focal points in the City of Clovis. While the Sierra Nevada Mountains can be viewed on clear days the Project would allow structures to be constructed at a maximum height of 35 feet. The units will be constructed at a typical maximum height for standard single family residential zone districts and consistent with nearby subdivision. Additionally, there are no officially designated scenic vistas in the area, therefore **no impact** would occur with regards to the project having a substantial effect on a scenic vista. As a result, no mitigation measures are required.

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

No Impact. As stated in the 2014 Clovis General Plan EIR, there are no Caltrans-designated scenic highways within the City of Clovis.[1] Further, there are no existing historical structures or rock outcroppings located on or within the immediate vicinity of the site, therefore, the Project would result in **no impact** with regards to substantially damaging scenic resources within a State scenic highway.

c) *Would the project 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?*

Less-Than-Significant Impact. As mentioned previously, the site is surrounded by primarily vacant and agricultural properties designated for future residential development at varying densities and a future park. The Project is located within the Heritage Grove planned growth area. Although the project is proposing to convert the subject property to residential uses, this conversion is pursuant to the 2014 General Plan. Upon completion, the project will not be consistent with the existing rural residential properties and orchards that currently exist in the surrounding area; however it will be consistent with future single-family development at Medium and Medium High Densities, per the General Plan designations. Additionally, the property immediately to the south is in the entitlement process for single-family residential development.

Further, the Project would undergo the RSPR process which would ensure that the overall design and character is consistent and/or complements the surrounding areas. The RSPR process will ensure the Project complies with relevant design policies, such as in the Heritage Grove Master Plan, the CMC, and the General Plan. During the review, the height, color and materials are reviewed for consistency with these plans and guidelines. Consequently, a **less-than-significant** impact would occur with regards to substantially degrading the existing visual character of the site and its surroundings, and no mitigation measures are required.

d) *Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

Less-Than-Significant Impact. The Project consists of 162 single-family homes. As a result of the existing site being primarily vacant with only three (3) residences and accessory, the Project would result in an

1 2014 Clovis General Plan EIR, June 2014, Page 5.1-1.

increase of light and glare sources. Light and glare from the Project would be typical of residential development, including but not limited to, sources such as exterior lighting for safety, light, and glare from vehicles or from light reflecting off surfaces such as windshields. Other sources of light would be the interior lighting of the units at night. These sources of light and glare are not typically associated with causing significant effects on the environment. Further, the site is surrounded by agricultural uses planned for single-family residences that will eventually result in similar sources and intensities of light and glare. Sources of future light and glare are comprised of streetlights, and light and glare from vehicles going to and from home.

Although the Project would introduce new sources of light and glare, the RSPR process would ensure that the design and placement of lighting is appropriate to minimize potential light and glare impacts to surrounding properties. Further, the Project would be required to comply with Section 9.22.050, Exterior Light and Glare, of the CMC, which requires light sources to be shielded and that lighting does not spillover to adjacent properties.

Overall, through the City's design review process and compliance with Section 9.22.050 of the CMC, the Project would result in a **less-than-significant impact** with regard to lighting adversely affecting day or nighttime views in the area. No mitigation measures are required.

2. AGRICULTURE AND FORESTRY RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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.			X	
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)) or timberland (as defined in Public Resources Code section 4526)?				X
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				X

ENVIRONMENTAL SETTING

The Project consists of ±14.57 acres and is located south of E. Perrin Avenue, east of N. Minnewawa Avenue and west of the N. Clovis Avenue Alignment in the County of Fresno, California. The Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities.

DISCUSSION

a) *Would the project 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?*

Less Than Significant Impact. According to the California Important Farmland finder interactive map from the California Department of Conservation,[2] the Project site is considered Farmland of Local Importance (2020 data), which is defined by the Department of Conservation as farmable lands within Fresno County that do not meet the definitions of Prime, Statewide, or Unique farmlands. Generally, Farmland of Local Importance is or has been used for irrigated pasture, dryland farming, livestock, dairy, and grazing land.

The Project site does not appear to have previously been cultivated, other than possible dry farming, nor is it zoned or designated for farming-related activities under the 2014 Clovis General Plan. Although the Project site is considered Farmland of Local Importance it is not considered Prime, Unique, or Farmland of Statewide Importance; therefore, **less-than-significant impact** would occur, and no mitigation measures are required.

b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act Contract?*

Less Than Significant Impact. As shown in Figure 5.2-2 of the Agricultural Resources Chapter of the 2014 Clovis General Plan EIR, the Project site is not under a Williamson Act Contract. Further, the site is not currently zoned or designated for agricultural use. However, the parcel directly east of the Project site (APN: 556-030-17S) is currently in the non-renewal process under a Williamson Act Contract. As the project will provide improvements to the N. Clovis Avenue alignment, a portion of the adjacent parcel will be dedicated to the City for right of way. Although the parcel is currently under a Williamson Act Contract, the non-renewal process will need to be completed, and the parcel removed from Contract before any right of way is dedicated for the Clovis Avenue improvements. As a result, the Project would have a **less-than-significant impact** with regards to conflicting with existing zoning for agricultural use or a Williamson Act Contract.

c) *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)) or timberland (as defined in Public Resources Code section 4526)?*

No Impact. The Project site does not contain forest land. Further, the site is not zoned for forestry or other forestry related uses. As a result, **no impact** would occur with regards to conflicts with existing zoning for, or cause rezoning of, forest land.

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

No Impact. See discussion under Section 2c.

2 Farmland Mapping, California Department of Conservation, Interactive mapping tool (https://maps.conservation.ca.gov/DLRP/CIFF/).

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

No Impact. See discussion under Section 2a.

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?			X	
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?			X	
c. Expose sensitive receptors to substantial pollutant concentrations?		X		
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

<u>ENVIRONMENTAL SETTING</u>

An Air Quality and Greenhouse Gas Technical Memorandum (AQ/GHG Memo) was prepared by Johnson, Johnson, and Miller Air Quality Consulting Services in December of 2023 (see Appendix A). Information in this AQ/GHG Memo is used for the analysis included in both the Air Quality and Greenhouse Gas Emissions section of this Initial Study.

San Joaquin Valley Air Basin

The City of Clovis (City) is in the central portion of the San Joaquin Valley Air Basin (SJVAB). SJVAB consists of eight counties: Fresno, Kern (western and central), Kings, Tulare, Madera, Merced, San Joaquin, and Stanislaus. The SJVAB is approximately 25,000 square miles. It is bordered by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. The valley is topographically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay.

Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants and can channel air from upwind areas that transports pollutants to downwind areas. The San Joaquin Valley Air Pollution Control District (SJVAPCD) covers the entirety of the SJVAB. The SJVAB is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Climate

The SJVAB is in a Mediterranean climate zone and is influenced by a subtropical high-pressure cell most of the year. Mediterranean climates are characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100°F in the valley.

The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface.

Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500–3,000 feet).

Winter-time high pressure events can often last many weeks, with surface temperatures often lowering into the 30°F. During these events, fog can be present, and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet.

Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 CAA amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National Air Quality Standards (AAQS) and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect “sensitive receptors,” those 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.

Both California and the federal government have established health based AAQS for six air pollutants. As shown in Table 3, Ambient Air Quality Standards for Criteria Pollutants, these pollutants are carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter ($PM_{2.5}$ and PM_{10}). In addition, the state has set standards for sulfates and hydrogen sulfide. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to the criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated based on risk rather than specification of safe levels of contamination.

Attainment Status

The air quality management plans prepared by SJVAPCD provide the framework for SJVAB to achieve attainment of the state and federal AAQS through the State Implementation Plan. Areas are classified as attainment or nonattainment areas for pollutants, depending on whether they meet the ambient air quality standards. Nonattainment areas are imposed with additional restrictions as required by the United States

Environmental Protection Agency. There are different classifications for attainment and the severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme. These classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the National AAQS.

Table 2: Air Quality Attainment Status for Fresno County

Pollutant	State	Federal
Ozone (1-hour)	Sever/Nonattainment	Not Applicable
Ozone (8-hour)	Nonattainment	Extreme Nonattainment
PM_{10}	Nonattainment	Attainment (Maintenance)
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment (Maintenance)
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	No Federal Regulation
Hydrogen Sulfide	Unclassified	No Federal Regulation

DISCUSSION

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

Less-Than-Significant Impact. The AQ/GHG Report[3] prepared by Johnson, Johnson, and Miller Air Quality Consulting Services proposes the following criteria for determining project consistency with the current Air Quality Plan (AQP):

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional thresholds identified by the District for Regional Air Pollutants.

2. Will the project comply with applicable control measures in the AQPs? The primary control measures applicable to development projects include Regulation VIII—Fugitive PM10 Prohibitions and Rule 9510 Indirect Source Review.

As shown in Tables 6 and 7 of the AQ/GHG Report, the project's construction and operational regional emissions would not exceed SJVAPCD's regional criteria pollutant emissions quantitative thresholds. Therefore, the proposed project would not be considered in conflict with or obstruct implementation of the applicable air quality plan based on this criterion. SJVAPCD's AQPs contain a number of control measures, which are enforceable requirements through the adoption of rules and regulations. The proposed project's will be subject to SJVAPCD Rule 9510, Regulation VIII and would implement dust control measures during the construction period. Additionally, components of the project may be required to obtain permits and abide by associated regulation set forth by Rule 2201. As described above, the proposed project's construction and operational regional emissions would not exceed SJVAPCD's regional criteria pollutant emissions quantitative thresholds. Furthermore, the proposed project would comply with all applicable SJVAPCD rules and regulations. Accordingly, the proposed project would not conflict with or obstruct implementation of the

3 Air Quality and Greenhouse Gas Technical Memorandum, prepared by Johnson, Johnson, and Miller Air Quality Consulting Services in December of 2023.

applicable air quality plans, and, therefore, this impact would be **less-than-significant** with no mitigation measures required.

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

Less-Than-Significant Impact. Per the AQ/GHG Report[4], the primary pollutants of concern during project construction and operation are ROG, NOX, $PM_{2.5}$ and PM_{10}. The project does not contain sources that would produce substantial quantities of SO_2 emissions during construction and operation. Modeling conducted for the project demonstrates that SO_2 emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Attachment A, of the Report. During construction, fugitive dust would be generated from earth-moving activities. Exhaust emissions would also be generated from off-road construction equipment and construction-related vehicle trips. Table 6 provides the construction emissions estimate for the proposed project. As shown in Table 6, estimated emissions from construction of project are below the SJVAPCD significance thresholds. Therefore, the regional construction emissions would be less-than-significant with no additional mitigation needed. In addition, Table 7 of the Report, discussed that the proposed project would not result in net operational-related air pollutants or precursors that would exceed the applicable thresholds of significance. Therefore, project operations would not be considered to have the potential to generate a significant quantity of air pollutants; long-term operational impacts associated with the project's criteria pollutant emissions would be less than significant.

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

Less-Than-Significant Impact with Mitigation. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. The SJVAPCD considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest existing sensitive receptors are residences located approximately 52.8 feet (0.01 mile) west of the project boundary. The project site is located within 1,000 feet of existing sensitive receptors that could be exposed to diesel emission exhaust during the construction period. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source location to concentrations at the receptor locations of interest (i.e., receptors at nearby residences). A maximally exposed receptor (MER) was determined for construction and through the use of the dispersion modeling. The project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The project is not a significant source of Toxic Air Contaminant (TAC) emissions during operations and is not a significant source of TAC emissions during construction after incorporation of MM AIR-1. The project is not in an area with suitable habitat for Valley fever spores and is not in an area known to have naturally occurring asbestos. Therefore, the project would not result in significant impacts to sensitive receptors after implementation of mitigation measure AIR-1. AIR-1 would ensure that a **less-than-significant impact with mitigation** occurs.

Mitigation Measure AIR-1: Before a construction permit is issued for the proposed project, the project applicant, project sponsor, or construction contractor shall submit documentation demonstrating reasonably detailed compliance with the following requirements to the City of Clovis:

4 Air Quality and Greenhouse Gas Technical Memorandum, prepared by Johnson, Johnson, and Miller Air Quality Consulting Services in December of 2023.

(1) Where portable diesel engines are used during construction, all off-road equipment with engines greater than 50 horsepower shall have engines that meet or exceed either United States Environmental Protection Agency (EPA) or California Air Resources Board (CARB) Tier 4 Interim off-road emission standards or be equipped with Level 3 diesel particulate filters. Tier 4 Interim engines shall, at a minimum, meet EPA or CARB particulate matter emissions standards for Tier 4 Interim engines. Alternatively, use of CARB-certified Level 3 diesel particulate filters on off-road equipment with engines greater than 50 horsepower can be used in lieu of Tier 4 Interim engines or in combination with Tier 4 Interim or better engines. The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number. The project applicant and/or construction contractor shall submit the construction operations plan and records of compliance to the City of Clovis.

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

Less-Than-Significant Impact. The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Project operations would not be anticipated to produce odorous emissions, as the project would not be considered an odor generator based on the surrounding land uses. Construction activities associated with the proposed project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present onsite temporarily during construction activities. The temporary and intermittent nature of construction activities would decrease the likelihood of the odors concentrating in a single area or lingering for any notable period of time. As such, these odors would likely not be noticeable for extended periods of time beyond the project's site boundaries. Therefore, construction would not create objectionable odors affecting a substantial number of people from use of diesel-powered equipment. Thus, a **less-than-significant** impact would occur with no mitigation measures.

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

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?				X
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?				X
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

ENVIRONMENTAL SETTING

A Biological Resource Assessment (BRA) was prepared by Argonaut Ecological Consulting, Inc., November 22, 2023 (see Appendix B). This BRA included a literature review and records search to identify the existence and potential for occurrence of sensitive or special-status plant and animal species in the project vicinity. The site is flat, comprised of single-family residences with portions of the site undeveloped.

DISCUSSION

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

Less-Than-Significant Impact With Mitigation. As described in the BRA, the Project is in an area that was historically in agricultural production. The Project Site is developed with rural residential homes, pasture (previously irrigated), landscaped areas, and a horse paddock. There are no sensitive habitats within the site, including waters/wetlands or critical habitat for species of concern. The Study Area potentially provides a habitat for nesting raptors (burrowing owl) and migratory birds. Implementation of mitigation measure BIO-1 would ensure that a **less-than-significant impact with mitigation** occurs.

> Mitigation Measure BIO-1: If ground disturbance (including grading, grubbing, home demolition, tree removal, or construction equipment and materials mobilization) is initiated during the nesting season (February 1 – August 31), a pre-construction survey for potential nesting raptors, migratory birds, and burrowing is recommended.

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

Less-Than-Significant Impact. As mentioned previously, the Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings, landscaping, and ruderal plants. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities.

There are no riparian habitats or sensitive natural communities identified at the site, nor are there any identified in local or regional plans. Therefore, the Project would not result in a substantial adverse effect with respect to this threshold, and a **less-than-significant** impact would occur.

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

No Impact. Based on the Biological Resources Assessment prepared for the Project, no wetland features are known to exist at the Project site.

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

No Impact. The BRA did not identify the site as a regional or local wildlife movement corridors,[5] thus, **no impact** would occur.

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

No Impact. The Project site does not indicate the presence of any sensitive habitat or wildlife features that would be impacted and will be consistent with the CMC and 2014 General Plan polices. Although Policy 2.6 of the Open Space and Conservation Element of the General Plan calls for the protection of biological resources, the Biological Evaluation did not identify any such resources at the site due to its location. Further, trees and shrubs are absent from the Project site; therefore, **no impact** would occur, and no mitigation measures are required.

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

No Impact. The City and Fresno County currently do not have a regional Natural Community Conservation Plan or a Habitat Conservation Plan. The Project site is subject to relevant biological resource policies of the 2014 General Plan. Therefore, there are no impacts to conservation plans. Overall, **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?		X		
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		

5 Biological Resources Evaluation prepared by LSA, June 2024, page 3.

c. Disturb any human remains, including those interred outside of formal cemeteries?		X		

ENVIRONMENTAL SETTING

The Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities.

A Cultural Resource Assessment (Cultural Study) was prepared by Peak & Associates, Inc. dated December 15, 2024 (see Appendix C). This Cultural Study included a records search at the California Historical Resources Information System (CHRIS) Southern San Joaquin Valley Information Center (SSJVIC), Native American Heritage Commission's (NAHC) Sacred Lands File, desktop archival research, as well as a pedestrian survey of the Project site.

In addition to the Cultural Report, City staff conducted Native American Consultation in compliance with Assembly Bill 52 (AB52). In compliance with AB52, invitations for consultation were mailed on July 2, 2024 which affords Native tribes thirty (30) days to respond and to request consultation. During that time, one (1) tribe requested consultation. On September 30, 2024 a representative from Table Mountain Rancheria met with City staff via virtual call to discuss the potential for cultural resources at the Project annexation area. Following the meeting the representative from Table Mountain Rancheria voiced concerns for the potential sites of tribal significance. Based on the conversation while potential sites were within the annexation area, they were outside of the Project development site. However, mitigation measures are included in the following analysis to ensure protection of such resources if any are discovered inadvertently. With the incorporation of the mitigation measures, the consultation ended.

DISCUSSION

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

Less-Than-Significant Impact With Mitigation. As previously mentioned, the Project site is partially developed with three existing residences. A cultural resource records search was conducted including a 0.25-mile radius of the Project, indicating that there were no resources reported on the Project site. Additionally, a field survey also indicated that there are no prehistoric resources existing within the Project boundary. Although no sites were found, there is a slight possibility that a site may exist and be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for on-the-spot evaluation of the finding.

Further, compliance with Policy 2.9 of the General Plan, which calls for the preservation of historical sites and buildings of state or national significance, would ensure that if there were historical resources present, they would be protected. Because there is the slight possibility for the accidental or inadvertent uncovering of archaeological resources during construction, Mitigation Measure CULT-1 would serve to reduce those potential impacts by requiring any work to stop until any found artifacts can be properly removed and inventoried by a qualified archaeologist. Therefore, regarding the Project causing a substantial adverse change in the significance of a historical resource the Project would result in a **less-than-significant impact with mitigation.**

Mitigation Measure CULT-1: If prehistoric or historic-era cultural or archaeological materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants.

If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.

If a potentially eligible resource is encountered, then the qualified professional archaeologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.

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

Less-Than-Significant Impact With Mitigation. The Project is situated adjacent to a mix of neighboring agricultural lands, current rural residential properties, future medium to high density residential housing, and existing single-family residences to the southeast. The site's ground has been previously disturbed as a result of the agriculture, and residential uses and other ground disturbing activities throughout the years. Nevertheless, the potential remains that archeological resources could be inadvertently or accidentally uncovered during ground-disturbing activities such as trenching, digging, and the installation of utilities and other infrastructure.

Because there is the slight possibility for the accidental or inadvertent uncovering of archaeological resources during construction, Mitigation Measure CULT-1 would serve to reduce those potential impacts by requiring any work to stop until any found artifacts can be properly removed and inventoried by a qualified archaeologist. Therefore, the Project would result in a **less-than-significant impact with mitigation**.

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

Less-Than-Significant Impact With Mitigation. The Project is situated adjacent to a mix of neighboring agricultural lands, current rural residential properties, future medium to high density residential housing, and existing single-family residences to the southeast. The site's ground has been previously disturbed as a result of the agriculture, and residential uses and other ground disturbing activities throughout the years. Nevertheless, the potential remains that human remains could be inadvertently or accidentally uncovered during ground-disturbing activities such as trenching, digging, and the installation of utilities and other infrastructure.

Because there is the slight possibility for the accidental or inadvertent uncovering of human remains during construction, Mitigation Measure CULT-2 would serve to reduce those potential impacts by requiring any work to stop until any found human remains can be properly removed by the County coroner and/or tribes. Therefore, the Project would result in a **less-than-significant impact with mitigation**.

Mitigation Measure CULT-2: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Lead Agency.

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 resources, during project construction or operation?			X	
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

ENVIRONMENTAL SETTING

The Project is situated on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities.

DISCUSSION

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

Less-Than-Significant Impact. The Project proposes the construction of 162 single-family homes on ±14.57 acres, along with associated landscape, hardscape, and infrastructure (i.e., drive aisles, utilities, etc.). The Project would include construction activities typical of residential development, thus, is not generally considered the type of use or intensity that would result in the unnecessary consumption of energy. The units themselves would comply with Title 24 Green Building Standards for energy efficiency, as well as be required to comply with the latest water efficient landscape policy regulations, and California Building Code. Further, the Project would be required to comply with Clovis 2014 General Plan Policy 3.4, and 3.7 of the Open Space and Conservation, which call for the use of water conserving and drought tolerant landscape, as well as energy efficient buildings. Consequently, compliance with these measures would ensure that the Project does not result in a significant impact due to the unnecessary consumption of energy and **less-than-significant** impact would occur with no mitigation measures.

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

Less-Than-Significant Impact. See discussion under Section 6a above.

7. GEOLOGY AND SOILS

Would the project:	Potentially	Less Than	Less Than	No

	Significant Impact	Significant With Mitigation Incorporated	Significant Impact	Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
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?			X	
ii. Strong seismic ground shaking?			X	
iii. Seismic-related ground failure, including liquefaction?			X	
iv. Landslides?			X	
b. Result in substantial soil erosion or the loss of topsoil?			X	
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?			X	
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?				X
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?				X
f. Directly or indirectly destroy a unique paleontological resource or unique geologic feature?		X		

ENVIRONMENTAL SETTING

The 2014 Clovis General Plan EIR identified no geologic hazards or unstable soil conditions known to exist on the Project site.

DISCUSSION

a) *Would the project 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?; ii) Strong seismic ground shaking?; iii) Seismic-related ground failure, including liquefaction?; iv) Landslides?*

Less-Than-Significant Impact. Although the Project site does not have any known faults on the site, the potential remains that seismic ground-shaking could occur from the fault located east of the Project. However, adherence to the most current California Building Codes would ensure that the structures are constructed safely and in compliance with the appropriate building codes. With regards to liquefaction, the 2014 General Plan EIR states that the soil types in the area are not considered conducive to liquefaction due to their high clay content or from being too coarse.[6] Further, the site is generally flat and therefore landslides would not occur at the Project site. Overall, due to the location away from a known fault, adherence to the most recent California Building Codes, and the flat topography, a **less-than-significant impact** would occur with regards to potential impacts from seismic activity.

b) *Would the project result in substantial soil erosion or the loss of topsoil?*

Less-Than-Significant Impact. Although the site is relatively flat, grading activities would be required to ensure a flat and graded surface prior to construction, which may result in the soil erosion and loss of topsoil. However, as part of the Project, grading plans are required to be submitted and approved by the Engineering Division to ensure appropriate grading of the site. Thus, this review and approval process would ensure that a **less-than-significant** impact occur, and no mitigation measures are required.

c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less-Than-Significant Impact. See discussion under Section 7a.

d) *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property?*

No Impact. According to the 2014 Clovis General Plan EIR, expansive soils are mostly present in areas along the northern edge of the non-Sphere of Influence (SOI) and the easternmost part of the Clovis non-SOI plan area. Because the Project is not within the vicinity of these areas, there would be no potential for creating direct or indirect substantial risks to life or property with regards to expansive soils. As a result, **no impact** would occur.

e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater?*

No Impact. The Project does not propose the use of septic tanks; therefore, **no impact** would occur.

f) *Would the project directly or indirectly destroy a unique paleontological resource or unique geologic feature?*

6 2014 Clovis General Plan EIR, Chapter 5: Geology and Soils, page 5.6-3.

Less-Than-Significant Impact With Mitigation. The Project site has been previously disturbed, as well as the immediately surrounding areas with no known occurrences of the discovery of paleontological resources. In addition, the BRA concluded that the potential for uncovering of subsurface deposits is unlikely. Nevertheless, the possibility remains that the inadvertent or accidental discovery could occur during ground disturbing construction activities. However, Mitigation Measure GEO-1, below, would serve to protect the accidental discovery of paleontological resources. As such, a **less-than-significant with mitigation** impact would occur.

Mitigation Measure GEO-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist and/or paleontologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants.

If the qualified professional determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.

If a potentially eligible resource is encountered, then the qualified professional archaeologist and/or paleontologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.

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, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			X	

ENVIRONMENTAL SETTING

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected into the atmosphere. The accumulation of GHG's has been implicated as a driving force for global climate change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and anthropogenic activities which alter the composition of the global atmosphere.

Individual projects contribute to the cumulative effects of climate change by emitting GHGs during construction and operational phases. The principal GHGs are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. While the presence of the primary GHGs in the atmosphere are naturally occurring, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are largely emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Carbon dioxide is the "reference gas" for climate change, meaning that emissions of GHGs are typically reported in "carbon dioxide-equivalent" measures. Emissions of carbon dioxide are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs, with much greater heat-absorption potential than carbon dioxide, include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes.

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. Potential global warming impacts in California may include, but are not limited to, loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

In 2005, in recognition of California's vulnerability to the effects of climate change, Executive Order S-3-05 was signed. The order sets forth a series of target dates by which statewide emission of GHGs would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32), which requires the California Air Resources Board to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020.

In December 2009, the SJVAPCD adopted guidance for addressing GHG impacts in its *Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under* CEQA. The guidance relies on performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project-specific GHG emissions on global climate change during the environmental review process. Projects can reduce their GHG emission impacts to a less than significant level by implementing BPS. Projects can also demonstrate compliance with the requirements of AB 32 by demonstrating that their emissions achieve a 29% reduction below "business as usual" (BAU) levels. BAU is a projected GHG emissions inventory assuming no change in existing business practices and without considering implementation of any GHG emission reduction measures.

Significance Criteria

The SJVAPCDs *Guidance for Valley Land Use Agencies in Addressing GHG Impacts for New Projects Under CEQA* provides initial screening criteria for climate change analyses, as well as draft guidance for the determination of significance.

The effects of project specific GHG emissions are cumulative, and therefore climate change impacts are addressed as a cumulative, rather than a direct, impact. The guidance for determining significance of impacts has been developed from the requirements of Assembly Bill 32. The guideline addresses the potential cumulative impacts that a project's GHG emissions could have on climate change.

Since climate change is a global phenomenon, no direct impact would be identified for an individual land development project. The following criteria are used to evaluate whether a project would result in a significant impact for climate change impacts:

- Does the project comply with an adopted statewide, regional, or local plan for reduction or mitigation of GHG emissions?

- Does the project achieve 29% GHG reductions by using approved Best Performance Standards?

- Does the project achieve Assembly Bill 32 targeted 29% GHG emission reductions compared with BAU?

Projects that meet one of these guidelines would have less-than-significant impact on the global climate. The goal of 29% below BAU for emissions of GHG has been used as a threshold of significance for this analysis.

In December 2022, the 2022 Scoping Plan was approved by the CARB which assesses progress toward achieving carbon neutrality by 2045. Because neither the City of Clovis or the SJVAPCD have developed or adopted numerical GHG significance threshold, the proposed Project was analyzed for consistency with the 2022 Scoping Plan consistent with statewide climate goals. The 2022 Scoping Plan includes key project attributes that reduce operational GHG emissions.

DISCUSSION

a) *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less-Than-Significant Impact. The Project would include the construction and operation of 162 single-family homes and associated infrastructure (i.e., sewer and water infrastructure, roadways, sidewalks, etc.). As such, GHG emissions would be produced through the construction and operational phases of the Project. As a result, an estimate of the Project's operational emissions indicate that the proposed project will not exceed the significant criteria for daily ROG, NO_x, CO, SO_x, $PM_{2.5}$ and PM_{10}.[7] The project will not result in a cumulatively considerable net increase of any criteria pollutant. With the implementation of recommended mitigation, the proposed project is generally consistent with the key project attributes recommended in the 2022 Scoping Plan, as further discussed below.

The proposed project may contribute to climate change impacts through its contribution of GHGs, due to Vehicle Miles Traveled (VMT). The proposed project would generate a variety of GHGs during construction and operations, including several defined by AB 32, such as CO2, CH4, and N2O from the exhaust of equipment during construction and on-road vehicle trips during construction and operations. 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 with any level of certainty, as they have not yet been developed; nevertheless, it can be anticipated that operation of the project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050. In its 2008 Scoping Plan, CARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update; however, CARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target. In addition, the 2022 Scoping Plan outlines objectives, regulations, planning efforts, and investments in clean technologies and infrastructure that outlines how the State can achieve carbon-neutrality by 2045. The 2022

7 Air Quality and Greenhouse Gas Technical Memorandum, prepared by Johnson, Johnson, and Miller Air Quality Consulting Services in December of 2023.

Scoping Plan strategies that are applicable to the project include reducing fossil fuel use, energy demand, and vehicle miles traveled; maximizing recycling and diversion from landfills; and increasing water conservation. The TM6467 project would be consistent with these goals through project design, which include complying with the latest requirements of the CALGreen Code and Building Energy Efficiency Standards. For instance, the latest requirement requires all new single-family homes to be equipped with solar to provide on-site renewable energy. In addition, the project would receive electricity from PG&E, which is required to reduce GHG emissions by increasing procurement from eligible renewable energy by set target years.

Furthermore, the project would be consistent with goals to reduce VMT by constructing new homes near existing residential, commercial, and public uses. The project would also to encourage alternative modes of transportation by providing infrastructure for future EV chargers (consistent with the applicable Building Code) and would provide extensive pedestrian connectivity within the project site and to adjacent land uses. The project would further align with goals in the 2022 Scoping Plan by incorporating a number of sustainable design features, including, but not limited, to installation of energy-efficient light fixtures, high-efficiency plumbing fixtures, EV parking spaces, and rooftop PV systems and solar panels (consistent with the requirements of Title 24). Accordingly, taking into account the proposed project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2030, carbon neutral by 2045, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment.

As described above, the proposed project would be consistent with State GHG Plans and would not obstruct the State's ability to meet its goals of reducing GHG emissions 40 percent below 1990 levels by 2030, carbon neutral by 2045, and 80 percent below 1990 levels by 2050. Therefore, the project's generation of GHG emissions would result in a **less-than-significant impact.**

b) *Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

Less-Than-Significant Impact. Based on the AQ/GHG Report,[8] the analysis contained above in Section A evaluates whether the project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs. As discussed above, the project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions GHGs. Consequently, the AQ/GHG Report found this potential impact to be **less than significant** with no mitigation measures.

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?			X	
b. Create a significant hazard to the public or the environment through reasonably			X	

8 Air Quality and Greenhouse Gas Technical Memorandum, prepared by Johnson, Johnson, and Miller Air Quality Consulting Services in December of 2023.

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?				X
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
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?				X
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

ENVIRONMENTAL SETTING

For purposes of this chapter, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined in the Code of Federal Regulations (CFR) as “substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as “any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.” Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

“Hazardous wastes” are defined in California Health and Safety Code Section 25141(b) as wastes that “…because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause or significantly contribute to an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.”

The nearest school to the Project site is Woods Elementary School, located approximately two (2) miles southeast of the site at its closest point.

DISCUSSION

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less-Than-Significant Impact. The Project consists of the construction of 162 single-family homes on ±14.57 acres. The type of hazardous materials that would be associated with the Project are those typical of residential uses, such as the use of household cleaners, landscape maintenance products, soaps, and potential pesticides (for pest control). These materials, when used and applied properly, would not necessarily create a significant hazard to the public or the environment. Further, these materials are not anticipated to be stored in large quantities that could pose a threat. Overall, the Project would not routinely transport, use, or dispose of hazardous materials other than those typical of residential development, which are not generally considered of the type or quantity that would pose a significant hazard to the public when used as directed. During construction, typical equipment and materials would be used that are associated with residential construction; however, any chemicals or materials would be handled, stored, disposed of, and/or transported according to applicable laws. Consequently, because the Project is not of the type of use that would routinely transport, use, or dispose of hazardous materials a **less-than-significant** impact would occur with no mitigation measures.

b) *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Less-Than-Significant Impact. See discussion above under Section 9a.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

No Impact. As mentioned above, the Project site is located approximately two (2) miles from the nearest school. Further, the Project is not of the type of use typically associated with emitting hazardous emissions or handling the type or quantity of hazardous materials such that it would pose a risk or threat to the school, or surrounding area. Therefore, **no impact** would occur.

d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

No Impact. According to the California Department of Toxic Substance Control EnviroStor Database, the Project site is not located on or within the immediate vicinity of a hazardous materials site.[9] Therefore, **no impact** would occur.

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?*

No Impact. The Project is located approximately seven (7) miles northeast of the Fresno Yosemite International Airport and is not within the Airport Influence Area, safety zones, noise, or airspace and overflight areas. Therefore, **no impact** would occur.

9 California Department of Toxic Substance Control, EnviroStor Database, https://www.envirostor.dtsc.ca.gov/public/map/?global_id=71003467, accessed on October 7, 2024.

f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less-Than-Significant Impact. The Project will connect in the internal street network to N. Minnewawa, E. Perrin and N. Clovis Avenues. Although the Project could result in temporary traffic detouring or closures during buildout, these delays would be temporary and would be coordinated with the City Planning and Development Services Department and other departments to ensure safe access to and from the area is maintained. Further, the site itself would be reviewed by City departments to ensure adequate site access and circulation is provided in the event of an emergency. Overall, a **less-than-significant** impact would occur with no mitigation measures.

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

Less-Than-Significant Impact. The Project site it is not located in an area typically associated with wildfires. Although urban fires could occur, the Project would be constructed to the latest fire code standards, which would include fire sprinklers in each unit, as well as the installation of several fire hydrants throughout the site as required by the Clovis Fire Department. Further, other life safety features would be required such as smoke detectors, which would be reviewed and checked by the Fire Department to ensure proper operation prior to occupancy. Ultimately, a **less-than-significant** impact would occur with no mitigation measures.

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?			X	
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
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 offsite; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?			X	
i. Result in substantial erosion or siltation			X	

on- or off-site?				
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?			X	
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
iv. Impede or redirect flood flows?			X	
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

ENVIRONMENTAL SETTING

The City is within the drainages of three streams: Dry Creek, Dog Creek, and Redbank Slough. On the north, Dry Creek discharges into the Herndon Canal in the City of Fresno west of Clovis. South of Dry Creek, Dog Creek is a tributary of Redbank Slough, which discharges into Mill Ditch south of Clovis (USGS 2012). A network of storm drains in the City discharge into 31 retention basins, most of which provide drainage for a one- to two-square-mile area. Most of the Plan Area east and northeast of the City is not in drainage areas served by retention basins.

The Project is located within the FMFCD boundary, and subject to its standards and regulations. Detention and retention basins in the FMFCD's flood control system are sized to accommodate stormwater from each basin's drainage area in built out condition. The current capacity standard for FMFCD basins is to contain runoff from six inches of rainfall during a 10-day period and to infiltrate about 75 to 80 percent of annual rainfall into the groundwater basin (Rourke 2014). Basins are highly effective at reducing average concentrations of a broad range of contaminants, including several polyaromatic hydrocarbons, total suspended solids, and most metals (FMFCD 2013). Pollutants are removed by filtration through soil, and thus do not reach the groundwater aquifer (FMFCD 2014). Basins are built to design criteria exceeding statewide Standard Urban Stormwater Mitigation Plan (SUSMP) standards (FMFCD 2013). The urban flood control system provides treatment for all types of development—not just the specific categories of development defined in a SUSMP—thus providing greater water quality protection for surface water and groundwater than does a SUSMP.

In addition to their flood control and water quality functions, many FMFCD basins are used for groundwater recharge with imported surface water during the dry season through contracts with the FID and the cities of Fresno and Clovis (FMFCD 2013).

The pipeline collection system in the urban flood control system is designed to convey the peak flow rate from a two-year storm.

Most drainage areas in the urban flood control system do not discharge to other water bodies and drain mostly through infiltration into groundwater. When necessary, FMFCD can move water from a basin in one such drainage area to a second such basin by pumping water into a street and letting water flow in curb and gutter to a storm drain inlet in an adjoining drainage area (Rourke 2014). Two FMFCD drainage areas discharge directly to the San Joaquin River, and three to an irrigation canal, without storage in a basin. Six drainage areas containing basins discharge to the San Joaquin River, and another 39 basins discharge to canals (FMFCD 2013).

A proposed development that would construct more impervious area on its project site than the affected detention/retention basin is sized to accommodate is required to infiltrate some stormwater onsite, such as through an onsite detention basin or drainage swales (Rourke 2014).

The Big Dry Creek Reservoir has a total storage capacity of about 30 thousand acre-feet (taf) and controls up to 230-year flood flows. Fancher Creek Dam and Reservoir hold up to 9.7 taf and controls up to 200-year flood flows. Redbank Creek Dam and Reservoir hold up to 1 taf and controls up to 200-year flood flows.

Groundwater

Clovis is underlain by the Kings Groundwater Basin that spans 1,530 square miles of central Fresno County and small areas of northern Kings and Tulare counties. Figure 5.9-4, Kings Groundwater Basin, shows that the basin is bounded on the north by the San Joaquin River, on the west by the Delta-Mendota and Westside Subbasins, the south by the Kings River South Fork and the Empire West Side Irrigation District, and on the east by the Sierra Nevada foothills. Depth to groundwater in 2016 ranged from 196.5 feet at the northwest City boundary to 69.5 feet at the southeast City boundary (Clovis 2016), 25 feet at the southeast SOI boundary, and about 20 feet at the eastern Plan Area boundary (FID 2013). The Kings Subbasin has been identified as critically overdrafted (Provost & Pritchard 2011).

In the Plan Area, groundwater levels are monitored by the City of Clovis and FID. The overall area has not experienced land subsidence due to groundwater pumping since the early 1900s (FID 2006). Subsidence occurs when underground water or natural resources (e.g., oil) are pumped to the extent that the ground elevation lowers. No significant land subsidence is known to have occurred in the last 50 years as a result of land development, water resources development, groundwater pumping, or oil drilling (FID 2006). The City has identified a localized area of subsidence of 0.6 feet in the vicinity of Minnewawa and Herndon Avenues within the last 14 years (Clovis 2016). Regional ground subsidence in the Plan Area was mapped as less than one foot by the US Geological Survey in 1999 (Galloway and Riley 1999). Groundwater levels in the San Joaquin Valley are forecast to hit an all-time low in 2014 (UCCHM 2014).

New development in accordance with the General Plan Update would increase the amount of impervious surface in the Plan Area, potentially affecting the amount of surface water that filters into the groundwater supply. Groundwater levels are monitored in the Plan Area by the FID and the City of Clovis. As described in the 2015 City of Clovis Urban Water Management Plan (UWMP), groundwater recharge occurs both naturally and artificially throughout the City. The Kings Groundwater Basin area is recharged through a joint effort between the Cities of Clovis and Fresno and the FID (CDWR 2006). Approximately 8,400 acre-feet per year (afy) of water are intentionally recharged into the Kings Groundwater Basin by the City of Clovis, and approximately 7,700 afy of water naturally flow into groundwater in the City's boundaries (Clovis 2011).

The FMFCD urban stormwater drainage system would provide groundwater infiltration for runoff from developed land uses in detention basins in the drainage system service area.

Projects pursuant to the proposed General Plan Update and developed outside of the FMFCD urban stormwater drainage system would be required to meet the requirements of NPDES regulations, including the implementation of BMPs to improve water retention and vegetation on project sites.

DISCUSSION

a) *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Less-Than-Significant Impact. The Project is located on a site that was previously anticipated for residential use. As with any development, existing policies and standards are required to be complied with, which are assessed during review of the entitlements. As such, the Engineering Division, as well as outside agencies such as the FMFCD review all plans to ensure that none of the water quality standards are violated and that waste discharge requirements are adhered to during construction and operation of the Project. Consequently, this process of Project review and approval would ensure that a **less-than-significant** impact occur with no mitigation measures.

b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Less-Than-Significant Impact. The Project would not deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level due to the Project. The 2014 General Plan EIR identified a net decrease in ground water aquifer throughout the region, however, because the City's domestic water system is primarily served through surface water via existing water entitlements, the loss of aquifer is less than significant. The City has developed a surface water treatment plant (opened in June 2004) that reduces the need for pumped groundwater, and has also expanded the municipal groundwater recharge facility. The Projects impacts to groundwater are **less than significant** with no mitigation measures required.

c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, 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 offsite; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?*

Less-Than-Significant Impact. There are no streams or rivers on the site that would be altered as a result of the Project. Further, some of the infrastructure surrounding the site, such as storm drains are already in place from existing development to the south. The site is mostly pervious since it is currently undeveloped, and as a result, the Project would increase the number of impervious surfaces by installing paving for roadways and sidewalks. However, the drainage pattern would be constructed per existing policies and regulations through review of the plans by the City Engineering Division and the FMFCD to ensure the site is properly and adequately drained such that the storm drain system is maintained and so that no flooding occurs. Consequently, this review and approval by City engineers and FMFCD would mean that the Project result in a **less-than-significant** impact would occur with no mitigation measures.

d) *Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Less-Than-Significant Impact. Due to the Central Valley's location away from the ocean, an impact from a tsunami is unlikely. The majority of the site is located within the 1% annual flood (100-year flood) area as mapped by Federal Emergency Management Agency (FEMA); however, the CMC Section 8.12, Floodplain Management lists standards and requirements for new construction within special flood zones; therefore, the Project would implement flood hazard management as required by the CMC. As a result of adhering to required flood hazard management, the Project would not risk the release of pollutants due to inundation and consequently, the Project would result in a **less-than-significant** impact would occur with no mitigation measures.

e) *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less-Than-Significant Impact. The City of Clovis is within the North Kings County Groundwater Sustainability Agency (GSA). Pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), certain regions in California are required to develop and implement a groundwater management plan that sustainably manages groundwater resources. The proposed Project would comply with the 2020 City of Clovis UWMP which promotes programs and policies to manage water supplies. Nevertheless, the Project would derive the majority of its water from surface water sources and does not propose or include plans for groundwater use. With regards to water quality control, the Project would be required to adhere to appropriate storm drain conveyance and the protection of water resources which would include the installation of backflow preventers. Consequently, the Project would result in a **less-than-significant** impact with no mitigation measures.

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 existing community?			X	
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?			X	

ENVIRONMENTAL SETTING

As described above in the Project Description, the Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities.

DISCUSSION

a) *Would the project physically divide an existing community?*

Less-Than-Significant Impact. Although the Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings, the surrounding area consists of primarily agricultural uses designated for future residential development at varying densities. Typically, physically dividing existing communities is associated with the construction of a new road intersecting an established area or introducing uses that are not necessarily in line with the existing uses and planned land uses of the area. However, the Project site has been previously designated in the 2014 Clovis General Plan and zoned for residential use.

Consequently, because the proposed Project is the type of use previously planned for this site and the general areas, it would not physically divide an existing community. Rather, it seeks to add new housing stock to the City with installation of a new public sidewalk and roadway infrastructure. Therefore, a **less-than-significant** impact would occur, and no mitigation measures are required.

b) *Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

Less-Than-Significant Impact. As mentioned in the Existing Setting Section above**,** the Project site is currently within the County of Fresno jurisdiction and zoned AE-20 (Exclusive Agricultural). However, the Project site will be rezoned to the R-1-PRD (Single-Family Planned Residential Development) Zone District though a separate entitlement application (Rezone 2024-005). According to Section 9.10.010(B)(5) of the CMC, the R-1-PRD Zone District identifies areas appropriate for single-family small lot uses, including attached and detached single-family structures on small lots. If approved, the Project will be required to go through the RSPR entitlement process for review for compliance with relevant design policies, such as in the Heritage Grove Master Plan, the CMC, and the General Plan. During the review, the height, color, and materials are reviewed for consistency with these plans and guidelines. As a result of the Project in complying with the land use and zoning designation upon approval, as well as the review process ensuring General Plan and other applicable policies are adhered to, the Project would result in a **less-than-significant** impact with regards to conflicting with a land use plan. No mitigation measures are required.

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?				X
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?				X

ENVIRONMENTAL SETTING

The City of Clovis 2014 General Plan EIR defines minerals as any naturally occurring chemical elements or compounds formed from inorganic processes and organic substances.[10] The 2014 General Plan EIR indicates that there are no active mines or inactive mines within the Plan Area of the City of Clovis.

DISCUSSION

a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

No Impact. As stated above, the City of Clovis does not have any active mines or inactive mines. Therefore, **no impact** would occur.

b) *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

No Impact. Please refer to the discussion under Section 12a.

10 2014 Clovis General Plan EIR, Chapter 5: Mineral Resources, page 5.11-1.

13. NOISE

Would the project:	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?			X	
b. Generation of excessive groundborne vibration or groundborne noise levels?			X	
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

ENVIRONMENTAL SETTING

The Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities. As such, existing ambient noise levels are typical of those associated with residential development, such as the sound of vehicles passing by, the sound of talking, and recreation could be expected within the Project vicinity. As a result of construction existing ambient noise levels may be slightly elevated as a result of the use of construction equipment, such as large trucks, tractors, and other construction tools associated with residential development. These increases would be temporary, however, and would cease upon completion of the neighborhood.

DISCUSSION

a) *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less-Than-Significant Impact. The Project would include development of 162 single-family homes on a primarily undeveloped site. Thus, the Project would result in a temporary and permanent increase in ambient noise levels as a result of construction and operation. However, as mentioned above, the Project site will be surrounded by residential development of varying densities. The Project would introduce new ambient noise from the construction and operation of the homes, these noises would represent the typical type of noise levels that is expected for a planned residential land use. While increases in ambient noise would occur due to the construction of the Project, this increase would be temporary and would be required to adhere to local regulations limiting the hours of construction.

The CMC Section 9.22.080, Noise, sets forth noise standards for development which would need to be complied with. For example, construction would only be permitted between the hours of 7:00 a.m. and 7:00 p.m. on weekdays, and between 9:00 a.m. and 5:00 p.m. on weekends. However, between June 1 and September 15, construction may begin at 6:00 a.m. on weekdays. Consequently, a **less-than-significant impact** would occur.

b) *Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

Less-Than-Significant Impact. The Project includes development of 162 single-family homes and associated infrastructure (i.e., sidewalks, roadways, curb, gutter, stormdrains, etc.). Therefore, construction equipment typical of the development of residential homes would be utilized temporarily. This equipment could include the use of heavy tractors, trucks, and other equipment; however, this type of equipment isn't typically associated with excessive groundborne vibration. If any vibration were to occur, it's likely that it would be temporary in nature and not at levels that would significantly impact the surrounding area. Further, the Project would be required to comply with the provisions of Section 9.22.090 of the CMC which requires that vibration not be perceptible along property lines and that it shall not interfere with operations or facilities on adjoining parcels. It's important to note also that temporary construction vibration and noise is exempt from these provisions due to the fact that construction is temporary. Overall, because the type of equipment likely to be used in the development of the Project is not considered to be of the type and intensity to result in substantial vibration or groundborne noise, the impact would be **less than significant** and no mitigation measures are required.

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The Project is located approximately seven (7) miles north of the Fresno Yosemite International Airport and is not within the Airport Influence Area, safety zones, noise, or airspace and overflight areas. Therefore, **no impact** would occur.

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 (for example, by proposing new homes and businesses) or indirectly (for example through extension of roads or other infrastructure)?			X	
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

ENVIRONMENTAL SETTING

The Project is located on a site that is planned for residential use in the 2014 Clovis General Plan. The Project site is ±14.57 acres and proposes 162 single-family homes.

DISCUSSION

a) *Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example through extension of roads or other infrastructure)?*

Less-Than-Significant Impact. The Project would result in 162 single-family homes. The Project site has an existing General Plan Land Use designation of Medium and Medium High Density Residential which allows for a blended density range. calculated with gross acres; the Project site would require a range of 60 to 183 dwelling units. The proposed density is 11.2 units per gross acre. Further, the Project includes residential use on a site that is planned for the type of use being proposed. Unplanned population growth is typically associated with providing new services in remote areas of the City or other infrastructure that was not previously identified in the General Plan. Although the Project would result in new housing units and population to the site, this growth was previously planned and anticipated under the 2014 General Plan. Thus, a **less-than-significant** impact would occur, and no mitigation measures are required.

b) *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

Less-Than-Significant Impact. The Project site is the Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities. Therefore, the Project would not result in the substantial displacement of existing people or housing and a **less-than-significant** impact would occur.

15. PUBLIC SERVICES

Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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:				
a. Fire protection?			X	
b. Police protection?			X	
c. Schools?			X	
d. Parks?			X	
e. Other public facilities?			X	

ENVIRONMENTAL SETTING

The Project would be served by the Clovis Fire Department, Clovis Police Department, with mutual aid from the City of Fresno, when needed. The Project site would also be within the Clovis Unified School District.

The nearest fire station is Fire Station #3, located approximately two (2) miles south of the site. The other closest fire station is Fire Station #5, located approximately five (5) miles to southeast of the site.

DISCUSSION

a) *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 fire protection services?*

Less-Than-Significant Impact. Although the Project would result in 162 new residential units, the site is located adjacent to an area of the City that is already served by the Clovis Fire Department. Upon annexation (RO310), the Project will then be located in an area the City will be able to serve. Also, the site itself is in close proximity to Fire Station's #3 and #5, which would mean that response times should be able to be maintained during calls for service. As part of the entitlement process for the Project, the Clovis Fire Department will review the design and site layout to ensure adequate fire safety measures and site circulation are achieved. This would include placement of new fire hydrants in certain locations throughout the site, adequate drive widths for fire truck and emergency vehicle access, and the appropriate application of fire codes, such as installation of sprinkler systems, fire alarms, and smoke detectors. Overall, with the site's close proximity to numerous fire stations, construction that would meet the latest fire code standards, and review by the Clovis Fire Department, impacts related to effects on the performance of the Fire Department would be **less-than-significant** and no mitigation measures are required.

b) *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 police protection services?*

Less-Than-Significant Impact. Although the Project would result in 162 new residential units, the site is located adjacent to an area of the City this already able to be served by the Clovis Police Department. Upon annexation (RO310), the Project will then be located in an area the City will be able to serve. The Clovis Police Department headquarters are located at 1233 Fifth Street, which is approximately five (5) miles from the site. As part of the entitlement process for the Project, the Clovis Police Department will review the design and site layout to ensure adequate safety measures are achieved. Consequently, a **less-than-significant** impact would occur and no mitigation measures are required.

c) *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 schools?*

Less-Than Significant Impact. As part of the review process, Clovis Unified School District (CUSD) is provided the opportunity to comment and work closely with the City as development is proposed. As mentioned previously, the Project site was previously planned for residential development, as indicated in the 2014 Clovis General Plan. As such, the CUSD has been aware of the potential for this type of development at this location. As part of the process, the Project would be required to pay school fees which typically go towards the improvement and/or construction of new schools or expanding existing schools if and when needed, as determined by the CUSD. Therefore, because the Project is consistent with what was previously planned for at this site in addition to payment of appropriate school fees set by the CUSD, a **less-than-significant** impact would occur and no mitigation measures are required.

d) *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 parks?*

Less-Than-Significant Impact. Although the Project proposes one (1) 8,639 square foot park and one (1) 13,358 square foot park, these parks would not cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives for parks. Furthermore, the Project is required to request annexation to and provide a covenant for the Landscape Maintenance District. Consequently, a **less-than-significant** impact would occur and no mitigation measures are required.

e) *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 other public facilities?*

Less-Than-Significant Impact. Although the Project would result in 162 new residential units, residential uses have been previously planned for in the 2014 Clovis General Plan in this area. Also, through the entitlement process, the Project would undergo review by several departments and agencies for compliance with appropriate regulations and policies. This could result in various impact fees that are intended to maintain and enhance public facilities as appropriate to be able to accommodate the Project. As such, payment of the typical development fees, as well as project review by the different department and agencies, would result in the Project having a **less-than-significant** impact to public facilities. No mitigation measures are required.

16. RECREATION

Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?			X	

ENVIRONMENTAL SETTING

The nearest existing recreational site is Dry Creek Trailhead, located at the corner of Shepherd and Sunnyside Avenues. A future community park is planned approximately 200 feet east of the Project site.

DISCUSSION

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?*

Less-Than-Significant Impact. As mentioned in the Population and Housing section of this Initial Study, the Project is of the type previously planned and accounted for in the 2014 Clovis General Plan. Although 162 new residential units would be constructed, therefore, adding new population to the area that may utilize parks within the surrounding area, this growth was planned for with regards to park usage throughout the city. Further, the Project itself would include landscaped and open space areas on-site for its residents, as well as a pocket park space within the neighborhood, thereby, providing areas of recreation within the site itself. The Project would also be required to comply with 2014 General Plan Policy 2.2 of the Open Space and Conservation Element which encourages the incorporation of on-site natural resources.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?*

Less-Than-Significant Impact. The Project site itself would construct an on-site neighborhood park. The Project itself would not require the construction or expansion of new recreational facilities elsewhere that would have an adverse physical effect on the environment. The Project would also be required to contribute a proportionate share towards the acquisition and development of future parks in order for the City to maintain its adopted ratio of providing four (4) acres of parkland per 1,000 residents, as stated in Policy 1.1 in the Open Space and Conservation Element of the 2014 General Plan, and Section 3.4.03 of the CMC. As such, a **less-than-significant** impact would occur and no mitigation measures are required.

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?			X	
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	X			
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d. Result in inadequate emergency access?			X	

ENVIRONMENTAL SETTING

The project is bound by N. Minnewawa Avenue to the west, E. Perrin Avenue to the north, and N. Clovis Avenue to the east. The circulation network serving the site including internal site circulation will be constructed as part of the project.

According to the 2014 Clovis General Plan Circulation Diagram in the Circulation Element (Figure C-1 of the Circulation Element), East Perrin Avenue is classified as a “Collector” street. Collectors generally intended to provide for relatively short distance travel between and within neighborhoods and that serve longer through trips. North Minnewawa and North Clovis Avenues are classified as “Arterial” roads. An arterial road is a high-capacity road that connects different areas of the city and is a crucial part of the national transportation system. Arterial roads are designed to carry large amounts of traffic efficiently and minimize delays.

A Transportation Impact Analysis (TIA) and Vehicle Miles Traveled Analysis (VMT) was prepared by JLB Traffic Engineering, Inc. in April of 2024 (included as Appendix D and E of this Initial Study). The information and analysis in the following sections is based in part on the results of the TIA and VMT.

DISCUSSION

a) *Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?*

Less-Than-Significant Impact. As mentioned above, the site is on land that was previously planned for residential use in the 2014 Clovis General Plan. As described in the Population and Housing section above, the Project will be consistent with the planned density. The 2024 Clovis General Plan considers level of service (LOS) D as the LOS standard vehicle traffic operations, except for roadway segments that are adopted in the City's General Plan EIR to operate at LOS E or F. At study intersections under the jurisdiction of the City of Clovis, a significant impact would occur at a signalized intersection when LOS falls below the target LOS of D with the addition of project traffic or when project increases the average delay at an intersection already operating at an unacceptable LOS.

The TIA studied seven (7) intersections 1) Minnewawa and Behymer Avenues, 2) Minnewawa and Perrin Avenues, 3) Clovis and Perrin Avenues (future), 4) Clovis and Baron Avenues, 5) Peach and Shepherd Avenues, 6) Minnewawa and Shepherd Avenues, and 7) Clovis and Shepherd Avenues for existing conditions, existing-plus-project conditions, near term with project conditions, and cumulative conditions to the year 2046. Each scenario is based on the Projects a.m. and p.m. peak hour trips as determined in the TIA. According to the TIA, the Project would result in 113 trips in the a.m. peak hours of between 7:00 a.m. and 9:00 a.m. and 152 trips in the p.m. peak hours between 4:00 p.m. and 6:00 p.m., as well as a total of 1,528 daily vehicle trips. Per the TIA, with incorporation of improvements recommended for each scenario, all study intersections will operate at satisfactory LOS levels thus, the Project, will not conflict with the Circulation Element of the 2014 General Plan. Consequently, a **less-than-significant** impact would occur. No mitigation measures are required.

b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

Significant and Unavoidable Impact. Senate Bill 743 (SB 743) requires that relevant CEQA analysis of transportation impacts be conducted using a metric known as vehicle miles traveled (VMT) instead of level of service (LOS). VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the proposed project adds excessive car travel onto our roads, the proposed project may cause a significant transportation impact. Per CEQA Guidelines Section 15064.3(b)(4) a lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

On October 17, 2022, the City of Clovis adopted the Transportation Impact Analysis Guidelines (Guidelines), dated September 15, 2022. Consistent with CEQA Guidelines Section 15064.3, the City of Clovis has adopted thresholds of significance to determine when a project will have a significant transportation impact based on VMT. The City has developed screening criteria to streamline the analysis for projects that meet certain criteria. A project will require a detailed VMT analysis unless it meets at least one of the City's five screening criteria[11]:

- Small Projects that generate less than 500 vehicle trips per day (i.e., Single-Family Residential developments with less than 53 dwelling units).
- Provision of affordable housing
- Local-serving retail projects with areas of 100,000 square feet and below
- Projects located in a High-Quality Transit Area (HQTA) as defined on page 8 of the City's Transportation Impact Analysis Guidelines
- Project located in low VMT area

The Project does not qualify for the screening criteria; therefore, shall be evaluated per Guidelines thresholds. The significance thresholds and specific VMT metrics are described on page 10 of the City's Transportation Impact Analysis Guidelines. Per the City's Transportation Impact Analysis Guidelines, the residential land use impact threshold is 14.1 VMT per capita. The Project will generate 48.5 VMT per capita which is greater than the threshold of 14.1 VMT per capita; therefore, the Project would create a significant transportation impact. Feasible mitigation measures must be identified to avoid or substantially reduce a significant impact under CEQA. Mitigation of VMT impacts typically requires changes in habits and behaviors of residents. Project design features that encourage mode shift from automobiles to transit or nonmotorized modes can potentially reduce project specific VMT. The potential VMT reduction was estimated using the California Air Pollution Control Officers Association's (CAPCOA) "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity – Designed for Local Governments, Communities, and Project Developers" dated December 2021.

Although the Project would create a significant transportation impact, the project is consistent with the City's General Plan. During preparation of the 2014 General Plan Circulation Element Update, a Supplemental Environmental Impact Report was prepared, along with a statement of Overriding consideration, that discussed the potential environmental impacts and required mitigation measures to be implemented/followed by all future projects that are consistent with the General Plan. The project will be conditioned to implement and follow these measures.

The City adopted a Supplemental Environmental Impact Report (SEIR) for the 2014 General Plan Circulation Element Update on October 17, 2022. The SEIR evaluated potential land uses consistent with the General Plan and their associated VMT impacts. The SEIR finds that implementation of the 2014 General Plan may result in VMT metrics that are greater than the applicable thresholds. Mitigation measures include policies to reduce VMT. Because the City cannot demonstrate that the implementation of these policies would achieve VMT reductions to meet the VMT thresholds, the impacts would remain significant and unavoidable. Therefore, following approval of the SEIR, individual land use development projects that are consistent with the 2014 General Plan have the opportunity to tier their environmental review from the General Plan SEIR pursuant to section 15152 of the CEQA Guidelines. The SEIR has disclosed the VMT impacts of land use development consistent with the General Plan. Therefore, significant, and unavoidable VMT impacts associated with the General Plan have already been disclosed. Because the proposed Project is consistent with the 2014 General Plan, the Project's significant transportation impact does not require the preparation of a project specific EIR. Although the Project, has been determined to be consistent with the 2014 General Plan and is tiering from the SEIR, it would remain a **significant and unavoidable impact**.

11 Transportation Impact Analysis, JLB Traffic Engineering, Inc., April 17, 2024, page 6.

c) *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Less-Than-Significant Impact. The Project would result in a significant impact if it would include features that would create a hazard such as a sharp curve in a new roadway or create a blind corner or result in sight distance issues from entryways. Through the entitlement process, the Project would undergo review by multiple City divisions, such as Planning and Engineering, to ensure that the site layout conforms to existing regulations, such as the CMC, and other applicable codes, such as the fire code and building code. During this review, the Project would need to make the necessary corrections to ensure that no hazardous design features would result from the Project. Further, the main roadway network (N. Minnewawa, E. Perrin and N. Clovis Avenues) will be constructed to City roadway standards. Therefore, because the Project would undergo site plan and design review to ensure consistency and adherence to applicable design and site layout guidelines, a **less-than-significant** impact would occur, and no mitigation measures are required.

d) *Would the project result in inadequate emergency access?*

Less-Than-Significant Impact. The Project would include two (2) ingress/egress access points to the proposed development, one (1) from N. Minnewawa Avenue and one (1) from E. Perrin Avenue. As part of the Project review, the Clovis Fire Department would review all plans to ensure adequate emergency access is provided. This review includes review for adequate roadway widths, turning radii, as well as adequate access to units and accessibility to water. Consequently, because the Project plans would be required by the CMC to be reviewed and approved by Clovis Fire Department and Police Department prior to construction, this impact would be **less-than-significant** and no mitigation measures are required.

18. TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?				X
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe?		X		

ENVIRONMENTAL SETTING

On September 25, 2014, Governor Jerry Brown signed Assembly Bill (AB52), which intends to protect a new class of recourse under CEQA. This new class is Tribal Cultural Resources and provides an avenue to identify Tribal Cultural resources through a consultation process. AB52 applies to all projects where a Notice of

Determination is filed. Furthermore, the consultation process is required to be complete prior to filing a Notice of Intent.

City staff conducted Native American Consultation in compliance with AB52. In compliance with AB52, invitations for consultation were mailed on July 2, 2024, which affords Native tribes thirty (30) days to respond and to request consultation. During this timeframe, no requests for consultations were received. The Cultural Study prepared by Peak & Associates Inc. dated December 2023 included a records search from the CHRIS SSJVIC and no tribal resources were found.

DISCUSSION

a) *Would the project cause a substantial adverse change to a listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

No Impact. See discussion under Section 5a.

b) *Would the project cause a substantial adverse change to a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe?*

Less-Than-Significant Impact With Mitigation. The Project site is developed but would require trenching and ground-disturbing activities during construction for the installation of utility infrastructure needed to serve the Project. Although no cultural resources were identified at the site, the potential remains that cultural resources could be inadvertently discovered during ground-disturbing activities. However, implementation of Mitigation Measures TCR-1 and TCR-2 below would reduce potential significant impacts and ensure protection in the event of accidental discovery of any cultural resources. With Mitigation Measure TCR-1 and TCR-2, impacts would be **less-than-significant with mitigation**.

Mitigation Measure TCR-1: If cultural or archaeological materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants.

If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.

If a potentially eligible resource is encountered, then the qualified professional archaeologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.

Mitigation Measure TCR-2: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Lead Agency.

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 storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c. Result in a determination by the wastewater treatment provider that 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?			X	
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?			X	
e. Comply with federal, state, and local management reduction statutes and regulations related to solid waste?			X	

ENVIRONMENTAL SETTING

The electricity and natural gas services in the City of Clovis are provided by PG&E. AT&T/SBC provides telephone service to the City.

The City's water supply sources include groundwater drawn from the Kings Sub-basin of the San Joaquin Valley Groundwater Basin and surface water from the FID. Surface water is treated at the City of Clovis Surface Water Treatment Facility.

The City of Clovis provides sewer collection service to its residents and businesses. Treatment of wastewater occurs at the Fresno-Clovis Regional Wastewater Treatment Plant (RWTP). The Fresno-Clovis RWTP is operated and maintained by the City of Fresno and operates under a waste discharge requirement issued by the Central Valley Regional Water Quality Control Board. Additionally, the City has completed a 2.8 mgd wastewater treatment/water reuse facility, which will service the City's new growth areas.

The FMFCD has the responsibility for storm water management within the Fresno-Clovis metropolitan area of the Project site. Stormwater runoff that is generated by land development is controlled through a system of pipelines and storm drainage detention basins.

DISCUSSION

a) *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

Less-Than-Significant Impact. The Project includes construction of 162 residential units. As mentioned above, the site is a use previously accounted for in the 2014 Clovis General Plan. Further, as part of the review process for the Project, the wastewater impacts will be evaluated by the City Engineer to ensure compliance with the City's Wastewater Master Plan, as well as FMFCD, so that the Project would not exceed wastewater treatment requirements such that a new facility would be required nor would the existing treatment facility need to be expanded. While the Project would introduce new units at this site, the type of development would be consistent with the land use designation and Zone District. Upon review and approval by the City Engineer, the Project would result in a **less-than-significant** impact. No mitigation measures are required.

b) *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

Less-Than-Significant Impact. The Project is of the type of development previously accounted for the in 2014 Clovis General Plan. The Project will be primarily served through surface water and will be required to purchase water allocation rights through Fresno Irrigation District. Therefore, the Project is anticipated to be adequately served by City water. Further, the Project would comply with current Green Building Codes, as well as the water efficient landscape policies with regards to water conserving features. Lastly, the Project would be required to comply several water conserving policies, such as Policy 3.4 and 3.5 of the Open Space and Conservation Element. Overall, a **less-than-significant** impact would occur with no mitigation measures

c) *Would the project result in a determination by the wastewater treatment provider that 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?*

Less-Than-Significant Impact. Because the Project is of the type previously planned and accounted for in the 2014 Clovis General Plan, it is not likely that the Project would result in a demand that would exceed the capacity of the wastewater treatment facility. Further, the Project is reviewed by the appropriate departments and agencies to ensure compliance and adequate capacity with regard to infrastructure, such as the ability to provide adequate wastewater treatment. Consequently, the impact would be **less than significant**. No mitigation measures are required.

d) *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less-Than-Significant Impact. The Project would introduce new solid waste throughout construction and operation of the Project. However, the Project would be required to comply with Chapter 6.3.1, Recycling and Diversion of Construction and Demolition Debris, of the CMC during construction. This section of the CMC requires that a minimum of fifty percent (50%) of waste tonnage from a project be diverted from disposal, and that all new residential (and commercial) construction within the City shall submit and obtain approval for a waste management plan prior to construction activities. Compliance with these measures would ensure that the Project does not result in a significant impact during the construction phase of the Project. Further, compliance with policies in the General Plan for the reduction and recycling of solid waste would serve to reduce impacts of solid waste by promoting and encouraging the recycling of materials. Lastly, according to the California Department of Resources Recycling and Recovery (CalRecycle), the City of Clovis has exceeded their target per resident disposal rate of 4.7 pounds per day per resident, meaning that Clovis residents are actually producing less solid waste than the target set by the State.[12] Consequently, a **less-than-significant** impact would occur. No mitigation measures are required.

e) *Would the project comply with federal, state, and local management reduction statutes and regulations related to solid waste?*

Less-Than-Significant. See discussion 19d above.

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?			X	
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?			X	
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?			X	
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 changes?			X	

ENVIRONMENTAL SETTING

The Project is situated on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities.

12 Calrecycle, City of Clovis, https://www2.calrecycle.ca.gov/LGCentral/DiversionProgram/JurisdictionDiversionPost2006, accessed September 30, 2024.

DISCUSSION

a) *Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

Less-Than-Significant Impact. The Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities. The Project will be required to improve N. Minnewawa and E. Perrin Avenues to City Standards. Additionally, the N. Clovis Alignment must be constructed as part of the Project. Although the Project could result in temporary traffic detouring or closures during buildout, these delays would be temporary and would be coordinated with the City Engineering Division and other departments to ensure safe access to and from the area is maintained. Further, the site itself would be reviewed by City departments to ensure adequate site access and circulation is provided in the event of an emergency. Overall, a **less-than-significant** impact would occur with no mitigation measures.

b) *Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Less-Than-Significant Impact. The general vicinity of the site is flat, therefore, is not of the type of topography nor in a location likely to exacerbate wildfire risks. Additionally, the Project site is located in an area mapped by CAL FIRE as “unzoned” per the Fire Hazard Severity Zone Viewer, indicating the area is not located in an area within State Responsibility Areas into Fire Hazard Severity Zones. Further, the Project would be required to comply with the latest fire codes and would be required to include sprinklers on the interior of the homes and require installation of several hydrants throughout the site. Lastly, the site plans would undergo review by the Clovis Fire Department to ensure that all fire safety regulations are met. Therefore, a **less-than-significant** impact would occur with no mitigation measures.

c) *Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Less-Than-Significant Impact. As a new development, installation of a private roadway network, water lines, and power lines would be required; however, these utilities and infrastructure are typical of residential development and would be constructed to standards of the respective agencies and departments which oversee them, as well as be required to comply all necessary plan review and permitting requirements of such departments and agencies. As such, a **less-than-significant** impact would occur. No mitigation measures are required.

d) *Would the project 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 changes?*

Less-Than-Significant Impact. The City of Clovis has generally flat topography, and the site itself is in an area that is not in close proximity to hillsides that would expose people or structures to significant risks associates with downstream flooding or landslides as a result of runoff or post-fire slope instability. As such, a **less-than-significant** impact would occur.

21. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact

		Incorporated		
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?			X	
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)?			X	
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X	

ENVIRONMENTAL SETTING

The Project is located on a primarily undeveloped site with three single-family residences, and accessory buildings. The site is surrounded by primarily agricultural uses designated for future residential development at varying densities.

DISCUSSION

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?*

Less-Than-Significant Impact. As discussed throughout the Initial Study, the Project would result in a significant and unavoidable VMT impact. However, during preparation of the General Plan, an EIR was prepared, along with a Statement of Overriding Consideration, that discussed the potential environmental impacts and required mitigation measures to be implemented/followed by all future projects that are consistent with the General Plan. Therefore, though the proposed project would have a significant and unavoidable transportation impact under CEQA, no further mitigation measure would be required for the project related to VMT. The proposed project would be conditioned to implement and follow mitigation measures prescribed above. Therefore, the Project would have a **less-than-significant** impact as it would not substantially degrade the quality of the environment.

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)?*

Less-Than-Significant Impact. The Project includes mitigation measures in certain topic areas identified throughout this Initial Study, which would reduce potential impacts to a less-than-significant level. None of these impacts would be cumulatively considerable since most are either temporary impacts from construction or site specific. With the exception of VMT, the Project was found to have a less-than-significant impact as discussed in this Initial Study. As such, this Project would be required to comply with those same regulations, ensuring adequate mitigation as development occurs. Lastly, while the Project would introduce 162 new residential units to an existing vacant site, the type of use was previously accounted for in the 2014 Clovis General Plan buildout. Thus, a **less-than-significant** impact would occur with no mitigation measures.

c) *Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?*

Less-Than-Significant Impact. As discussed throughout the document, the Project would not result in an impact that could not be mitigated to a less-than-significant level. Therefore, a **less-than-significant** impact would occur. No migration measures are required.

I. Report Preparation

LEAD AGENCY

Marissa Jensen, MA
Assistant Planner
City of Clovis
Planning & Development Services

TECHNICAL STUDIES

Air Quality and Greenhouse Gas Emissions Technical Memorandum
Bonadelle TM6467
Johnson, Johnson and Miller Air Quality Consulting Services

Biological Resources Assessment
TM6467 Perrin Avenue at Minnewawa Ave. Clovis, CA
Argonaut Ecological Consulting, Inc.

Cultural Resource Assessment
Tentative Map 6467 Project
Melinda A. Peak
Peak & Associates, Inc.

Traffic Impact Analysis Report
Clovis and Perrin Subdivision
JLB Traffic Engineering, Inc.

Vehicle Miles Traveled Analysis
Clovis and Perrin Subdivision
JLB Traffic Engineering, Inc

MITIGATION MONITORING AND REPORTING PROGRAM
TM6467

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
Air Quality				
AIR-1	Before a construction permit is issued for the proposed project, the project applicant, project sponsor, or construction contractor shall submit documentation demonstrating reasonably detailed compliance with the following requirements to the City of Clovis: (1) Where portable diesel engines are used during construction, all off-road equipment with engines greater than 50 horsepower shall have engines that meet or exceed either United States Environmental Protection Agency (EPA) or California Air Resources Board (CARB) Tier 4 Interim off-road emission standards or be equipped with Level 3 diesel particulate filters. Tier 4 Interim engines shall, at a minimum, meet EPA or CARB particulate matter emissions standards for Tier 4 Interim engines. Alternatively, use of CARB-certified Level 3 diesel particulate filters on off-road equipment with engines greater than 50 horsepower can be used in lieu of Tier 4 Interim engines or in combination with Tier 4 Interim or better engines. The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to,	City of Clovis Planning	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number. The project applicant and/or construction contractor shall submit the construction operations plan and records of compliance to the City of Clovis.			
Biological Resources				
BIO-1	If ground disturbance (including grading, grubbing, home demolition, tree removal, or construction equipment and materials mobilization) is initiated during the nesting season (February 1 – August 31), a pre-construction survey for potential nesting raptors, migratory birds, and burrowing is recommended.	City of Clovis Planning	*Prior to Permits and During Construction*	
Cultural Resources				
CULT-1	If archaeological or tribal resources or materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants.	City of Clovis Planning	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. If a potentially-eligible resource is encountered, then the qualified professional archaeologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.			
CULT-2	If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code and Project shall follow the procedures and protocols set for un CEQA Guidelines Section 15064.4(e)(1). If human remains are identified to be those of Native American, California Health and Safety Code 7050.5 requires the County coroner notify the NAHC within 24 hours of discovery. All reports, correspondence, and determinations regarding the discovery of human	City of Clovis Planning	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	remains on the project site shall be submitted to the Lead Agency.			
Geological Resources				
GEO-1	If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist and/or paleontologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified professional determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. If a potentially-eligible resource is encountered, then the qualified professional archaeologist and/or paleontologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The	City of Clovis Planning	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.			
Greenhouse Gas Emissions				
GHG-1	In order to meet the 2022 Scoping Plan GHG requirements, consistent with State GHG reduction and equity prioritization goals, each residential unit shall provide electric vehicle charging capabilities as part of the final project designs.	City of Clovis Planning	*Prior to Permits and During Construction*	
Tribal Cultural Resources				
TCR-1	If archaeological or tribal resources or materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These	City of Clovis Planning	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	additional studies may include avoidance, testing, and evaluation or data recovery excavation. If a potentially-eligible resource is encountered, then the qualified professional archaeologist, the Lead Agency, and the project proponent shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Lead Agency as verification that the provisions for managing unanticipated discoveries have been met.			
TCR-2	If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code and Project shall follow the procedures and protocols set for un CEQA Guidelines Section 15064.4(e)(1). If human remains are identified to be those of Native American, California Health and Safety Code 7050.5 requires the County coroner notify the NAHC within 24 hours of discovery. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Lead Agency.	City of Clovis Planning	*Prior to Permits and During Construction*	

To: John A. Bonadelle
Director of Operations
Bonadelle Homes
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From: Johnson Johnson and Miller Air Quality Consulting Services
Richard Miller, Air Quality and Climate Change Specialist
rmiller.jjm.environmental@gmail.com

Bonadelle TM6467 Project—Clovis, California

Date: December 27, 2023

Subject: Air Quality/Greenhouse Gas Emissions Technical Memorandum

This Air Quality/Greenhouse Gas Emissions Technical Memorandum was prepared to evaluate whether the estimated criteria air pollutant, ozone precursor, toxic air contaminant (TAC), and/or greenhouse gas (GHG) emissions generated from construction and/or operation of the TM6467 Residential Development Project would cause significant impacts to air resources in the project area. The respective analyses were conducted within the context of the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] § 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD) for the quantification of emissions and evaluation of potential impacts to air resources[1] and the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under the California Environmental Quality Act.[2]

Project Location and Description

The TM6467 Bonadelle Homes Residential Development Project (project or proposed project) consists of the construction and development of 162 single-family residential homes and two (2) parks on approximately 14.57 gross acres in Fresno County, California. The project site is currently in unincorporated Fresno County and will be annexed into the City of Clovis. The project site is located southeast of the intersection of E. Perrin Avenue and N. Minnewawa Avenue. The Assessor's Parcel Numbers (APNs) associated with the project site include: 556030045, 556030065, 556030085 and 556030095.

The project is anticipated to start in November 2024 and be developed in a single phase. Lot development is expected to be completed by November 2025, while vertical construction of homes expected to last until 2028.

An aerial view of the project site is shown in Figure 1 and in Attachment A. The project site plan is included as part of Attachment A.

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1 San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impacts. February 19. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed December 6, 2023.

2 San Joaquin Valley Air Pollution Control District (SJVAPCD). 2009. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. December 17. Website: https://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf. Accessed December 6, 2023.Th

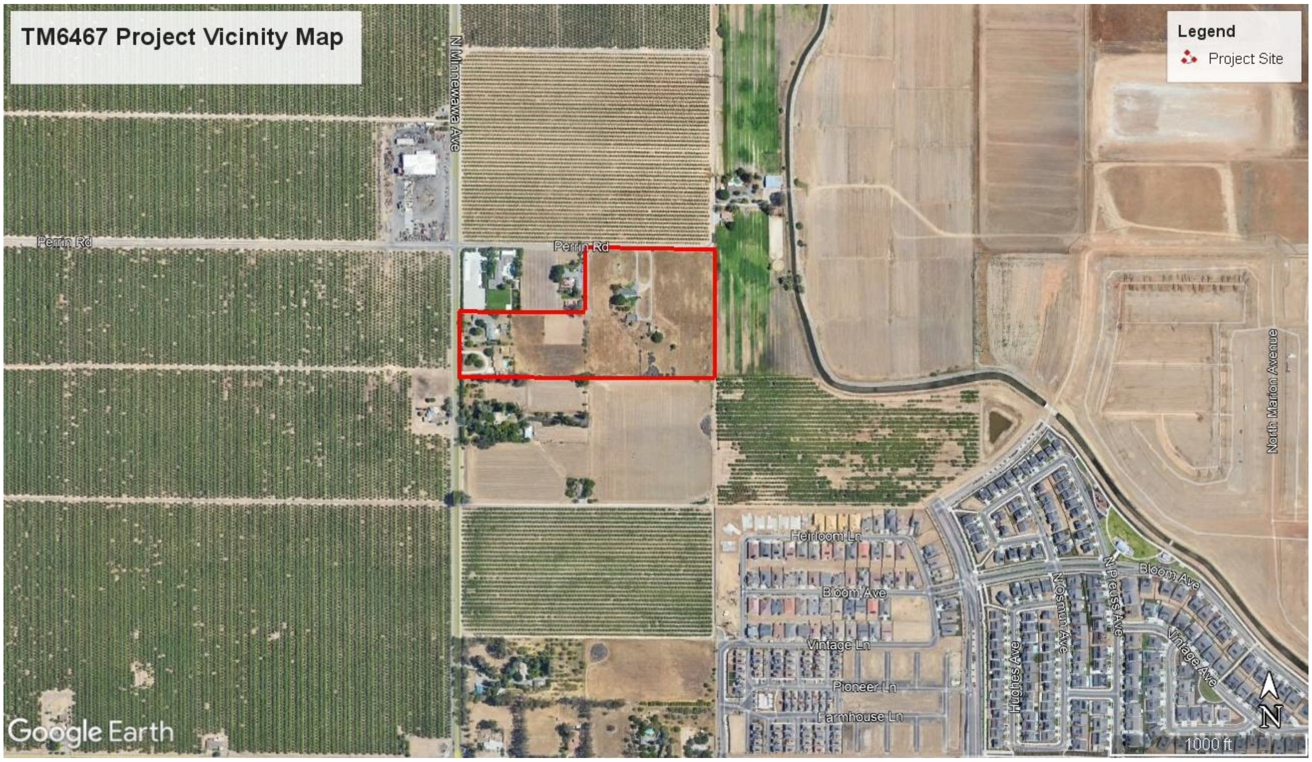

Figure 1 – Bonadelle TM6467 Project Vicinity Map

Summary of Analysis Results

The following is a summary of the analysis results. As shown below, the proposed project would result in less than significant impacts to air quality and GHG resources. Mitigation is required during the construction period to reduce Impact AIR-3.

Impact AIR-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact.**

Impact AIR-2: 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? **Less than significant impact.**

Impact AIR-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact with incorporation of mitigation.**

Impact AIR-4: The proposed project would not create objectionable odors affecting a substantial number of people. **Less than significant impact.**

Impact GHG-1: The proposed project would not generate direct or indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less than significant impact.**

Impact GHG-2: The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. **Less than significant impact**.

Mitigation Measures

Air Quality Mitigation Measures

MM AIR-1 is required to reduce the project's potential impacts during construction to less than significant (see Impact AIR-3).

MM AIR-1 Before a construction permit is issued for the proposed project, the project applicant, project sponsor, or construction contractor shall submit documentation demonstrating reasonably detailed compliance with the following requirements to the City of Clovis:

(1) Where portable diesel engines are used during construction, all off-road equipment with engines greater than 50 horsepower shall have engines that meet or exceed either United States Environmental Protection Agency (EPA) or California Air Resources Board (CARB) Tier 4 Interim off-road emission standards or be equipped with Level 3 diesel particulate filters. Tier 4 Interim engines shall, at a minimum, meet EPA or CARB particulate matter emissions standards for Tier 4 Interim engines. Alternatively, use of CARB-certified Level 3 diesel particulate filters on off-road equipment with engines greater than 50 horsepower can be used in lieu of Tier 4 Interim engines or in combination with Tier 4 Interim or better engines. The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number. The project applicant and/or construction contractor shall submit the construction operations plan and records of compliance to the City of Clovis.

Greenhouse Gas Emissions Mitigation Measures

No mitigation is required.

Modeling Parameters and Assumptions

The following modeling parameters and assumptions were used to generate criteria air pollutant (including precursors), Toxic Air Contaminants (TACs), and greenhouse gas (GHG) emissions for the proposed project.

Air Pollutants and GHGs Assessed

Criteria Pollutants Assessed

The following criteria air pollutants were assessed in this analysis: reactive organic gases (ROG), oxides of nitrogen (NO_X), carbon monoxide (CO), sulfur oxides (SO_X), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

Note that the proposed project would emit ozone precursors ROG and NO_X. However, the proposed project would not directly emit ozone since it is formed in the atmosphere during the photochemical reaction of ozone precursors.

The residential and park project does not contain sources that would produce substantial quantities of SO_X emissions during construction or operation. Modeling conducted for the project is provided in Attachment A and includes SO_2 emission estimates. No further analysis of SO_2 is required.

GHGs Assessed

This analysis was restricted to GHGs identified by AB 32, which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). The proposed project would generate a variety of GHGs, including several defined by AB 32 such as CO_2, CH_4, and N_2O.

Certain GHGs defined by AB 32 would not be emitted by the residential and park project. HFCs, PFCs, SF_6, and NF_3 are typically used in industrial applications, none of which would be used for typical residential operations. Therefore, it is not anticipated that the proposed project would emit those GHGs.

GHG emissions associated with the proposed project construction, as well as future operations were estimated using CO_2 equivalent (CO_2e) emissions as a proxy for all GHG emissions. Construction GHG emissions were amortized over the lifetime of the proposed project. In order to obtain the CO_2e, an individual GHG is multiplied by its Global Warming Potential (GWP). The GWP designates on a pound for pound basis the potency of the GHG compared to CO_2.

Toxic Air Containments Assessed

Diesel particulate matter (DPM)

Studies indicate that diesel particulate matter (DPM) poses the greatest health risk among airborne TACs. The California Air Resources Board (CARB) conducted a 10-year research program that demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic long-term health risk.

DPM is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases: gas and particle. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines, such as the on-road diesel engines of trucks, buses, and cars, and off-road diesel engines that include locomotives, marine vessels, and heavy-duty equipment.[3]

For purposes of this analysis, DPM exhaust emissions are represented as particulate matter that is 10 micrometers in diameter and smaller (PM_{10}).

Asbestos

Asbestos is a fibrous mineral that both naturally occurs in ultramafic rock (a rock type commonly found in California) and is used as a processed component of building materials. Because asbestos has been proven to cause a number of disabling and fatal diseases, such as asbestosis and lung cancer, it is strictly regulated either based on its natural widespread occurrence or in its use as a building material. In the initial Asbestos National Emission Standards for Hazardous Air Pollutants rule promulgated in 1973, a distinction was made between building materials that would readily release asbestos fibers when damaged or disturbed (friable) and those materials that were unlikely to result in significant fiber release (non-friable). The U.S. Environmental Protection Agency (EPA) has since determined that, when severely damaged, otherwise non-friable materials can release significant amounts of asbestos fibers. Asbestos has been banned from many building materials under the Toxic Substances Control Act, the Clean Air Act, and the Consumer Product Safety Act. Naturally occurring asbestos (NOA) is known to occur in many parts of California and is commonly associated with ultramafic or serpentinite rock.

Model Selection

Criteria Pollutants and GHG Emissions—Model Selection

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. CalEEMod quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, CalEEMod identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

CalEEMod was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided in the model to account for local requirements and conditions.

The project is located in the City of Clovis and within the San Joaquin Valley Air Basin. The modeling follows SJVAPCD guidance, where applicable, from its GAMAQI. The models used in this analysis are summarized as follows:

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[3] California Air Resources Board (CARB). 2019. Overview: Diesel Exhaust and Health. Website: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health. Accessed December 6, 2023.

- Construction emissions: CalEEMod, version 2022.1 (2022.1.1.21, released 12/05/2023)
- Operational emissions: CalEEMod, version 2022.1 (2022.1.1.21, released 12/05/2023)
- Operational TAC emissions: EMission FACtor (EMFAC) 2021
- Dispersion Model: American Meteorological Society/ Environmental Protection Agency Regulatory Model (AERMOD), version 22112
- Health Risk Metric Calculations: Hot Spots Analysis & Reporting Program 2 (HARP2)

Construction DPM emissions (represented as PM_{10} exhaust) were estimated using CalEEMod version 2022.1. Emissions were estimated for the unmitigated scenario, which included compliance with dust control measures that would be required through compliance with existing regulations.

Toxic Air Containments—Model Selection and Parameters

An air dispersion model is a mathematical formulation used to estimate the air quality impacts at specific locations (receptors) surrounding a source of emissions given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the U.S. EPA AERMOD (version 22112) air dispersion model. Specifically, AERMOD was used to estimate levels of air emissions at sensitive receptor locations from potential sources of project-generated TACs during the construction period. The use of AERMOD provides a refined methodology for estimating construction impacts by utilizing long-term, measured representative meteorological data for the project site and a representative construction schedule.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the sensitive receptors. Direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source location. Terrain elevations were obtained for the project site using the AERMAP model, the AERMOD terrain data pre-processor. The air dispersion model assessment used meteorological data from the Fresno Station (Station #93193). The meteorological data used was preprocessed for use with AERMOD by the SJVAPCD and included data for the years 2010 to 2014; all years were used in the assessment. To evaluate the proposed project's localized impacts at the point of maximum impact, all receptors were placed within the breathing zone at 1.2 meters above ground level.

For the construction period, construction emissions were assumed to be distributed over the project site with a working schedule of eight hours per day and five days per week. Emissions were adjusted by a factor of 4.2 to convert for use with a 24-hour-per-day, 365 day-per-year averaging period. To assess impacts during construction, project operations were assessed assuming a 24-hour-per-day, and seven day-per-week schedule. Detailed parameters and complete calculations are contained in Attachment B.

Assumptions

Construction Modeling Assumptions

Schedule

The proposed project would require various tasks including site preparation, grading, building construction, paving, and architectural coating (painting). Table 1 shows the construction schedule used to estimate emissions for the purposes of assessing air quality impacts. The construction schedule utilized in the analysis represents a “worst-case” analysis scenario since emission factors for construction equipment decrease as the analysis year increases, due to improvements in technology and more stringent regulatory requirements. Therefore, construction emissions would be similar or decrease if the construction schedule moved to later years or is phased over multiple years. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as required per CEQA guidelines. The site-specific construction fleet may vary due to specific project needs at the time of construction.

Table 1: Project Construction Schedule

Construction Task	Start Date	End Date	Number of Days per Week	Number of Workdays per Phase
Demolition	11/1/2024	11/29/2024	5	20
Site Preparation	11/30/2024	12/14/2024	5	10
Grading	12/15/2024	1/26/2025	5	30
Paving	1/27/2025	2/21/2025	5	20
Trenching/Utilities	2/22/2025	10/03/2025	5	160
Building Construction	10/04/2025	1/21/2028	5	600
Architectural Coating	1/22/2028	2/18/2028	5	20
Source: Modeling Assumptions and CalEEMod Output Files (Attachment A).				

Equipment

The off-road equipment fleet assumptions for construction were generated using default values from CalEEMod. CalEEMod generates construction fleets for construction activities based on the size of the construction areas. Construction equipment for each construction activity is shown in Table 2.

Table 2: Project Construction Equipment

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor	Fuel Type
Demolition	Rubber Tired Dozers	2	8	367	0.40	Diesel
	Excavators	3	8	36	0.38	Diesel
	Concrete/Industrial Saws	1	8	33	0.73	Diesel
Site Preparation	Rubber Tired Dozers	3	8	367	0.40	Diesel
	Tractors/Loaders/Backhoes	4	8	84	0.37	Diesel
Grading	Graders	1	8	148	0.41	Diesel
	Excavators	2	8	36	0.38	Diesel
	Tractors/Loaders/Backhoes	2	8	84	0.37	Diesel
	Scrapers	2	8	423	0.48	Diesel
	Rubber Tired Dozers	1	8	367	0.40	Diesel
Paving	Pavers	2	8	81	0.42	Diesel

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor	Fuel Type
	Paving Equipment	2	8	89	0.36	Diesel
	Rollers	2	8	36	0.38	Diesel
Trenching/Utilities[1]	Tractors/Loaders/Backhoes	2	8	84	0.37	Diesel
	Trenchers	1	8	40	0.50	Diesel
	Rubber Tired Dozers	1	8	367	0.40	Diesel
Building Construction	Forklifts	3	8	82	0.20	Diesel
	Generator Sets	1	8	14	0.74	Diesel
	Cranes[2]	1	3.5	367	0.29	Diesel
	Welders	1	8	46	0.45	Diesel
	Tractors/Loaders/Backhoes	3	7	84	0.37	Diesel
Architectural Coating	Air Compressors	1	6	37	0.48	Diesel

Notes:
[1] Equipment added to the Trenching/Utilities phase, as this phase was not generated as a CalEEMod-default phase. The Trenching/Utilities phase was added to reflect the applicant-provided construction schedule.
[2] The crane usage hours were adjusted to retain default HP hours, as the duration for the building construction phase was doubled to reflect the applicant-provided construction schedule.
Source: Modeling Assumptions and CalEEMod Output Files (Attachment A).

Vehicles Trips

Table 3 provides a summary of the construction-related vehicle trips. CalEEMod default values were used to estimate the number of construction-related vehicle trips and were supplemented with additional purpose-based trips to avoid underestimating emissions from on-road vehicles anticipated during the construction period.

The default values for hauling trips are based on the assumption that a truck can haul 20 tons (or 16 cubic yards) of material per load. If one load of material is delivered, CalEEMod assumes that one haul truck importing material will also have a return trip with an empty truck (e.g., 2 one-way trips).

The fleet mix for worker trips is light-duty passenger vehicles to light-duty trucks. The vendor trips fleet mix is composed of a mixture of medium and heavy-duty diesel trucks. The hauling trips were assumed to be 100 percent heavy-duty diesel truck trips. CalEEMod default trip lengths for a project in Fresno County were used for the worker (7.7 miles), vendor (4 miles), and hauling (20 miles) trips.

Table 3: Construction Vehicle Trips

Construction Task	Worker Trips per Day	Vendor Trips per Day	Haul Trips per Day
Demolition	15	4	0.95
Site Preparation	17.5	4	0
Grading	20	4	20.83
Paving	15	4	0
Trenching/Utilities	10	4	0

Building Construction	58.32	17.32	0
Architectural Coating	11.664	4	0

Notes:
Vendor trips were added to the demolition, site preparation, grading, paving, trenching/utilities, and architectural coating to account for delivery of materials.
Demolition: The existing houses and structures were measured using Google Earth and input into CalEEMod to be demolished.
Cut and fill estimates: Based on applicant-provided information, cut and fill is expected to balance on-site. 2,500 cubic yards of fill estimated to be imported and 2,500 cubic yards to be exported during the grading phase to provide a conservative estimate of emissions.
CalEEMod default trips account for miscellaneous trips in the building construction phases, which were retained in the modeling.
Source: Modeling Assumptions and CalEEMod Output Files (Attachment A).

Operational Modeling Assumptions

Operational emissions are those emissions that occur during operation of the proposed project. The sources are summarized below.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the proposed project site during project operations. Assumptions were based on the ITE Trip Generation Manual, 11th Edition for the ITE Land Use 210 – Single-family detached housing. The trip generation rates used to estimate air pollutant and GHG emissions associated with the project are shown in Table 4.

Table 4: Trip Generation Rates Used to Estimate Emissions

Land Use Type	Units	Weekday	Saturday	Sunday
Daily Trip Rates				
Single-Family Housing (210)	DU	9.43 trips/DU	9.48 trips/DU	8.48 trips/DU
Daily Trips				
Project	162 DU	1,527.66	1,535.76	1,373.76

Notes: DU = dwelling units
Source of Trip Rates: Institute of Transportation Engineers (ITE), Trip generation Manual 11th Edition, with ITE code in parentheses.

Trip Lengths

The CalEEMod default trip lengths for development in Fresno County were used in this analysis. Trip lengths are for primary trips. Trip purposes are primary, diverted, and pass-by trips. Diverted trips take a slightly different path than a primary trip. The CalEEMod defaults for percentages of primary, diverted, and pass-by trips were used in the analysis.

Vehicle Fleet Mix

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the proposed project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline- and diesel-powered vehicles). The vehicle fleet mix for the single-family homes was revised to reflect the residential fleet mix approved by SJVAPCD for each year analyzed. The CalEEMod default fleet mix was retained for the park land use.

Area Sources

Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. “Consumer Product” means a chemically formulated product used by household and institutional consumers, including but not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint products, furniture coatings, or architectural coatings. CalEEMod includes default consumer product use rates based on building square footage. The default emission factors developed for CalEEMod were used for consumer products were used.

Architectural Coatings (Painting)

Paints release VOC emissions. The single-family homes included as part of the proposed project would be repainted on occasion. CalEEMod defaults were used for this purpose.

Landscaping Emissions

CalEEMod estimates a total of 180 days for which landscaping equipment would be used to estimate potential emissions for the proposed project.

Indirect Emissions

For GHG emissions, CalEEMod contains calculations to estimate indirect GHG emissions. Indirect emissions are emissions where the location of consumption or activity is different from where actual emissions are generated. For example, electricity would be consumed at the proposed project site; however, emissions associated with producing that electricity are generated off-site at a power plant. Since the electricity can vary greatly based on locations, the user should override these values if they have more specific information regarding their specific water supply and treatment.

Energy Use

The emissions associated with the building electricity and natural gas usage (non-hearth) were estimated based on the land use type and size.

The Renewables Portfolio Standard (RPS) took effect in 2020. The Renewable Electricity Standard requires that electricity providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. The utilities in California will be required to increase the use of renewable energy sources to 60 percent by 2030.

Other Indirect Emissions (Water Use, Wastewater Use, and Solid Waste)

CalEEMod includes calculations for indirect GHG emissions for electricity consumption, water consumption, and solid waste disposal. For water consumption, CalEEMod calculates embedded energy (e.g., treatment, conveyance, distribution) associated with providing each gallon of potable water to the project. For solid waste disposal, GHG emissions are associated with the disposal of solid waste generated by the proposed project into landfills. CalEEMod default data were used for inputs associated with solid waste.

AIR QUALITY

Environmental Setting

Air quality impacts are both local and regional. Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season. The project is located in the City of Clovis, within Fresno County. The project site and Fresno County are in the San Joaquin Valley Air Basin (Air Basin or SJV Air Basin), which experiences some of the most challenging environmental conditions for air quality in the nation. The following section describes these conditions as they pertain to the Air Basin. The information in this section is primarily from the SJVAPCD's GAMAQI.[4]

Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants and can channel air from upwind areas that transports pollutants to downwind areas. The SJVAPCD covers the entirety of the SJV Air Basin. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Climate

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The SJV Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the SJV Air Basin averages over 260 sunny days per year.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the SJV Air Basin form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin portion of Kern County. As the wind moves through the SJV Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high

[4] San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impacts. February 19. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed December 11, 2023.

pressure and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong, low-level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and PM_{10}.

Criteria Air Pollutants

The Federal Clean Air Act (FCAA) establishes the framework for modern air pollution control. The FCAA, enacted in 1970 and amended in 1990, directs the U.S. EPA to establish ambient air quality standards. These standards are divided into primary and secondary standards. The primary standards are set to protect human health, and the secondary standards are set to protect environmental values, such as plant and animal life. The FCAA requires the EPA to set National Ambient Air Quality Standards for the six criteria air pollutants. These pollutants include particulate matter (PM), ground-level ozone, carbon monoxide (CO), sulfur oxides, nitrogen oxides, and lead.

Toxic Air Contaminants

A toxic air contaminant (TAC) is an air pollutant not included in the California Ambient Air Quality Standards, but TACs are considered hazardous to human health. Toxic air contaminants are defined by the California Air Resources Board (CARB) as those pollutants that, “may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health.”

The health effects associated with TACs are generally assessed locally rather than regionally. Toxic air contaminants can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; TACs can also cause short-term acute effects such as eye watering, respiratory irritation, running nose, throat pain, and headaches. For evaluation purposes, TACs are separated into carcinogens and noncarcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and the cancer risk is expressed as excess cancer cases per one million exposed individuals (typically over a lifetime of exposure).

TACs of concern assessed in this analysis include asbestos and DPM.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics.

Air Quality Standards

The Clean Air Act requires states to develop a general plan to attain and maintain the standards in all areas of the country and a specific plan to attain the standards for each area designated nonattainment. These plans, known as State Implementation Plans or SIPs, are developed by state and local air quality management agencies and submitted to EPA for approval.

The SIP for the State of California is administered by the CARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for each regional air district. SIPs are prepared by the regional air district and sent to CARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

The CARB also administers the California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the California Clean Air Act. The 10 state air pollutants include the six federal criteria pollutant standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The federal and state ambient air quality standards are summarized in Table 5.

Table 5: California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 Hour	0.09 ppm (180 μg/m^3)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 μg/m^3)	0.070ppm (137 μg/m^3)	
Respirable Particulate Matter	24 Hour	50 μg/m^3	150 μg/m3	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m^3	—	
Fine Particulate Matter	24 Hour	—	35 μg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m^3	12 μg/m^3	
Carbon Monoxide	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	—	—
Nitrogen Dioxide	1 Hour	0.18 ppm (339 μg/m^3)	100 ppb (188 μg/m^3)	—
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as Primary Standard
Sulfur Dioxide	1 Hour	0.25 ppm (655 μg/m^3)	75 ppb (196 μg/m^3)	—
	3 Hour	—	—	0.5 ppm (1300 μg/m^3)
	24 Hour	0.04 ppm (105 μg/m^3)	0.14 ppm (for certain areas)	—

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
Lead	30-Day Average	1.5 μg/m^3	—	—
	Calendar Quarter	—	1.5 μg/m^3	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m^3	
Visibility-Reducing Particles	8 Hour	See Footnote 1	No National Standards	
Sulfates	24 Hour	25 μg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 μg/m^3)		

Notes:
1 - In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.
μg/m3 =micrograms per cubic meter
CARB = California Air Resources Board
mg/m3 = milligrams per cubic meter
ppm = parts per million
Source: California Air Resources Board (CARB). 2017. Air Quality Standards. Website: https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Accessed December 11, 2023.

Federal and state air quality laws require identification of areas not meeting the ambient air quality standards. These areas must develop regional air quality plans to eventually attain the standards. The SJV Air Basin is designated nonattainment for ozone, PM_{10}, and $PM_{2.5}$.[5]

Thresholds of Significance

Project-level Thresholds

The CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the proposed project must be evaluated.

This analysis uses the air quality significance thresholds contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the proposed project would:

a) Conflict with or obstruct implementation of the applicable air quality plan.

[5] San Joaquin Valley Air Pollution Control District (SJVAPCD). 2017. Ambient Air Quality Standards & Valley Attainment Status. Website: https://www.valleyair.org/aqinfo/attainment.htm. Accessed December 11, 2023.

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) Create objectionable odors affecting a substantial number of people.

The City of Clovis has not established specific CEQA significance thresholds. Where available guidance provided by the applicable air district can be used to make significance determinations for the CEQA questions listed above. While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, the SJVAPCD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions in accordance with the Appendix G requirements. If a Lead Agency finds that a project has the potential to exceed these air pollution thresholds, according to the SJVAPCD, the project should be considered to have significant air quality impacts.

Air pollutant emissions have regional effects and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from project construction and operation are also assessed using concentration-based thresholds that determine if the project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during project construction and operation are ROG, NO_X, PM_{10}, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for ROG and NO_X; SO_X, CO, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NO_X emissions in the presence of sunlight. Therefore, ROG and NO_x are termed ozone precursors. The SJVAB often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The SJVAB also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants.

The SJVAPCD has adopted significance thresholds for construction-related and operational emissions. These thresholds will be identified and addressed in the appropriate section of this document.

Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. Once operational, some diesel-fueled vehicles would access the project site. The following project-specific health risk significance thresholds are applied in this analysis:

- Maximum Incremental Cancer Risk: >=20 in 1 million.
- Hazard Index (project increment) >=1.0.

Fugitive Dust

Construction

Fugitive dust would be generated from site grading and other earth-moving activities. Most of this fugitive dust would remain localized and would be deposited near the project site. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from the project site. Therefore, adherence to Regulation VIII would be required during construction of the proposed project. Regulation VIII would require fugitive dust control measures that are consistent with best management practices (BMPs) established by the SJVAPCD to reduce the proposed project's construction-generated fugitive dust impacts to a less than significant level.

The SJVAPCD (SJVAPCD or District) adopted Regulation VIII in 1993 and its most recent amendments became effective on October 1, 2004. This is a basic summary of the regulation's requirements as they apply to construction sites. These regulations affect all workers at a regulated construction site, including everyone from the landowner to the subcontractors. Violations of Regulation VIII are subject to enforcement action including fines.[6]

Visible Dust Emissions may not exceed 20 percent opacity during periods when soil is being disturbed by equipment or by wind at any time. Visible Dust Emissions opacity of 20 percent means dust that would obstruct an observer's view of an object by 20 percent. District inspectors are state certified to evaluate visible emissions. Dust control may be achieved by applying water before/during earthwork and onto unpaved traffic areas, phasing work to limit dust, and setting up wind fences to limit windblown dust.

Soil Stabilization is required at regulated construction sites after normal working hours and on weekends and holidays. This requirement also applies to inactive construction areas such as phased projects where disturbed land is left unattended. Applying water to form a visible crust on the soil and restricting vehicle access are often effective for short-term stabilization of disturbed surface areas. Long-term methods including applying dust suppressants and establishing vegetative cover.

Carryout and Trackout occur when materials from emptied or loaded vehicles falls onto a paved surface or shoulder of a public road or when materials adhere to vehicle tires and are deposited onto a paved surface or shoulder of a public road. Should either occur, the material must be cleaned up at least daily, and immediately if it extends more than 50 feet from the exit point onto a paved road. The appropriate clean-up methods require the complete removal and cleanup of mud and dirt from the paved surface and shoulder. Using a blower device or dry sweeping with any mechanical device other than a PM10-efficient street sweeper is a violation. Larger construction sites, or sites with a high amount of traffic on one or more days, must prevent carryout and trackout from occurring by installing gravel pads, grizzlies, wheel washers, paved interior roads, or a combination thereof at each exit point from the site. In many cases, cleaning up trackout with water is also prohibited as it may lead to plugged storm drains. Prevention is the best method.

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6 San Joaquin Valley Air Pollution Control District (SJVAPCD). 2007. Compliance Assistance Bulletin. Website: http://www.valleyair.org/busind/comply/pm10/forms/RegVIIICAB.pdf. Accessed December 11, 2023.

Unpaved Access and Haul Roads, as well as unpaved vehicle and equipment traffic areas at construction sites must have dust control. Speed limit signs limiting vehicle speed to 15 mph or less at construction sites must be posted every 500 feet on uncontrolled and unpaved roads.

Storage Piles and Bulk Materials have handling, storage, and transportation requirements that include applying water when handling materials, wetting or covering stored materials, and installing wind barriers to limit visible dust emissions. Also, limiting vehicle speeds, loading haul trucks with a freeboard of six inches or greater along with applying water to the top of the load, and covering the cargo compartments are effective measures for reducing visible dust emissions and carryout from vehicles transporting bulk materials.

Dust Control Plans identify the dust sources and describe the dust control measures that will be implemented before, during, and after any dust generating activity for the duration of the project. Owners or operators are required to submit plans to the SJVAPCD at least 30 days prior to commencing the work for the following:

- Residential developments of ten or more acres of disturbed surface area.
- Non-residential developments of five or more acres of disturbed surface area.
- The relocation of more than 2,500 cubic yards per day of materials on at least three days.

Operations may not commence until the SJAVPCD has approved the Dust Control Plan. A copy of the plan must be on site and available to workers and District employees. All work on the site is subject to the requirements of the approved dust control plan. A failure to abide by the plan by anyone on site may be subject to enforcement action.

Record Keeping is required to document compliance with the rules and must be kept for each day any dust control measure is used. The SJVAPCD has developed record forms for water application, street sweeping, and “permanent” controls such as applying long term dust palliatives, vegetation, ground cover materials, paving, or other durable materials. Records must be kept for one year after the end of dust generating activities (Title V sources must keep records for five years).

Exemptions exist for several activities. Those occurring above 3,000 feet in elevation are exempt from all Regulation VIII requirements. Further, Rule 8021 – Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities exempts the following construction and earthmoving activities:

- Blasting activities permitted by California Division of Industrial Safety.
- Maintenance or remodeling of existing buildings provided the addition is less than 50% of the size of the existing building or less than 10,000 square feet (due to asbestos concerns, contact the SJVAPCD at least two weeks ahead of time).
- Additions to single family dwellings.
- The disking of weeds and vegetation for fire prevention on sites smaller than ½ acre.
- Spreading of daily landfill cover to preserve public health and safety and to comply with California Integrated Waste Management Board requirements.

Nuisances are prohibited at all times because District Rule 4102 – Nuisance applies to all construction sources of fugitive dust, whether or not they are exempt from Regulation VIII. It is important to monitor dust-generating activities and implement appropriate dust control measures to limit the public's exposure to fugitive dust.

Environmental Impact Analysis

This section discusses potential impacts related to air quality associated with the proposed project and provides mitigation measures where necessary.

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI indicates that projects that do not exceed SJVAPCD regional criteria pollutant emissions quantitative thresholds would not conflict with or obstruct the applicable air quality plan (AQP). An additional criterion regarding the project's implementation of control measures was assessed to provide further evidence of the project's consistency with current AQPs. This document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional thresholds identified by the District for Regional Air Pollutants.

2. Will the project comply with applicable control measures in the AQPs? The primary control measures applicable to development projects include Regulation VIII—Fugitive PM_{10} Prohibitions and Rule 9510 Indirect Source Review.

Contribution to Air Quality Violations

A measure for determining if the project is consistent with the air quality plans is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}—if project-generated emissions of either of the ozone precursor pollutants (ROG and NO_X), PM_{10}, or $PM_{2.5}$ would exceed the SJVAPCD's significance thresholds—then the project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As shown in Table 6 and Table 7 under Impact AIR-2 below, the project's construction and operational regional emissions would not exceed SJVAPCD's regional criteria pollutant emissions quantitative thresholds. Therefore, the proposed project would not be considered in conflict with or obstruct implementation of the applicable air quality plan based on this criterion.

Compliance with Applicable Control Measures

SJVAPCD's AQPs contain a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A description of rules and regulations that apply to this project is provided below.

> **SJVAPCD Rule 9510—Indirect Source Review (ISR)** is a control measure in the 2006 PM_{10} Plan that requires NO_X and PM_{10} emission reductions from development projects in the San Joaquin Valley. The NO_X emission reductions help reduce the secondary formation of PM_{10} in the atmosphere (primarily ammonium nitrate and ammonium sulfate) and also reduce the formation of ozone. Reductions in directly emitted PM_{10} reduce particles such as dust, soot, and aerosols. Rule 9510 is also a control measure in the 2016 Plan for the 2008 8-Hour Ozone Standard. Developers of projects subject to Rule 9510 must reduce emissions occurring during construction and operational phases through on-site measures or pay off-site mitigation fees. The proposed project would be subject to Rule 9510.
>
> **Regulation VIII—Fugitive** PM_{10} **Prohibitions** is a control measure that is one main strategies from the 2006 PM_{10} for reducing the PM_{10} emissions that are part of fugitive dust. Residential projects over 10 acres and non-residential projects over 5 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. The project will be required to comply with Regulation VIII and would implement dust control measures during the construction period.
>
> **Rule 2201—New and Modified Stationary Source Review Rule** requires the review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards. Components of the project may be required to obtain permits and abide by associated regulations set forth by Rule 2201.

Other control measures that apply to the project are Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operation that requires reductions in VOC emissions during paving and Rule 4601—Architectural Coatings that limits the VOC content of all types of paints and coatings sold in the San Joaquin Valley. These measures apply at the point of sale of the asphalt and the coatings, so project compliance is ensured without additional mitigation measures.

The project would comply with all applicable SJVAPCD rules and regulations. Therefore, the proposed project would not conflict with or obstruct implementation of the applicable air quality attainment plan under this criterion.

Conclusion

As described above, the proposed project's construction and operational regional emissions would not exceed SJVAPCD's regional criteria pollutant emissions quantitative thresholds. Furthermore, the proposed project would comply with all applicable SJVAPCD rules and regulations. Accordingly, the proposed project would not conflict with or obstruct implementation of the applicable air quality plans, and, therefore, this impact would be less than significant.

Level of Significance Before Mitigation
Less than significant.

Mitigation Measures
No mitigation measures are necessary.

Impact AIR-2	**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?**

Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the SJVAPCD's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.
3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Regional Emissions

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from project construction and operation are assessed under Impact AIR-3—Sensitive Receptors using concentration-based thresholds that determine if the project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during project construction and operation are ROG, NO_X, PM_{10}, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for CO, NO_X, ROG, SO_X, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and NO_X emissions in the presence of sunlight. Therefore, ROG and NO_X are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants. The SJVAPCD's annual emission significance thresholds used for the project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 27 tons per year SO_X

- 10 tons per year NO_X
- 10 tons per year ROG
- 15 tons per year PM_{10}
- 15 tons per year $PM_{2.5}$

The project does not contain sources that would produce substantial quantities of SO_2 emissions during construction and operation. Modeling conducted for the project demonstrates that SO_2 emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Attachment A. No further discussion of SO_2 is required.

Construction Emissions

Construction activities associated with development of the proposed project would include site preparation, grading, building construction, paving, and architectural coatings. Emissions from construction-related activities are generally short-term in duration but may still cause adverse air quality impacts. During construction, fugitive dust would be generated from earth-moving activities. Exhaust emissions would also be generated from off-road construction equipment and construction-related vehicle trips. Emissions associated with construction of the proposed project are discussed below.

Table 6 provides the construction emissions estimate for the proposed project. Please refer to the Modeling Parameters and Assumptions section of this technical memorandum for details regarding assumptions used to estimate construction emissions. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as required pursuant to CEQA guidelines.

Table 6: Construction Regional Air Pollutant Annual Emissions (Unmitigated)

Parameter	Air Pollutants (ton/year)				
	ROG	**NO_X**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Project Construction (2024)	0.068	0.653	0.581	0.097	0.055
Project Construction (2025)	0.197	1.686	1.864	0.149	0.086
Project Construction (2026)	0.148	1.157	1.754	0.113	0.052
Project Construction (2027)	0.141	1.104	1.734	0.108	0.048
Project Construction (2028)	1.033	0.070	0.114	0.009	0.003
Total Project Construction Emissions (tons/year)	***1.587***	***4.67***	***6.047***	***0.476***	***0.244***
Significance Threshold (tons/year)	**10**	**10**	**100**	**15**	**15**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**	**No**

Notes:
PM_{10} and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive PM_{10} Prohibitions.
NO_X = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter
$PM_{2.5}$ = particulate matter 2.5 microns in diameter
ROG = reactive organic gases
Source: Modeling Assumptions and CalEEMod Output Files (Attachment A).

As shown in Table 6, estimated emissions from construction of project are below the SJVAPCD significance thresholds. Therefore, the regional construction emissions would be less than significant on a project basis.

Operational Emissions

As previously discussed, the pollutants of concern include ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$. Emissions were assessed for full buildout operations in the 2025 operational year. The 2025 operational year was chosen as it is the earliest year the project is anticipated to become operational. Emissions were estimated for full project buildout in the earliest operational year, thus generating the full amount of expected operational activity. The SJVAPCD Criteria Air Pollutant Significance thresholds were used to determine impacts. Operational annual emissions are shown in Table 7 below.

Table 7: Operational Annual Emissions for Full Buildout (Unmitigated)

Emissions Source	Tons per Year				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	1.42	0.06	0.85	< 0.01	< 0.01
Energy Consumption	0.02	0.29	0.12	0.02	0.02
Mobile (On-road Vehicles)	0.83	0.67	5.29	1.02	0.26
Total Project Annual Emissions	**2.27**	**1.02**	**6.26**	**1.04**	**0.28**
Thresholds of Significance	**10**	**10**	**100**	**15**	**15**
Exceeds Significance Threshold?	**No**	**No**	**No**	**No**	**No**

Notes:
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
PM_{10} = particulate matter 10 microns or less in diameter
ROG = reactive organic gases
Source: Modeling Assumptions and CalEEMod Output Files (Attachment A).

As shown in Table 7, the proposed project would not result in net operational-related air pollutants or precursors that would exceed the applicable thresholds of significance. Therefore, project operations would not be considered to have the potential to generate a significant quantity of air pollutants; long-term operational impacts associated with the project’s criteria pollutant emissions would be less than significant.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are necessary.

Impact AIR-3 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

Emissions occurring at or near the project have the potential to create a localized impact that could expose sensitive receptors to substantial pollutant concentrations. Sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution than others due to their exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. The SJVAPCD considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

The closest existing sensitive receptors (to the site area) are residences, the closest of which is located approximately 52.8 feet (0.01 mile) west of the project boundary. Descriptions of the land uses surrounding the project site are provided below.

- North of the project site is primarily developed farmland, northeast is an existing rural residence 0.06 of a mile away and northwest is P&R Farms agricultural buildings and parking area 0.14 of a mile. There is a large Derrel's Mini Storage just over ¾ of a mile to the northwest followed by a large Tract of homes. Clovis Community College, Granite Ridge Intermediate School, Riverview Elementary and Clovis North High School are all approximately 1 ½ miles northwest of the project.
- East of the project site is developed farmland within ¼ mile, including a large agricultural canal running approximately 0.10 of a mile directly east. Lennar The Ranch at Heritage Grove is a future subdivision starting at 0.38 miles away and mix of large rural homes and farmland starting approximately ¾ of a mile away.
- South of the project site is a mix of farmland, a few rural scattered homes, and a large tract of homes starting at 0.13 miles away. Woods Elementary School is just over ¾ of a mile south of the project.
- West of the project site is primarily developed farmland with 2 existing rural homes within 0.01 of a mile, including the closest residence to the project at 0.01 of a mile away. Just over 1 mile away is a large tract of existing homes.

Localized Impacts

Emissions occurring at or near the project have the potential to create a localized impact also referred to as an air pollutant hotspot. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard. The pollutants of concern for localized impact in the SJVAB are NO_2, SO_X, and CO. The SJVAPCD has provided guidance for screening localized impacts in the GAMAQI that establishes a screening threshold of 100 pounds per day of any criteria pollutant. If a project exceeds 100 pounds per day of any criteria pollutant, then ambient air quality modeling would be necessary. If the project does not exceed 100 pounds per day of any criteria pollutant, then it can be assumed that it would not cause a violation of an ambient air quality standard.

Construction: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_X

Local construction impacts would be short-term in nature lasting only during the duration of construction. As shown in Table 8 below, on-site construction emissions would be less than 100 pounds per day for each of the criteria pollutants. To present a conservative estimate, on-site emissions for on-road construction vehicles were included in the localized analysis. Based on the SJVAPCD's guidance, the construction emissions would not cause an ambient air quality standard violation.

Table 8: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_X for Construction

Source	On-site Emissions (pounds per day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Construction (2024)	36.06	33.24	9.65	5.45
Construction (2025)	30.16	28.89	5.22	2.60
Construction (2026)	8.65	12.53	0.72	0.34
Construction (2027)	8.25	12.45	0.68	0.30
Construction (2028)	7.90	12.40	0.65	0.27
Entire Project Construction Duration (2024-2028)				
Maximum Daily On-site Emissions	**36.06**	**33.24**	**9.65**	**5.45**
Significance Thresholds	100	100	100	100
Exceed Significance Thresholds?	No	No	No	No
Note: Overlap of construction activities is based on the construction schedule shown in Table 1 and Attachment A. Source of Emissions: Modeling Assumptions and CalEEMod Output Files (Attachment A). Source of Thresholds: San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impacts. February 19. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed December 12, 2023.				

Operation: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_X

Localized impacts could occur in areas with a single large source of emissions—such as a power plant—or at locations with multiple sources concentrated in a small area, such as a distribution center. Although residential development projects are typically less likely to cause a localized air quality impact compared to land uses with large sources of emissions or multiple concentrated sources of emissions, the proposed project would emit air pollutants that have the potential to create a localized impact. The maximum daily operational emissions would occur at project buildout, which was modeled in the 2025 operational year for the purposes of providing a conservative estimate of emissions. Operational emissions include those generated on-site by area sources (such as consumer products and landscape maintenance), energy use from natural gas combustion, and motor vehicles operation at the project site. To assess localized air impacts, motor vehicle emissions were estimated for on-site and localized operations using an adjusted trip length of 0.5 mile.

As shown in Table 9 below, operational modeling of on-site emissions for the project indicate that the project would not exceed 100 pounds per day for each of the criteria pollutants. Therefore, based on the SJVAPCD's guidance, the operational emissions would not cause an ambient air quality standard violation. As such, impacts would be less than significant.

Table 9: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_X for Operations

Source	On-site Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	8.26	1.34	9.74	0.11	0.11
Energy Consumption	0.09	1.59	0.68	0.13	0.13
Mobile (On-road Vehicles)	5.00	1.94	12.80	0.55	0.15
Daily Total	**13.35**	**4.87**	**23.22**	**0.79**	**0.39**
Significance Thresholds	**—**	**100**	**100**	**100**	**100**
Exceed Significance Thresholds?	**—**	**No**	**No**	**No**	**No**
Source of Emissions: Modeling Assumptions and CalEEMod Output Files (Attachment A). Source of Thresholds: San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impacts. February 19. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed December 12, 2023.					

Toxic Air Contaminants

Construction

Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. The SJVAPCD's current threshold of significance for TAC emissions is an increase in cancer risk for the maximally exposed individual of 20 in a million (formerly 10 in a million).

A project-level assessment was conducted of the potential community health risk and health hazard impacts on surrounding sensitive receptors resulting from the emissions of TACs during construction. A summary of the assessment is provided below, while the detailed assessment is provided in Attachment B.

Construction activity using diesel-powered equipment emits DPM, a known carcinogen. Diesel particulate matter includes exhaust PM_{10} and exhaust $PM_{2.5}$. A 10-year research program demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk.[7] Health risks from TACs are a function of both concentration and duration of exposure. Construction diesel emissions are temporary, affecting an area for a period of weeks or months. Additionally, construction-related sources are mobile and transient in nature.

The health risk assessment evaluated DPM (represented as exhaust PM_{10}) emissions generated during construction of the proposed project and the related health risk impacts for sensitive receptors located within approximately 1,000 feet of the project boundary.

[7] California Air Resources Board (CARB). 2015. The Report on Diesel Exhaust. Website: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/dieseltac/de-fnds.htm. Accessed December 12, 2023.

The project site is located within 1,000 feet of existing sensitive receptors that could be exposed to diesel emission exhaust during the construction period. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source location to concentrations at the receptor locations of interest (i.e., receptors at nearby residences). A maximally exposed receptor (MER) was determined for construction and through the use of the dispersion modeling. A graphical representation of the inputs used in the dispersion modeling, including the locations of modeled receptor locations, is included as part of Attachment B.

Table 10 presents a summary of the proposed project's construction cancer risk and chronic non-cancer hazard impacts at the MER from project construction prior to the application of any equipment mitigation.

Table 10: Summary of the Health Impacts from Unmitigated Construction of the Project

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Chronic Non-Cancer Hazard Index	Acute Non-Cancer Hazard Index
Risks and Hazards at the MER			
Risks and Hazards at the MER (Construction Only)	21.41	0.01090	0.00000
Risks and Hazards at the MER (Construction Plus Operations)	23.14	0.0163	0.00000
Significance Threshold	**20**	**1**	**1**
Threshold Exceeded in Any Scenario?	**Yes**	**No**	**No**
MER = Maximally Exposed Receptor Project MER: Receptor #310 (36°52'23.2"N 119°42'33.1"W) Source: Construction Health Risk Assessment and Operational Health Risk Screening (Attachment B).			

As shown in Table 10, estimated health risks from elevated DPM concentrations during construction of the proposed project would not exceed the applicable health risk significance thresholds when construction is considered alone; however, construction plus operational emissions would exceed the applicable cancer risk threshold. This represents a potentially significant construction TAC exposure impact. Therefore, mitigation is required to reduce the impact during the construction period to below a level of significance.

MM AIR-C1 requires the project applicant, project sponsor, or construction contractor to provide documentation to the City of Farmerville that all off-road diesel-powered construction equipment greater than 50 horsepower meet EPA or CARB Tier 4 Interim off-road emissions standards or will utilize Level 3 filters. Table 11 shows the health risks and non-cancer hazard index for construction with implementation of MM AIR-1.

Table 11: Summary of the Health Impacts from Mitigated Construction of the Project

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Chronic Non-Cancer Hazard Index	Acute Non-Cancer Hazard Index
Risks and Hazards at the MER—Tier 4 Equipment Scenario			
Risks and Hazards at the MER (Construction Only)	5.14	0.00262	0.00000
Risks and Hazards at the MER (Construction Plus Operations)	6.87	0.00802	0.00000
Risks and Hazards at the MER—Level 3 Filters Scenario			
Risks and Hazards at the MER (Construction Only)	5.99	0.00305	0.00000
Risks and Hazards at the MER (Construction Plus Operations)	7.72	0.00845	0.00000
Highest Risks and Hazards at the MER after Incorporation of MM AIR-1			
Risks and Hazards at the MER	7.72	0.00845	0.00000
Significance Threshold	**20**	**1**	**1**
Threshold Exceeded in Any Scenario?	**No**	**No**	**No**

MER = Maximally Exposed Receptor
Project MER: Receptor #310 (36°52'23.2"N 119°42'33.1"W)
Source: Construction Health Risk Assessment and Operational Health Risk Screening (Attachment B).

As noted in Table 11, calculated health metrics from the proposed project's construction DPM emissions would not exceed the cancer risk significance threshold or non-cancer hazard index significance threshold at the MER with incorporation of MM AIR-1. Therefore, the proposed project would not result in a significant impact on nearby sensitive receptors from TACs during construction.

Operations

Operational DPM

The proposed residential project is expected to generate 1,507 average daily trips.[8] The proposed project would primarily generate trips associated with residents and visitors traveling to and from the project site.

Unlike warehouses or distribution centers, the daily vehicle trips generated by the proposed residential and parks project would be primarily generated by passenger vehicles. Passenger vehicles typically use gasoline engines rather than the diesel engines that are found in heavy-duty trucks. Gasoline-powered vehicles do emit TACs in the form of toxic organic gases, some of which are carcinogenic. Compared to the combustion of diesel, the combustion of gasoline has relatively low emissions of TACs. Thus, residential projects typically produce limited amounts of TAC emissions during operation from passenger vehicle trips. DPM emissions were estimated for the project-generated truck trips using EMFAC2021 to assess the project's

[8] Average daily trips based on weighted average of weekday, Saturday, and Sunday trips shown in Table 4.

potential to generate elevated levels of TACs from project trips. Health risk impacts were compared to the prioritization screening threshold to determine if a more refined health risk assessment conducted using dispersion modeling would be required. Detailed assumptions are provided in Attachment B. The results of the operational HRA from project-generated sources of DPM during operations are summarized below, while the complete assessment is included as part of Attachment B.

Table 12: Summary of the Health Impacts Risk Impacts (Operational DPM Emissions)

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Chronic Non-Cancer Hazard Index
Prioritization Score (70-Year Exposure)	1.73	0.0054
Applicable Prioritization Screening Threshold	**10**	**1**
Exceeds Prioritization Screening Threshold?	**No**	**No**
Notes: Source: Attachment B (Construction Health Risk Assessment and Operational Health Risk Screening).		

As shown in Table 12, the project would not exceed the applicable cancer risk or chronic risk prioritization screening threshold levels. The primary source of the DPM emissions responsible for chronic risk are from diesel trucks. DPM does not have an acute risk factor. Since the project does not exceed the applicable SJVAPCD screening thresholds for cancer risk, acute risk, or chronic risk, the impact related to the project's potential to expose sensitive receptors to substantial pollutant concentrations from non-permitted sources would be less than significant. Therefore, the proposed project would not result in a significant impact on nearby sensitive receptors from project-generated TACs during operations.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The San Joaquin Valley is considered an endemic area for Valley fever. The San Joaquin Valley is considered an endemic area for Valley fever. During 2000–2018, a total of 65,438 coccidioidomycosis cases were reported in California; median statewide annual incidence was 7.9 per 100,000 population and varied by region from 1.1 in Northern and Eastern California to 90.6 in the Southern San Joaquin Valley, with the largest increase (15-fold) occurring in the Northern San Joaquin Valley. Incidence has been consistently high in six counties in the Southern San Joaquin Valley (Fresno, Kern, Kings, Madera, Tulare, and Merced counties) and Central Coast (San Luis Obispo County) regions.[9] California experienced 7,392 new probable or

[9] Centers for Disease Control and Prevention (CDC). 2020. Regional Analysis of Coccidioidomycosis Incidence—California, 2000–2018. Website: https://www.cdc.gov/mmwr/volumes/69/wr/mm6948a4.htm?s_cid=mm6948a4_e. Accessed December 12, 2023.

confirmed cases of Valley fever in 2020. A total of 466 Valley fever cases were reported in Fresno County in 2020.[10]

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)
2) Old (prehistoric) Indian campsites near fire pits
3) Areas with sparse vegetation and alkaline soils
4) Areas with high salinity soils
5) Areas adjacent to arroyos (where residual moisture may be available)
6) Packrat middens
7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils
8) Sandy, well-aerated soil with relatively high water-holding capacities

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields
2) Heavily vegetated areas (e.g., grassy lawns)
3) Higher elevations (above 7,000 feet)
4) Areas where commercial fertilizers (e.g., ammonium sulfate) have been applied
5) Areas that are continually wet
6) Paved (asphalt or concrete) or oiled areas
7) Soils containing abundant microorganisms
8) Heavily urbanized areas where there is little undisturbed virgin soil.[11]

The project is situated on a site previously disturbed that does not provide a suitable habitat for spores. Specifically, the project site has been previously disturbed and has previously been tilled. Therefore, development of the proposed project would have a lower probability of the site having *C. immitis* growth sites than if the site had been previously undisturbed.

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[10] California Department of Public Health (CDPH). 2021. Coccidioidomycosis in California Provisional Monthly Report January 2021. Website: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciinCA ProvisionalMonthlyReport.pdf. Accessed December 12, 2023.

[11] United States Geological Survey (USGS). 2000. Operational Guidelines (Version 1.0) for Geological Fieldwork in Areas Endemic for Coccidioidomycosis (Valley Fever), 2000, Open-File Report 2000-348. Website: https://pubs.usgs.gov/of/2000/0348/pdf/of00-348.pdf. Accessed December 12, 2023.

Although conditions are not favorable, construction activities could generate fugitive dust that contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with SJVAPCD's Regulation VIII. Therefore, this regulation, combined with the relatively low probability of the presence of *C. immitis* spores would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be relatively small because most of the project area where operational activities would occur would be occupied by the proposed homes, g pavement associated with the proposed residential and parks development; it is anticipated that all internal travel areas would be paved. This condition would lessen the possibility of the project from providing habitat suitable for *C. immitis* spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Naturally Occurring Asbestos

Review of the map of areas where naturally occurring asbestos in California are likely to occur found no such areas in the immediate project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos.[12] Impacts would be less than significant.

Impact Analysis Summary

In summary, the project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The project is not a significant source of TAC emissions during operations and is not a significant source of TAC emissions during construction after incorporation of MM AIR-1. The project is not in an area with suitable habitat for Valley fever spores and is not in an area known to have naturally occurring asbestos. Therefore, the project would not result in significant impacts to sensitive receptors after incorporation of MM AIR-1.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-1 Before a construction permit is issued for the proposed project, the project applicant, project sponsor, or construction contractor shall submit documentation demonstrating reasonably detailed compliance with the following requirements to the City of Clovis:

(1) Where portable diesel engines are used during construction, all off-road equipment with engines greater than 50 horsepower shall have engines that meet or exceed either United States Environmental Protection Agency (EPA) or California Air Resources Board (CARB) Tier 4 Interim off-road emission standards or be equipped with Level 3 diesel particulate filters. Tier 4 Interim engines shall, at a minimum, meet EPA or CARB particulate matter emissions standards for Tier 4 Interim engines. Alternatively, use of CARB-certified Level

[12] U.S. Geological Survey. 2011. Van Gosen, B.S., and Clinkenbeard, J.P. California Geological Survey Map Sheet 59. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Open-File Report 2011-1188 Website: https://pubs.usgs.gov/of/2011/1188/. Accessed December 12, 2023.

3 diesel particulate filters on off-road equipment with engines greater than 50 horsepower can be used in lieu of Tier 4 Interim engines or in combination with Tier 4 Interim or better engines. The construction contractor shall maintain records documenting its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information shall include, but are not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number. The project applicant and/or construction contractor shall submit the construction operations plan and records of compliance to the City of Clovis.

Level of Significance After Mitigation

Less than significant impact with incorporation of MM AIR-1.

Impact AIR-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact Analysis

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. According to the *CBIA v. BAAQMD* ruling, impacts of existing sources of odors on the project are not subject to CEQA review. Therefore, the analysis to determine if the project would locate new sensitive receptors near an existing source of odor is not used to determine significance for this impact.

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Although the project is approximately 52.8 feet (0.01 mile) from the nearest sensitive receptor, the project is not expected to be a significant source of odors. The screening levels for these land use types are shown in Table 13.

Table 13: Screening Levels for Potential Odor Sources

Odor Generator	Screening Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile
Wastewater Treatment Facilities	2 miles
Source of Thresholds: San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impacts. February 19. Website: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed December 12, 2023.	

Project Construction and Project Operation

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Project operations would not be anticipated to produce odorous emissions, as the project would not be considered an odor generator based on the land uses shown in Table 13. Construction activities associated with the proposed project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present onsite temporarily during construction activities. The temporary and intermittent nature of construction activities would decrease the likelihood of the odors concentrating in a single area or lingering for any notable period of time. As such, these odors would likely not be noticeable for extended periods of time beyond the project's site boundaries. Therefore, construction would not create objectionable odors affecting a substantial number of people from use of diesel-powered equipment. As there would not be conditions under which the project would have the potential to expose a substantial number of people to odors emitted from construction or operations of the project, and the impact would be less than significant.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are necessary.

GREENHOUSE GASES

Environmental Setting

Greenhouse Gases

Greenhouse gases and climate change are cumulative global issues. The CARB and EPA regulate GHG emissions within the State of California and the U.S., respectively. Meanwhile, the CARB has the primary regulatory responsibility within California for GHG emissions. Local agencies can also adopt policies for GHG emission reduction.

Many chemical compounds in the Earth's atmosphere act as GHGs as they absorb and emit radiation within the thermal infrared range. When radiation from the sun reaches the Earth's surface, some of it is reflected into the atmosphere as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy from the sun to the Earth's surface should be approximately equal to the amount of energy radiated back into space, leaving the temperature of the earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide [CO_2], methane [CH_4], and nitrous oxide [N_2O]), while others are exclusively human made (like gases used for aerosols).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below.

Carbon Dioxide

Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane

Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide

Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases

Hydrofluorocarbons, perfluorinated chemicals, and sulfur hexafluoride are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high global warming potential gases.

Emissions Inventories and Trends

According to the CARB's recent GHG inventory for the State, released 2022, California produced 369.2 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2020. The major source of GHGs in California is transportation, contributing approximately 38 percent of the state's total GHG emissions in 2020.[13] This puts total emissions below the 2020 target of 431 million metric tons. California statewide GHG emissions dropped below the 2020 GHG limit in 2016 and have remained below the 2020 GHG limit since then.

Potential Environmental Impacts

For California, climate change in the form of warming has the potential to incur and exacerbate environmental impacts, including but not limited to changes to precipitation and runoff patterns, increased agricultural demand for water, inundation of low-lying coastal areas by sea-level rise, and increased incidents and severity of wildfire events.[14] Cooling of the climate may have the opposite effects. Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial and manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Regulatory Requirements

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The governor has also issued several executive orders (EOs) related to the state's evolving climate change policy. Of particular importance are AB 32 and SB 32, which outline the state's GHG reduction goals of achieving 1990 emissions levels by 2020 and a 40 percent reduction below 1990 emissions levels by 2030.

In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans.

CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would

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13 California Air Resources Board (CARB). 2022. 2000-2020 Greenhouse Gas inventory (2022 Edition). Website: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed December 12, 2023.

14 Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. Website: http://www.susannemoser.com/documents/CEC-500-2008-071_Moseretal_FutureisNow.pdf. Accessed December 12, 2023.

have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Thresholds of Significance

San Joaquin Valley Air Pollution Control District

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA presents a tiered approach to analyzing project significance with respect to GHG emissions. Project GHG emissions are considered less than significant if they can meet any of the following conditions, evaluated in the order presented:

- Project is exempt from CEQA requirements;
- Project complies with an approved GHG emission reduction plan or GHG mitigation program;
- Project implements Best Performance Standards (BPS); or
- Project demonstrates that specific GHG emissions would be reduced or mitigated by at least 29 percent compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period.

Project-level Thresholds

Section 15064.4(b) of the CEQA Guidelines' amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- Consideration #1: The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Consideration #2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- Consideration #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. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an Environmental Impact Report (EIR) must be prepared for the project.

Newhall Ranch

In the California Supreme Court decision in the *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (62 Cal.4th 204 [2015], and known as the Newhall Ranch decision), the Supreme Court was concerned that new development may need to reduce GHG emissions more than existing development to demonstrate it is meeting its fair share of reductions. New development does more than its fair share through compliance with enhanced regulations, particularly with respect to motor vehicles, energy efficiency, and electricity generation. If no additional reductions are required from an individual project beyond that achieved by regulations, then the amount needed to reach the 2020 target is the amount of GHG emissions a project must reduce to comply with Statewide goals.

The State's regulatory program implementing the 2008 Scoping Plan is now fully mature. All regulations envisioned in the Scoping Plan have been adopted by the responsible agencies and the effectiveness of those regulations have been estimated by the agencies during the adoption process and then are tracked to verify their effectiveness after implementation. The Governor Brown, in the introduction to Executive Order B-30-15, states "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)." The progress was evident in emission inventories prepared by CARB, which showed that the State inventory dropped below 1990 levels for the first time in 2016.[15] The State projects that it will meet the 2020 target and achieve continued progress towards meeting the 2017 Scoping Plan target for 2030.[16] CARB adopted the 2022 Scoping Plan on December 16, 2022 that addresses long-term GHG goals set forth by AB 1279.[17] The 2022 Scoping Plan outlines the State's pathway to achieve carbon neutrality and an 85 percent reduction in 1990 emissions goal by 2045. In the 2022 Scoping Plan, CARB advocates for compliance with a local GHG reduction strategy consistent with CEQA Guidelines section 15183.5.

Environmental Impact Analysis

This section discusses potential impacts related to GHGs associated with the proposed project and provides mitigation measures where necessary.

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

The proposed project may contribute to climate change impacts through its contribution of GHGs. The proposed project would generate a variety of GHGs during construction and operations, including several defined by AB 32, such as CO_2, CH_4, and N_2O from the exhaust of equipment during construction and on-road vehicle trips during construction and operations. The following analysis assesses the project's compliance with Consideration #3 regarding

[15] California Air Resources Board (CARB). 2018. Climate Pollutants Fall Below 1990 Levels for the First Time. Website: https://ww2.arb.ca.gov/news/climate-pollutants-fall-below-1990-levelsfirst-time. Accessed December 12, 2023.
[16] California Air Resources Board (CARB). 2017. The 2017 Climate Change Scoping Plan Update, the Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. January 17, 2017. Website: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf. Accessed December 12, 2023.
[17] The Final 2022 Scoping Plan was released on November 16, 2022 and adopted by CARB in December 2022.

consistency with adopted plans to reduce GHG emissions. The project is in unincorporated Fresno County, just outside of the City of Clovis. As the project site would be annexed into the City of Clovis, information for both unincorporated Fresno County and the City of Clovis was reviewed. Neither the City of Clovis nor the County of Fresno have adopted a GHG reduction plan that would be applicable to the proposed project. In addition, neither the City of Clovis nor the County of Fresno have completed the GHG inventory, benchmarking, or goal-setting process required to identify a reduction target and take advantage of the streamlining provisions contained in the CEQA Guidelines. The SJVAPCD has adopted a Climate Action Plan, but it does not contain measures that are applicable to the project. Therefore, the SJVAPCD Climate Action Plan cannot be applied to the project. Since no other local or regional Climate Action Plan is in place, the project is assessed for its consistency with CARB's adopted Scoping Plans.

In the absence of an adopted numeric GHG emissions threshold consistent with the State's 2030 target, the project's GHG emissions impact determination is based on 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. The project's GHG emissions are provided for informational purposes only.

Quantification of Greenhouse Gas Emissions for Informational Purposes

Construction Emissions

Construction emissions would be generated from the exhaust of construction equipment, material delivery trips, haul truck trips, and worker commuter trips. Detailed construction assumptions are provided in Modeling Parameters and Assumptions section of this technical memorandum. Construction-generated GHGs were quantified and are disclosed in Attachment A. $MTCO_2e$ emissions during construction of the project are summarized below in Table 14.

Table 14: Construction Greenhouse Gas Emissions

Project Construction (2024-2028)	$MTCO_2e$ per Year
Project Construction (2024)	104
Project Construction (2025)	325
Project Construction (2026)	300
Project Construction (2027)	298
Project Construction (2028)	19
Total Construction $MTCO_2e$	**1,046**
Emissions Amortized Over 30 Years[1]	**34.9**

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalent
[1] Construction GHG emissions are amortized over the 30-year lifetime of the project.
Source: Modeling Assumptions and CalEEMod Output Files (Attachment A).

During the construction of the proposed project, approximately 1,046 $MTCO_2e$ would be emitted. Neither the City of Clovis, Fresno County, nor the SJVAPCD have an adopted threshold of significance for construction related GHG emissions. Because impacts from construction activities occur over a relatively short-term period, they contribute a relatively small portion of the overall lifetime project GHG emissions. In addition, GHG emission reduction measures for construction equipment are relatively limited. Therefore, a standard practice is to amortize construction emissions over the anticipated lifetime of a project so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. However, emissions were quantified for informational purposes only. The total emissions generated during construction were amortized based on the life of the development (30 years) and added to the operational emissions to determine the total emissions from the project, as shown below.

Operational Emissions

Operational or long-term emissions occur over the life of the project. The operational emissions for the proposed project are shown in Table 15. Sources for operational emissions include the following:

- Motor Vehicles: These emissions refer to GHG emissions contained in the exhaust from the cars and trucks that would travel to and from the project site. As described in the traffic study prepared for the proposed project, the project is expected to generate 1,507 average daily trips.[18]
- Natural Gas: These emissions refer to the GHG emissions that occur when natural gas is burned on the project site. Natural gas uses could include heating water, space heating, dryers, stoves, or other uses.
- Indirect Electricity: These emissions refer to those generated by offsite power plants to supply electricity required for the project.
- Water Transport: These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.
- Waste: These emissions refer to the GHG emissions produced by decomposing waste generated by the project.

Detailed modeling results and more information regarding assumptions used to estimate emissions are provided in Attachment A. Operational emissions are shown in Table 15.

Table 15: Operational Greenhouse Gas Emissions for Project Buildout

Source Category	**Project Total Buildout Year ($MTCO_2e$/year)**
Area	66
Energy Consumption	477
Mobile (On-road Vehicles)	1,074
Water Usage	19
Solid Waste Generation	45
Refrigerants	< 0.1
Amortized Construction Emissions	34.9
Total	**1,681**

[18] Average daily trips based on weighted average of weekday, Saturday, and Sunday trips shown in Table 4.

Source Category	Project Total Buildout Year ($MTCO_2e$/year)
Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalent Source: Modeling Assumptions and CalEEMod Output Files (Attachment A).	

As previously noted, the project's estimated emissions were estimated for disclosure purposes. However, significance for GHG emissions is analyzed by assessing the project's compliance with Consideration No. 3 regarding consistency with adopted plans to reduce GHG emissions. As discussed in detail below, the project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of GHGs. As such, the project's generation of GHG emissions would not result in a significant impact on the environment.

Impact Analysis (Project's Compliance with Consideration No. 3 Regarding Consistency with Adopted Plans to Reduce GHG Emissions)

The following analysis assesses the project's compliance with Consideration No. 3 regarding consistency with adopted plans to reduce GHG emissions. The proposed project is assessed for its consistency with CARB's adopted Scoping Plans, which include the 2008, 2017, and 2022 Scoping Plans.

Consistency with AB 32 and the 2008 Scoping Plan

The State's regulatory program implementing the 2008 Scoping Plan is now fully mature. All regulations envisioned in the Scoping Plan have been adopted, and the effectiveness of those regulations has been estimated by the agencies during the adoption process and then tracked to verify their effectiveness after implementation. The combined effect of this successful effort is that the State projects that it will achieve continued progress toward meeting post-2020 targets. Governor Brown, in the introduction to Executive Order B-30-15, stated "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)."

Consistency with SB 32 and the 2017 Scoping Plan

The 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32. The 2017 Scoping Plan includes the following summary of its overall strategy for reaching the 2030 target:

- SB 350
  - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
  - Doubling of energy efficiency savings by 2030.
- Low Carbon Fuel Standard (LCFS)
  - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
  - Maintaining existing GHG standards for light- and heavy-duty vehicles.

  - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
  - Increase ZEV buses, delivery and other trucks.
- Sustainable Freight Action Plan
  - Improve freight system efficiency.
  - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
  - Deploy over 100,000 zero-emission trucks and equipment by 2030.
- Short-Lived Climate Pollutant (SLCP) Reduction Strategy
  - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
  - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
- SB 375 Sustainable Communities Strategies
  - Increased stringency of 2035 targets.
- Post-2020 Cap-and-Trade Program
  - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
  - CARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, CARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
- By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Table 16 provides an analysis of the project's consistency with the 2017 Scoping Plan Update measures.

Table 16: Consistency with SB 32 2017 Scoping Plan Update

Scoping Plan Measure	Project Consistency
SB 350 50% Renewable Mandate. Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030. This has been increased to 60%.	**Consistent**: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate SB 100 Renewable Mandate. SB 100 revised the Renewable Portfolio Standard goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The specific provider for the City of Clovis and the proposed project is Pacific Gas and Electric (PG&E). In February 2018, PG&E announced that it had reached California's 2020 renewable energy goal 3 years ahead of schedule and delivers nearly 80 percent of its electricity from GHG-free resources.[1]

Scoping Plan Measure	Project Consistency
SB 350 Double Building Energy Efficiency by 2030. This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels.	**Not Applicable**. This measure applies to existing buildings, while the project includes new construction. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency over time.
Low Carbon Fuel Standard. This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent**. This is a Statewide measure that cannot be implemented by a project applicant or lead agency. However, vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario). Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Consistent**. The project consists of 162 single family detached residential units and two (2) small parks on approximately 14.57 acres. The project is residential is nature and would not engage in vehicle manufacturing; however, vehicles would access the project site during project operations. Future project residents and other visitors can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. Residential deliveries will be made by increasing numbers of ZEV delivery trucks.
Sustainable Freight Action Plan. The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	**Not Applicable**. The measure applies to owners and operators of trucks and freight operations. However, deliveries that would be made to the future homes proposed as part of the project are expected to be made by increasing number of ZEV delivery trucks.
Short-Lived Climate Pollutant (SLCP) Reduction Strategy. The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent.** Sources of black carbon are already regulated by the CARB and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources. The project residences would not include wood burning hearths. Natural gas hearths produce very little black carbon compared to woodburning fireplaces and heaters.
SB 375 Sustainable Communities Strategies. Requires Regional Transportation Plans to include a sustainable communities strategy for reduction of per capita vehicle miles traveled.	**Not Applicable**. The project does not consist of a proposed regional transportation plan; therefore, this measure is not applicable to the proposed project.
Post-2020 Cap-and-Trade Program. The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated 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, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade

Scoping Plan Measure	Project Consistency
	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 from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.
Natural and Working Lands Action Plan. CARB is working in coordination with several other agencies at the federal, state, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land.	**Not Applicable**. The project consists of residential development and will not be considered natural or working lands.
Source: California Air Resources Board (CARB). 2017. The 2017 Climate Change Scoping Plan Update. January 20. Website: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf. Accessed December 12, 2023. [1] Pacific Gas and Electric (PG&E). 2018. PG&E Clean Energy Deliveries Already Meet Future Goals. Website: www.pge.com/en/about/newsroom/newsdetails/index.page?title=20180220_pge_clean_energy_deliveries_already_meet_future_goals. Accessed December 12, 2023.	

<u>Consistency Regarding GHG Reduction Goals for 2050 under Executive Order S-3-05 and GHG Reduction Goals for 2045 under the 2022 Scoping Plan</u>

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 with any level of certainty, as they have not yet been developed; nevertheless, it can be anticipated that operation of the project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050. In its 2008 Scoping Plan, CARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update; however, CARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target. In addition, the 2022 Scoping Plan outlines objectives, regulations, planning efforts, and investments in clean technologies and infrastructure that outlines how the State can achieve carbon-neutrality by 2045.

The 2022 Scoping Plan strategies that are applicable to the project include reducing fossil fuel use, energy demand, and vehicle miles traveled; maximizing recycling and diversion from landfills; and increasing water conservation. The TM6467 project would be consistent with these goals through project design, which include complying with the latest requirements of the CALGreen Code and Building Energy Efficiency Standards. For instance, the latest requirement require all new single-family homes to be equipped with solar to provide on-site renewable energy. In addition, the project would receive electricity from PG&E, which is required to reduce GHG emissions by increasing procurement from eligible renewable energy by set target years.

Furthermore, the project would be consistent with goals to reduce VMT by constructing new homes near existing residential, commercial, and public uses. The project would also to encourage alternative modes of transportation by providing infrastructure for future EV chargers (consistent with the applicable Building Code) and would provide extensive pedestrian connectivity within the project site and to adjacent land uses. The project would further align with goals in the 2022 Scoping Plan by incorporating a number of sustainable design features, including, but not limited, to installation of energy-efficient light fixtures, high-efficiency plumbing fixtures, EV parking spaces, and rooftop PV systems and solar panels (consistent with the requirements of Title 24).

Accordingly, taking into account the proposed project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2030, carbon neutral by 2045, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment. Impacts would be less than significant.

Conclusion

As described above, the proposed project would be consistent with State GHG Plans and would not obstruct the State's ability to meet its goals of reducing GHG emissions 40 percent below 1990 levels by 2030, carbon neutral by 2045, and 80 percent below 1990 levels by 2050. Therefore, the project's generation of GHG emissions would not result in a significant impact on the environment.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are necessary.

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

The analysis contained above under Impact GHG-1 evaluates whether the project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of GHGs. As discussed under Impact GHG-1 above, the project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions GHGs. As such, project impacts in this regard would be less than significant.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are necessary.

Attachments:

Attachment A – Modeling Assumptions and CalEEMod Output Files

Attachment B – Construction Health Risk Assessment and Operational Health Risk Screening

ATTACHMENT A
Modeling Assumptions and CalEEMod Output Files

Modeling Assumptions and CalEEMod Output Files

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Bonadelle TM6467 Project Construction Assumptions

Construction Phase Phase Name	Start Date	End Date	Num Days Week	Num Days
Demolition	11/1/2024	11/29/2024	5	20
Site Preparation	11/30/2024	12/14/2024	5	10
Grading	12/15/2024	1/26/2025	5	30
Paving	1/27/2025	2/21/2025	5	20
Trenching/Utilities	2/22/2025	10/03/2025	5	160
Building Construction	10/04/2025	1/21/2028	5	600
Architectural Coating	1/22/2028	2/18/2028	5	20

OffRoad Equipment Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Rubber Tired Dozers	2	8	367	0.40
Demolition	Excavators	3	8	36	0.38
Demolition	Concrete/Industrial Saws	1	8	33	0.73
Site Preparation	Rubber Tired Dozers	3	8	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8	84	0.37
Grading	Graders	1	8	148	0.41
Grading	Excavators	2	8	36	0.38
Grading	Tractors/Loaders/Backhoes	2	8	84	0.37
Grading	Scrapers	2	8	423	0.48
Grading	Rubber Tired Dozers	1	8	367	0.40
Paving	Pavers	2	8	81	0.42
Paving	Paving Equipment	2	8	89	0.36
Paving	Rollers	2	8	36	0.38
Trenching/Utilities	Tractors/Loaders/Backhoes	2	8	84	0.37
Trenching/Utilities	Trenchers	1	8	40	0.50
Trenching/Utilities	Rubber Tired Dozers	1	8	367	0.40
Building Construction	Forklifts	3	8	82	0.20
Building Construction	Generator Sets	1	8	14	0.74
Building Construction	Cranes	1	3.5	367	0.29
Building Construction	Welders	1	8	46	0.45
Building Construction	Tractors/Loaders/Backhoes	3	7	84	0.37
Architectural Coating	Air Compressors	1	6	37	0.48

Construction Trips Phase Name	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Demolition	15	4	0.95	7.7	4	20
Site Preparation	17.5	4	0	7.7	4	20
Grading	20	4	20.83	7.7	4	20
Paving	15	4	0	7.7	4	20
Trenching/Utilities	10	4	0	7.7	4	20
Building Construction	58.32	17.32	0	7.7	4	20
Architectural Coating	11.664	4	0	7.7	4	20


TM6467 Project Vicinity Map
Legend
Project Site
N Minnewawa Ave
Perrin Rd
Perrin Rd
North Marion Avenue
Heirloom Ln
Bloom Ave
Bloom Ave
N Osmun Ave
N Preuss Ave
Vintage Ln
Vintage Ave
Pioneer Ln
Farmhouse Ln
Hughes Ave
Google Earth
N
1000 ft

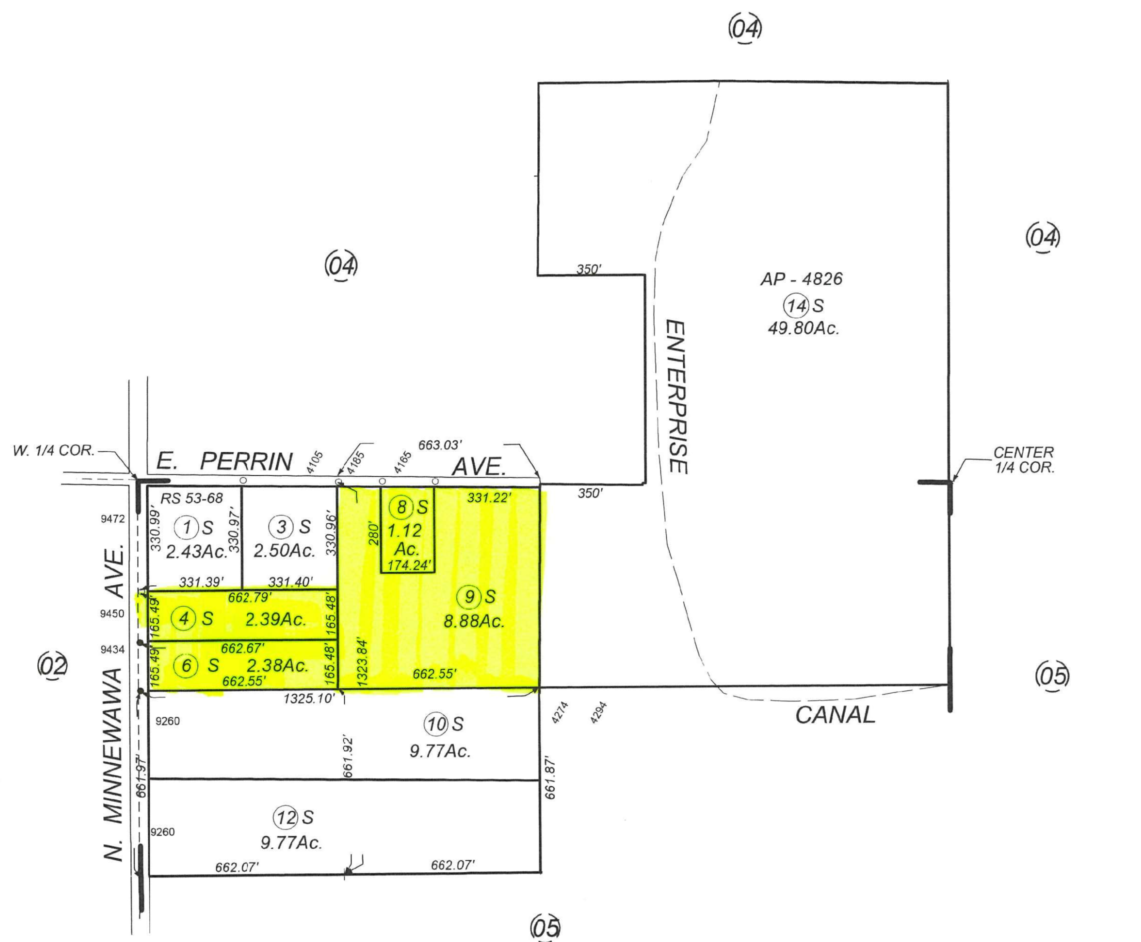
-NOTE-
This map is for Assessment purposes only.
It is not to be construed as portraying legal
ownership or divisions of land for purposes
of zoning or subdivision law.

POR. SEC. 20, T.12 S., R. 21 E., M.D.B.&M.

Tax Rate Area
76-052

556-03

N
1"=400'

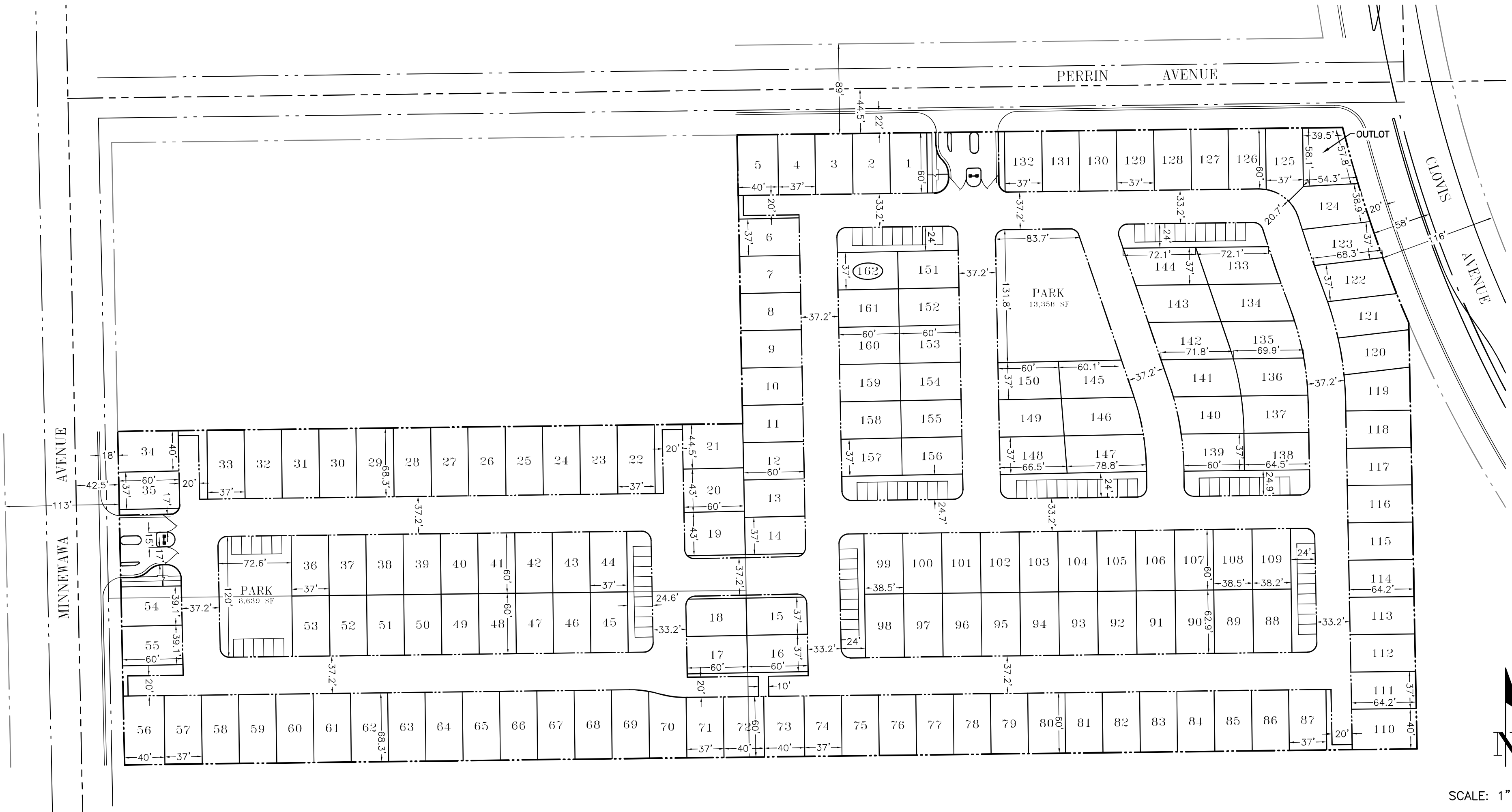


Record of Survey - Bk.53, Pg.68

Assessor's Map Bk. 556 - Pg. 03
County of Fresno, Calif.

Note - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

4/7/2022



SCALE: 1" = 100'

SITE INFO
37' X 60' LOTS
14.57 GROSS AC
13.95 NET AC
162 LOTS
DENSITY: 11.61 U/AC
87 PARKING STALLS
MAXIMUM LOTS:
*MEDIUM – 7.0 DU/AC * 4.71 NET AC = 32.97 DU*
*MEDIUM-HIGH – 15 DU/AC * 9.24 NET AC = 138.60 DU*
TOTAL DU ALLOWED = (32.97+138.6) = 171 LOTS

TM6467

LAYOUT 5 - 37'x60' LOTS
WITH PASEO CORNER

8-14-23

Harbour & Associates
Civil Engineers
389 Clovis Avenue, Suite 300 • Clovis, California 93612
(559) 325-7676 • Fax (559) 325-7699 • e-mail geoffe@harbour-engineering.com

TM6467 Clovis Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	TM6467 Clovis
Construction Start Date	11/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	21.2
Location	36.872631, -119.708339
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2569
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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

Single Family Housing	162	Dwelling Unit	8.30	315,900	1,897,483	—	518	162 single-family residential homes
City Park	0.50	Acre	0.50	0.00	21,997	21,997	—	Two parks totaling 21,997 square feet
Other Asphalt Surfaces	5.07	Acre	5.07	0.00	22,063	—	—	—
Other Non-Asphalt Surfaces	0.73	Acre	0.73	0.00	3,180	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.68	1.41	12.7	13.2	0.02	0.54	0.25	0.79	0.50	0.04	0.53	—	2,285	2,285	0.09	0.03	0.37	2,296
2026	1.35	1.15	8.85	13.8	0.02	0.32	0.56	0.88	0.29	0.11	0.40	—	2,539	2,539	0.10	0.07	1.73	2,563
2027	1.29	1.10	8.44	13.6	0.02	0.28	0.56	0.84	0.26	0.11	0.37	—	2,527	2,527	0.09	0.06	1.55	2,549
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.42	3.72	36.4	33.6	0.07	1.60	7.96	9.56	1.47	3.98	5.46	—	8,254	8,254	0.31	0.30	0.11	8,352
2025	3.95	3.30	31.7	29.4	0.07	1.26	4.29	5.55	1.16	1.58	2.74	—	8,222	8,222	0.31	0.29	0.11	8,318
2026	1.32	1.13	8.91	13.4	0.02	0.32	0.56	0.88	0.29	0.11	0.40	—	2,501	2,501	0.10	0.07	0.04	2,523
2027	1.26	1.07	8.49	13.3	0.02	0.28	0.56	0.84	0.26	0.11	0.37	—	2,489	2,489	0.10	0.06	0.04	2,511
2028	1.21	103	8.12	13.2	0.02	0.25	0.56	0.81	0.23	0.11	0.34	—	2,478	2,478	0.10	0.06	0.04	2,500

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.44	0.37	3.58	3.19	0.01	0.15	0.38	0.53	0.14	0.16	0.30	—	623	623	0.02	0.01	0.08	628
2025	1.24	1.08	9.24	10.2	0.02	0.39	0.43	0.82	0.35	0.12	0.47	—	1,948	1,948	0.08	0.04	0.32	1,962
2026	0.95	0.81	6.34	9.61	0.01	0.23	0.39	0.62	0.21	0.08	0.29	—	1,794	1,794	0.07	0.05	0.53	1,810
2027	0.90	0.77	6.05	9.50	0.01	0.20	0.39	0.59	0.18	0.08	0.26	—	1,786	1,786	0.07	0.05	0.48	1,801
2028	0.06	5.66	0.39	0.62	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	116	116	< 0.005	< 0.005	0.03	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.08	0.07	0.65	0.58	< 0.005	0.03	0.07	0.10	0.03	0.03	0.06	—	103	103	< 0.005	< 0.005	0.01	104
2025	0.23	0.20	1.69	1.86	< 0.005	0.07	0.08	0.15	0.06	0.02	0.09	—	322	322	0.01	0.01	0.05	325
2026	0.17	0.15	1.16	1.75	< 0.005	0.04	0.07	0.11	0.04	0.01	0.05	—	297	297	0.01	0.01	0.09	300
2027	0.16	0.14	1.10	1.73	< 0.005	0.04	0.07	0.11	0.03	0.01	0.05	—	296	296	0.01	0.01	0.08	298
2028	0.01	1.03	0.07	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.01	19.4

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.53	5.28	3.49	34.1	0.07	0.05	5.73	5.78	0.04	1.45	1.49	—	6,958	6,958	0.31	0.35	24.5	7,093
Area	1.03	8.26	1.43	9.74	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,730	1,730	0.03	< 0.005	—	1,732
Energy	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,866	2,866	0.32	0.02	—	2,880
Water	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Waste	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Total	6.75	13.6	6.51	44.5	0.09	0.29	5.73	6.02	0.28	1.45	1.73	90.0	11,613	11,703	9.70	0.40	26.8	12,092

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.81	4.53	4.05	30.1	0.06	0.05	5.73	5.78	0.04	1.45	1.49	—	6,296	6,296	0.39	0.38	0.64	6,418
Area	0.16	7.43	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Energy	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,866	2,866	0.32	0.02	—	2,880
Water	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Waste	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Total	5.15	12.1	6.98	31.3	0.08	0.28	5.73	6.01	0.28	1.45	1.73	90.0	10,927	11,017	9.78	0.43	2.90	11,393
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.82	4.56	3.69	29.0	0.06	0.05	5.54	5.59	0.04	1.40	1.44	—	6,360	6,360	0.34	0.35	10.4	6,484
Area	0.47	7.78	0.35	4.65	< 0.005	0.03	—	0.03	0.03	—	0.03	0.00	395	395	0.01	< 0.005	—	396
Energy	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,866	2,866	0.32	0.02	—	2,880
Water	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Waste	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Total	5.47	12.4	5.62	34.3	0.07	0.20	5.54	5.74	0.20	1.40	1.60	90.0	9,681	9,771	9.71	0.41	12.6	10,147
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.88	0.83	0.67	5.29	0.01	0.01	1.01	1.02	0.01	0.26	0.26	—	1,053	1,053	0.06	0.06	1.72	1,074
Area	0.08	1.42	0.06	0.85	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	65.4	65.4	< 0.005	< 0.005	—	65.5
Energy	0.03	0.02	0.29	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	475	475	0.05	< 0.005	—	477
Water	—	—	—	—	—	—	—	—	—	—	—	2.07	9.73	11.8	0.21	0.01	—	18.7
Waste	—	—	—	—	—	—	—	—	—	—	—	12.8	0.00	12.8	1.28	0.00	—	44.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37	0.37
Total	1.00	2.27	1.03	6.26	0.01	0.04	1.01	1.05	0.04	0.26	0.29	14.9	1,603	1,618	1.61	0.07	2.09	1,680

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	1.06	—	1.06	0.98	—	0.98	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.36	1.19	< 0.005	0.06	—	0.06	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.49	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.01	83.7
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.8	67.8	< 0.005	0.01	< 0.005	71.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.68	4.68	< 0.005	< 0.005	0.01	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.94	2.94	< 0.005	< 0.005	< 0.005	3.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.57	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	96.2	96.2	< 0.005	< 0.005	0.01	97.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.73	2.73	< 0.005	< 0.005	0.01	2.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.53
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.14	1.00	< 0.005	0.05	—	0.05	0.04	—	0.04	—	220	220	0.01	< 0.005	—	220
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.3	36.3	< 0.005	< 0.005	—	36.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.66	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	0.01	0.01	0.01	112
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.07	0.03	1.92	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,487	1,487	0.03	0.24	0.09	1,558

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.86
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.05	51.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.19	8.19	< 0.005	< 0.005	0.01	8.58

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.51	1.44	< 0.005	0.06	—	0.06	0.06	—	0.06	—	336	336	0.01	< 0.005	—	337

Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.6	55.6	< 0.005	< 0.005	—	55.8
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	108	108	< 0.005	0.01	0.01	109
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.06	0.02	1.86	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,458	1,458	0.03	0.23	0.09	1,526
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.67	5.67	< 0.005	< 0.005	0.01	5.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.80
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	< 0.005	0.01	0.08	77.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46

Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.01	12.9

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.96	8.84	11.7	0.02	0.37	—	0.37	0.34	—	0.34	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.54	2.03	< 0.005	0.06	—	0.06	0.06	—	0.06	—	342	342	0.01	< 0.005	—	343
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.97
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.16	1.76	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	314	314	0.01	0.02	0.03	319
Vendor	0.02	0.01	0.39	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	228	228	0.01	0.03	0.02	238
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.31	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.6	56.6	< 0.005	< 0.005	0.10	57.5
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.7	39.7	< 0.005	0.01	0.04	41.5
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.37	9.37	< 0.005	< 0.005	0.02	9.53
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.57	6.57	< 0.005	< 0.005	0.01	6.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.18	5.18	< 0.005	< 0.005	< 0.005	5.45
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.27	5.27	< 0.005	< 0.005	< 0.005	5.53
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.65	5.96	8.30	0.01	0.23	—	0.23	0.21	—	0.21	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.73	3.73	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.09	1.51	< 0.005	0.04	—	0.04	0.04	—	0.04	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.12	2.00	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	346	346	0.01	0.02	1.20	352
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.52	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.15	1.62	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	307	307	0.01	0.02	0.03	312
Vendor	0.02	0.01	0.38	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.01	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.09	1.18	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	227	227	0.01	0.01	0.37	231
Vendor	0.01	0.01	0.26	0.12	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	160	160	< 0.005	0.02	0.16	167

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.6	37.6	< 0.005	< 0.005	0.06	38.3
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.5	26.5	< 0.005	< 0.005	0.03	27.7
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	0.00

3.13. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.07	5.07	< 0.005	< 0.005	< 0.005	5.32
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.68	8.29	0.01	0.20	—	0.20	0.18	—	0.18	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.65	3.65	< 0.005	< 0.005	< 0.005	3.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.14	0.11	1.04	1.51	< 0.005	0.04	—	0.04	0.03	—	0.03	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.22	0.11	1.85	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	339	339	0.01	0.01	1.09	344
Vendor	0.02	0.01	0.34	0.15	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.46	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.13	1.50	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	301	301	0.01	0.02	0.03	306
Vendor	0.02	0.01	0.37	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.01	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	0.09	1.08	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	223	223	0.01	0.01	0.33	226
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	< 0.005	0.02	0.14	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.9	36.9	< 0.005	< 0.005	0.06	37.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.9	25.9	< 0.005	< 0.005	0.02	27.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.61	11.6	0.02	0.25	—	0.25	0.23	—	0.23	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.05	5.05	< 0.005	< 0.005	< 0.005	5.31
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.12	1.39	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	295	295	0.01	0.02	0.03	300
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	214	214	0.01	0.03	0.01	224
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.78	8.78	< 0.005	< 0.005	0.01	9.18
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.11
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.52
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	0.00

3.17. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.58	4.58	< 0.005	< 0.005	0.01	4.66
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.89	2.89	< 0.005	< 0.005	< 0.005	3.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.28	0.28	< 0.005	0.03	0.03	—	7.58	7.58	< 0.005	< 0.005	< 0.005	7.97
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	5.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.1	59.1	< 0.005	< 0.005	0.01	60.0
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	< 0.005	51.6
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.35	3.35	< 0.005	< 0.005	< 0.005	3.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.70	2.70	< 0.005	< 0.005	< 0.005	2.83
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Utilities (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.29	5.29	< 0.005	< 0.005	< 0.005	5.55

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.51	5.60	0.01	0.24	—	0.24	0.22	—	0.22	—	950	950	0.04	0.01	—	953
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.33	2.33	< 0.005	< 0.005	< 0.005	2.45
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.02	< 0.005	0.04	—	0.04	0.04	—	0.04	—	157	157	0.01	< 0.005	—	158
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.02	0.37	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	60.6	60.6	< 0.005	< 0.005	0.23	61.7
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.6	52.6	< 0.005	0.01	0.14	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	53.8	53.8	< 0.005	< 0.005	0.01	54.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	0.03	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.04	4.04	< 0.005	< 0.005	0.01	4.11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.82	3.82	< 0.005	< 0.005	< 0.005	4.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	5.53	5.28	3.49	34.1	0.07	0.05	5.73	5.78	0.04	1.45	1.49	—	6,958	6,958	0.31	0.35	24.5	7,093
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	5.53	5.28	3.49	34.1	0.07	0.05	5.73	5.78	0.04	1.45	1.49	—	6,958	6,958	0.31	0.35	24.5	7,093

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.81	4.53	4.05	30.1	0.06	0.05	5.73	5.78	0.04	1.45	1.49	—	6,296	6,296	0.39	0.38	0.64	6,418
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	4.81	4.53	4.05	30.1	0.06	0.05	5.73	5.78	0.04	1.45	1.49	—	6,296	6,296	0.39	0.38	0.64	6,418
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.88	0.83	0.67	5.29	0.01	0.01	1.01	1.02	0.01	0.26	0.26	—	1,053	1,053	0.06	0.06	1.72	1,074
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	0.88	0.83	0.67	5.29	0.01	0.01	1.01	1.02	0.01	0.26	0.26	—	1,053	1,053	0.06	0.06	1.72	1,074

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.02	0.29	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	334	334	0.03	< 0.005	—	335
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	0.03	0.02	0.29	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	334	334	0.03	< 0.005	—	335

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.16	0.08	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Consumer Products	—	6.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.87	0.83	0.09	9.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.6	24.6	< 0.005	< 0.005	—	24.7
Total	1.03	8.26	1.43	9.74	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,730	1,730	0.03	< 0.005	—	1,732
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.16	0.08	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Consumer Products	—	6.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.16	7.43	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	63.4	63.4	< 0.005	< 0.005	—	63.5
Consumer Products	—	1.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	0.07	0.01	0.83	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.01	2.01	< 0.005	< 0.005	—	2.01
Total	0.08	1.42	0.06	0.85	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	65.4	65.4	< 0.005	< 0.005	—	65.5

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.5	57.4	69.9	1.29	0.03	—	112
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.41	0.41	< 0.005	< 0.005	—	0.41
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.06	0.06	< 0.005	< 0.005	—	0.06
Total	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.5	57.4	69.9	1.29	0.03	—	112
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.41	0.41	< 0.005	< 0.005	—	0.41
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.06	0.06	< 0.005	< 0.005	—	0.06
Total	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.07	9.51	11.6	0.21	0.01	—	18.5
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.15	0.15	< 0.005	< 0.005	—	0.15
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.07	0.07	< 0.005	< 0.005	—	0.07
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	2.07	9.73	11.8	0.21	0.01	—	18.7

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
City Park	—	—	—	—	—	—	—	—	—	—	—	0.02	0.00	0.02	< 0.005	0.00	—	0.08
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
City Park	—	—	—	—	—	—	—	—	—	—	—	0.02	0.00	0.02	< 0.005	0.00	—	0.08
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.8	0.00	12.8	1.28	0.00	—	44.9
City Park	—	—	—	—	—	—	—	—	—	—	—	< 0.005	0.00	< 0.005	< 0.005	0.00	—	0.01
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.8	0.00	12.8	1.28	0.00	—	44.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37	0.37
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37	0.37

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

90

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	11/1/2024	11/29/2024	5.00	20.0	—
Site Preparation	Site Preparation	11/30/2024	12/14/2024	5.00	10.0	—

Grading	Grading	12/15/2024	1/26/2025	5.00	30.0	—
Building Construction	Building Construction	10/04/2025	1/21/2028	5.00	600	—
Paving	Paving	1/27/2025	2/21/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	1/22/2028	2/18/2028	5.00	20.0	—
Utilities	Trenching	2/22/2025	10/03/2025	5.00	160	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	3.50	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37

Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Utilities	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Utilities	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

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	7.70	LDA,LDT1,LDT2
Demolition	Vendor	4.00	4.00	HHDT,MHDT
Demolition	Hauling	0.95	20.0	HHDT
Demolition	Onsite truck	2.00	0.25	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	4.00	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	2.00	0.25	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	4.00	4.00	HHDT,MHDT
Grading	Hauling	20.8	20.0	HHDT
Grading	Onsite truck	2.00	0.25	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	58.3	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	17.3	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	2.00	0.25	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	4.00	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	2.00	0.25	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	11.7	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	4.00	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	3.00	0.25	HHDT
Utilities	—	—	—	—
Utilities	Worker	10.0	7.70	LDA,LDT1,LDT2
Utilities	Vendor	4.00	4.00	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	2.00	0.25	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	639,698	213,233	0.00	0.00	15,146

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,650	—
Site Preparation	—	—	15.0	0.00	—
Grading	2,500	2,500	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	7.58

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.79	0%
City Park	0.00	0%
Other Asphalt Surfaces	5.07	100%
Other Non-Asphalt Surfaces	0.73	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

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
Single Family Housing	1,528	1,536	1,374	549,993	8,135	8,178	7,316	2,928,862
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—

Wood Fireplaces	0
Gas Fireplaces	81
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	81
Conventional Wood Stoves	0
Catalytic Wood Stoves	8
Non-Catalytic Wood Stoves	8
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
639697.5	213,233	0.00	0.00	15,146

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	1,514,146	204	0.0330	0.0040	6,303,796
City Park	0.00	204	0.0330	0.0040	0.00

Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	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)
Single Family Housing	6,527,952	31,835,405
City Park	0.00	671,017
Other Asphalt Surfaces	0.00	302,866
Other Non-Asphalt Surfaces	0.00	43,651

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	144	—
City Park	0.04	—
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

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)

8. User Changes to Default Data

Screen	Justification
Land Use	Land uses based on the project site plan. 162 single-family residential homes and 2 parks on approximately 14.57 gross acres. Acreage for homes based on lot sizes.
Construction: Construction Phases	Lot development to occur prior to building construction. Construction to start as early as November 2024 and last until 2028. Utilities phase added and building construction phase doubled to reflect applicant-provided construction schedule.
Operations: Vehicle Data	Trip rates for single-family housing from the ITE Trip Generation Rates, 11th Edition. ITE Land Use Code 210 (Single-family detached housing) The parks will serve as amenities for the subdivision.
Operations: Fleet Mix	SJVAPCD-approved residential fleet mix for the 2025 operational year applied to single-family homes.
Operations: Hearths	SJVAPCD Rule 4901 Woodburning No woodburning fireplaces or wood stoves
Construction: Off-Road Equipment	Equipment added to the utilities phase. Crane usage adjusted to retain default HP hours, as the duration for the building construction phase was doubled.

TM6467 Clovis - Localized Assessment Custom Report

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5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	TM6467 Clovis - Localized Assessment
Construction Start Date	11/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	21.2
Location	36.872631, -119.708339
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2569
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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

Single Family Housing	162	Dwelling Unit	8.30	315,900	1,897,483	—	518	162 single-family residential homes
City Park	0.50	Acre	0.50	0.00	21,997	21,997	—	Two parks totaling 21,997 square feet
Other Asphalt Surfaces	5.07	Acre	5.07	0.00	22,063	—	—	—
Other Non-Asphalt Surfaces	0.73	Acre	0.73	0.00	3,180	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.67	1.41	12.7	12.9	0.02	0.54	0.38	0.92	0.50	0.04	0.54	—	2,189	2,189	0.09	0.02	0.04	2,198
2026	1.32	1.13	8.63	12.3	0.02	0.32	0.40	0.72	0.29	0.04	0.34	—	2,047	2,047	0.09	0.03	0.15	2,059
2027	1.26	1.08	8.23	12.3	0.02	0.28	0.40	0.68	0.26	0.04	0.30	—	2,046	2,046	0.09	0.03	0.14	2,056
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.41	3.71	36.1	33.2	0.06	1.60	8.05	9.65	1.47	3.98	5.45	—	6,702	6,702	0.28	0.07	< 0.005	6,730
2025	3.90	3.28	30.2	28.9	0.06	1.24	3.98	5.22	1.14	1.47	2.60	—	6,701	6,701	0.28	0.07	< 0.005	6,728
2026	1.29	1.11	8.65	12.5	0.02	0.32	0.40	0.72	0.29	0.04	0.34	—	2,046	2,046	0.10	0.03	< 0.005	2,057
2027	1.24	1.06	8.25	12.5	0.02	0.28	0.40	0.68	0.26	0.04	0.30	—	2,044	2,044	0.10	0.03	< 0.005	2,055
2028	1.19	103	7.90	12.4	0.02	0.25	0.56	0.65	0.23	0.06	0.27	—	2,042	2,042	0.09	0.03	< 0.005	2,054

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.44	0.37	3.51	3.14	0.01	0.15	0.37	0.52	0.14	0.16	0.30	—	558	558	0.02	0.01	< 0.005	560
2025	1.22	1.07	9.09	9.88	0.02	0.38	0.44	0.83	0.35	0.10	0.45	—	1,741	1,741	0.07	0.02	0.02	1,749
2026	0.93	0.79	6.17	8.86	0.01	0.23	0.27	0.50	0.21	0.03	0.24	—	1,461	1,461	0.07	0.02	0.05	1,470
2027	0.88	0.76	5.89	8.81	0.01	0.20	0.27	0.47	0.18	0.03	0.21	—	1,460	1,460	0.07	0.02	0.04	1,468
2028	0.06	5.66	0.37	0.58	< 0.005	0.01	0.04	0.06	0.01	< 0.005	0.01	—	92.7	92.7	< 0.005	< 0.005	< 0.005	93.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.08	0.07	0.64	0.57	< 0.005	0.03	0.07	0.10	0.03	0.03	0.05	—	92.4	92.4	< 0.005	< 0.005	< 0.005	92.8
2025	0.22	0.20	1.66	1.80	< 0.005	0.07	0.08	0.15	0.06	0.02	0.08	—	288	288	0.01	< 0.005	< 0.005	290
2026	0.17	0.14	1.13	1.62	< 0.005	0.04	0.05	0.09	0.04	0.01	0.04	—	242	242	0.01	< 0.005	0.01	243
2027	0.16	0.14	1.07	1.61	< 0.005	0.04	0.05	0.09	0.03	0.01	0.04	—	242	242	0.01	< 0.005	0.01	243
2028	0.01	1.03	0.07	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	< 0.005	15.4

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.12	5.00	1.70	12.8	0.01	0.01	0.54	0.55	0.01	0.14	0.15	—	935	935	0.24	0.14	2.30	985
Area	1.03	8.26	1.43	9.74	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,730	1,730	0.03	< 0.005	—	1,732
Energy	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,866	2,866	0.32	0.02	—	2,880
Water	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Waste	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Total	6.34	13.3	4.73	23.2	0.03	0.25	0.54	0.79	0.25	0.14	0.39	90.0	5,590	5,680	9.63	0.20	4.56	5,984

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.43	4.26	1.94	16.8	0.01	0.01	0.54	0.55	0.01	0.14	0.15	—	883	883	0.32	0.15	0.06	937
Area	0.16	7.43	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Energy	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,866	2,866	0.32	0.02	—	2,880
Water	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Waste	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Total	4.77	11.8	4.87	18.1	0.03	0.25	0.54	0.79	0.25	0.14	0.38	90.0	5,513	5,603	9.71	0.21	2.32	5,911
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.43	4.29	1.76	14.0	0.01	0.01	0.52	0.53	0.01	0.13	0.14	—	878	878	0.28	0.14	0.97	928
Area	0.47	7.78	0.35	4.65	< 0.005	0.03	—	0.03	0.03	—	0.03	0.00	395	395	0.01	< 0.005	—	396
Energy	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,866	2,866	0.32	0.02	—	2,880
Water	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Waste	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Total	5.08	12.2	3.70	19.3	0.02	0.17	0.52	0.69	0.17	0.13	0.30	90.0	4,198	4,288	9.64	0.20	3.24	4,591
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.81	0.78	0.32	2.55	< 0.005	< 0.005	0.09	0.10	< 0.005	0.02	0.03	—	145	145	0.05	0.02	0.16	154
Area	0.08	1.42	0.06	0.85	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	65.4	65.4	< 0.005	< 0.005	—	65.5
Energy	0.03	0.02	0.29	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	475	475	0.05	< 0.005	—	477
Water	—	—	—	—	—	—	—	—	—	—	—	2.07	9.73	11.8	0.21	0.01	—	18.7
Waste	—	—	—	—	—	—	—	—	—	—	—	12.8	0.00	12.8	1.28	0.00	—	44.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37	0.37
Total	0.93	2.22	0.68	3.52	< 0.005	0.03	0.09	0.13	0.03	0.02	0.05	14.9	695	710	1.60	0.03	0.54	760

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	1.06	—	1.06	0.98	—	0.98	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	7.23	7.23	< 0.005	< 0.005	< 0.005	7.59
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.36	1.19	< 0.005	0.06	—	0.06	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.02	0.22	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.03	8.03	< 0.005	< 0.005	< 0.005	8.58
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.8	10.8	< 0.005	< 0.005	< 0.005	11.3
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.43	3.43	< 0.005	< 0.005	< 0.005	3.60
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.48
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.62
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.08
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	7.23	7.23	< 0.005	< 0.005	< 0.005	7.59
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.02	0.26	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.37	9.37	< 0.005	< 0.005	< 0.005	10.0
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.8	10.8	< 0.005	< 0.005	< 0.005	11.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.28
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	7.23	7.23	< 0.005	< 0.005	< 0.005	7.59
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.14	1.00	< 0.005	0.05	—	0.05	0.04	—	0.04	—	220	220	0.01	< 0.005	—	220
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.3	36.3	< 0.005	< 0.005	—	36.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.02	0.30	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.7	10.7	0.01	< 0.005	< 0.005	11.4
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.8	10.8	< 0.005	< 0.005	< 0.005	11.3
Hauling	0.02	0.02	0.38	0.25	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	75.3	75.3	0.01	0.01	< 0.005	79.0

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.37
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.49	2.49	< 0.005	< 0.005	< 0.005	2.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	7.08	7.08	< 0.005	< 0.005	< 0.005	7.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.51	1.44	< 0.005	0.06	—	0.06	0.06	—	0.06	—	336	336	0.01	< 0.005	—	337

Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.38
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.6	55.6	< 0.005	< 0.005	—	55.8
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.02	0.28	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	< 0.005	11.2
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	< 0.005	11.1
Hauling	0.02	0.01	0.38	0.25	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	73.8	73.8	0.01	0.01	< 0.005	77.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.58
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.73	3.73	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.10
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09

Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.96	8.84	11.7	0.02	0.37	—	0.37	0.34	—	0.34	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	7.08	7.08	< 0.005	< 0.005	< 0.005	7.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.54	2.03	< 0.005	0.06	—	0.06	0.06	—	0.06	—	342	342	0.01	< 0.005	—	343
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	1.22	1.22	< 0.005	< 0.005	< 0.005	1.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.20	0.06	0.81	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	30.5	30.5	0.01	0.01	< 0.005	32.6
Vendor	0.01	0.01	0.22	0.14	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	45.9	45.9	< 0.005	0.01	< 0.005	48.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.01	0.12	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	5.40	5.40	< 0.005	< 0.005	0.01	5.76
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.94	7.94	< 0.005	< 0.005	0.01	8.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.95
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.32	1.32	< 0.005	< 0.005	< 0.005	1.38
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	6.85	6.85	< 0.005	< 0.005	0.01	7.20
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	6.94	6.94	< 0.005	< 0.005	< 0.005	7.28
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.65	5.96	8.30	0.01	0.23	—	0.23	0.21	—	0.21	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.25	0.25	< 0.005	0.02	0.03	—	4.92	4.92	< 0.005	< 0.005	< 0.005	5.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.09	1.51	< 0.005	0.04	—	0.04	0.04	—	0.04	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.86
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.21	0.05	0.56	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	32.0	32.0	0.01	0.01	0.08	34.0
Vendor	0.01	0.01	0.20	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.6	44.6	< 0.005	0.01	0.07	46.8
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.19	0.06	0.75	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	29.8	29.8	0.01	0.01	< 0.005	31.9
Vendor	0.01	0.01	0.21	0.14	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	45.0	45.0	< 0.005	0.01	< 0.005	47.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	0.04	0.45	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	21.7	21.7	0.01	< 0.005	0.02	23.1
Vendor	0.01	0.01	0.15	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.0	32.0	< 0.005	< 0.005	0.02	33.5

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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.01	0.08	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.59	3.59	< 0.005	< 0.005	< 0.005	3.83
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.29	5.29	< 0.005	< 0.005	< 0.005	5.55
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	6.70	6.70	< 0.005	< 0.005	0.01	7.03
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	6.79	6.79	< 0.005	< 0.005	< 0.005	7.12
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.68	8.29	0.01	0.20	—	0.20	0.18	—	0.18	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.25	0.25	< 0.005	0.02	0.03	—	4.81	4.81	< 0.005	< 0.005	< 0.005	5.05
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.14	0.11	1.04	1.51	< 0.005	0.04	—	0.04	0.03	—	0.03	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.84
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.20	0.04	0.52	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	31.3	31.3	0.01	< 0.005	0.07	32.9
Vendor	0.01	0.01	0.20	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.7	43.7	< 0.005	0.01	0.06	45.8
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.18	0.05	0.69	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	29.2	29.2	0.01	0.01	< 0.005	31.2
Vendor	0.01	0.01	0.21	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.1	44.1	< 0.005	0.01	< 0.005	46.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.13	0.03	0.42	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	21.2	21.2	0.01	< 0.005	0.02	22.6
Vendor	0.01	0.01	0.15	0.09	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.3	31.3	< 0.005	< 0.005	0.02	32.8
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.08	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	< 0.005	3.75
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.19	5.19	< 0.005	< 0.005	< 0.005	5.44
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.61	11.6	0.02	0.25	—	0.25	0.23	—	0.23	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	6.64	6.64	< 0.005	< 0.005	< 0.005	6.98
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.17	0.05	0.65	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	28.6	28.6	0.01	0.01	< 0.005	30.6
Vendor	0.01	0.01	0.21	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.2	43.2	< 0.005	0.01	< 0.005	45.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.20	1.20	< 0.005	< 0.005	< 0.005	1.26
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.85
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.21
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	7.08	7.08	< 0.005	< 0.005	< 0.005	7.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.02	0.21	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.85	7.85	< 0.005	< 0.005	< 0.005	8.39
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	< 0.005	11.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.47
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.60
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.08
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.56	0.56	< 0.005	0.06	0.06	—	9.96	9.96	< 0.005	< 0.005	< 0.005	10.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	5.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.13	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	5.72	5.72	< 0.005	< 0.005	< 0.005	6.12
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.98	9.98	< 0.005	< 0.005	< 0.005	10.5
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.32	0.32	< 0.005	< 0.005	< 0.005	0.34
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.57
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Utilities (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	6.99	6.99	< 0.005	< 0.005	0.01	7.34

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	7.08	7.08	< 0.005	< 0.005	< 0.005	7.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.51	5.60	0.01	0.24	—	0.24	0.22	—	0.22	—	950	950	0.04	0.01	—	953
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.15	0.15	< 0.005	0.02	0.02	—	3.08	3.08	< 0.005	< 0.005	< 0.005	3.23
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.02	< 0.005	0.04	—	0.04	0.04	—	0.04	—	157	157	0.01	< 0.005	—	158
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.51	0.51	< 0.005	< 0.005	< 0.005	0.54
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.01	0.10	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	5.60	5.60	< 0.005	< 0.005	0.01	5.96
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.02	11.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.01	0.14	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	5.23	5.23	< 0.005	< 0.005	< 0.005	5.59
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	< 0.005	11.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.33	2.33	< 0.005	< 0.005	< 0.005	2.49
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.62	4.62	< 0.005	< 0.005	< 0.005	4.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.80
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	5.12	5.00	1.70	12.8	0.01	0.01	0.54	0.55	0.01	0.14	0.15	—	935	935	0.24	0.14	2.30	985
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	5.12	5.00	1.70	12.8	0.01	0.01	0.54	0.55	0.01	0.14	0.15	—	935	935	0.24	0.14	2.30	985

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.43	4.26	1.94	16.8	0.01	0.01	0.54	0.55	0.01	0.14	0.15	—	883	883	0.32	0.15	0.06	937
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	4.43	4.26	1.94	16.8	0.01	0.01	0.54	0.55	0.01	0.14	0.15	—	883	883	0.32	0.15	0.06	937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.81	0.78	0.32	2.55	< 0.005	< 0.005	0.09	0.10	< 0.005	0.02	0.03	—	145	145	0.05	0.02	0.16	154
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	0.81	0.78	0.32	2.55	< 0.005	< 0.005	0.09	0.10	< 0.005	0.02	0.03	—	145	145	0.05	0.02	0.16	154

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	846	846	0.14	0.02	—	855
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	0.19	0.09	1.59	0.68	0.01	0.13	—	0.13	0.13	—	0.13	—	2,020	2,020	0.18	< 0.005	—	2,026
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.02	0.29	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	334	334	0.03	< 0.005	—	335
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	0.03	0.02	0.29	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	334	334	0.03	< 0.005	—	335

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.16	0.08	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Consumer Products	—	6.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.87	0.83	0.09	9.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.6	24.6	< 0.005	< 0.005	—	24.7
Total	1.03	8.26	1.43	9.74	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,730	1,730	0.03	< 0.005	—	1,732
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.16	0.08	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Consumer Products	—	6.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.16	7.43	1.34	0.57	0.01	0.11	—	0.11	0.11	—	0.11	0.00	1,706	1,706	0.03	< 0.005	—	1,707
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	63.4	63.4	< 0.005	< 0.005	—	63.5
Consumer Products	—	1.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	0.07	0.01	0.83	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.01	2.01	< 0.005	< 0.005	—	2.01
Total	0.08	1.42	0.06	0.85	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	65.4	65.4	< 0.005	< 0.005	—	65.5

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.5	57.4	69.9	1.29	0.03	—	112
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.41	0.41	< 0.005	< 0.005	—	0.41
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.06	0.06	< 0.005	< 0.005	—	0.06
Total	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.5	57.4	69.9	1.29	0.03	—	112
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.41	0.41	< 0.005	< 0.005	—	0.41
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.06	0.06	< 0.005	< 0.005	—	0.06
Total	—	—	—	—	—	—	—	—	—	—	—	12.5	58.8	71.3	1.29	0.03	—	113
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2.07	9.51	11.6	0.21	0.01	—	18.5
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.15	0.15	< 0.005	< 0.005	—	0.15
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.07	0.07	< 0.005	< 0.005	—	0.07
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	2.07	9.73	11.8	0.21	0.01	—	18.7

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
City Park	—	—	—	—	—	—	—	—	—	—	—	0.02	0.00	0.02	< 0.005	0.00	—	0.08
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
City Park	—	—	—	—	—	—	—	—	—	—	—	0.02	0.00	0.02	< 0.005	0.00	—	0.08
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.5	0.00	77.5	7.75	0.00	—	271
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.8	0.00	12.8	1.28	0.00	—	44.9
City Park	—	—	—	—	—	—	—	—	—	—	—	< 0.005	0.00	< 0.005	< 0.005	0.00	—	0.01
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.8	0.00	12.8	1.28	0.00	—	44.9

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.26	2.26
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37	0.37
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37	0.37

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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)

Equipme Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	11/1/2024	11/29/2024	5.00	20.0	—
Site Preparation	Site Preparation	11/30/2024	12/14/2024	5.00	10.0	—

Grading	Grading	12/15/2024	1/26/2025	5.00	30.0	—
Building Construction	Building Construction	10/04/2025	1/21/2028	5.00	600	—
Paving	Paving	1/27/2025	2/21/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	1/22/2028	2/18/2028	5.00	20.0	—
Utilities	Trenching	2/22/2025	10/03/2025	5.00	160	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	3.50	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37

Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Utilities	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Utilities	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

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	0.50	LDA,LDT1,LDT2
Demolition	Vendor	4.00	0.50	HHDT,MHDT
Demolition	Hauling	0.95	0.50	HHDT
Demolition	Onsite truck	2.00	0.50	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	0.50	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	0.50	HHDT,MHDT
Site Preparation	Hauling	0.00	0.50	HHDT
Site Preparation	Onsite truck	2.00	0.50	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	0.50	LDA,LDT1,LDT2
Grading	Vendor	4.00	0.50	HHDT,MHDT
Grading	Hauling	20.8	0.50	HHDT
Grading	Onsite truck	2.00	0.50	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	58.3	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	17.3	0.50	HHDT,MHDT
Building Construction	Hauling	0.00	0.50	HHDT
Building Construction	Onsite truck	2.00	0.50	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	0.50	LDA,LDT1,LDT2
Paving	Vendor	4.00	0.50	HHDT,MHDT
Paving	Hauling	0.00	0.50	HHDT
Paving	Onsite truck	2.00	0.50	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	11.7	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	4.00	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	3.00	0.50	HHDT
Utilities	—	—	—	—
Utilities	Worker	10.0	0.50	LDA,LDT1,LDT2
Utilities	Vendor	4.00	0.50	HHDT,MHDT
Utilities	Hauling	0.00	0.50	HHDT
Utilities	Onsite truck	2.00	0.50	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	639,698	213,233	0.00	0.00	15,146

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,650	—
Site Preparation	—	—	15.0	0.00	—
Grading	2,500	2,500	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	7.58

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.79	0%
City Park	0.00	0%
Other Asphalt Surfaces	5.07	100%
Other Non-Asphalt Surfaces	0.73	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

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
Single Family Housing	1,528	1,536	1,374	549,993	764	768	687	274,997
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—

Wood Fireplaces	0
Gas Fireplaces	81
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	81
Conventional Wood Stoves	0
Catalytic Wood Stoves	8
Non-Catalytic Wood Stoves	8
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
639697.5	213,233	0.00	0.00	15,146

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	1,514,146	204	0.0330	0.0040	6,303,796
City Park	0.00	204	0.0330	0.0040	0.00

Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	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)
Single Family Housing	6,527,952	31,835,405
City Park	0.00	671,017
Other Asphalt Surfaces	0.00	302,866
Other Non-Asphalt Surfaces	0.00	43,651

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	144	—
City Park	0.04	—
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

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)

8. User Changes to Default Data

Screen	Justification
Land Use	Land uses based on the project site plan. 162 single-family residential homes and 2 parks on approximately 14.57 gross acres. Acreage for homes based on lot sizes.
Construction: Construction Phases	Lot development to occur prior to building construction. Construction to start as early as November 2024 and last until 2028. Utilities phase added and building construction phase doubled to reflect applicant-provided construction schedule.
Operations: Vehicle Data	Trip lengths updated to 0.5 mile to account for on-site and localized emissions from mobile sources. Trip rates for single-family housing from the ITE Trip Generation Rates, 11th Edition. ITE Land Use Code 210 (Single-family detached housing) The parks will serve as amenities for the subdivision.
Operations: Fleet Mix	SJVAPCD-approved residential fleet mix for the 2025 operational year applied to single-family homes.
Operations: Hearths	SJVAPCD Rule 4901 Woodburning No woodburning fireplaces or wood stoves
Construction: Off-Road Equipment	Equipment added to the utilities phase. Crane usage adjusted to retain default HP hours, as the duration for the building construction phase was doubled.

Construction: Trips and VMT	Trip lengths updated to 0.5 mile to account for on-site and localized emissions from construction vehicles.

TM6467 - Mitigated Construction (Tier 4 Equipment) Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	TM6467 - Mitigated Construction (Tier 4 Equipment)
Construction Start Date	11/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	21.2
Location	36.872631, -119.708339
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2569
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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
Single Family Housing	162	Dwelling Unit	8.30	315,900	1,897,483	—	518	162 single-family residential homes

City Park	0.50	Acre	0.50	0.00	21,997	21,997	—	Two parks totaling 21,997 square feet
Other Asphalt Surfaces	5.07	Acre	5.07	0.00	22,063	—	—	—
Other Non-Asphalt Surfaces	0.73	Acre	0.73	0.00	3,180	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.68	1.41	12.7	13.2	0.02	0.54	0.25	0.79	0.50	0.04	0.53	—	2,285	2,285	0.09	0.03	0.37	2,296
2026	1.35	1.15	8.85	13.8	0.02	0.32	0.56	0.88	0.29	0.11	0.40	—	2,539	2,539	0.10	0.07	1.73	2,563
2027	1.29	1.10	8.44	13.6	0.02	0.28	0.56	0.84	0.26	0.11	0.37	—	2,527	2,527	0.09	0.06	1.55	2,549
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.42	3.72	36.4	33.6	0.07	1.60	7.96	9.56	1.47	3.98	5.46	—	8,254	8,254	0.31	0.30	0.11	8,352
2025	3.95	3.30	31.7	29.4	0.07	1.26	4.29	5.55	1.16	1.58	2.74	—	8,222	8,222	0.31	0.29	0.11	8,318
2026	1.32	1.13	8.91	13.4	0.02	0.32	0.56	0.88	0.29	0.11	0.40	—	2,501	2,501	0.10	0.07	0.04	2,523
2027	1.26	1.07	8.49	13.3	0.02	0.28	0.56	0.84	0.26	0.11	0.37	—	2,489	2,489	0.10	0.06	0.04	2,511

2028	1.21	103	8.12	13.2	0.02	0.25	0.56	0.81	0.23	0.11	0.34	—	2,478	2,478	0.10	0.06	0.04	2,500
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.44	0.37	3.58	3.19	0.01	0.15	0.38	0.53	0.14	0.16	0.30	—	623	623	0.02	0.01	0.08	628
2025	1.24	1.08	9.24	10.2	0.02	0.39	0.43	0.82	0.35	0.12	0.47	—	1,948	1,948	0.08	0.04	0.32	1,962
2026	0.95	0.81	6.34	9.61	0.01	0.23	0.39	0.62	0.21	0.08	0.29	—	1,794	1,794	0.07	0.05	0.53	1,810
2027	0.90	0.77	6.05	9.50	0.01	0.20	0.39	0.59	0.18	0.08	0.26	—	1,786	1,786	0.07	0.05	0.48	1,801
2028	0.06	5.66	0.39	0.62	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	116	116	< 0.005	< 0.005	0.03	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.08	0.07	0.65	0.58	< 0.005	0.03	0.07	0.10	0.03	0.03	0.06	—	103	103	< 0.005	< 0.005	0.01	104
2025	0.23	0.20	1.69	1.86	< 0.005	0.07	0.08	0.15	0.06	0.02	0.09	—	322	322	0.01	0.01	0.05	325
2026	0.17	0.15	1.16	1.75	< 0.005	0.04	0.07	0.11	0.04	0.01	0.05	—	297	297	0.01	0.01	0.09	300
2027	0.16	0.14	1.10	1.73	< 0.005	0.04	0.07	0.11	0.03	0.01	0.05	—	296	296	0.01	0.01	0.08	298
2028	0.01	1.03	0.07	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.01	19.4

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.52	0.48	7.12	12.7	0.02	0.09	0.25	0.35	0.09	0.04	0.13	—	2,285	2,285	0.09	0.03	0.37	2,296
2026	0.83	0.75	8.62	15.0	0.02	0.10	0.56	0.66	0.10	0.11	0.20	—	2,539	2,539	0.10	0.07	1.73	2,563
2027	0.79	0.72	8.55	14.8	0.02	0.09	0.56	0.66	0.09	0.11	0.20	—	2,527	2,527	0.09	0.06	1.55	2,549
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.16	1.08	21.0	36.6	0.07	0.20	7.96	8.06	0.20	3.98	4.08	—	8,254	8,254	0.31	0.30	0.11	8,352
2025	1.13	1.18	20.9	36.5	0.07	0.20	4.29	4.49	0.19	1.58	1.77	—	8,222	8,222	0.31	0.29	0.11	8,318

2026	0.79	0.72	8.67	14.6	0.02	0.10	0.56	0.66	0.10	0.11	0.20	—	2,501	2,501	0.10	0.07	0.04	2,523
2027	0.76	0.69	8.60	14.5	0.02	0.09	0.56	0.66	0.09	0.11	0.20	—	2,489	2,489	0.10	0.06	0.04	2,511
2028	0.74	103	8.54	14.4	0.02	0.09	0.56	0.65	0.08	0.11	0.19	—	2,478	2,478	0.10	0.06	0.04	2,500
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.11	0.10	1.71	3.05	0.01	0.02	0.38	0.40	0.02	0.16	0.18	—	623	623	0.02	0.01	0.08	628
2025	0.46	0.46	6.09	10.6	0.02	0.08	0.43	0.51	0.07	0.12	0.19	—	1,948	1,948	0.08	0.04	0.32	1,962
2026	0.57	0.52	6.18	10.5	0.01	0.07	0.39	0.46	0.07	0.08	0.14	—	1,794	1,794	0.07	0.05	0.53	1,810
2027	0.55	0.50	6.13	10.4	0.01	0.07	0.39	0.46	0.06	0.08	0.14	—	1,786	1,786	0.07	0.05	0.48	1,801
2028	0.04	5.65	0.40	0.67	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	116	116	< 0.005	< 0.005	0.03	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.02	0.02	0.31	0.56	< 0.005	< 0.005	0.07	0.07	< 0.005	0.03	0.03	—	103	103	< 0.005	< 0.005	0.01	104
2025	0.08	0.08	1.11	1.93	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	322	322	0.01	0.01	0.05	325
2026	0.10	0.09	1.13	1.91	< 0.005	0.01	0.07	0.08	0.01	0.01	0.03	—	297	297	0.01	0.01	0.09	300
2027	0.10	0.09	1.12	1.89	< 0.005	0.01	0.07	0.08	0.01	0.01	0.03	—	296	296	0.01	0.01	0.08	298
2028	0.01	1.03	0.07	0.12	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.01	19.4

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	1.06	—	1.06	0.98	—	0.98	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.36	1.19	< 0.005	0.06	—	0.06	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.49	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.01	83.7
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.8	67.8	< 0.005	0.01	< 0.005	71.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.68	4.68	< 0.005	< 0.005	0.01	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.94	2.94	< 0.005	< 0.005	< 0.005	3.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.2. Demolition (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.81	10.8	18.4	0.03	0.19	—	0.19	0.18	—	0.18	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.59	1.01	< 0.005	0.01	—	0.01	0.01	—	0.01	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.49	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.01	83.7
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.8	67.8	< 0.005	0.01	< 0.005	71.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.68	4.68	< 0.005	< 0.005	0.01	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.94	2.94	< 0.005	< 0.005	< 0.005	3.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.57	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	96.2	96.2	< 0.005	< 0.005	0.01	97.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.73	2.73	< 0.005	< 0.005	0.01	2.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.53
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.40	0.78	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.57	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	96.2	96.2	< 0.005	< 0.005	0.01	97.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.73	2.73	< 0.005	< 0.005	0.01	2.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.53
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.14	1.00	< 0.005	0.05	—	0.05	0.04	—	0.04	—	220	220	0.01	< 0.005	—	220
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.3	36.3	< 0.005	< 0.005	—	36.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.66	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	0.01	0.01	0.01	112
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.07	0.03	1.92	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,487	1,487	0.03	0.24	0.09	1,558

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.86
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.05	51.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.19	8.19	< 0.005	< 0.005	0.01	8.58

3.6. Grading (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.96	18.9	35.4	0.06	0.18	—	0.18	0.17	—	0.17	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.63	1.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	220	220	0.01	< 0.005	—	220

Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.3	36.3	< 0.005	< 0.005	—	36.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.66	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	0.01	0.01	0.01	112
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.07	0.03	1.92	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,487	1,487	0.03	0.24	0.09	1,558
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.86
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.05	51.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.19	8.19	< 0.005	< 0.005	0.01	8.58

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.51	1.44	< 0.005	0.06	—	0.06	0.06	—	0.06	—	336	336	0.01	< 0.005	—	337
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.6	55.6	< 0.005	< 0.005	—	55.8

Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	108	108	< 0.005	0.01	0.01	109
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.06	0.02	1.86	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,458	1,458	0.03	0.23	0.09	1,526
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.67	5.67	< 0.005	< 0.005	0.01	5.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.80
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	< 0.005	0.01	0.08	77.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.01	12.9

3.8. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.95	18.9	35.4	0.06	0.17	—	0.17	0.17	—	0.17	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.96	1.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	336	336	0.01	< 0.005	—	337
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.18	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	55.6	55.6	< 0.005	< 0.005	—	55.8
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	108	108	< 0.005	0.01	0.01	109
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.06	0.02	1.86	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,458	1,458	0.03	0.23	0.09	1,526
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.67	5.67	< 0.005	< 0.005	0.01	5.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.80
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	< 0.005	0.01	0.08	77.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.01	12.9

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.96	8.84	11.7	0.02	0.37	—	0.37	0.34	—	0.34	—	1,964	1,964	0.08	0.02	—	1,971

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.54	2.03	< 0.005	0.06	—	0.06	0.06	—	0.06	—	342	342	0.01	< 0.005	—	343
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.97
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.16	1.76	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	314	314	0.01	0.02	0.03	319
Vendor	0.02	0.01	0.39	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	228	228	0.01	0.03	0.02	238
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.31	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.6	56.6	< 0.005	< 0.005	0.10	57.5
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.7	39.7	< 0.005	0.01	0.04	41.5
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.37	9.37	< 0.005	< 0.005	0.02	9.53
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.57	6.57	< 0.005	< 0.005	0.01	6.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	0.51	8.16	12.8	0.02	0.10	—	0.10	0.10	—	0.10	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	1.42	2.24	< 0.005	0.02	—	0.02	0.02	—	0.02	—	342	342	0.01	< 0.005	—	343
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.97
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.26	0.41	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.24	0.22	0.16	1.76	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	314	314	0.01	0.02	0.03	319
Vendor	0.02	0.01	0.39	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	228	228	0.01	0.03	0.02	238
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.31	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.6	56.6	< 0.005	< 0.005	0.10	57.5
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.7	39.7	< 0.005	0.01	0.04	41.5
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.37	9.37	< 0.005	< 0.005	0.02	9.53
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.57	6.57	< 0.005	< 0.005	0.01	6.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.18	5.18	< 0.005	< 0.005	< 0.005	5.45
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.27	5.27	< 0.005	< 0.005	< 0.005	5.53
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.65	5.96	8.30	0.01	0.23	—	0.23	0.21	—	0.21	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.73	3.73	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.09	1.51	< 0.005	0.04	—	0.04	0.04	—	0.04	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.12	2.00	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	346	346	0.01	0.02	1.20	352
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.52	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.15	1.62	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	307	307	0.01	0.02	0.03	312
Vendor	0.02	0.01	0.38	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.01	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.09	1.18	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	227	227	0.01	0.01	0.37	231
Vendor	0.01	0.01	0.26	0.12	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	160	160	< 0.005	0.02	0.16	167
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.03	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.6	37.6	< 0.005	< 0.005	0.06	38.3
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.5	26.5	< 0.005	< 0.005	0.03	27.7
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	0.00

3.12. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.50	8.11	12.8	0.02	0.10	—	0.10	0.09	—	0.09	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.18	5.18	< 0.005	< 0.005	< 0.005	5.45
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.50	8.11	12.8	0.02	0.10	—	0.10	0.09	—	0.09	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.27	5.27	< 0.005	< 0.005	< 0.005	5.53
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.36	5.79	9.17	0.01	0.07	—	0.07	0.07	—	0.07	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.73	3.73	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.06	1.67	< 0.005	0.01	—	0.01	0.01	—	0.01	—	232	232	0.01	< 0.005	—	233

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.12	2.00	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	346	346	0.01	0.02	1.20	352
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.52	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.15	1.62	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	307	307	0.01	0.02	0.03	312
Vendor	0.02	0.01	0.38	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.01	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.09	1.18	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	227	227	0.01	0.01	0.37	231
Vendor	0.01	0.01	0.26	0.12	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	160	160	< 0.005	0.02	0.16	167
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.6	37.6	< 0.005	< 0.005	0.06	38.3
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.5	26.5	< 0.005	< 0.005	0.03	27.7
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	0.00

3.13. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.07	5.07	< 0.005	< 0.005	< 0.005	5.32
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.68	8.29	0.01	0.20	—	0.20	0.18	—	0.18	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.65	3.65	< 0.005	< 0.005	< 0.005	3.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	1.04	1.51	< 0.005	0.04	—	0.04	0.03	—	0.03	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.22	0.11	1.85	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	339	339	0.01	0.01	1.09	344
Vendor	0.02	0.01	0.34	0.15	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.46	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.13	1.50	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	301	301	0.01	0.02	0.03	306
Vendor	0.02	0.01	0.37	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.01	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	0.09	1.08	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	223	223	0.01	0.01	0.33	226
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	< 0.005	0.02	0.14	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.9	36.9	< 0.005	< 0.005	0.06	37.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.9	25.9	< 0.005	< 0.005	0.02	27.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.49	8.07	12.8	0.02	0.09	—	0.09	0.09	—	0.09	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.07	5.07	< 0.005	< 0.005	< 0.005	5.32
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.54	0.49	8.07	12.8	0.02	0.09	—	0.09	0.09	—	0.09	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.39	0.35	5.76	9.16	0.01	0.07	—	0.07	0.06	—	0.06	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.65	3.65	< 0.005	< 0.005	< 0.005	3.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	1.05	1.67	< 0.005	0.01	—	0.01	0.01	—	0.01	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.22	0.11	1.85	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	339	339	0.01	0.01	1.09	344
Vendor	0.02	0.01	0.34	0.15	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.46	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.13	1.50	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	301	301	0.01	0.02	0.03	306
Vendor	0.02	0.01	0.37	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.01	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	0.09	1.08	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	223	223	0.01	0.01	0.33	226
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	< 0.005	0.02	0.14	163

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.9	36.9	< 0.005	< 0.005	0.06	37.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.9	25.9	< 0.005	< 0.005	0.02	27.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.61	11.6	0.02	0.25	—	0.25	0.23	—	0.23	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.05	5.05	< 0.005	< 0.005	< 0.005	5.31
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.12	1.39	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	295	295	0.01	0.02	0.03	300
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	214	214	0.01	0.03	0.01	224
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.78	8.78	< 0.005	< 0.005	0.01	9.18
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.11
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.52
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	0.00

3.16. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.53	0.48	8.03	12.8	0.02	0.09	—	0.09	0.08	—	0.08	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.05	5.05	< 0.005	< 0.005	< 0.005	5.31
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.33	0.53	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.12	1.39	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	295	295	0.01	0.02	0.03	300
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	214	214	0.01	0.03	0.01	224
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.78	8.78	< 0.005	< 0.005	0.01	9.18
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.11

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.52
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	0.00

3.17. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.58	4.58	< 0.005	< 0.005	0.01	4.66
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.89	2.89	< 0.005	< 0.005	< 0.005	3.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.18. Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Off-Road Equipment	0.51	0.46	6.78	10.6	0.01	0.10	—	0.10	0.10	—	0.10	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.37	0.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.58	4.58	< 0.005	< 0.005	0.01	4.66
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.89	2.89	< 0.005	< 0.005	< 0.005	3.02

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.28	0.28	< 0.005	0.03	0.03	—	7.58	7.58	< 0.005	< 0.005	< 0.005	7.97
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	5.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.1	59.1	< 0.005	< 0.005	0.01	60.0
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	< 0.005	51.6
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.35	3.35	< 0.005	< 0.005	< 0.005	3.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.70	2.70	< 0.005	< 0.005	< 0.005	2.83
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.20. Architectural Coating (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.28	0.28	< 0.005	0.03	0.03	—	7.58	7.58	< 0.005	< 0.005	< 0.005	7.97
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	5.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.1	59.1	< 0.005	< 0.005	0.01	60.0
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	< 0.005	51.6
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.35	3.35	< 0.005	< 0.005	< 0.005	3.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.70	2.70	< 0.005	< 0.005	< 0.005	2.83
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Utilities (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.29	5.29	< 0.005	< 0.005	< 0.005	5.55

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.51	5.60	0.01	0.24	—	0.24	0.22	—	0.22	—	950	950	0.04	0.01	—	953
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.33	2.33	< 0.005	< 0.005	< 0.005	2.45
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.02	< 0.005	0.04	—	0.04	0.04	—	0.04	—	157	157	0.01	< 0.005	—	158
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.02	0.37	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	60.6	60.6	< 0.005	< 0.005	0.23	61.7
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.6	52.6	< 0.005	0.01	0.14	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	53.8	53.8	< 0.005	< 0.005	0.01	54.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	0.03	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.04	4.04	< 0.005	< 0.005	0.01	4.11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.82	3.82	< 0.005	< 0.005	< 0.005	4.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.22. Utilities (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.43	6.98	12.2	0.02	0.09	—	0.09	0.09	—	0.09	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.29	5.29	< 0.005	< 0.005	< 0.005	5.55
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.43	6.98	12.2	0.02	0.09	—	0.09	0.09	—	0.09	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.19	3.06	5.36	0.01	0.04	—	0.04	0.04	—	0.04	—	950	950	0.04	0.01	—	953

Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.33	2.33	< 0.005	< 0.005	< 0.005	2.45
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.56	0.98	< 0.005	0.01	—	0.01	0.01	—	0.01	—	157	157	0.01	< 0.005	—	158
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.02	0.37	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	60.6	60.6	< 0.005	< 0.005	0.23	61.7
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.6	52.6	< 0.005	0.01	0.14	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	53.8	53.8	< 0.005	< 0.005	0.01	54.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	0.03	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.04	4.04	< 0.005	< 0.005	0.01	4.11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.82	3.82	< 0.005	< 0.005	< 0.005	4.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	11/1/2024	11/29/2024	5.00	20.0	—
Site Preparation	Site Preparation	11/30/2024	12/14/2024	5.00	10.0	—
Grading	Grading	12/15/2024	1/26/2025	5.00	30.0	—
Building Construction	Building Construction	10/04/2025	1/21/2028	5.00	600	—
Paving	Paving	1/27/2025	2/21/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	1/22/2028	2/18/2028	5.00	20.0	—
Utilities	Trenching	2/22/2025	10/03/2025	5.00	160	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	3.50	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Utilities	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Utilities	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	3.50	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

Utilities	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Utilities	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40

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	7.70	LDA,LDT1,LDT2
Demolition	Vendor	4.00	4.00	HHDT,MHDT
Demolition	Hauling	0.95	20.0	HHDT
Demolition	Onsite truck	2.00	0.25	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	4.00	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	2.00	0.25	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	4.00	4.00	HHDT,MHDT
Grading	Hauling	20.8	20.0	HHDT
Grading	Onsite truck	2.00	0.25	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	58.3	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	17.3	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT

Building Construction	Onsite truck	2.00	0.25	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	4.00	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	2.00	0.25	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	11.7	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	4.00	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	3.00	0.25	HHDT
Utilities	—	—	—	—
Utilities	Worker	10.0	7.70	LDA,LDT1,LDT2
Utilities	Vendor	4.00	4.00	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	2.00	0.25	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	7.70	LDA,LDT1,LDT2
Demolition	Vendor	4.00	4.00	HHDT,MHDT
Demolition	Hauling	0.95	20.0	HHDT
Demolition	Onsite truck	2.00	0.25	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	4.00	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	2.00	0.25	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	4.00	4.00	HHDT,MHDT
Grading	Hauling	20.8	20.0	HHDT
Grading	Onsite truck	2.00	0.25	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	58.3	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	17.3	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	2.00	0.25	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	4.00	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	2.00	0.25	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	11.7	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	4.00	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	3.00	0.25	HHDT
Utilities	—	—	—	—
Utilities	Worker	10.0	7.70	LDA,LDT1,LDT2
Utilities	Vendor	4.00	4.00	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	2.00	0.25	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	639,698	213,233	0.00	0.00	15,146

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,650	—
Site Preparation	—	—	15.0	0.00	—
Grading	2,500	2,500	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	7.58

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.79	0%
City Park	0.00	0%
Other Asphalt Surfaces	5.07	100%
Other Non-Asphalt Surfaces	0.73	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
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)

8. User Changes to Default Data

Screen	Justification
Land Use	Land uses based on the project site plan. 162 single-family residential homes and 2 parks on approximately 14.57 gross acres. Acreage for homes based on lot sizes.
Construction: Construction Phases	Lot development to occur prior to building construction. Construction to start as early as November 2024 and last until 2028. Utilities phase added and building construction phase doubled to reflect applicant-provided construction schedule.
Operations: Vehicle Data	Trip rates for single-family housing from the ITE Trip Generation Rates, 11th Edition. ITE Land Use Code 210 (Single-family detached housing) The parks will serve as amenities for the subdivision.
Operations: Fleet Mix	SJVAPCD-approved residential fleet mix for the 2025 operational year applied to single-family homes.

Operations: Hearths	SJVAPCD Rule 4901 Woodburning No woodburning fireplaces or wood stoves
Construction: Off-Road Equipment	Equipment added to the utilities phase. Crane usage adjusted to retain default HP hours, as the duration for the building construction phase was doubled.

TM6467 - Mitigated Construction (Level 3 Filters) Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	TM6467 - Mitigated Construction (Level 3 Filters)
Construction Start Date	11/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	21.2
Location	36.872631, -119.708339
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2569
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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
Single Family Housing	162	Dwelling Unit	8.30	315,900	1,897,483	—	518	162 single-family residential homes

City Park	0.50	Acre	0.50	0.00	21,997	21,997	—	Two parks totaling 21,997 square feet
Other Asphalt Surfaces	5.07	Acre	5.07	0.00	22,063	—	—	—
Other Non-Asphalt Surfaces	0.73	Acre	0.73	0.00	3,180	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-6	Use Diesel Particulate Filters

2. Emissions Summary

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.68	1.41	12.7	13.2	0.02	0.54	0.25	0.79	0.50	0.04	0.53	—	2,285	2,285	0.09	0.03	0.37	2,296
2026	1.35	1.15	8.85	13.8	0.02	0.32	0.56	0.88	0.29	0.11	0.40	—	2,539	2,539	0.10	0.07	1.73	2,563
2027	1.29	1.10	8.44	13.6	0.02	0.28	0.56	0.84	0.26	0.11	0.37	—	2,527	2,527	0.09	0.06	1.55	2,549
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.42	3.72	36.4	33.6	0.07	1.60	7.96	9.56	1.47	3.98	5.46	—	8,254	8,254	0.31	0.30	0.11	8,352
2025	3.95	3.30	31.7	29.4	0.07	1.26	4.29	5.55	1.16	1.58	2.74	—	8,222	8,222	0.31	0.29	0.11	8,318
2026	1.32	1.13	8.91	13.4	0.02	0.32	0.56	0.88	0.29	0.11	0.40	—	2,501	2,501	0.10	0.07	0.04	2,523
2027	1.26	1.07	8.49	13.3	0.02	0.28	0.56	0.84	0.26	0.11	0.37	—	2,489	2,489	0.10	0.06	0.04	2,511

2028	1.21	103	8.12	13.2	0.02	0.25	0.56	0.81	0.23	0.11	0.34	—	2,478	2,478	0.10	0.06	0.04	2,500
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.44	0.37	3.58	3.19	0.01	0.15	0.38	0.53	0.14	0.16	0.30	—	623	623	0.02	0.01	0.08	628
2025	1.24	1.08	9.24	10.2	0.02	0.39	0.43	0.82	0.35	0.12	0.47	—	1,948	1,948	0.08	0.04	0.32	1,962
2026	0.95	0.81	6.34	9.61	0.01	0.23	0.39	0.62	0.21	0.08	0.29	—	1,794	1,794	0.07	0.05	0.53	1,810
2027	0.90	0.77	6.05	9.50	0.01	0.20	0.39	0.59	0.18	0.08	0.26	—	1,786	1,786	0.07	0.05	0.48	1,801
2028	0.06	5.66	0.39	0.62	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	116	116	< 0.005	< 0.005	0.03	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.08	0.07	0.65	0.58	< 0.005	0.03	0.07	0.10	0.03	0.03	0.06	—	103	103	< 0.005	< 0.005	0.01	104
2025	0.23	0.20	1.69	1.86	< 0.005	0.07	0.08	0.15	0.06	0.02	0.09	—	322	322	0.01	0.01	0.05	325
2026	0.17	0.15	1.16	1.75	< 0.005	0.04	0.07	0.11	0.04	0.01	0.05	—	297	297	0.01	0.01	0.09	300
2027	0.16	0.14	1.10	1.73	< 0.005	0.04	0.07	0.11	0.03	0.01	0.05	—	296	296	0.01	0.01	0.08	298
2028	0.01	1.03	0.07	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.01	19.4

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.68	1.41	12.7	13.2	0.02	0.13	0.25	0.38	0.12	0.04	0.16	—	2,285	2,285	0.09	0.03	0.37	2,296
2026	1.35	1.15	8.85	13.8	0.02	0.11	0.56	0.67	0.10	0.11	0.21	—	2,539	2,539	0.10	0.07	1.73	2,563
2027	1.29	1.10	8.44	13.6	0.02	0.10	0.56	0.66	0.09	0.11	0.20	—	2,527	2,527	0.09	0.06	1.55	2,549
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.42	3.72	36.4	33.6	0.07	0.29	7.96	8.20	0.27	3.98	4.21	—	8,254	8,254	0.31	0.30	0.11	8,352
2025	3.95	3.30	31.7	29.4	0.07	0.26	4.29	4.54	0.24	1.58	1.82	—	8,222	8,222	0.31	0.29	0.11	8,318

2026	1.32	1.13	8.91	13.4	0.02	0.11	0.56	0.67	0.10	0.11	0.21	—	2,501	2,501	0.10	0.07	0.04	2,523
2027	1.26	1.07	8.49	13.3	0.02	0.10	0.56	0.66	0.09	0.11	0.20	—	2,489	2,489	0.10	0.06	0.04	2,511
2028	1.21	103	8.12	13.2	0.02	0.09	0.56	0.65	0.08	0.11	0.19	—	2,478	2,478	0.10	0.06	0.04	2,500
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.44	0.37	3.58	3.19	0.01	0.03	0.38	0.41	0.03	0.16	0.19	—	623	623	0.02	0.01	0.08	628
2025	1.24	1.08	9.24	10.2	0.02	0.10	0.43	0.53	0.09	0.12	0.21	—	1,948	1,948	0.08	0.04	0.32	1,962
2026	0.95	0.81	6.34	9.61	0.01	0.08	0.39	0.47	0.07	0.08	0.15	—	1,794	1,794	0.07	0.05	0.53	1,810
2027	0.90	0.77	6.05	9.50	0.01	0.07	0.39	0.46	0.06	0.08	0.14	—	1,786	1,786	0.07	0.05	0.48	1,801
2028	0.06	5.66	0.39	0.62	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	116	116	< 0.005	< 0.005	0.03	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.08	0.07	0.65	0.58	< 0.005	0.01	0.07	0.07	0.01	0.03	0.04	—	103	103	< 0.005	< 0.005	0.01	104
2025	0.23	0.20	1.69	1.86	< 0.005	0.02	0.08	0.10	0.02	0.02	0.04	—	322	322	0.01	0.01	0.05	325
2026	0.17	0.15	1.16	1.75	< 0.005	0.01	0.07	0.09	0.01	0.01	0.03	—	297	297	0.01	0.01	0.09	300
2027	0.16	0.14	1.10	1.73	< 0.005	0.01	0.07	0.08	0.01	0.01	0.03	—	296	296	0.01	0.01	0.08	298
2028	0.01	1.03	0.07	0.11	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.01	19.4

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	1.06	—	1.06	0.98	—	0.98	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.36	1.19	< 0.005	0.06	—	0.06	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.49	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.01	83.7
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.8	67.8	< 0.005	0.01	< 0.005	71.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.68	4.68	< 0.005	< 0.005	0.01	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.94	2.94	< 0.005	< 0.005	< 0.005	3.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.2. Demolition (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	0.27	—	0.27	0.25	—	0.25	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.36	1.19	< 0.005	0.02	—	0.02	0.01	—	0.01	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.49	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.01	83.7
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.8	67.8	< 0.005	0.01	< 0.005	71.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.68	4.68	< 0.005	< 0.005	0.01	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.94	2.94	< 0.005	< 0.005	< 0.005	3.07
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.51
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.04	—	0.04	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.57	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	96.2	96.2	< 0.005	< 0.005	0.01	97.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.73	2.73	< 0.005	< 0.005	0.01	2.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.53
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	0.24	—	0.24	0.22	—	0.22	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.99	0.90	< 0.005	0.01	—	0.01	0.01	—	0.01	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.18	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.57	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	96.2	96.2	< 0.005	< 0.005	0.01	97.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.73	2.73	< 0.005	< 0.005	0.01	2.78
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.53
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.14	1.00	< 0.005	0.05	—	0.05	0.04	—	0.04	—	220	220	0.01	< 0.005	—	220
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.3	36.3	< 0.005	< 0.005	—	36.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.66	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	0.01	0.01	0.01	112
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.07	0.03	1.92	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,487	1,487	0.03	0.24	0.09	1,558

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Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.86
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.05	51.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.19	8.19	< 0.005	< 0.005	0.01	8.58

3.6. Grading (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	34.3	30.2	0.06	0.27	—	0.27	0.24	—	0.24	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.49	5.49	< 0.005	< 0.005	< 0.005	5.77
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.14	1.00	< 0.005	0.01	—	0.01	0.01	—	0.01	—	220	220	0.01	< 0.005	—	220

Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.3	36.3	< 0.005	< 0.005	—	36.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	0.66	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	110	110	0.01	0.01	0.01	112
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	< 0.005	56.0
Hauling	0.07	0.03	1.92	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,487	1,487	0.03	0.24	0.09	1,558
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.86
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.05	51.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.19	8.19	< 0.005	< 0.005	0.01	8.58

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.51	1.44	< 0.005	0.06	—	0.06	0.06	—	0.06	—	336	336	0.01	< 0.005	—	337
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.6	55.6	< 0.005	< 0.005	—	55.8

Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	108	108	< 0.005	0.01	0.01	109
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.06	0.02	1.86	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,458	1,458	0.03	0.23	0.09	1,526
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.67	5.67	< 0.005	< 0.005	0.01	5.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.80
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	< 0.005	0.01	0.08	77.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.01	12.9

3.8. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	0.23	—	0.23	0.21	—	0.21	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.51	1.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	336	336	0.01	< 0.005	—	337
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	55.6	55.6	< 0.005	< 0.005	—	55.8
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	108	108	< 0.005	0.01	0.01	109
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.06	0.02	1.86	0.44	0.01	0.03	0.39	0.41	0.03	0.11	0.13	—	1,458	1,458	0.03	0.23	0.09	1,526
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.67	5.67	< 0.005	< 0.005	0.01	5.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.80
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	74.1	74.1	< 0.005	0.01	0.08	77.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.01	12.9

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.96	8.84	11.7	0.02	0.37	—	0.37	0.34	—	0.34	—	1,964	1,964	0.08	0.02	—	1,971

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.54	2.03	< 0.005	0.06	—	0.06	0.06	—	0.06	—	342	342	0.01	< 0.005	—	343
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.97
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.37	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.16	1.76	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	314	314	0.01	0.02	0.03	319
Vendor	0.02	0.01	0.39	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	228	228	0.01	0.03	0.02	238
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.31	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.6	56.6	< 0.005	< 0.005	0.10	57.5
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.7	39.7	< 0.005	0.01	0.04	41.5
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.37	9.37	< 0.005	< 0.005	0.02	9.53
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.57	6.57	< 0.005	< 0.005	0.01	6.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.96	8.84	11.7	0.02	0.12	—	0.12	0.11	—	0.11	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.54	2.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	342	342	0.01	< 0.005	—	343
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.97
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.37	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.16
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.24	0.22	0.16	1.76	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	314	314	0.01	0.02	0.03	319
Vendor	0.02	0.01	0.39	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	228	228	0.01	0.03	0.02	238
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.31	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	56.6	56.6	< 0.005	< 0.005	0.10	57.5
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.7	39.7	< 0.005	0.01	0.04	41.5
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.37	9.37	< 0.005	< 0.005	0.02	9.53
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.57	6.57	< 0.005	< 0.005	0.01	6.87
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.18	5.18	< 0.005	< 0.005	< 0.005	5.45
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.32	—	0.32	0.29	—	0.29	—	1,964	1,964	0.08	0.02	—	1,971

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.27	5.27	< 0.005	< 0.005	< 0.005	5.53
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.65	5.96	8.30	0.01	0.23	—	0.23	0.21	—	0.21	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.73	3.73	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.09	1.51	< 0.005	0.04	—	0.04	0.04	—	0.04	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.12	2.00	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	346	346	0.01	0.02	1.20	352
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.52	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.15	1.62	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	307	307	0.01	0.02	0.03	312
Vendor	0.02	0.01	0.38	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.01	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.09	1.18	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	227	227	0.01	0.01	0.37	231
Vendor	0.01	0.01	0.26	0.12	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	160	160	< 0.005	0.02	0.16	167
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.03	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.6	37.6	< 0.005	< 0.005	0.06	38.3
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.5	26.5	< 0.005	< 0.005	0.03	27.7
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	0.00

3.12. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.10	—	0.10	0.10	—	0.10	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.18	5.18	< 0.005	< 0.005	< 0.005	5.45
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.91	8.35	11.6	0.02	0.10	—	0.10	0.10	—	0.10	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.27	5.27	< 0.005	< 0.005	< 0.005	5.53
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.65	5.96	8.30	0.01	0.07	—	0.07	0.07	—	0.07	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.73	3.73	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.09	1.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	232	232	0.01	< 0.005	—	233

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.12	2.00	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	346	346	0.01	0.02	1.20	352
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.52	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.21	0.15	1.62	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	307	307	0.01	0.02	0.03	312
Vendor	0.02	0.01	0.38	0.17	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.03	0.01	234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.09	1.18	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	227	227	0.01	0.01	0.37	231
Vendor	0.01	0.01	0.26	0.12	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	160	160	< 0.005	0.02	0.16	167
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.6	37.6	< 0.005	< 0.005	0.06	38.3
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.5	26.5	< 0.005	< 0.005	0.03	27.7
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	0.00

3.13. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.07	5.07	< 0.005	< 0.005	< 0.005	5.32
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.28	—	0.28	0.26	—	0.26	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.68	8.29	0.01	0.20	—	0.20	0.18	—	0.18	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.65	3.65	< 0.005	< 0.005	< 0.005	3.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	1.04	1.51	< 0.005	0.04	—	0.04	0.03	—	0.03	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.22	0.11	1.85	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	339	339	0.01	0.01	1.09	344
Vendor	0.02	0.01	0.34	0.15	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.46	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.13	1.50	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	301	301	0.01	0.02	0.03	306
Vendor	0.02	0.01	0.37	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.01	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	0.09	1.08	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	223	223	0.01	0.01	0.33	226
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	< 0.005	0.02	0.14	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.9	36.9	< 0.005	< 0.005	0.06	37.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.9	25.9	< 0.005	< 0.005	0.02	27.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.09	—	0.09	0.09	—	0.09	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.07	5.07	< 0.005	< 0.005	< 0.005	5.32
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.04	0.87	7.96	11.6	0.02	0.09	—	0.09	0.09	—	0.09	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.42
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.74	0.62	5.68	8.29	0.01	0.07	—	0.07	0.06	—	0.06	—	1,403	1,403	0.06	0.01	—	1,408
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	3.65	3.65	< 0.005	< 0.005	< 0.005	3.83
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	1.04	1.51	< 0.005	0.01	—	0.01	0.01	—	0.01	—	232	232	0.01	< 0.005	—	233
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.22	0.11	1.85	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	339	339	0.01	0.01	1.09	344
Vendor	0.02	0.01	0.34	0.15	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.46	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.13	1.50	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	301	301	0.01	0.02	0.03	306
Vendor	0.02	0.01	0.37	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	0.01	0.03	0.01	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	0.09	1.08	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	223	223	0.01	0.01	0.33	226
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	< 0.005	0.02	0.14	163

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.9	36.9	< 0.005	< 0.005	0.06	37.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.9	25.9	< 0.005	< 0.005	0.02	27.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	7.61	11.6	0.02	0.25	—	0.25	0.23	—	0.23	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.05	5.05	< 0.005	< 0.005	< 0.005	5.31
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.12	1.39	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	295	295	0.01	0.02	0.03	300
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	214	214	0.01	0.03	0.01	224
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.78	8.78	< 0.005	< 0.005	0.01	9.18
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.11
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.52
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	0.00

3.16. 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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.00	0.84	7.61	11.6	0.02	0.08	—	0.08	0.08	—	0.08	—	1,964	1,964	0.08	0.02	—	1,971
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.05	5.05	< 0.005	< 0.005	< 0.005	5.31
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.12	1.39	0.00	0.00	0.32	0.32	0.00	0.07	0.07	—	295	295	0.01	0.02	0.03	300
Vendor	0.02	0.01	0.35	0.16	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	214	214	0.01	0.03	0.01	224
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.78	8.78	< 0.005	< 0.005	0.01	9.18
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.11

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.52
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	0.00

3.17. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.58	4.58	< 0.005	< 0.005	0.01	4.66
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.89	2.89	< 0.005	< 0.005	< 0.005	3.02
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.18. Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.12	—	0.12	0.11	—	0.11	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.01	—	0.01	0.01	—	0.01	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.01	82.0
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.58	4.58	< 0.005	< 0.005	0.01	4.66
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.89	2.89	< 0.005	< 0.005	< 0.005	3.02

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.77
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.28	0.28	< 0.005	0.03	0.03	—	7.58	7.58	< 0.005	< 0.005	< 0.005	7.97
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	5.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.1	59.1	< 0.005	< 0.005	0.01	60.0
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	< 0.005	51.6
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.35	3.35	< 0.005	< 0.005	< 0.005	3.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.70	2.70	< 0.005	< 0.005	< 0.005	2.83
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.20. Architectural Coating (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.28	0.28	< 0.005	0.03	0.03	—	7.58	7.58	< 0.005	< 0.005	< 0.005	7.97
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	5.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	1.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.1	59.1	< 0.005	< 0.005	0.01	60.0
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	< 0.005	51.6
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.35	3.35	< 0.005	< 0.005	< 0.005	3.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.70	2.70	< 0.005	< 0.005	< 0.005	2.83
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Utilities (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.29	5.29	< 0.005	< 0.005	< 0.005	5.55

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.54	—	0.54	0.50	—	0.50	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.51	5.60	0.01	0.24	—	0.24	0.22	—	0.22	—	950	950	0.04	0.01	—	953
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.33	2.33	< 0.005	< 0.005	< 0.005	2.45
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.02	< 0.005	0.04	—	0.04	0.04	—	0.04	—	157	157	0.01	< 0.005	—	158
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.02	0.37	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	60.6	60.6	< 0.005	< 0.005	0.23	61.7
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.6	52.6	< 0.005	0.01	0.14	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	53.8	53.8	< 0.005	< 0.005	0.01	54.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	0.03	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.04	4.04	< 0.005	< 0.005	0.01	4.11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.82	3.82	< 0.005	< 0.005	< 0.005	4.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.22. Utilities (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.13	—	0.13	0.12	—	0.12	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.29	5.29	< 0.005	< 0.005	< 0.005	5.55
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	12.6	12.8	0.02	0.13	—	0.13	0.12	—	0.12	—	2,166	2,166	0.09	0.02	—	2,174
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.64
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.51	5.60	0.01	0.06	—	0.06	0.05	—	0.05	—	950	950	0.04	0.01	—	953

Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	2.33	2.33	< 0.005	< 0.005	< 0.005	2.45
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.01	1.02	< 0.005	0.01	—	0.01	0.01	—	0.01	—	157	157	0.01	< 0.005	—	158
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.02	0.37	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	60.6	60.6	< 0.005	< 0.005	0.23	61.7
Vendor	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.6	52.6	< 0.005	0.01	0.14	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.30	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	53.8	53.8	< 0.005	< 0.005	0.01	54.6
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.7	52.7	< 0.005	0.01	< 0.005	55.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	0.03	24.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.04	4.04	< 0.005	< 0.005	0.01	4.11
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.82	3.82	< 0.005	< 0.005	< 0.005	4.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	11/1/2024	11/29/2024	5.00	20.0	—
Site Preparation	Site Preparation	11/30/2024	12/14/2024	5.00	10.0	—
Grading	Grading	12/15/2024	1/26/2025	5.00	30.0	—
Building Construction	Building Construction	10/04/2025	1/21/2028	5.00	600	—
Paving	Paving	1/27/2025	2/21/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	1/22/2028	2/18/2028	5.00	20.0	—
Utilities	Trenching	2/22/2025	10/03/2025	5.00	160	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	3.50	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Utilities	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Utilities	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	3.50	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

Utilities	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Utilities	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Utilities	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

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	7.70	LDA,LDT1,LDT2
Demolition	Vendor	4.00	4.00	HHDT,MHDT
Demolition	Hauling	0.95	20.0	HHDT
Demolition	Onsite truck	2.00	0.25	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	4.00	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	2.00	0.25	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	4.00	4.00	HHDT,MHDT
Grading	Hauling	20.8	20.0	HHDT
Grading	Onsite truck	2.00	0.25	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	58.3	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	17.3	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT

Building Construction	Onsite truck	2.00	0.25	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	4.00	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	2.00	0.25	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	11.7	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	4.00	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	3.00	0.25	HHDT
Utilities	—	—	—	—
Utilities	Worker	10.0	7.70	LDA,LDT1,LDT2
Utilities	Vendor	4.00	4.00	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	2.00	0.25	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	7.70	LDA,LDT1,LDT2
Demolition	Vendor	4.00	4.00	HHDT,MHDT
Demolition	Hauling	0.95	20.0	HHDT
Demolition	Onsite truck	2.00	0.25	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	4.00	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	2.00	0.25	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	7.70	LDA,LDT1,LDT2
Grading	Vendor	4.00	4.00	HHDT,MHDT
Grading	Hauling	20.8	20.0	HHDT
Grading	Onsite truck	2.00	0.25	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	58.3	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	17.3	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	2.00	0.25	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	7.70	LDA,LDT1,LDT2
Paving	Vendor	4.00	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	2.00	0.25	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	11.7	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	4.00	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	3.00	0.25	HHDT
Utilities	—	—	—	—
Utilities	Worker	10.0	7.70	LDA,LDT1,LDT2
Utilities	Vendor	4.00	4.00	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	2.00	0.25	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	639,698	213,233	0.00	0.00	15,146

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,650	—
Site Preparation	—	—	15.0	0.00	—
Grading	2,500	2,500	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	7.58

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.79	0%
City Park	0.00	0%
Other Asphalt Surfaces	5.07	100%
Other Non-Asphalt Surfaces	0.73	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
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)

8. User Changes to Default Data

Screen	Justification
Land Use	Land uses based on the project site plan. 162 single-family residential homes and 2 parks on approximately 14.57 gross acres. Acreage for homes based on lot sizes.
Construction: Construction Phases	Lot development to occur prior to building construction. Construction to start as early as November 2024 and last until 2028. Utilities phase added and building construction phase doubled to reflect applicant-provided construction schedule.
Operations: Vehicle Data	Trip rates for single-family housing from the ITE Trip Generation Rates, 11th Edition. ITE Land Use Code 210 (Single-family detached housing) The parks will serve as amenities for the subdivision.
Operations: Fleet Mix	SJVAPCD-approved residential fleet mix for the 2025 operational year applied to single-family homes.

Operations: Hearths	SJVAPCD Rule 4901 Woodburning No woodburning fireplaces or wood stoves
Construction: Off-Road Equipment	Equipment added to the utilities phase. Crane usage adjusted to retain default HP hours, as the duration for the building construction phase was doubled.

ATTACHMENT B

Construction Health Risk Assessment and Operational Health Risk Screening

Construction Health Risk Assessment and Operational Health Risk Screening

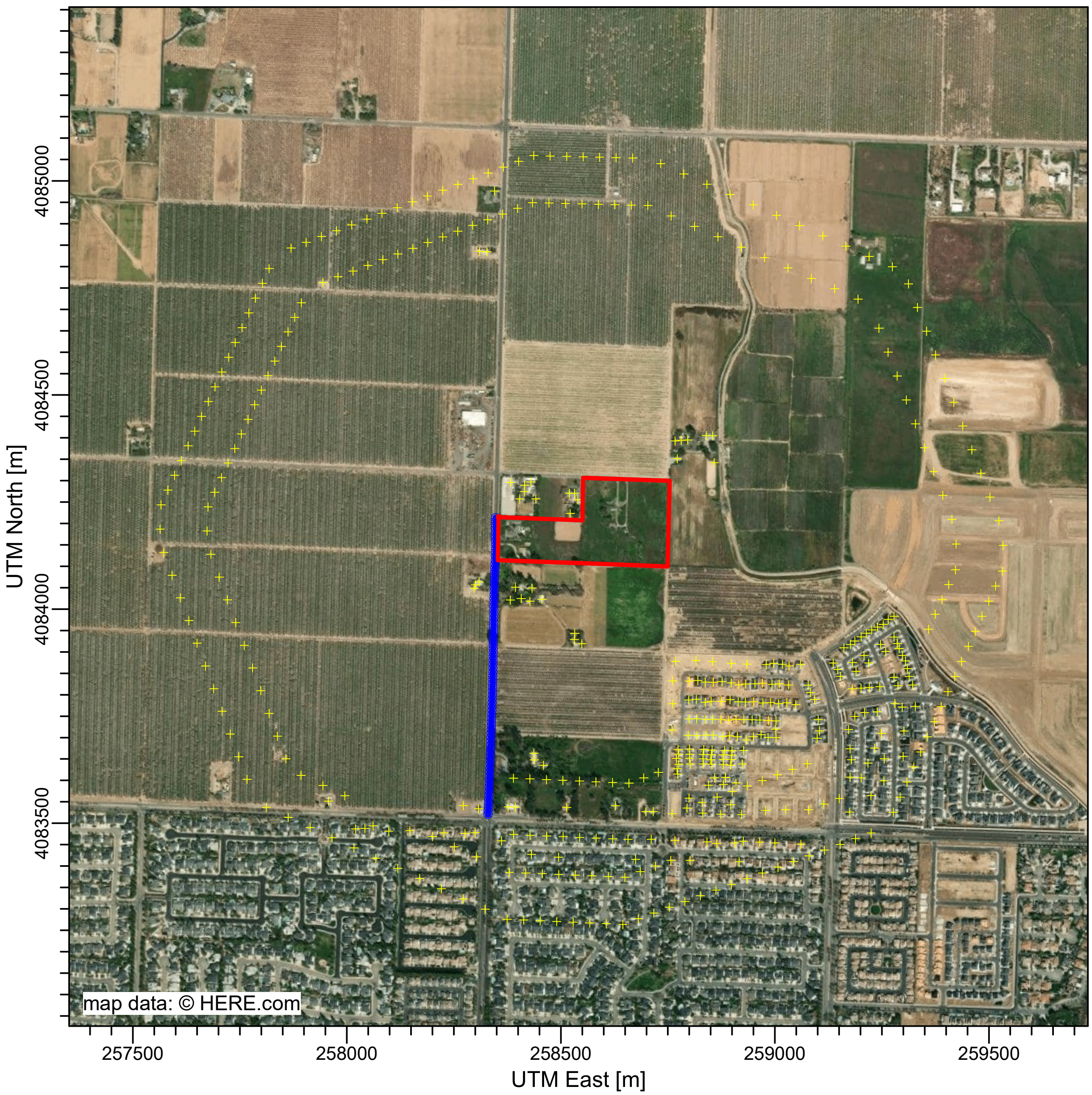
Table of Contents

Health Risk Assessment

General Parameters

PROJECT TITLE:

Graphical Representation of AERMOD Inputs (Construction)



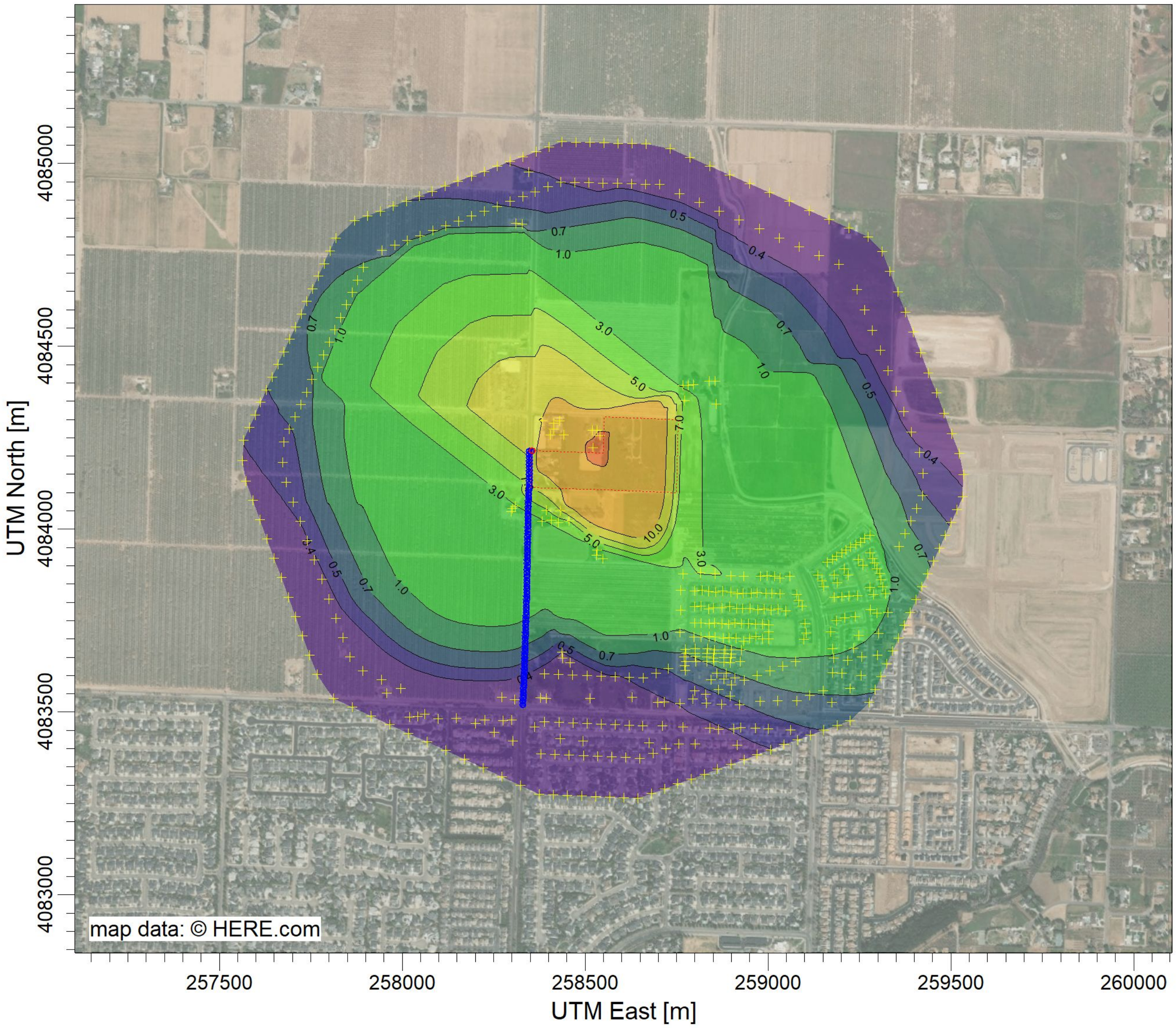
COMMENTS:	SOURCES: **2**	COMPANY NAME:	
	RECEPTORS: **481**	MODELER:	
		SCALE: 1:14,961 (0 — 0.5 km)	
		DATE: **12/25/2023**	PROJECT NO.:

AERMOD View - Lakes Environmental Software

D:\Move\0029-0004\Construction\Construction.isc

PROJECT TITLE:

Air Dispersion Concentration Trend (Unit Emissions)



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: AREA ug/m^3

Max: 35.4 [ug/m^3] at (258521.86, 4084223.21)

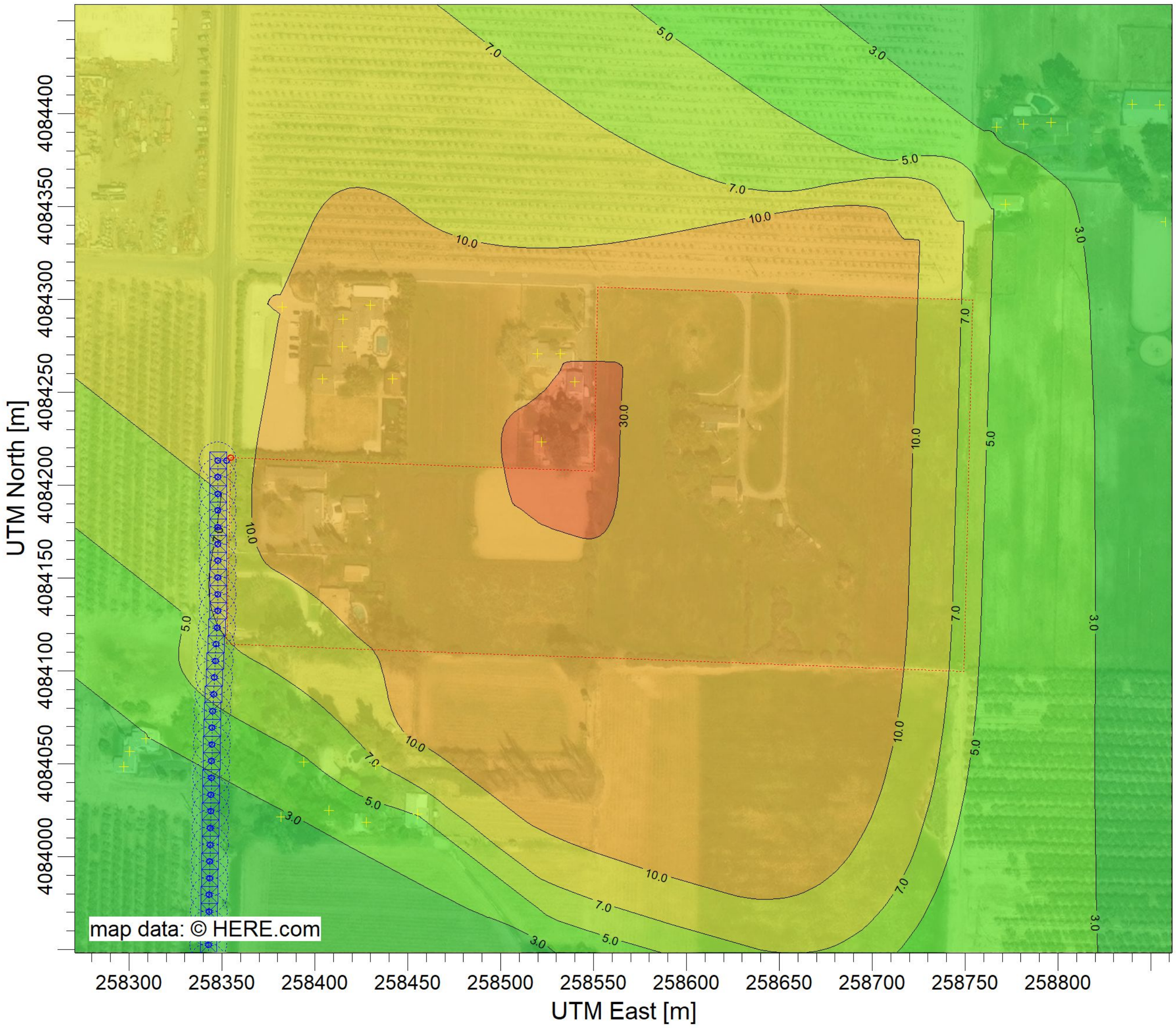
0.1 0.4 0.5 0.7 1.0 3.0 5.0 7.0 10.0 30.0 35.4

COMMENTS:	SOURCES: **2**	COMPANY NAME:
	RECEPTORS: **481**	MODELER:
	OUTPUT TYPE: **Concentration**	SCALE: 1:18,864 0 0.5 km
	MAX: **35.4 ug/m^3**	DATE: **12/25/2023**	PROJECT NO.:

AERMOD View - Lakes Environmental Software D:\Move\0029-0004\Construction\Construction.isc

PROJECT TITLE:

Air Dispersion Concentration Trend (Unit Emissions)
Zoomed In Near the Project Site



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: AREA

ug/m^3

Max: 35.4 [ug/m^3] at (258521.86, 4084223.21)

0.1 0.4 0.5 0.7 1.0 3.0 5.0 7.0 10.0 30.0 35.4

COMMENTS:	SOURCES: **2**	COMPANY NAME:	
	RECEPTORS: **481**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:3,714 0 0.1 km	
	MAX: **35.4 ug/m^3**	DATE: **12/25/2023**	PROJECT NO.:

AERMOD View - Lakes Environmental Software

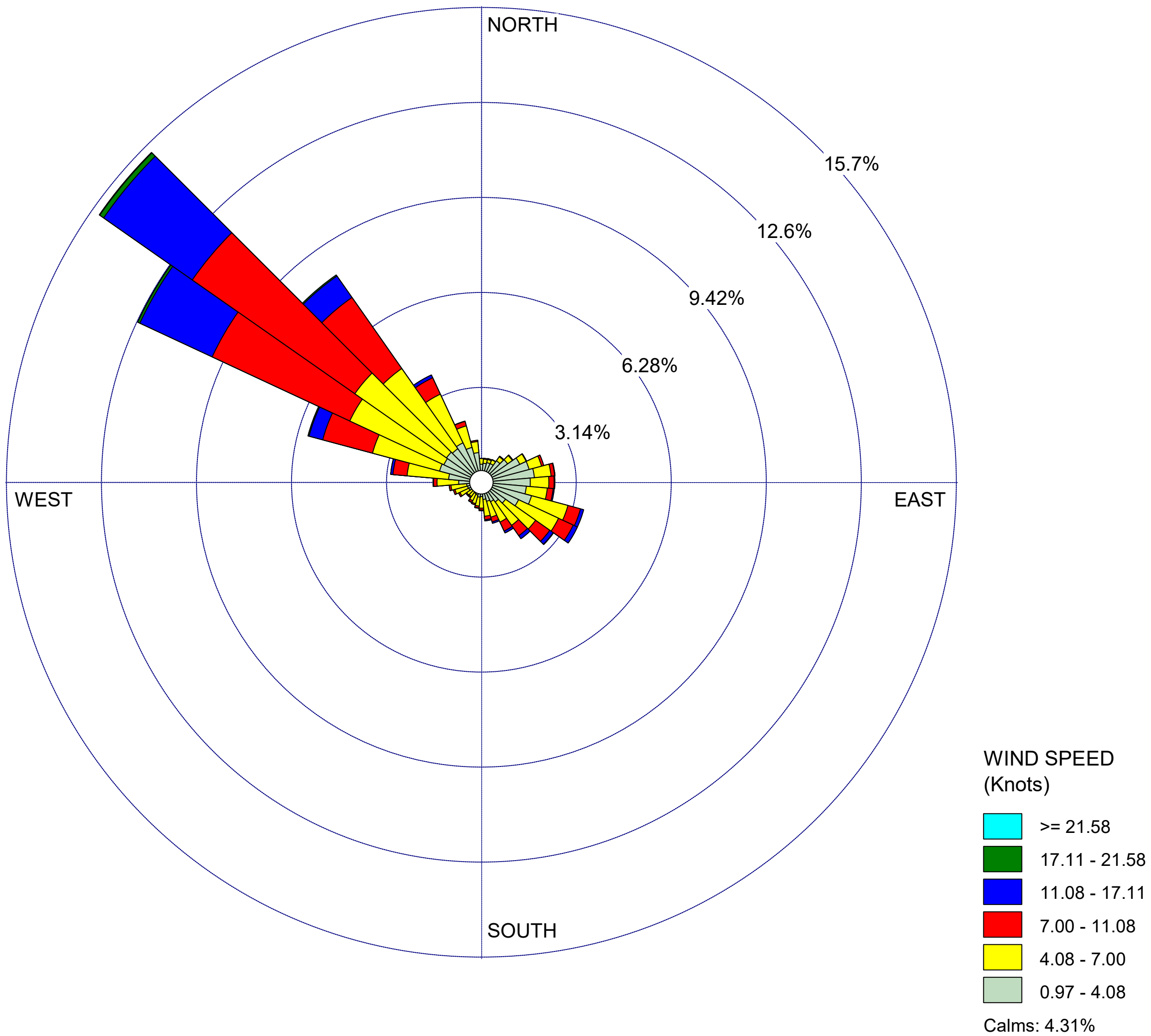
D:\Move\0029-0004\Construction\Construction.isc

WIND ROSE PLOT:

Wind Rose - Fresno Station (#93193) – Blowing From

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 1/1/2013 - 00:00 **End Date: 12/31/2017 - 23:59**	MODELER:	
	CALM WINDS: **4.31%**	TOTAL COUNT: **43534 hrs.**	
	AVG. WIND SPEED: **5.73 Knots**	DATE: **5/14/2023**	PROJECT NO.:

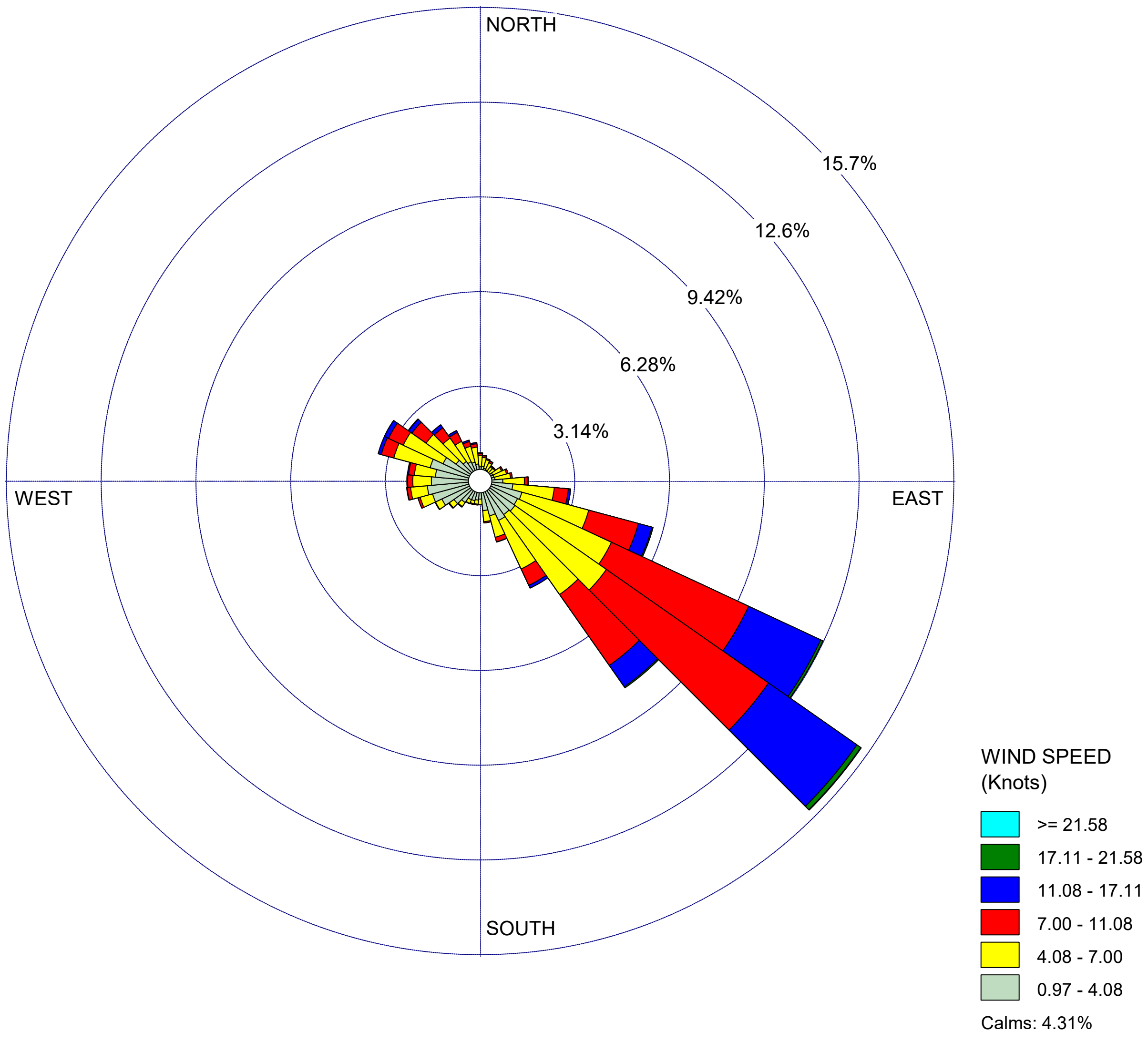
WRPLOT View - Lakes Environmental Software

WIND ROSE PLOT:

Wind Rose - Fresno Station (#93193) – Blowing To

DISPLAY:

Wind Speed
Flow Vector (blowing to)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 1/1/2013 - 00:00 **End Date: 12/31/2017 - 23:59**	MODELER:	
	CALM WINDS: **4.31%**	TOTAL COUNT: **43534 hrs.**	
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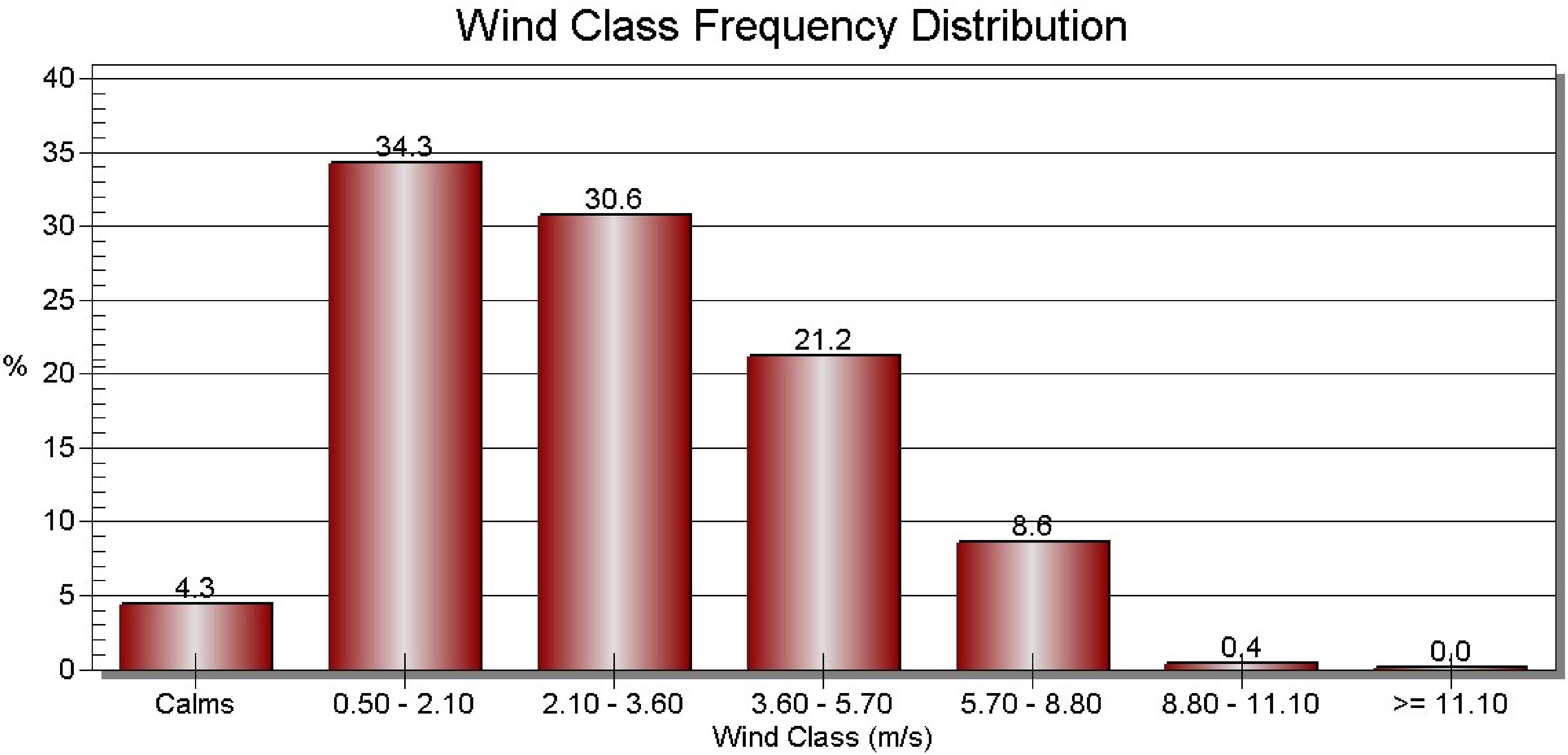
WRPLOT View - Lakes Environmental Software


Wind Class Frequency Distribution
40
35
30
25
20
15
10
5
0
%
34.3
30.6
21.2
8.6
4.3
0.4
0.0
Calms
0.50 - 2.10
2.10 - 3.60
3.60 - 5.70
5.70 - 8.80
8.80 - 11.10
>= 11.10
Wind Class (m/s)

Health Risk Assessment

Unmitigated Construction

Bonadelle TM6467 Residential Project (Unmitigated Construction)

Estimation of Annual Onsite Construction Emissions

Start of Construction	11/1/2024	
End of Construction	2/18/2028	**Total**
Number of Days	1,204	1,204
Number of Hours	28,896	28,896

Size of the construction area source: **59,919.7** **sq-meters**

Run	**Year**	**On-site Construction Activity**	**Unmitigated On-site DPM (pounds)**
Project Construction	2024	Demolition	21.2091
Project Construction	2024	Site Preparation	15.9966
Project Construction	2024	Grading	17.5835
Project Construction	2025	Grading	22.9352
Project Construction	2025	Paving	6.9718
Project Construction	2025	Trenching/Utilities	86.5246
Project Construction	2025	Building Construction	23.3235
Project Construction	2026	Building Construction	82.6053
Project Construction	2027	Building Construction	72.3786
Project Construction	2028	Building Construction	3.6881
Project Construction	2028	Architectural Coating	0.3071

Total Unmitigated DPM (On-site) 3.535E+02 pounds

Factor in AERMOD to Account for 5 days per week/8 hours per day: 4.2

Average Emission for Project Site (AREA)	1.605E+05	grams
	1.543E-03	grams/sec
	2.575E-08	grams/m2-sec

Pounds/Construction Period	3.535E+02
Pounds/Day	2.936E-01
Pounds/Hour	1.223E-02
Pounds/Year	1.072E+02
Years	3.29863

Bonadelle TM6467 Residential Project (Unmitigated Construction)

Estimation of Annual Offsite Construction DPM Emissions (Unmitigated)

Start of Construction	11/1/2024	
End of Construction	2/18/2028	**Total**
Number of Days	1,204	1,204
Number of Hours	28,896	28,896

Construction Trip Type	2024 Project Construction Demolition	2024 Project Construction Site Preparation	2024+2025 Project Construction Grading	2025 Project Construction Paving	2025 Project Construction Trenching /Utilities	2025-2028 Project Construction Building Construction	2028 Project Construction Architectural Coating	**Total (pounds)**
Total (pounds)	0.03990	0.00739	0.86910	0.014770972	0.11817	1.85244	0.01510	**2.91688**

	Haul Truck	**Vendor Truck**	**Worker**	**Total**
Demolition (2024)	300.00	80.00	19.00	399.00
Site Preparation (2024)	175.00	40.00	0.00	215.00
Grading (2024+2025)	600.00	120.00	625.00	1,345.00
Paving (2025)	300.00	80.00	0.00	380.00
Trenching/Utilities (2025)	1,600.00	640.00	0.00	2,240.00
Building Construction (2025-2028)	34,992.00	10,390.68	0.00	45,382.68
Architectural Coating (2028)	233.28	80.00	0.00	313.28
Total	**38,200.28**	**11,430.68**	**644.00**	**50,274.96**

	Haul Truck (pounds)	**Vendor Truck (pounds)**	**Worker (pounds)**	**Total (pounds)**
Total DPM	2.216E+00	6.632E-01	3.736E-02	2.917E+00
Average Emissions				
Grams	1.006E+03	3.011E+02	1.696E+01	
Grams/sec	9.673E-06	2.894E-06	1.631E-07	
Default Distance	20	4	7.7	Default Vehicle Travel Distance in CalEEMod
Vehicle Travel Distances in the Construction HRA (miles)				
Off-site Road Segment 1	0.44	0.44	0.44	miles
Trip Distribution (percent)				
Off-site Road Segment 1	100.0%	100.0%	100.0%	off-site
Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
Off-site Road Segment 1	2.113E-07	3.162E-07	9.254E-09	5.368E-07

	Grams/sec	Pounds/Hour	Pounds/Day	Pounds/year	Tons/year
Off-site Road Segment 1	5.368E-07	4.260E-06	1.022E-04	3.732E-02	1.866E-05

Health Risk Summary - Unmitigated Construction (Summary of HARP2 Results)

Bonadelle TM6467 Residential Project (Unmitigated Construction)

	RISK_SUM	Cancer Risk/million	MAXHI NonCancer Chronic	MAXHI Acute
Maximum Risk	2.1409E-05	21.41	1.0904E-02	0.00E+00

	X	Y
MEI UTM	258521.86	4084223.21
Lat/Long	36°52'23.2"N	119°42'33.1"W
Receptor # 310		

*HARP - HRACalc v22118 12/25/2023 8:30:43 PM - Cancer Risk - Input File: HARP (UNMIT)\hra\Unmit ConHRAInput.hra
*HARP - HRACalc v22118 12/25/2023 8:30:43 PM - Chronic Risk - Input File: HARP (UNMIT)\hra\Unmit ConHRAInput.hra
*HARP - HRACalc v22118 12/25/2023 8:30:43 PM - Acute Risk - Input File: HARP (UNMIT)\hra\Unmit ConHRAInput.hra

REC	GRP	X	Y	RISK_SUM	SCENARIO	MAXHI NonCancerChronic	MAXHI Acute
1	ALL	258771.79	4084351.29	2.53900E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.293E-03	0.00E+00
2	ALL	258854.63	4084404.68	8.19540E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.174E-04	0.00E+00
3	ALL	258839.82	4084405.13	8.91720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.542E-04	0.00E+00
4	ALL	258767.07	4084392.87	1.64540E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.380E-04	0.00E+00
5	ALL	259413.55	4084209.66	2.24980E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.146E-04	0.00E+00
6	ALL	259392.22	4084265.46	1.99570E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.016E-04	0.00E+00
7	ALL	259370.89	4084321.25	1.75990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.963E-05	0.00E+00
8	ALL	259349.55	4084377.04	1.55240E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.907E-05	0.00E+00
9	ALL	259328.22	4084432.83	1.39160E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.087E-05	0.00E+00
10	ALL	259306.89	4084488.62	1.24950E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.364E-05	0.00E+00
11	ALL	259285.56	4084544.41	1.13780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.795E-05	0.00E+00
12	ALL	259264.23	4084600.20	1.05080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.352E-05	0.00E+00
13	ALL	259242.90	4084656.00	9.82880E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.006E-05	0.00E+00
14	ALL	259194.28	4084723.93	9.60730E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.893E-05	0.00E+00
15	ALL	259139.71	4084748.21	1.03150E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.254E-05	0.00E+00
16	ALL	259085.14	4084772.49	1.11260E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.666E-05	0.00E+00
17	ALL	259030.57	4084796.77	1.19560E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.089E-05	0.00E+00
18	ALL	258975.99	4084821.06	1.27330E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.485E-05	0.00E+00
19	ALL	258921.42	4084845.34	1.34030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.826E-05	0.00E+00
20	ALL	258866.85	4084869.62	1.39520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.106E-05	0.00E+00
21	ALL	258812.28	4084893.90	1.44120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.340E-05	0.00E+00
22	ALL	258757.71	4084918.18	1.48240E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.550E-05	0.00E+00
23	ALL	259423.37	4084151.85	2.60770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.328E-04	0.00E+00
24	ALL	259421.67	4084092.01	3.10070E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.579E-04	0.00E+00
25	ALL	259523.59	4084206.33	1.71610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.740E-05	0.00E+00
26	ALL	259502.43	4084261.68	1.54280E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.858E-05	0.00E+00
27	ALL	259481.27	4084317.02	1.38040E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.030E-05	0.00E+00
28	ALL	259460.11	4084372.37	1.23440E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.287E-05	0.00E+00
29	ALL	259438.95	4084427.71	1.11780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.693E-05	0.00E+00
30	ALL	259417.79	4084483.06	1.01210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.155E-05	0.00E+00
31	ALL	259396.62	4084538.41	9.26570E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.719E-05	0.00E+00
32	ALL	259375.46	4084593.75	8.58470E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.372E-05	0.00E+00
33	ALL	259354.30	4084649.10	8.04340E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.097E-05	0.00E+00
34	ALL	259333.14	4084704.44	7.61120E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.876E-05	0.00E+00
35	ALL	259311.98	4084759.79	7.26310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.699E-05	0.00E+00
36	ALL	259274.33	4084799.51	7.31150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.724E-05	0.00E+00
37	ALL	259220.20	4084823.59	7.80430E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.975E-05	0.00E+00
38	ALL	259166.06	4084847.68	8.35400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.255E-05	0.00E+00
39	ALL	259111.92	4084871.77	8.92850E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.547E-05	0.00E+00
40	ALL	259057.79	4084895.86	9.48910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.833E-05	0.00E+00
41	ALL	259003.65	4084919.95	9.99400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.090E-05	0.00E+00
42	ALL	258949.52	4084944.03	1.04170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.305E-05	0.00E+00
43	ALL	258895.38	4084968.12	1.07560E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.478E-05	0.00E+00
44	ALL	258841.24	4084992.21	1.10350E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.620E-05	0.00E+00
45	ALL	258787.11	4085016.30	1.12900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.750E-05	0.00E+00
46	ALL	258732.97	4085040.39	1.15420E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.878E-05	0.00E+00
47	ALL	259533.32	4084148.74	1.95800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.972E-05	0.00E+00
48	ALL	259531.63	4084088.90	2.28910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.166E-04	0.00E+00
49	ALL	258432.62	4084049.36	4.15410E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.116E-03	0.00E+00
50	ALL	258394.03	4084051.05	2.90990E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.482E-03	0.00E+00
51	ALL	258455.35	4084022.86	3.06150E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.559E-03	0.00E+00
52	ALL	258407.45	4084024.89	2.16220E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.101E-03	0.00E+00
53	ALL	258837.42	4083782.54	9.86880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.026E-04	0.00E+00
54	ALL	258895.19	4083788.44	1.09260E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.565E-04	0.00E+00
55	ALL	258979.89	4083870.61	1.61550E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.228E-04	0.00E+00
56	ALL	258693.45	4083606.06	2.70120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.376E-04	0.00E+00
57	ALL	258727.72	4083618.67	3.09850E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.578E-04	0.00E+00
58	ALL	258771.60	4083627.20	3.57710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.822E-04	0.00E+00
59	ALL	258802.19	4083638.19	4.04790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.062E-04	0.00E+00
60	ALL	258832.46	4083660.61	4.85080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.471E-04	0.00E+00
61	ALL	258882.36	4083669.86	5.58790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.846E-04	0.00E+00
62	ALL	258894.00	4083704.06	6.81880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.473E-04	0.00E+00
63	ALL	258933.35	4083694.38	6.82300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.475E-04	0.00E+00
64	ALL	258967.63	4083706.99	7.48800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.814E-04	0.00E+00

65	ALL	259001.90	4083719.61	8.07190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.111E-04	0.00E+00
66	ALL	259048.89	4083777.14	1.01270E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.158E-04	0.00E+00
67	ALL	259082.91	4083805.09	1.06870E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.443E-04	0.00E+00
68	ALL	259078.00	4083822.40	1.13660E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.789E-04	0.00E+00
69	ALL	258659.18	4083593.44	2.37750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.211E-04	0.00E+00
70	ALL	258620.59	4083595.13	2.21370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.128E-04	0.00E+00
71	ALL	258582.00	4083596.83	2.07310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.056E-04	0.00E+00
72	ALL	258543.41	4083598.52	1.95520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.958E-05	0.00E+00
73	ALL	258504.82	4083600.21	1.85960E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.471E-05	0.00E+00
74	ALL	258466.22	4083601.90	1.78370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.085E-05	0.00E+00
75	ALL	258427.63	4083603.60	1.72450E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.783E-05	0.00E+00
76	ALL	258389.04	4083605.29	1.68920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.603E-05	0.00E+00
77	ALL	258698.48	4083526.75	1.97090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.004E-04	0.00E+00
78	ALL	258715.65	4083527.38	2.04260E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.040E-04	0.00E+00
79	ALL	258759.76	4083522.35	2.18720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.114E-04	0.00E+00
80	ALL	258794.89	4083535.28	2.47690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.262E-04	0.00E+00
81	ALL	258830.03	4083548.22	2.81170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.432E-04	0.00E+00
82	ALL	258865.16	4083561.15	3.19650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.628E-04	0.00E+00
83	ALL	258900.29	4083574.08	3.62250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.845E-04	0.00E+00
84	ALL	258935.43	4083587.02	4.07140E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.074E-04	0.00E+00
85	ALL	258970.56	4083599.95	4.54090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.313E-04	0.00E+00
86	ALL	259005.70	4083612.89	5.00750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.550E-04	0.00E+00
87	ALL	259040.83	4083625.82	5.44480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.773E-04	0.00E+00
88	ALL	259075.96	4083638.76	5.82410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.966E-04	0.00E+00
89	ALL	259104.34	4083715.55	7.72670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.935E-04	0.00E+00
90	ALL	259172.18	4083718.97	7.30100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.718E-04	0.00E+00
91	ALL	259186.67	4083749.30	7.71990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.932E-04	0.00E+00
92	ALL	259201.16	4083815.52	8.50770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.333E-04	0.00E+00
93	ALL	259180.70	4083813.74	8.91850E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.542E-04	0.00E+00
94	ALL	259189.52	4083854.46	9.22720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.700E-04	0.00E+00
95	ALL	259208.10	4083891.91	8.94520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.556E-04	0.00E+00
96	ALL	259247.03	4083917.32	7.81190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.979E-04	0.00E+00
97	ALL	259253.30	4083964.35	7.35890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.748E-04	0.00E+00
98	ALL	258656.61	4083462.55	1.47080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.491E-05	0.00E+00
99	ALL	258621.02	4083463.50	1.40070E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.134E-05	0.00E+00
100	ALL	258582.43	4083465.19	1.33800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.815E-05	0.00E+00
101	ALL	258543.83	4083466.88	1.28530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.546E-05	0.00E+00
102	ALL	258505.24	4083468.57	1.24140E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.323E-05	0.00E+00
103	ALL	258466.65	4083470.27	1.20480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.136E-05	0.00E+00
104	ALL	258428.06	4083471.96	1.17420E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.980E-05	0.00E+00
105	ALL	258389.47	4083473.65	1.14860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.850E-05	0.00E+00
106	ALL	258685.31	4083386.82	1.22040E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.215E-05	0.00E+00
107	ALL	258721.07	4083399.98	1.33630E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.806E-05	0.00E+00
108	ALL	258756.84	4083413.15	1.47370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.506E-05	0.00E+00
109	ALL	258801.60	4083413.40	1.59190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.108E-05	0.00E+00
110	ALL	258841.28	4083456.31	1.98710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.012E-04	0.00E+00
111	ALL	258864.13	4083452.65	2.04410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.041E-04	0.00E+00
112	ALL	258906.01	4083454.15	2.21470E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.128E-04	0.00E+00
113	ALL	258926.22	4083457.88	2.32790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.186E-04	0.00E+00
114	ALL	258978.10	4083529.93	3.38640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.725E-04	0.00E+00
115	ALL	259025.53	4083531.43	3.62360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.846E-04	0.00E+00
116	ALL	259060.74	4083450.71	2.76520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.408E-04	0.00E+00
117	ALL	259078.73	4083531.65	3.82970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.951E-04	0.00E+00
118	ALL	259114.49	4083544.82	4.12940E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.103E-04	0.00E+00
119	ALL	259150.26	4083557.99	4.38780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.235E-04	0.00E+00
120	ALL	259201.73	4083605.88	5.12080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.608E-04	0.00E+00
121	ALL	259217.44	4083640.60	5.61610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.860E-04	0.00E+00
122	ALL	259233.15	4083675.33	6.05880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.086E-04	0.00E+00
123	ALL	259248.86	4083710.05	6.40600E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.263E-04	0.00E+00
124	ALL	259239.07	4083760.47	7.16310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.648E-04	0.00E+00
125	ALL	259280.28	4083779.50	6.72030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.423E-04	0.00E+00
126	ALL	259287.49	4083821.31	6.82980E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.479E-04	0.00E+00
127	ALL	259313.59	4083842.80	6.39010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.255E-04	0.00E+00
128	ALL	259305.21	4083878.94	6.52960E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.326E-04	0.00E+00
129	ALL	259298.24	4083891.93	6.64590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.385E-04	0.00E+00
130	ALL	259358.83	4083953.11	5.12260E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.609E-04	0.00E+00
131	ALL	259374.54	4083987.84	4.59030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.338E-04	0.00E+00
132	ALL	259390.25	4084022.56	4.06200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.069E-04	0.00E+00
133	ALL	259405.96	4084057.28	3.56060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.813E-04	0.00E+00
134	ALL	258649.54	4083373.65	1.12330E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.721E-05	0.00E+00
135	ALL	258610.95	4083375.34	1.07920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.496E-05	0.00E+00
136	ALL	258572.36	4083377.04	1.04170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.306E-05	0.00E+00
137	ALL	258533.77	4083378.73	1.00970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.142E-05	0.00E+00
138	ALL	258495.17	4083380.42	9.82000E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.001E-05	0.00E+00
139	ALL	258456.58	4083382.12	9.57720E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.878E-05	0.00E+00
140	ALL	258417.99	4083383.81	9.35730E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.766E-05	0.00E+00
141	ALL	258379.40	4083385.50	9.15720E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.664E-05	0.00E+00
142	ALL	258680.97	4083277.10	9.13090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.650E-05	0.00E+00
143	ALL	258717.22	4083290.45	9.83560E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.009E-05	0.00E+00
144	ALL	258753.47	4083303.79	1.06650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.432E-05	0.00E+00
145	ALL	258789.71	4083317.14	1.16320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.925E-05	0.00E+00
146	ALL	258825.96	4083330.48	1.27670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.503E-05	0.00E+00
147	ALL	258862.21	4083343.83	1.40600E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.161E-05	0.00E+00
148	ALL	258898.46	4083357.17	1.55650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.927E-05	0.00E+00

149	ALL	258934.71	4083370.52	1.72410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.781E-05	0.00E+00
150	ALL	258970.96	4083383.86	1.91310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.744E-05	0.00E+00
151	ALL	259007.21	4083397.20	2.12020E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.080E-04	0.00E+00
152	ALL	259043.46	4083410.55	2.34130E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.193E-04	0.00E+00
153	ALL	259079.70	4083423.89	2.56770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.308E-04	0.00E+00
154	ALL	259115.95	4083437.24	2.80000E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.426E-04	0.00E+00
155	ALL	259152.20	4083450.58	3.02790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.542E-04	0.00E+00
156	ALL	259188.45	4083463.93	3.24090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.651E-04	0.00E+00
157	ALL	259224.70	4083477.27	3.42910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.747E-04	0.00E+00
158	ALL	259276.87	4083525.81	3.96120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.018E-04	0.00E+00
159	ALL	259292.79	4083561.00	4.32120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.201E-04	0.00E+00
160	ALL	259308.72	4083596.20	4.65080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.369E-04	0.00E+00
161	ALL	259324.64	4083631.39	4.92890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.510E-04	0.00E+00
162	ALL	259340.56	4083666.58	5.13500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.615E-04	0.00E+00
163	ALL	259356.48	4083701.78	5.24810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.673E-04	0.00E+00
164	ALL	259372.41	4083736.97	5.25640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.677E-04	0.00E+00
165	ALL	259388.33	4083772.16	5.16880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.633E-04	0.00E+00
166	ALL	259404.25	4083807.35	4.98360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.538E-04	0.00E+00
167	ALL	259420.17	4083842.55	4.72090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.404E-04	0.00E+00
168	ALL	259436.10	4083877.74	4.40230E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.242E-04	0.00E+00
169	ALL	259452.02	4083912.93	4.04510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.060E-04	0.00E+00
170	ALL	259467.94	4083948.13	3.66990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.869E-04	0.00E+00
171	ALL	259483.86	4083983.32	3.29460E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.678E-04	0.00E+00
172	ALL	259499.79	4084018.51	2.93350E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.494E-04	0.00E+00
173	ALL	259515.71	4084053.70	2.59650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.322E-04	0.00E+00
174	ALL	258644.72	4083263.76	8.53200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.345E-05	0.00E+00
175	ALL	258606.13	4083265.45	8.26980E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.212E-05	0.00E+00
176	ALL	258567.54	4083267.14	8.04520E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.098E-05	0.00E+00
177	ALL	258528.95	4083268.84	7.85290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.000E-05	0.00E+00
178	ALL	258490.35	4083270.53	7.68500E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.914E-05	0.00E+00
179	ALL	258451.76	4083272.22	7.53630E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.838E-05	0.00E+00
180	ALL	258413.17	4083273.91	7.40180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.770E-05	0.00E+00
181	ALL	258374.58	4083275.61	7.27780E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.707E-05	0.00E+00
182	ALL	258427.55	4084018.70	2.32100E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.182E-03	0.00E+00
183	ALL	257682.15	4084127.78	2.30840E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.176E-04	0.00E+00
184	ALL	257701.63	4084074.74	2.22890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.135E-04	0.00E+00
185	ALL	257721.10	4084021.70	2.15770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.099E-04	0.00E+00
186	ALL	257740.57	4083968.66	2.08150E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.060E-04	0.00E+00
187	ALL	257760.04	4083915.61	1.98690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.012E-04	0.00E+00
188	ALL	257779.51	4083862.57	1.86860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.517E-05	0.00E+00
189	ALL	257798.98	4083809.53	1.72970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.809E-05	0.00E+00
190	ALL	257818.45	4083756.49	1.57910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.042E-05	0.00E+00
191	ALL	257837.92	4083703.45	1.42670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.266E-05	0.00E+00
192	ALL	257857.39	4083650.41	1.28060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.522E-05	0.00E+00
193	ALL	257892.74	4083611.97	1.19710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.097E-05	0.00E+00
194	ALL	257943.97	4083588.13	1.16360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.926E-05	0.00E+00
195	ALL	257995.20	4083564.29	1.12720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.741E-05	0.00E+00
196	ALL	258147.34	4083482.78	9.98150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.084E-05	0.00E+00
197	ALL	258200.11	4083468.94	9.94360E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.064E-05	0.00E+00
198	ALL	258251.33	4083445.10	9.69300E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.937E-05	0.00E+00
199	ALL	258302.56	4083421.26	9.46440E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.820E-05	0.00E+00
200	ALL	257673.55	4084182.53	2.46410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.255E-04	0.00E+00
201	ALL	257675.80	4084238.99	2.71280E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.382E-04	0.00E+00
202	ALL	257572.23	4084132.20	1.88330E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.592E-05	0.00E+00
203	ALL	257591.68	4084079.22	1.82570E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.299E-05	0.00E+00
204	ALL	257611.13	4084026.24	1.77690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.050E-05	0.00E+00
205	ALL	257630.58	4083973.26	1.72960E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.809E-05	0.00E+00
206	ALL	257650.02	4083920.28	1.67430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.528E-05	0.00E+00
207	ALL	257669.47	4083867.30	1.60380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.168E-05	0.00E+00
208	ALL	257688.92	4083814.32	1.51610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.722E-05	0.00E+00
209	ALL	257708.37	4083761.35	1.41460E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.205E-05	0.00E+00
210	ALL	257727.82	4083708.37	1.30500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.646E-05	0.00E+00
211	ALL	257747.26	4083655.39	1.19340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.078E-05	0.00E+00
212	ALL	257766.71	4083602.41	1.08490E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.526E-05	0.00E+00
213	ALL	257811.74	4083537.52	9.71550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.948E-05	0.00E+00
214	ALL	257862.91	4083513.71	9.45500E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.816E-05	0.00E+00
215	ALL	257914.08	4083489.90	9.17040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.671E-05	0.00E+00
216	ALL	257965.25	4083466.09	8.88170E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.524E-05	0.00E+00
217	ALL	258016.41	4083442.28	8.60270E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.381E-05	0.00E+00
218	ALL	258067.58	4083418.47	8.34670E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.251E-05	0.00E+00
219	ALL	258118.75	4083394.66	8.11720E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.134E-05	0.00E+00
220	ALL	258169.91	4083370.85	7.91540E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.031E-05	0.00E+00
221	ALL	258221.08	4083347.04	7.73650E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.940E-05	0.00E+00
222	ALL	258272.25	4083323.23	7.57440E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.858E-05	0.00E+00
223	ALL	258323.41	4083299.42	7.42240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.780E-05	0.00E+00
224	ALL	257563.63	4084186.92	1.99530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.016E-04	0.00E+00
225	ALL	257565.89	4084243.38	2.17200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.106E-04	0.00E+00
226	ALL	258382.28	4084295.95	6.12460E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.119E-03	0.00E+00
227	ALL	258398.86	4084935.93	2.32000E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.182E-04	0.00E+00
228	ALL	258363.89	4084922.61	2.51050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.279E-04	0.00E+00
229	ALL	258328.92	4084909.29	2.69590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.373E-04	0.00E+00
230	ALL	258293.94	4084895.97	2.88450E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.469E-04	0.00E+00
231	ALL	258258.97	4084882.66	3.07090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.564E-04	0.00E+00
232	ALL	258224.00	4084869.34	3.25060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.656E-04	0.00E+00

233	ALL	258189.03	4084856.02	3.41970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.742E-04	0.00E+00
234	ALL	258154.05	4084842.70	3.57540E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.821E-04	0.00E+00
235	ALL	258119.08	4084829.39	3.71570E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.892E-04	0.00E+00
236	ALL	258084.11	4084816.07	3.83870E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.955E-04	0.00E+00
237	ALL	258049.14	4084802.75	3.94170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.008E-04	0.00E+00
238	ALL	258014.16	4084789.43	4.02170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.048E-04	0.00E+00
239	ALL	257979.19	4084776.12	4.07590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.076E-04	0.00E+00
240	ALL	257944.22	4084762.80	4.10340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.090E-04	0.00E+00
241	ALL	257893.68	4084715.45	4.34370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.212E-04	0.00E+00
242	ALL	257878.12	4084681.42	4.56830E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.327E-04	0.00E+00
243	ALL	257862.56	4084647.38	4.74980E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.419E-04	0.00E+00
244	ALL	257846.99	4084613.35	4.87140E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.481E-04	0.00E+00
245	ALL	257831.43	4084579.32	4.92890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.510E-04	0.00E+00
246	ALL	257815.87	4084545.28	4.91400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.503E-04	0.00E+00
247	ALL	257800.30	4084511.25	4.82340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.457E-04	0.00E+00
248	ALL	257784.74	4084477.22	4.66080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.374E-04	0.00E+00
249	ALL	257769.18	4084443.19	4.43290E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.258E-04	0.00E+00
250	ALL	257753.61	4084409.15	4.16510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.121E-04	0.00E+00
251	ALL	257738.05	4084375.12	3.86730E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.970E-04	0.00E+00
252	ALL	257722.49	4084341.09	3.56190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.814E-04	0.00E+00
253	ALL	257706.93	4084307.06	3.25820E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.659E-04	0.00E+00
254	ALL	257691.36	4084273.02	2.97210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.514E-04	0.00E+00
255	ALL	258433.83	4084949.25	2.15020E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.095E-04	0.00E+00
256	ALL	258472.31	4084948.28	2.06780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.053E-04	0.00E+00
257	ALL	258510.78	4084947.31	1.98170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.009E-04	0.00E+00
258	ALL	258549.25	4084946.34	1.89220E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.637E-05	0.00E+00
259	ALL	258587.72	4084945.37	1.79970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.166E-05	0.00E+00
260	ALL	258626.19	4084944.40	1.70550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.686E-05	0.00E+00
261	ALL	258664.66	4084943.43	1.61170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.208E-05	0.00E+00
262	ALL	258703.13	4084942.47	1.52050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.744E-05	0.00E+00
263	ALL	258401.16	4085045.71	1.70650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.691E-05	0.00E+00
264	ALL	258365.71	4085032.22	1.82400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.290E-05	0.00E+00
265	ALL	258330.27	4085018.72	1.94880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.925E-05	0.00E+00
266	ALL	258294.82	4085005.22	2.08640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.063E-04	0.00E+00
267	ALL	258259.38	4084991.72	2.22050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.131E-04	0.00E+00
268	ALL	258223.93	4084978.23	2.35400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.199E-04	0.00E+00
269	ALL	258188.49	4084964.73	2.48480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.266E-04	0.00E+00
270	ALL	258153.04	4084951.23	2.61050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.330E-04	0.00E+00
271	ALL	258117.60	4084937.73	2.72880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.390E-04	0.00E+00
272	ALL	258082.15	4084924.23	2.83840E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.446E-04	0.00E+00
273	ALL	258046.71	4084910.74	2.93790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.496E-04	0.00E+00
274	ALL	258011.26	4084897.24	3.02650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.541E-04	0.00E+00
275	ALL	257975.82	4084883.74	3.10250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.580E-04	0.00E+00
276	ALL	257940.37	4084870.24	3.16470E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.612E-04	0.00E+00
277	ALL	257904.93	4084856.75	3.21180E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.636E-04	0.00E+00
278	ALL	257869.48	4084843.25	3.24320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.652E-04	0.00E+00
279	ALL	257818.26	4084795.26	3.44450E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.754E-04	0.00E+00
280	ALL	257802.49	4084760.77	3.61710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.842E-04	0.00E+00
281	ALL	257786.72	4084726.27	3.76780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.919E-04	0.00E+00
282	ALL	257770.94	4084691.78	3.89110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.982E-04	0.00E+00
283	ALL	257755.17	4084657.29	3.98110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.028E-04	0.00E+00
284	ALL	257739.39	4084622.80	4.01430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.045E-04	0.00E+00
285	ALL	257723.62	4084588.30	3.99620E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.035E-04	0.00E+00
286	ALL	257707.85	4084553.81	3.92540E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.999E-04	0.00E+00
287	ALL	257692.07	4084519.32	3.80510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.938E-04	0.00E+00
288	ALL	257676.30	4084484.83	3.64200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.855E-04	0.00E+00
289	ALL	257660.53	4084450.33	3.44700E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.756E-04	0.00E+00
290	ALL	257644.75	4084415.84	3.23100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.646E-04	0.00E+00
291	ALL	257628.98	4084381.35	3.00490E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.530E-04	0.00E+00
292	ALL	257613.21	4084346.85	2.77750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.415E-04	0.00E+00
293	ALL	257597.43	4084312.36	2.55920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.303E-04	0.00E+00
294	ALL	257581.66	4084277.87	2.35670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.200E-04	0.00E+00
295	ALL	258436.60	4085059.21	1.59530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.125E-05	0.00E+00
296	ALL	258475.07	4085058.24	1.53810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.834E-05	0.00E+00
297	ALL	258513.55	4085057.27	1.47860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.531E-05	0.00E+00
298	ALL	258552.02	4085056.31	1.41690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.216E-05	0.00E+00
299	ALL	258590.49	4085055.34	1.35370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.894E-05	0.00E+00
300	ALL	258628.96	4085054.37	1.28990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.570E-05	0.00E+00
301	ALL	258667.43	4085053.40	1.22720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.250E-05	0.00E+00
302	ALL	258404.04	4084257.27	9.96060E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.073E-03	0.00E+00
303	ALL	258415.08	4084289.21	7.16580E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.650E-03	0.00E+00
304	ALL	258414.69	4084274.53	8.25840E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.206E-03	0.00E+00
305	ALL	258429.94	4084296.83	7.05810E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.595E-03	0.00E+00
306	ALL	258441.68	4084257.32	1.07780E-05	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.489E-03	0.00E+00
307	ALL	258519.90	4084270.62	1.50090E-05	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.644E-03	0.00E+00
308	ALL	258532.02	4084270.62	1.74860E-05	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.906E-03	0.00E+00
309	ALL	258539.83	4084255.54	2.01590E-05	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.027E-02	0.00E+00
310	ALL	258521.86	4084223.21	2.14090E-05	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.090E-02	0.00E+00
311	ALL	258781.30	4084394.27	1.45250E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.398E-04	0.00E+00
312	ALL	258796.19	4084395.23	1.28760E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.558E-04	0.00E+00
313	ALL	258857.92	4084341.90	1.30190E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.631E-04	0.00E+00
314	ALL	258381.67	4084021.46	1.70560E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.687E-04	0.00E+00
315	ALL	258309.03	4084063.67	1.78140E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.073E-04	0.00E+00
316	ALL	258300.45	4084056.72	1.57770E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.035E-04	0.00E+00

317	ALL	258297.18	4084048.35	1.43130E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.290E-04	0.00E+00
318	ALL	258532.20	4083943.49	1.62720E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.287E-04	0.00E+00
319	ALL	258531.59	4083928.98	1.39040E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.082E-04	0.00E+00
320	ALL	258548.95	4083919.18	1.35560E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.904E-04	0.00E+00
321	ALL	258310.01	4084835.46	3.49680E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.781E-04	0.00E+00
322	ALL	258327.51	4084834.54	3.46820E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.766E-04	0.00E+00
323	ALL	258800.04	4083832.11	1.28840E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.562E-04	0.00E+00
324	ALL	258819.84	4083833.03	1.33470E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.798E-04	0.00E+00
325	ALL	258837.33	4083829.81	1.33500E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.799E-04	0.00E+00
326	ALL	258798.66	4083787.91	9.55310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.866E-04	0.00E+00
327	ALL	258816.61	4083789.29	9.95720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.071E-04	0.00E+00
328	ALL	258875.08	4083784.69	1.05020E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.349E-04	0.00E+00
329	ALL	258851.14	4083784.69	1.02010E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.195E-04	0.00E+00
330	ALL	258914.21	4083783.77	1.07730E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.487E-04	0.00E+00
331	ALL	258856.20	4083828.88	1.35170E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.884E-04	0.00E+00
332	ALL	258876.46	4083830.73	1.38520E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.055E-04	0.00E+00
333	ALL	258898.10	4083827.96	1.37480E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.002E-04	0.00E+00
334	ALL	258915.44	4083822.94	1.34000E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.825E-04	0.00E+00
335	ALL	258931.54	4083824.89	1.35330E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.893E-04	0.00E+00
336	ALL	258953.60	4083825.45	1.34700E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.860E-04	0.00E+00
337	ALL	258970.84	4083826.87	1.34130E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.831E-04	0.00E+00
338	ALL	258993.46	4083824.33	1.29750E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.608E-04	0.00E+00
339	ALL	258930.98	4083783.33	1.08260E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.514E-04	0.00E+00
340	ALL	258950.49	4083783.61	1.08900E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.546E-04	0.00E+00
341	ALL	258972.03	4083780.69	1.07300E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.465E-04	0.00E+00
342	ALL	259008.61	4083779.36	1.05340E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.365E-04	0.00E+00
343	ALL	258989.99	4083781.69	1.07350E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.468E-04	0.00E+00
344	ALL	259010.28	4083825.59	1.27940E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.516E-04	0.00E+00
345	ALL	259031.90	4083822.93	1.22980E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.263E-04	0.00E+00
346	ALL	259027.91	4083781.35	1.04880E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.342E-04	0.00E+00
347	ALL	258997.31	4083873.16	1.58130E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.053E-04	0.00E+00
348	ALL	259017.93	4083871.16	1.50420E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.661E-04	0.00E+00
349	ALL	259033.23	4083867.17	1.43490E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.308E-04	0.00E+00
350	ALL	259060.17	4083870.83	1.36040E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.929E-04	0.00E+00
351	ALL	259092.77	4083789.00	1.00010E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.094E-04	0.00E+00
352	ALL	258799.98	4083743.62	7.25590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.696E-04	0.00E+00
353	ALL	258817.23	4083744.18	7.52800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.834E-04	0.00E+00
354	ALL	258838.72	4083742.49	7.75440E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.949E-04	0.00E+00
355	ALL	258854.27	4083743.05	7.98600E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.067E-04	0.00E+00
356	ALL	258873.78	4083741.92	8.17090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.162E-04	0.00E+00
357	ALL	258891.87	4083741.07	8.32790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.241E-04	0.00E+00
358	ALL	258909.12	4083742.77	8.57090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.365E-04	0.00E+00
359	ALL	258927.50	4083741.92	8.67610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.419E-04	0.00E+00
360	ALL	258946.72	4083741.64	8.78300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.473E-04	0.00E+00
361	ALL	258965.10	4083740.79	8.82700E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.496E-04	0.00E+00
362	ALL	258984.89	4083739.94	8.84320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.504E-04	0.00E+00
363	ALL	259002.70	4083739.09	8.82420E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.494E-04	0.00E+00
364	ALL	258797.44	4083705.16	5.75410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.931E-04	0.00E+00
365	ALL	258817.51	4083704.60	5.98810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.050E-04	0.00E+00
366	ALL	258839.00	4083706.01	6.28970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.203E-04	0.00E+00
367	ALL	258855.96	4083705.73	6.47380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.297E-04	0.00E+00
368	ALL	258877.74	4083702.62	6.59970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.361E-04	0.00E+00
369	ALL	258912.45	4083702.25	6.92720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.528E-04	0.00E+00
370	ALL	258949.94	4083702.25	7.21540E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.675E-04	0.00E+00
371	ALL	258984.07	4083700.32	7.32810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.732E-04	0.00E+00
372	ALL	259002.81	4083699.84	7.37600E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.757E-04	0.00E+00
373	ALL	258898.77	4083648.91	5.16510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.631E-04	0.00E+00
374	ALL	258627.60	4083540.66	1.82520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.296E-05	0.00E+00
375	ALL	258513.83	4083537.00	1.53010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.793E-05	0.00E+00
376	ALL	258774.97	4083660.95	4.28200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.181E-04	0.00E+00
377	ALL	258769.92	4083651.33	4.02590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.050E-04	0.00E+00
378	ALL	258774.97	4083637.63	3.79730E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.934E-04	0.00E+00
379	ALL	258773.05	4083614.79	3.37780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.720E-04	0.00E+00
380	ALL	258800.45	4083672.96	4.83850E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.464E-04	0.00E+00
381	ALL	258800.93	4083660.95	4.54060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.313E-04	0.00E+00
382	ALL	258800.45	4083651.81	4.32190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.201E-04	0.00E+00
383	ALL	258832.17	4083650.61	4.59980E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.343E-04	0.00E+00
384	ALL	258833.86	4083672.48	5.18320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.640E-04	0.00E+00
385	ALL	258832.90	4083638.59	4.33210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.206E-04	0.00E+00
386	ALL	258853.33	4083670.80	5.33640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.718E-04	0.00E+00
387	ALL	258851.89	4083659.98	5.02640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.560E-04	0.00E+00
388	ALL	258850.45	4083648.21	4.71450E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.401E-04	0.00E+00
389	ALL	258899.25	4083659.25	5.44610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.774E-04	0.00E+00
390	ALL	258879.12	4083659.84	5.27800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.688E-04	0.00E+00
391	ALL	258879.84	4083649.03	5.00340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.548E-04	0.00E+00
392	ALL	258879.84	4083637.01	4.70790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.398E-04	0.00E+00
393	ALL	258852.44	4083637.97	4.49110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.287E-04	0.00E+00
394	ALL	258900.03	4083669.22	5.73750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.922E-04	0.00E+00
395	ALL	258773.78	4083671.75	4.52290E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.304E-04	0.00E+00
396	ALL	258896.43	4083635.32	4.80650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.448E-04	0.00E+00
397	ALL	259101.17	4083742.27	8.49650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.327E-04	0.00E+00
398	ALL	257956.80	4083551.58	1.07320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.466E-05	0.00E+00
399	ALL	258299.79	4083477.86	1.08450E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.524E-05	0.00E+00
400	ALL	258436.73	4083663.40	2.13730E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.089E-04	0.00E+00

401	ALL	258437.84	4083647.84	2.02360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.031E-04	0.00E+00
402	ALL	258459.51	4083635.62	1.98790E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.012E-04	0.00E+00
403	ALL	258376.97	4083538.26	1.38210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.039E-05	0.00E+00
404	ALL	258393.50	4083537.79	1.38380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.048E-05	0.00E+00
405	ALL	258307.43	4083534.01	1.31680E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.707E-05	0.00E+00
406	ALL	258272.12	4083541.20	1.26200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.428E-05	0.00E+00
407	ALL	258098.15	4083481.43	9.71230E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.947E-05	0.00E+00
408	ALL	258061.23	4083493.74	9.82460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.004E-05	0.00E+00
409	ALL	258226.60	4083477.59	1.03100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.251E-05	0.00E+00
410	ALL	258361.21	4083459.13	1.08050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.503E-05	0.00E+00
411	ALL	258020.46	4083486.82	9.50160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.839E-05	0.00E+00
412	ALL	258042.00	4083487.59	9.60620E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.893E-05	0.00E+00
413	ALL	258275.83	4083476.05	1.06080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.403E-05	0.00E+00
414	ALL	258711.10	4083462.61	1.60670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.183E-05	0.00E+00
415	ALL	258766.68	4083459.83	1.75490E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.938E-05	0.00E+00
416	ALL	258799.47	4083558.75	2.76230E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.407E-04	0.00E+00
417	ALL	258964.79	4083455.94	2.46500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.255E-04	0.00E+00
418	ALL	259000.10	4083453.98	2.58390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.316E-04	0.00E+00
419	ALL	258916.41	4083410.17	1.91770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.767E-05	0.00E+00
420	ALL	258494.66	4083420.63	1.08340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.518E-05	0.00E+00
421	ALL	258674.47	4083415.40	1.30620E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.653E-05	0.00E+00
422	ALL	258431.23	4083427.17	1.04800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.338E-05	0.00E+00
423	ALL	259186.93	4083925.38	9.68090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.931E-04	0.00E+00
424	ALL	259176.19	4083917.25	1.00610E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.124E-04	0.00E+00
425	ALL	259161.40	4083909.71	1.05710E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.384E-04	0.00E+00
426	ALL	259201.76	4083935.11	9.14250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.656E-04	0.00E+00
427	ALL	259213.57	4083943.61	8.71170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.437E-04	0.00E+00
428	ALL	259226.33	4083951.64	8.25520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.204E-04	0.00E+00
429	ALL	259264.60	4083975.74	6.94850E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.539E-04	0.00E+00
430	ALL	259240.03	4083958.26	7.78990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.968E-04	0.00E+00
431	ALL	259278.30	4083983.30	6.51960E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.321E-04	0.00E+00
432	ALL	259136.50	4083874.19	1.10650E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.636E-04	0.00E+00
433	ALL	259146.90	4083859.07	1.04980E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.347E-04	0.00E+00
434	ALL	259153.04	4083843.01	1.00540E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.121E-04	0.00E+00
435	ALL	259181.39	4083875.14	9.64990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.915E-04	0.00E+00
436	ALL	259278.25	4083934.67	6.92100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.525E-04	0.00E+00
437	ALL	259286.28	4083919.55	6.81060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.469E-04	0.00E+00
438	ALL	259258.88	4083901.13	7.54120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.841E-04	0.00E+00
439	ALL	259219.19	4083874.19	8.56670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.363E-04	0.00E+00
440	ALL	259290.53	4083907.74	6.76390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.445E-04	0.00E+00
441	ALL	259286.28	4083919.55	6.81060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.469E-04	0.00E+00
442	ALL	259290.53	4083907.74	6.76390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.445E-04	0.00E+00
443	ALL	259220.60	4083817.02	8.11740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.134E-04	0.00E+00
444	ALL	259245.17	4083818.91	7.63310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.888E-04	0.00E+00
445	ALL	259278.25	4083840.65	7.07050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.601E-04	0.00E+00
446	ALL	259309.43	4083860.96	6.46740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.294E-04	0.00E+00
447	ALL	259321.72	4083822.70	6.22320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.170E-04	0.00E+00
448	ALL	259297.42	4083771.34	6.40580E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.263E-04	0.00E+00
449	ALL	259328.16	4083772.65	5.97180E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.042E-04	0.00E+00
450	ALL	259209.79	4083758.26	7.55270E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.847E-04	0.00E+00
451	ALL	259098.67	4083698.32	7.28910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.712E-04	0.00E+00
452	ALL	259175.62	4083673.70	6.38770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.253E-04	0.00E+00
453	ALL	259178.70	4083648.30	5.89990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.005E-04	0.00E+00
454	ALL	259175.62	4083607.52	5.19080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.644E-04	0.00E+00
455	ALL	259255.64	4083650.61	5.56420E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.834E-04	0.00E+00
456	ALL	259254.87	4083599.06	4.88330E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.487E-04	0.00E+00
457	ALL	259301.81	4083715.25	5.91370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.012E-04	0.00E+00
458	ALL	259299.50	4083656.00	5.34340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.721E-04	0.00E+00
459	ALL	258884.76	4083606.75	4.09830E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.087E-04	0.00E+00
460	ALL	258922.14	4083520.12	2.97090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.513E-04	0.00E+00
461	ALL	258873.46	4083521.06	2.72740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.389E-04	0.00E+00
462	ALL	258831.41	4083523.90	2.54120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.294E-04	0.00E+00
463	ALL	258896.62	4083543.27	3.13480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.597E-04	0.00E+00
464	ALL	258884.76	4083606.75	4.09830E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.087E-04	0.00E+00
465	ALL	258844.64	4083588.64	3.48170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.773E-04	0.00E+00
466	ALL	258879.61	4083590.53	3.76310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.917E-04	0.00E+00
467	ALL	258859.29	4083606.12	3.89210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.982E-04	0.00E+00
468	ALL	258909.38	4083593.84	4.03190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.054E-04	0.00E+00
469	ALL	258926.86	4083669.92	5.98740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.049E-04	0.00E+00
470	ALL	258924.03	4083638.26	5.09670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.596E-04	0.00E+00
471	ALL	259224.41	4083564.62	4.48740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.286E-04	0.00E+00
472	ALL	259174.70	4083526.03	3.95900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.016E-04	0.00E+00
473	ALL	258768.08	4083878.27	1.71310E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.725E-04	0.00E+00
474	ALL	258815.83	4083880.24	1.84710E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.408E-04	0.00E+00
475	ALL	258898.26	4083873.04	1.79250E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.129E-04	0.00E+00
476	ALL	258854.43	4083876.97	1.84320E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.388E-04	0.00E+00
477	ALL	258934.24	4083871.73	1.73150E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.819E-04	0.00E+00
478	ALL	258760.89	4083832.48	1.20310E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.127E-04	0.00E+00
479	ALL	258760.89	4083778.84	8.32880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.242E-04	0.00E+00
480	ALL	258759.58	4083718.01	5.68060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.893E-04	0.00E+00
481	ALL	258345.05	4084976.54	2.16830E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.104E-04	0.00E+00

```
HARP2 - HRACalc (dated 22118) 12/25/2023 8:30:43 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
**********************************
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: HighEnd

**********************************
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 3.3

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 1.3
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

**********************************
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments.  The remaining pathways are only used for
cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
```

Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|

```
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (UNMIT)\hra\Unmit
ConCancerRisk.csv
Cancer risk total by receptor saved to: F:\Move\0029-0004\HARP (UNMIT)\hra\Unmit ConCancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (UNMIT)\hra\Unmit
ConNCChronicRisk.csv
Chronic risk total by receptor saved to: F:\Move\0029-0004\HARP (UNMIT)\hra\Unmit
ConNCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (UNMIT)\hra\Unmit
ConNCAcuteRisk.csv
Acute risk total by receptor saved to: F:\Move\0029-0004\HARP (UNMIT)\hra\Unmit ConNCAcuteRiskSumByRec.csv
HRA ran successfully
```

Health Risk Assessment

Mitigated Construction

Bonadelle TM6467 Residential Project (Mitigated Construction - Tier 4 Scenario)

Estimation of Annual Onsite Construction Emissions

Start of Construction	11/1/2024	
End of Construction	2/18/2028	**Total**
Number of Days	1,204	1,204
Number of Hours	28,896	28,896

Size of the construction area source: **59,919.7** **sq-meters**

Run	**Year**	**On-site Construction Activity**	**Tier 4 Mitigated On-site DPM (pounds)**
Project Construction	2024	Demolition	3.7565
Project Construction	2024	Site Preparation	0.9960
Project Construction	2024	Grading	2.1453
Project Construction	2025	Grading	3.1725
Project Construction	2025	Paving	2.0719
Project Construction	2025	Trenching/Utilities	15.0675
Project Construction	2025	Building Construction	6.6589
Project Construction	2026	Building Construction	25.5390
Project Construction	2027	Building Construction	23.8480
Project Construction	2028	Building Construction	1.2835
Project Construction	2028	Architectural Coating	0.3071

Total Mitigated DPM (On-site) 8.485E+01 pounds

Factor in AERMOD to Account for 5 days per week/8 hours per day: 4.2

Average Emission for Construction Site	3.852E+04	grams
	3.703E-04	grams/sec
	6.180E-09	grams/m2-sec

Pounds/Construction Period	8.485E+01
Pounds/Day	7.047E-02
Pounds/Hour	2.936E-03
Pounds/Year	2.572E+01
Years	3.29863

Bonadelle TM6467 Residential Project (Mitigated Construction - Tier 4 Scenario)

Estimation of Annual Offsite Construction DPM Emissions (No Change Compared to Unmitigated Scenario)

		Total
Start of Construction	11/1/2024	
End of Construction	2/18/2028	
Number of Days	1,204	1,204
Number of Hours	28,896	28,896

Construction Trip Type	2024 Project Construction Demolition	2024 Project Construction Site Preparation	2024+2025 Project Construction Grading	2025 Project Construction Paving	2025 Project Construction Trenching /Utilities	2025-2028 Project Construction Building Construction	2028 Project Construction Architectural Coating	**Total (pounds)**
Total (pounds)	0.03990	0.00739	0.86910	0.014770972	0.11817	1.85244	0.01510	**2.91688**

	Haul Truck	**Vendor Truck**	**Worker**	**Total**
Demolition (2024)	300.00	80.00	19.00	399.00
Site Preparation (2024)	175.00	40.00	0.00	215.00
Grading (2024+2025)	600.00	120.00	625.00	1,345.00
Paving (2025)	300.00	80.00	0.00	380.00
Trenching/Utilities (2025)	1,600.00	640.00	0.00	2,240.00
Building Construction (2025-2028)	34,992.00	10,390.68	0.00	45,382.68
Architectural Coating (2028)	233.28	80.00	0.00	313.28
Total	**38,200.28**	**11,430.68**	**644.00**	**50,274.96**

	Haul Truck (pounds)	**Vendor Truck (pounds)**	**Worker (pounds)**	**Total (pounds)**
Total DPM	2.216E+00	6.632E-01	3.736E-02	2.917E+00
Average Emissions				
Grams	1.006E+03	3.011E+02	1.696E+01	
Grams/sec	9.673E-06	2.894E-06	1.631E-07	
Default Distance	20	4	7.7	Default Vehicle Travel Distance in CalEEMod
Vehicle Travel Distances in the Construction HRA (miles)				
Off-site Road Segment 1	0.44	0.44	0.44	miles
Trip Distribution (percent)				
Off-site Road Segment 1	100.0%	100.0%	100.0%	off-site
Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
Off-site Road Segment 1	2.113E-07	3.162E-07	9.254E-09	5.368E-07

	Grams/sec	Pounds/Hour	Pounds/Day	Pounds/year	Tons/year
Off-site Road Segment 1	5.368E-07	4.260E-06	1.022E-04	3.732E-02	1.866E-05

Health Risk Summary - Tier 4 Mitigated Construction (Summary of HARP2 Results)

Bonadelle TM6467 Residential Project (Mitigated Construction - Tier 4 Scenario)

	RISK_SUM	Cancer Risk/million	MAXHI NonCancer Chronic	MAXHI Acute
Maximum Risk	5.1385E-06	5.14	2.6171E-03	0.00E+00

	X	Y
MEI UTM	258521.86	4084223.21
Lat/Long	36°52'23.2"N 119°42'33.1"W	
Receptor # 310		

*HARP - HRACalc v22118 12/26/2023 10:06:03 AM - Cancer Risk - Input File: F:\Move\0029-0004\HARP (T4)\hra\Tier 4 MitigatedHRAInput.hra
*HARP - HRACalc v22118 12/26/2023 10:06:03 AM - Chronic Risk - Input File: F:\Move\0029-0004\HARP (T4)\hra\Tier 4 MitigatedHRAInput.hra
*HARP - HRACalc v22118 12/26/2023 10:06:03 AM - Acute Risk - Input File: F:\Move\0029-0004\HARP (T4)\hra\Tier 4 MitigatedHRAInput.hra

REC	GRP	X	Y	RISK_SUM	SCENARIO	MAXHI NonCancerChronic	MAXHI Acute
1	ALL	258771.79	4084351.29	6.09430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.104E-04	0.00E+00
2	ALL	258854.63	4084404.68	1.96740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.002E-04	0.00E+00
3	ALL	258839.82	4084405.13	2.14070E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.090E-04	0.00E+00
4	ALL	258767.07	4084392.87	3.94950E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.012E-04	0.00E+00
5	ALL	259413.55	4084209.66	5.40210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.751E-05	0.00E+00
6	ALL	259392.22	4084265.46	4.79210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.441E-05	0.00E+00
7	ALL	259370.89	4084321.25	4.22600E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.152E-05	0.00E+00
8	ALL	259349.55	4084377.04	3.72800E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.899E-05	0.00E+00
9	ALL	259328.22	4084432.83	3.34200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.702E-05	0.00E+00
10	ALL	259306.89	4084488.62	3.00090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.528E-05	0.00E+00
11	ALL	259285.56	4084544.41	2.73280E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.392E-05	0.00E+00
12	ALL	259264.23	4084600.20	2.52390E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.286E-05	0.00E+00
13	ALL	259242.90	4084656.00	2.36090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.202E-05	0.00E+00
14	ALL	259194.28	4084723.93	2.30760E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.175E-05	0.00E+00
15	ALL	259139.71	4084748.21	2.47760E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.262E-05	0.00E+00
16	ALL	259085.14	4084772.49	2.67220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.361E-05	0.00E+00
17	ALL	259030.57	4084796.77	2.87150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.463E-05	0.00E+00
18	ALL	258975.99	4084821.06	3.05810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.558E-05	0.00E+00
19	ALL	258921.42	4084845.34	3.21900E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.640E-05	0.00E+00
20	ALL	258866.85	4084869.62	3.35080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.707E-05	0.00E+00
21	ALL	258812.28	4084893.90	3.46120E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.763E-05	0.00E+00
22	ALL	258757.71	4084918.18	3.56010E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.813E-05	0.00E+00
23	ALL	259423.37	4084151.85	6.26100E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.189E-05	0.00E+00
24	ALL	259421.67	4084092.01	7.44450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.792E-05	0.00E+00
25	ALL	259523.59	4084206.33	4.12080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.099E-05	0.00E+00
26	ALL	259502.43	4084261.68	3.70480E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.887E-05	0.00E+00
27	ALL	259481.27	4084317.02	3.31480E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.688E-05	0.00E+00
28	ALL	259460.11	4084372.37	2.96450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.510E-05	0.00E+00
29	ALL	259438.95	4084427.71	2.68460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.367E-05	0.00E+00
30	ALL	259417.79	4084483.06	2.43090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.238E-05	0.00E+00
31	ALL	259396.62	4084538.41	2.22560E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.134E-05	0.00E+00
32	ALL	259375.46	4084593.75	2.06210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.050E-05	0.00E+00
33	ALL	259354.30	4084649.10	1.93210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.841E-06	0.00E+00
34	ALL	259333.14	4084704.44	1.82840E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.312E-06	0.00E+00
35	ALL	259311.98	4084759.79	1.74480E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.886E-06	0.00E+00
36	ALL	259274.33	4084799.51	1.75640E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.945E-06	0.00E+00
37	ALL	259220.20	4084823.59	1.87470E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.548E-06	0.00E+00
38	ALL	259166.06	4084847.68	2.00670E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.022E-05	0.00E+00
39	ALL	259111.92	4084871.77	2.14460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.092E-05	0.00E+00
40	ALL	259057.79	4084895.86	2.27920E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.161E-05	0.00E+00
41	ALL	259003.65	4084919.95	2.40050E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.223E-05	0.00E+00
42	ALL	258949.52	4084944.03	2.50190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.274E-05	0.00E+00
43	ALL	258895.38	4084968.12	2.58330E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.316E-05	0.00E+00
44	ALL	258841.24	4084992.21	2.65050E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.350E-05	0.00E+00
45	ALL	258787.11	4085016.30	2.71150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.381E-05	0.00E+00
46	ALL	258732.97	4085040.39	2.77210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.412E-05	0.00E+00
47	ALL	259533.32	4084148.74	4.70140E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.394E-05	0.00E+00
48	ALL	259531.63	4084088.90	5.49610E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.799E-05	0.00E+00
49	ALL	258432.62	4084049.36	9.99410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.090E-04	0.00E+00
50	ALL	258394.03	4084051.05	7.02970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.580E-04	0.00E+00
51	ALL	258455.35	4084022.86	7.36620E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.752E-04	0.00E+00
52	ALL	258407.45	4084024.89	5.22490E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.661E-04	0.00E+00
53	ALL	258837.42	4083782.54	2.37070E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.207E-04	0.00E+00
54	ALL	258895.19	4083788.44	2.62400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.336E-04	0.00E+00
55	ALL	258979.89	4083870.61	3.87840E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.975E-04	0.00E+00
56	ALL	258693.45	4083606.06	6.52190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.322E-05	0.00E+00
57	ALL	258727.72	4083618.67	7.47090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.805E-05	0.00E+00
58	ALL	258771.60	4083627.20	8.61470E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.388E-05	0.00E+00
59	ALL	258802.19	4083638.19	9.74160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.962E-05	0.00E+00
60	ALL	258832.46	4083660.61	1.16660E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.942E-05	0.00E+00
61	ALL	258882.36	4083669.86	1.34310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.841E-05	0.00E+00
62	ALL	258894.00	4083704.06	1.63840E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.345E-05	0.00E+00
63	ALL	258933.35	4083694.38	1.63920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.349E-05	0.00E+00
64	ALL	258967.63	4083706.99	1.79860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.161E-05	0.00E+00

65	ALL	259001.90	4083719.61	1.93860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.873E-05	0.00E+00
66	ALL	259048.89	4083777.14	2.43170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.239E-04	0.00E+00
67	ALL	259082.91	4083805.09	2.56580E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.307E-04	0.00E+00
68	ALL	259078.00	4083822.40	2.72880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.390E-04	0.00E+00
69	ALL	258659.18	4083593.44	5.75050E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.929E-05	0.00E+00
70	ALL	258620.59	4083595.13	5.36590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.733E-05	0.00E+00
71	ALL	258582.00	4083596.83	5.03960E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.567E-05	0.00E+00
72	ALL	258543.41	4083598.52	4.77240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.431E-05	0.00E+00
73	ALL	258504.82	4083600.21	4.56630E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.326E-05	0.00E+00
74	ALL	258466.22	4083601.90	4.42320E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.253E-05	0.00E+00
75	ALL	258427.63	4083603.60	4.35430E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.218E-05	0.00E+00
76	ALL	258389.04	4083605.29	4.44560E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.264E-05	0.00E+00
77	ALL	258698.48	4083526.75	4.76590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.427E-05	0.00E+00
78	ALL	258715.65	4083527.38	4.93610E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.514E-05	0.00E+00
79	ALL	258759.76	4083522.35	5.27830E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.688E-05	0.00E+00
80	ALL	258794.89	4083535.28	5.97080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.041E-05	0.00E+00
81	ALL	258830.03	4083548.22	6.77160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.449E-05	0.00E+00
82	ALL	258865.16	4083561.15	7.69310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.918E-05	0.00E+00
83	ALL	258900.29	4083574.08	8.71330E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.438E-05	0.00E+00
84	ALL	258935.43	4083587.02	9.78880E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.986E-05	0.00E+00
85	ALL	258970.56	4083599.95	1.09140E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.559E-05	0.00E+00
86	ALL	259005.70	4083612.89	1.20320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.128E-05	0.00E+00
87	ALL	259040.83	4083625.82	1.30800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.662E-05	0.00E+00
88	ALL	259075.96	4083638.76	1.39890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.125E-05	0.00E+00
89	ALL	259104.34	4083715.55	1.85540E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.450E-05	0.00E+00
90	ALL	259172.18	4083718.97	1.75310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.928E-05	0.00E+00
91	ALL	259186.67	4083749.30	1.85350E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.440E-05	0.00E+00
92	ALL	259201.16	4083815.52	2.04250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.040E-04	0.00E+00
93	ALL	259180.70	4083813.74	2.14110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.091E-04	0.00E+00
94	ALL	259189.52	4083854.46	2.21520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.128E-04	0.00E+00
95	ALL	259208.10	4083891.91	2.14740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.094E-04	0.00E+00
96	ALL	259247.03	4083917.32	1.87540E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.551E-05	0.00E+00
97	ALL	259253.30	4083964.35	1.76660E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.997E-05	0.00E+00
98	ALL	258656.61	4083462.55	3.56740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.817E-05	0.00E+00
99	ALL	258621.02	4083463.50	3.40440E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.734E-05	0.00E+00
100	ALL	258582.43	4083465.19	3.26100E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.661E-05	0.00E+00
101	ALL	258543.83	4083466.88	3.14380E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.601E-05	0.00E+00
102	ALL	258505.24	4083468.57	3.05090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.554E-05	0.00E+00
103	ALL	258466.65	4083470.27	2.98020E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.518E-05	0.00E+00
104	ALL	258428.06	4083471.96	2.93050E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.493E-05	0.00E+00
105	ALL	258389.47	4083473.65	2.89680E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.475E-05	0.00E+00
106	ALL	258685.31	4083386.82	2.95710E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.506E-05	0.00E+00
107	ALL	258721.07	4083399.98	3.23400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.647E-05	0.00E+00
108	ALL	258756.84	4083413.15	3.56210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.814E-05	0.00E+00
109	ALL	258801.60	4083413.40	3.84310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.957E-05	0.00E+00
110	ALL	258841.28	4083456.31	4.79040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.440E-05	0.00E+00
111	ALL	258864.13	4083452.65	4.92600E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.509E-05	0.00E+00
112	ALL	258906.01	4083454.15	5.33350E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.716E-05	0.00E+00
113	ALL	258926.22	4083457.88	5.60420E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.854E-05	0.00E+00
114	ALL	258978.10	4083529.93	8.14290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.147E-05	0.00E+00
115	ALL	259025.53	4083531.43	8.71030E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.436E-05	0.00E+00
116	ALL	259060.74	4083450.71	6.64910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.386E-05	0.00E+00
117	ALL	259078.73	4083531.65	9.20330E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.687E-05	0.00E+00
118	ALL	259114.49	4083544.82	9.92160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.053E-05	0.00E+00
119	ALL	259150.26	4083557.99	1.05410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.369E-05	0.00E+00
120	ALL	259201.73	4083605.88	1.22990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.264E-05	0.00E+00
121	ALL	259217.44	4083640.60	1.34870E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.869E-05	0.00E+00
122	ALL	259233.15	4083675.33	1.45490E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.410E-05	0.00E+00
123	ALL	259248.86	4083710.05	1.53810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.834E-05	0.00E+00
124	ALL	259239.07	4083760.47	1.71980E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.759E-05	0.00E+00
125	ALL	259280.28	4083779.50	1.61350E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.218E-05	0.00E+00
126	ALL	259287.49	4083821.31	1.63970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.351E-05	0.00E+00
127	ALL	259313.59	4083842.80	1.53410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.813E-05	0.00E+00
128	ALL	259305.21	4083878.94	1.56760E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.984E-05	0.00E+00
129	ALL	259298.24	4083891.93	1.59550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.126E-05	0.00E+00
130	ALL	259358.83	4083953.11	1.22980E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.264E-05	0.00E+00
131	ALL	259374.54	4083987.84	1.10200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.613E-05	0.00E+00
132	ALL	259390.25	4084022.56	9.75200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.967E-05	0.00E+00
133	ALL	259405.96	4084057.28	8.54840E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.354E-05	0.00E+00
134	ALL	258649.54	4083373.65	2.72530E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.388E-05	0.00E+00
135	ALL	258610.95	4083375.34	2.62190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.335E-05	0.00E+00
136	ALL	258572.36	4083377.04	2.53450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.291E-05	0.00E+00
137	ALL	258533.77	4083378.73	2.45990E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.253E-05	0.00E+00
138	ALL	258495.17	4083380.42	2.39480E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.220E-05	0.00E+00
139	ALL	258456.58	4083382.12	2.33600E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.190E-05	0.00E+00
140	ALL	258417.99	4083383.81	2.28030E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.161E-05	0.00E+00
141	ALL	258379.40	4083385.50	2.22790E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.135E-05	0.00E+00
142	ALL	258680.97	4083277.10	2.20990E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.126E-05	0.00E+00
143	ALL	258717.22	4083290.45	2.37960E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.212E-05	0.00E+00
144	ALL	258753.47	4083303.79	2.57870E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.313E-05	0.00E+00
145	ALL	258789.71	4083317.14	2.81060E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.431E-05	0.00E+00
146	ALL	258825.96	4083330.48	3.08240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.570E-05	0.00E+00
147	ALL	258862.21	4083343.83	3.39180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.728E-05	0.00E+00
148	ALL	258898.46	4083357.17	3.75210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.911E-05	0.00E+00

149	ALL	258934.71	4083370.52	4.15350E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.115E-05	0.00E+00
150	ALL	258970.96	4083383.86	4.60630E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.346E-05	0.00E+00
151	ALL	259007.21	4083397.20	5.10230E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.599E-05	0.00E+00
152	ALL	259043.46	4083410.55	5.63210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.869E-05	0.00E+00
153	ALL	259079.70	4083423.89	6.17460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.145E-05	0.00E+00
154	ALL	259115.95	4083437.24	6.73100E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.428E-05	0.00E+00
155	ALL	259152.20	4083450.58	7.27720E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.706E-05	0.00E+00
156	ALL	259188.45	4083463.93	7.78770E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.966E-05	0.00E+00
157	ALL	259224.70	4083477.27	8.23860E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.196E-05	0.00E+00
158	ALL	259276.87	4083525.81	9.51460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.846E-05	0.00E+00
159	ALL	259292.79	4083561.00	1.03780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.286E-05	0.00E+00
160	ALL	259308.72	4083596.20	1.11690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.688E-05	0.00E+00
161	ALL	259324.64	4083631.39	1.18360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.028E-05	0.00E+00
162	ALL	259340.56	4083666.58	1.23300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.280E-05	0.00E+00
163	ALL	259356.48	4083701.78	1.26010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.418E-05	0.00E+00
164	ALL	259372.41	4083736.97	1.26200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.428E-05	0.00E+00
165	ALL	259388.33	4083772.16	1.24100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.320E-05	0.00E+00
166	ALL	259404.25	4083807.35	1.19650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.094E-05	0.00E+00
167	ALL	259420.17	4083842.55	1.13340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.773E-05	0.00E+00
168	ALL	259436.10	4083877.74	1.05690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.383E-05	0.00E+00
169	ALL	259452.02	4083912.93	9.71160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.946E-05	0.00E+00
170	ALL	259467.94	4083948.13	8.81070E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.487E-05	0.00E+00
171	ALL	259483.86	4083983.32	7.91000E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.029E-05	0.00E+00
172	ALL	259499.79	4084018.51	7.04320E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.587E-05	0.00E+00
173	ALL	259515.71	4084053.70	6.23400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.175E-05	0.00E+00
174	ALL	258644.72	4083263.76	2.06510E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.052E-05	0.00E+00
175	ALL	258606.13	4083265.45	2.00210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.020E-05	0.00E+00
176	ALL	258567.54	4083267.14	1.94770E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.920E-06	0.00E+00
177	ALL	258528.95	4083268.84	1.90080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.681E-06	0.00E+00
178	ALL	258490.35	4083270.53	1.85940E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.470E-06	0.00E+00
179	ALL	258451.76	4083272.22	1.82250E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.282E-06	0.00E+00
180	ALL	258413.17	4083273.91	1.78910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.112E-06	0.00E+00
181	ALL	258374.58	4083275.61	1.75860E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.957E-06	0.00E+00
182	ALL	258427.55	4084018.70	5.59660E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.850E-04	0.00E+00
183	ALL	257682.15	4084127.78	5.55200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.828E-05	0.00E+00
184	ALL	257701.63	4084074.74	5.36170E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.731E-05	0.00E+00
185	ALL	257721.10	4084021.70	5.19120E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.644E-05	0.00E+00
186	ALL	257740.57	4083968.66	5.00870E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.551E-05	0.00E+00
187	ALL	257760.04	4083915.61	4.78210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.436E-05	0.00E+00
188	ALL	257779.51	4083862.57	4.49810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.291E-05	0.00E+00
189	ALL	257798.98	4083809.53	4.16460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.121E-05	0.00E+00
190	ALL	257818.45	4083756.49	3.80290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.937E-05	0.00E+00
191	ALL	257837.92	4083703.45	3.43660E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.750E-05	0.00E+00
192	ALL	257857.39	4083650.41	3.08540E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.571E-05	0.00E+00
193	ALL	257892.74	4083611.97	2.88530E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.470E-05	0.00E+00
194	ALL	257943.97	4083588.13	2.80670E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.429E-05	0.00E+00
195	ALL	257995.20	4083564.29	2.72150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.386E-05	0.00E+00
196	ALL	258147.34	4083482.78	2.42010E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.233E-05	0.00E+00
197	ALL	258200.11	4083468.94	2.41770E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.231E-05	0.00E+00
198	ALL	258251.33	4083445.10	2.36160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.203E-05	0.00E+00
199	ALL	258302.56	4083421.26	2.30650E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.175E-05	0.00E+00
200	ALL	257673.55	4084182.53	5.92540E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.018E-05	0.00E+00
201	ALL	257675.80	4084238.99	6.52210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.322E-05	0.00E+00
202	ALL	257572.23	4084132.20	4.52910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.307E-05	0.00E+00
203	ALL	257591.68	4084079.22	4.39110E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.236E-05	0.00E+00
204	ALL	257611.13	4084026.24	4.27410E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.177E-05	0.00E+00
205	ALL	257630.58	4083973.26	4.16070E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.119E-05	0.00E+00
206	ALL	257650.02	4083920.28	4.02810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.052E-05	0.00E+00
207	ALL	257669.47	4083867.30	3.85880E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.965E-05	0.00E+00
208	ALL	257688.92	4083814.32	3.64820E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.858E-05	0.00E+00
209	ALL	257708.37	4083761.35	3.40430E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.734E-05	0.00E+00
210	ALL	257727.82	4083708.37	3.14080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.600E-05	0.00E+00
211	ALL	257747.26	4083655.39	2.87260E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.463E-05	0.00E+00
212	ALL	257766.71	4083602.41	2.61180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.330E-05	0.00E+00
213	ALL	257811.74	4083537.52	2.33950E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.192E-05	0.00E+00
214	ALL	257862.91	4083513.71	2.27780E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.160E-05	0.00E+00
215	ALL	257914.08	4083489.90	2.21030E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.126E-05	0.00E+00
216	ALL	257965.25	4083466.09	2.14190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.091E-05	0.00E+00
217	ALL	258016.41	4083442.28	2.07600E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.057E-05	0.00E+00
218	ALL	258067.58	4083418.47	2.01550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.027E-05	0.00E+00
219	ALL	258118.75	4083394.66	1.96130E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.989E-06	0.00E+00
220	ALL	258169.91	4083370.85	1.91350E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.746E-06	0.00E+00
221	ALL	258221.08	4083347.04	1.87090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.529E-06	0.00E+00
222	ALL	258272.25	4083323.23	1.83160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.328E-06	0.00E+00
223	ALL	258323.41	4083299.42	1.79420E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.138E-06	0.00E+00
224	ALL	257563.63	4084186.92	4.79760E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.443E-05	0.00E+00
225	ALL	257565.89	4084243.38	5.22190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.660E-05	0.00E+00
226	ALL	258382.28	4084295.95	1.47040E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.489E-04	0.00E+00
227	ALL	258398.86	4084935.93	5.57120E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.838E-05	0.00E+00
228	ALL	258363.89	4084922.61	6.02850E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.070E-05	0.00E+00
229	ALL	258328.92	4084909.29	6.47380E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.297E-05	0.00E+00
230	ALL	258293.94	4084895.97	6.92650E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.528E-05	0.00E+00
231	ALL	258258.97	4084882.66	7.37410E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.756E-05	0.00E+00
232	ALL	258224.00	4084869.34	7.80570E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.976E-05	0.00E+00

233	ALL	258189.03	4084856.02	8.21160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.182E-05	0.00E+00
234	ALL	258154.05	4084842.70	8.58550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.373E-05	0.00E+00
235	ALL	258119.08	4084829.39	8.92250E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.544E-05	0.00E+00
236	ALL	258084.11	4084816.07	9.21800E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.695E-05	0.00E+00
237	ALL	258049.14	4084802.75	9.46540E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.821E-05	0.00E+00
238	ALL	258014.16	4084789.43	9.65750E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.919E-05	0.00E+00
239	ALL	257979.19	4084776.12	9.78790E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.985E-05	0.00E+00
240	ALL	257944.22	4084762.80	9.85400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.019E-05	0.00E+00
241	ALL	257893.68	4084715.45	1.04320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.313E-05	0.00E+00
242	ALL	257878.12	4084681.42	1.09710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.588E-05	0.00E+00
243	ALL	257862.56	4084647.38	1.14070E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.810E-05	0.00E+00
244	ALL	257846.99	4084613.35	1.17000E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.959E-05	0.00E+00
245	ALL	257831.43	4084579.32	1.18390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.030E-05	0.00E+00
246	ALL	257815.87	4084545.28	1.18030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.012E-05	0.00E+00
247	ALL	257800.30	4084511.25	1.15870E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.901E-05	0.00E+00
248	ALL	257784.74	4084477.22	1.11970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.703E-05	0.00E+00
249	ALL	257769.18	4084443.19	1.06500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.424E-05	0.00E+00
250	ALL	257753.61	4084409.15	1.00080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.097E-05	0.00E+00
251	ALL	257738.05	4084375.12	9.29330E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.733E-05	0.00E+00
252	ALL	257722.49	4084341.09	8.56060E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.360E-05	0.00E+00
253	ALL	257706.93	4084307.06	7.83160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.989E-05	0.00E+00
254	ALL	257691.36	4084273.02	7.14470E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.639E-05	0.00E+00
255	ALL	258433.83	4084949.25	5.16350E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.630E-05	0.00E+00
256	ALL	258472.31	4084948.28	4.96550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.529E-05	0.00E+00
257	ALL	258510.78	4084947.31	4.75890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.424E-05	0.00E+00
258	ALL	258549.25	4084946.34	4.54400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.314E-05	0.00E+00
259	ALL	258587.72	4084945.37	4.32190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.201E-05	0.00E+00
260	ALL	258626.19	4084944.40	4.09570E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.086E-05	0.00E+00
261	ALL	258664.66	4084943.43	3.87040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.971E-05	0.00E+00
262	ALL	258703.13	4084942.47	3.65170E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.860E-05	0.00E+00
263	ALL	258401.16	4085045.71	4.09820E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.087E-05	0.00E+00
264	ALL	258365.71	4085032.22	4.38040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.231E-05	0.00E+00
265	ALL	258330.27	4085018.72	4.68000E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.384E-05	0.00E+00
266	ALL	258294.82	4085005.22	5.01040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.552E-05	0.00E+00
267	ALL	258259.38	4084991.72	5.33240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.716E-05	0.00E+00
268	ALL	258223.93	4084978.23	5.65280E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.879E-05	0.00E+00
269	ALL	258188.49	4084964.73	5.96710E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.039E-05	0.00E+00
270	ALL	258153.04	4084951.23	6.26890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.193E-05	0.00E+00
271	ALL	258117.60	4084937.73	6.55300E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.338E-05	0.00E+00
272	ALL	258082.15	4084924.23	6.81600E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.471E-05	0.00E+00
273	ALL	258046.71	4084910.74	7.05500E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.593E-05	0.00E+00
274	ALL	258011.26	4084897.24	7.26780E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.702E-05	0.00E+00
275	ALL	257975.82	4084883.74	7.45040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.795E-05	0.00E+00
276	ALL	257940.37	4084870.24	7.59990E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.871E-05	0.00E+00
277	ALL	257904.93	4084856.75	7.71310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.928E-05	0.00E+00
278	ALL	257869.48	4084843.25	7.78860E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.967E-05	0.00E+00
279	ALL	257818.26	4084795.26	8.27230E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.213E-05	0.00E+00
280	ALL	257802.49	4084760.77	8.68690E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.424E-05	0.00E+00
281	ALL	257786.72	4084726.27	9.04890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.609E-05	0.00E+00
282	ALL	257770.94	4084691.78	9.34530E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.760E-05	0.00E+00
283	ALL	257755.17	4084657.29	9.56180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.870E-05	0.00E+00
284	ALL	257739.39	4084622.80	9.64210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.911E-05	0.00E+00
285	ALL	257723.62	4084588.30	9.59890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.889E-05	0.00E+00
286	ALL	257707.85	4084553.81	9.42950E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.803E-05	0.00E+00
287	ALL	257692.07	4084519.32	9.14100E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.656E-05	0.00E+00
288	ALL	257676.30	4084484.83	8.75010E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.457E-05	0.00E+00
289	ALL	257660.53	4084450.33	8.28210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.218E-05	0.00E+00
290	ALL	257644.75	4084415.84	7.76390E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.954E-05	0.00E+00
291	ALL	257628.98	4084381.35	7.22140E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.678E-05	0.00E+00
292	ALL	257613.21	4084346.85	6.67550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.400E-05	0.00E+00
293	ALL	257597.43	4084312.36	6.15150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.133E-05	0.00E+00
294	ALL	257581.66	4084277.87	5.66530E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.885E-05	0.00E+00
295	ALL	258436.60	4085059.21	3.83120E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.951E-05	0.00E+00
296	ALL	258475.07	4085058.24	3.69380E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.881E-05	0.00E+00
297	ALL	258513.55	4085057.27	3.55090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.809E-05	0.00E+00
298	ALL	258552.02	4085056.31	3.40280E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.733E-05	0.00E+00
299	ALL	258590.49	4085055.34	3.25100E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.656E-05	0.00E+00
300	ALL	258628.96	4085054.37	3.09800E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.578E-05	0.00E+00
301	ALL	258667.43	4085053.40	2.94740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.501E-05	0.00E+00
302	ALL	258404.04	4084257.27	2.39130E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.218E-03	0.00E+00
303	ALL	258415.08	4084289.21	1.72030E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.761E-04	0.00E+00
304	ALL	258414.69	4084274.53	1.98260E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.010E-03	0.00E+00
305	ALL	258429.94	4084296.83	1.69430E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.629E-04	0.00E+00
306	ALL	258441.68	4084257.32	2.58730E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.318E-03	0.00E+00
307	ALL	258519.90	4084270.62	3.60240E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.835E-03	0.00E+00
308	ALL	258532.02	4084270.62	4.19700E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.138E-03	0.00E+00
309	ALL	258539.83	4084255.54	4.83850E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.464E-03	0.00E+00
310	ALL	258521.86	4084223.21	5.13850E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.617E-03	0.00E+00
311	ALL	258781.30	4084394.27	3.48670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.776E-04	0.00E+00
312	ALL	258796.19	4084395.23	3.09080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.574E-04	0.00E+00
313	ALL	258857.92	4084341.90	3.12510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.592E-04	0.00E+00
314	ALL	258381.67	4084021.46	4.15390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.116E-04	0.00E+00
315	ALL	258309.03	4084063.67	4.33540E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.208E-04	0.00E+00
316	ALL	258300.45	4084056.72	3.83490E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.953E-04	0.00E+00

317	ALL	258297.18	4084048.35	3.48030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.773E-04	0.00E+00
318	ALL	258532.20	4083943.49	3.91480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.994E-04	0.00E+00
319	ALL	258531.59	4083928.98	3.34670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.705E-04	0.00E+00
320	ALL	258548.95	4083919.18	3.26210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.661E-04	0.00E+00
321	ALL	258310.01	4084835.46	8.39650E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.276E-05	0.00E+00
322	ALL	258327.51	4084834.54	8.32800E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.242E-05	0.00E+00
323	ALL	258800.04	4083832.11	3.09460E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.576E-04	0.00E+00
324	ALL	258819.84	4083833.03	3.20550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.633E-04	0.00E+00
325	ALL	258837.33	4083829.81	3.20600E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.633E-04	0.00E+00
326	ALL	258798.66	4083787.91	2.29530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.169E-04	0.00E+00
327	ALL	258816.61	4083789.29	2.39210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.218E-04	0.00E+00
328	ALL	258875.08	4083784.69	2.52230E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.285E-04	0.00E+00
329	ALL	258851.14	4083784.69	2.45030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.248E-04	0.00E+00
330	ALL	258914.21	4083783.77	2.58720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.318E-04	0.00E+00
331	ALL	258856.20	4083828.88	3.24600E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.653E-04	0.00E+00
332	ALL	258876.46	4083830.73	3.32640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.694E-04	0.00E+00
333	ALL	258898.10	4083827.96	3.30130E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.681E-04	0.00E+00
334	ALL	258915.44	4083822.94	3.21750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.639E-04	0.00E+00
335	ALL	258931.54	4083824.89	3.24950E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.655E-04	0.00E+00
336	ALL	258953.60	4083825.45	3.23410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.647E-04	0.00E+00
337	ALL	258970.84	4083826.87	3.22030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.640E-04	0.00E+00
338	ALL	258993.46	4083824.33	3.11530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.587E-04	0.00E+00
339	ALL	258930.98	4083783.33	2.59970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.324E-04	0.00E+00
340	ALL	258950.49	4083783.61	2.61500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.332E-04	0.00E+00
341	ALL	258972.03	4083780.69	2.57670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.312E-04	0.00E+00
342	ALL	259008.61	4083779.36	2.52940E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.288E-04	0.00E+00
343	ALL	258989.99	4083781.69	2.57770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.313E-04	0.00E+00
344	ALL	259010.28	4083825.59	3.07170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.565E-04	0.00E+00
345	ALL	259031.90	4083822.93	2.95250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.504E-04	0.00E+00
346	ALL	259027.91	4083781.35	2.51830E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.283E-04	0.00E+00
347	ALL	258997.31	4083873.16	3.79610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.933E-04	0.00E+00
348	ALL	259017.93	4083871.16	3.61110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.839E-04	0.00E+00
349	ALL	259033.23	4083867.17	3.44470E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.754E-04	0.00E+00
350	ALL	259060.17	4083870.83	3.26590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.663E-04	0.00E+00
351	ALL	259092.77	4083789.00	2.40120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.223E-04	0.00E+00
352	ALL	258799.98	4083743.62	1.74410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.883E-05	0.00E+00
353	ALL	258817.23	4083744.18	1.80920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.214E-05	0.00E+00
354	ALL	258838.72	4083742.49	1.86330E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.490E-05	0.00E+00
355	ALL	258854.27	4083743.05	1.91880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.773E-05	0.00E+00
356	ALL	258873.78	4083741.92	1.96300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.998E-05	0.00E+00
357	ALL	258891.87	4083741.07	2.00060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.019E-04	0.00E+00
358	ALL	258909.12	4083742.77	2.05880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.049E-04	0.00E+00
359	ALL	258927.50	4083741.92	2.08390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.061E-04	0.00E+00
360	ALL	258946.72	4083741.64	2.10950E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.074E-04	0.00E+00
361	ALL	258965.10	4083740.79	2.11990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.080E-04	0.00E+00
362	ALL	258984.89	4083739.94	2.12380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.082E-04	0.00E+00
363	ALL	259002.70	4083739.09	2.11910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.079E-04	0.00E+00
364	ALL	258797.44	4083705.16	1.38370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.047E-05	0.00E+00
365	ALL	258817.51	4083704.60	1.43960E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.332E-05	0.00E+00
366	ALL	258839.00	4083706.01	1.51180E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.700E-05	0.00E+00
367	ALL	258855.96	4083705.73	1.55590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.924E-05	0.00E+00
368	ALL	258877.74	4083702.62	1.58600E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.077E-05	0.00E+00
369	ALL	258912.45	4083702.25	1.66430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.477E-05	0.00E+00
370	ALL	258949.94	4083702.25	1.73330E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.828E-05	0.00E+00
371	ALL	258984.07	4083700.32	1.76020E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.965E-05	0.00E+00
372	ALL	259002.81	4083699.84	1.77160E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.023E-05	0.00E+00
373	ALL	258898.77	4083648.91	1.24160E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.323E-05	0.00E+00
374	ALL	258627.60	4083540.66	4.42870E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.256E-05	0.00E+00
375	ALL	258513.83	4083537.00	3.75900E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.915E-05	0.00E+00
376	ALL	258774.97	4083660.95	1.03060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.249E-05	0.00E+00
377	ALL	258769.92	4083651.33	9.69200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.936E-05	0.00E+00
378	ALL	258774.97	4083637.63	9.14270E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.656E-05	0.00E+00
379	ALL	258773.05	4083614.79	8.13610E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.144E-05	0.00E+00
380	ALL	258800.45	4083672.96	1.16390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.928E-05	0.00E+00
381	ALL	258800.93	4083660.95	1.09240E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.564E-05	0.00E+00
382	ALL	258800.45	4083651.81	1.03990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.297E-05	0.00E+00
383	ALL	258832.17	4083650.61	1.10640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.635E-05	0.00E+00
384	ALL	258833.86	4083672.48	1.24630E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.348E-05	0.00E+00
385	ALL	258832.90	4083638.59	1.04210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.308E-05	0.00E+00
386	ALL	258853.33	4083670.80	1.28300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.534E-05	0.00E+00
387	ALL	258851.89	4083659.98	1.20860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.155E-05	0.00E+00
388	ALL	258850.45	4083648.21	1.13370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.774E-05	0.00E+00
389	ALL	258899.25	4083659.25	1.30900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.667E-05	0.00E+00
390	ALL	258879.12	4083659.84	1.26880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.462E-05	0.00E+00
391	ALL	258879.84	4083649.03	1.20290E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.126E-05	0.00E+00
392	ALL	258879.84	4083637.01	1.13200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.765E-05	0.00E+00
393	ALL	258852.44	4083637.97	1.08010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.501E-05	0.00E+00
394	ALL	258900.03	4083669.22	1.37890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.023E-05	0.00E+00
395	ALL	258773.78	4083671.75	1.08840E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.544E-05	0.00E+00
396	ALL	258896.43	4083635.32	1.15550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.885E-05	0.00E+00
397	ALL	259101.17	4083742.27	2.04010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.039E-04	0.00E+00
398	ALL	257956.80	4083551.58	2.58880E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.319E-05	0.00E+00
399	ALL	258299.79	4083477.86	2.69150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.371E-05	0.00E+00
400	ALL	258436.73	4083663.40	5.33740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.718E-05	0.00E+00

401	ALL	258437.84	4083647.84	5.05880E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.577E-05	0.00E+00
402	ALL	258459.51	4083635.62	4.92940E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.511E-05	0.00E+00
403	ALL	258376.97	4083538.26	3.72690E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.898E-05	0.00E+00
404	ALL	258393.50	4083537.79	3.61760E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.843E-05	0.00E+00
405	ALL	258307.43	4083534.01	3.71180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.890E-05	0.00E+00
406	ALL	258272.12	4083541.20	3.21640E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.638E-05	0.00E+00
407	ALL	258098.15	4083481.43	2.34970E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.197E-05	0.00E+00
408	ALL	258061.23	4083493.74	2.37450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.209E-05	0.00E+00
409	ALL	258226.60	4083477.59	2.51570E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.281E-05	0.00E+00
410	ALL	258361.21	4083459.13	2.68720E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.369E-05	0.00E+00
411	ALL	258020.46	4083486.82	2.29400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.168E-05	0.00E+00
412	ALL	258042.00	4083487.59	2.32040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.182E-05	0.00E+00
413	ALL	258275.83	4083476.05	2.61110E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.330E-05	0.00E+00
414	ALL	258711.10	4083462.61	3.88750E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.980E-05	0.00E+00
415	ALL	258766.68	4083459.83	4.23810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.159E-05	0.00E+00
416	ALL	258799.47	4083558.75	6.65580E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.390E-05	0.00E+00
417	ALL	258964.79	4083455.94	5.93160E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.021E-05	0.00E+00
418	ALL	259000.10	4083453.98	6.21590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.166E-05	0.00E+00
419	ALL	258916.41	4083410.17	4.61940E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.353E-05	0.00E+00
420	ALL	258494.66	4083420.63	2.65390E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.352E-05	0.00E+00
421	ALL	258674.47	4083415.40	3.16650E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.613E-05	0.00E+00
422	ALL	258431.23	4083427.17	2.57810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.313E-05	0.00E+00
423	ALL	259186.93	4083925.38	2.32400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.184E-04	0.00E+00
424	ALL	259176.19	4083917.25	2.41530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.230E-04	0.00E+00
425	ALL	259161.40	4083909.71	2.53760E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.292E-04	0.00E+00
426	ALL	259201.76	4083935.11	2.19480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.118E-04	0.00E+00
427	ALL	259213.57	4083943.61	2.09130E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.065E-04	0.00E+00
428	ALL	259226.33	4083951.64	1.98170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.009E-04	0.00E+00
429	ALL	259264.60	4083975.74	1.66810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.496E-05	0.00E+00
430	ALL	259240.03	4083958.26	1.87010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.524E-05	0.00E+00
431	ALL	259278.30	4083983.30	1.56510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.971E-05	0.00E+00
432	ALL	259136.50	4083874.19	2.65630E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.353E-04	0.00E+00
433	ALL	259146.90	4083859.07	2.52030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.284E-04	0.00E+00
434	ALL	259153.04	4083843.01	2.41370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.229E-04	0.00E+00
435	ALL	259181.39	4083875.14	2.31660E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.180E-04	0.00E+00
436	ALL	259278.25	4083934.67	1.66150E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.462E-05	0.00E+00
437	ALL	259286.28	4083919.55	1.63500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.327E-05	0.00E+00
438	ALL	259258.88	4083901.13	1.81040E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.221E-05	0.00E+00
439	ALL	259219.19	4083874.19	2.05660E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.047E-04	0.00E+00
440	ALL	259290.53	4083907.74	1.62380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.270E-05	0.00E+00
441	ALL	259286.28	4083919.55	1.63500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.327E-05	0.00E+00
442	ALL	259290.53	4083907.74	1.62380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.270E-05	0.00E+00
443	ALL	259220.60	4083817.02	1.94880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.926E-05	0.00E+00
444	ALL	259245.17	4083818.91	1.83250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.333E-05	0.00E+00
445	ALL	259278.25	4083840.65	1.69740E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.645E-05	0.00E+00
446	ALL	259309.43	4083860.96	1.55260E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.908E-05	0.00E+00
447	ALL	259321.72	4083822.70	1.49410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.609E-05	0.00E+00
448	ALL	259297.42	4083771.34	1.53800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.833E-05	0.00E+00
449	ALL	259328.16	4083772.65	1.43380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.302E-05	0.00E+00
450	ALL	259209.79	4083758.26	1.81330E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.236E-05	0.00E+00
451	ALL	259098.67	4083698.32	1.75040E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.915E-05	0.00E+00
452	ALL	259175.62	4083673.70	1.53390E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.812E-05	0.00E+00
453	ALL	259178.70	4083648.30	1.41680E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.216E-05	0.00E+00
454	ALL	259175.62	4083607.52	1.24670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.350E-05	0.00E+00
455	ALL	259255.64	4083650.61	1.33610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.805E-05	0.00E+00
456	ALL	259254.87	4083599.06	1.17270E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.973E-05	0.00E+00
457	ALL	259301.81	4083715.25	1.41990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.232E-05	0.00E+00
458	ALL	259299.50	4083656.00	1.28310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.535E-05	0.00E+00
459	ALL	258884.76	4083606.75	9.85630E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.020E-05	0.00E+00
460	ALL	258922.14	4083520.12	7.14820E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.641E-05	0.00E+00
461	ALL	258873.46	4083521.06	6.56620E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.344E-05	0.00E+00
462	ALL	258831.41	4083523.90	6.12210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.118E-05	0.00E+00
463	ALL	258896.62	4083543.27	7.54290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.842E-05	0.00E+00
464	ALL	258884.76	4083606.75	9.85630E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.020E-05	0.00E+00
465	ALL	258844.64	4083588.64	8.37890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.267E-05	0.00E+00
466	ALL	258879.61	4083590.53	9.05210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.610E-05	0.00E+00
467	ALL	258859.29	4083606.12	9.36310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.769E-05	0.00E+00
468	ALL	258909.38	4083593.84	9.69550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.938E-05	0.00E+00
469	ALL	258926.86	4083669.92	1.43870E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.328E-05	0.00E+00
470	ALL	258924.03	4083638.26	1.22500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.239E-05	0.00E+00
471	ALL	259224.41	4083564.62	1.07780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.489E-05	0.00E+00
472	ALL	259174.70	4083526.03	9.51130E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.844E-05	0.00E+00
473	ALL	258768.08	4083878.27	4.11420E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.095E-04	0.00E+00
474	ALL	258815.83	4083880.24	4.43520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.259E-04	0.00E+00
475	ALL	258898.26	4083873.04	4.30360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.192E-04	0.00E+00
476	ALL	258854.43	4083876.97	4.42550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.254E-04	0.00E+00
477	ALL	258934.24	4083871.73	4.15690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.117E-04	0.00E+00
478	ALL	258760.89	4083832.48	2.89030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.472E-04	0.00E+00
479	ALL	258760.89	4083778.84	2.00190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.020E-04	0.00E+00
480	ALL	258759.58	4083718.01	1.36640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.959E-05	0.00E+00
481	ALL	258345.05	4084976.54	5.20700E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.652E-05	0.00E+00

```
HARP2 - HRACalc (dated 22118) 12/26/2023 10:06:03 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
**********************************
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: HighEnd

**********************************
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 3.3

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 1.3
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

**********************************
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments.  The remaining pathways are only used for
cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
```

Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|

```
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (T4)\hra\Tier 4
MitigatedCancerRisk.csv
Cancer risk total by receptor saved to: F:\Move\0029-0004\HARP (T4)\hra\Tier 4
MitigatedCancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (T4)\hra\Tier 4
MitigatedNCChronicRisk.csv
Chronic risk total by receptor saved to: F:\Move\0029-0004\HARP (T4)\hra\Tier 4
MitigatedNCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (T4)\hra\Tier 4
MitigatedNCAcuteRisk.csv
Acute risk total by receptor saved to: F:\Move\0029-0004\HARP (T4)\hra\Tier 4
MitigatedNCAcuteRiskSumByRec.csv
HRA ran successfully
```

Bonadelle TM6467 Residential Project (Mitigated Construction - Level 3 Filters Scenario)

Estimation of Annual Onsite Construction Emissions

Start of Construction	11/1/2024	
End of Construction	2/18/2028	**Total**
Number of Days	1,204	1,204
Number of Hours	28,896	28,896

Size of the construction area source: **59,919.7** **sq-meters**

Run	**Year**	**On-site Construction Activity**	**Level 3 Filters Mitigated On-site DPM (pounds)**
Project Construction	2024	Demolition	5.4941
Project Construction	2024	Site Preparation	2.3995
Project Construction	2024	Grading	3.2310
Project Construction	2025	Grading	4.2556
Project Construction	2025	Paving	2.4107
Project Construction	2025	Trenching/Utilities	20.7739
Project Construction	2025	Building Construction	7.4684
Project Construction	2026	Building Construction	27.1674
Project Construction	2027	Building Construction	24.1959
Project Construction	2028	Building Construction	1.2454
Project Construction	2028	Architectural Coating	0.3071

Total Mitigated DPM (On-site) 9.895E+01 pounds

Factor in AERMOD to Account for 5 days per week/8 hours per day: 4.2

Average Emission for Construction Site	4.492E+04	grams
	4.318E-04	grams/sec
	7.207E-09	grams/m2-sec

Pounds/Construction Period	9.895E+01
Pounds/Day	8.218E-02
Pounds/Hour	3.424E-03
Pounds/Year	3.000E+01
Years	3.29863

Bonadelle TM6467 Residential Project (Mitigated Construction - Level 3 Filters Scenario)

Estimation of Annual Offsite Construction DPM Emissions (No Change Compared to Unmitigated Scenario)

Start of Construction		11/1/2024						
End of Construction		2/18/2028						**Total**
Number of Days		1,204						1,204
Number of Hours		28,896						28,896

	2024	2024	2024+2025	2025	2025	2025-2028	2028	
	Project Construction	Project Construction	Project Construction	Project Construction	Project Construction	Project Construction	Project Construction	
Construction Trip Type	Demolition	Site Preparation	Grading	Paving	Trenching /Utilities	Building Construction	Architectural Coating	**Total (pounds)**
Total (pounds)	0.03990	0.00739	0.86910	0.014770972	0.11817	1.85244	0.01510	**2.91688**

	Haul Truck	**Vendor Truck**	**Worker**	**Total**
Demolition (2024)	300.00	80.00	19.00	399.00
Site Preparation (2024)	175.00	40.00	0.00	215.00
Grading (2024+2025)	600.00	120.00	625.00	1,345.00
Paving (2025)	300.00	80.00	0.00	380.00
Trenching/Utilities (2025)	1,600.00	640.00	0.00	2,240.00
Building Construction (2025-2028)	34,992.00	10,390.68	0.00	45,382.68
Architectural Coating (2028)	233.28	80.00	0.00	313.28
Total	**38,200.28**	**11,430.68**	**644.00**	**50,274.96**

	Haul Truck (pounds)	**Vendor Truck (pounds)**	**Worker (pounds)**	**Total (pounds)**
Total DPM	2.216E+00	6.632E-01	3.736E-02	2.917E+00
Average Emissions				
Grams	1.006E+03	3.011E+02	1.696E+01	
Grams/sec	9.673E-06	2.894E-06	1.631E-07	
Default Distance	20	4	7.7	Default Vehicle Travel Distance in CalEEMod
Vehicle Travel Distances in the Construction HRA (miles)				
Off-site Road Segment 1	0.44	0.44	0.44	miles
Trip Distribution (percent)				
Off-site Road Segment 1	100.0%	100.0%	100.0%	off-site
Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
Off-site Road Segment 1	2.113E-07	3.162E-07	9.254E-09	5.368E-07

	Grams/sec	Pounds/Hour	Pounds/Day	Pounds/year	Tons/year
Off-site Road Segment 1	5.368E-07	4.260E-06	1.022E-04	3.732E-02	1.866E-05

Health Risk Summary - Level 3 Filters Mitigated Construction (Summary of HARP2 Results)

Bonadelle TM6467 Residential Project (Mitigated Construction - Level 3 Filters Scenario)

	RISK_SUM	Cancer Risk/million	MAXHI NonCancer Chronic	MAXHI Acute
Maximum Risk	5.9925E-06	5.99	3.0520E-03	0.00E+00

	X	Y
MEI UTM	258521.86	4084223.21
Lat/Long	36°52'23.2"N 119°42'33.1"W	
Receptor # 310		

*HARP - HRACalc v22118 12/26/2023 10:22:42 AM - Cancer Risk - Input File: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters MitigatedHRAInput.hra
*HARP - HRACalc v22118 12/26/2023 10:22:42 AM - Chronic Risk - Input File: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters MitigatedHRAInput.hra
*HARP - HRACalc v22118 12/26/2023 10:22:42 AM - Acute Risk - Input File: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters MitigatedHRAInput.hra

REC	GRP	X	Y	RISK_SUM	SCENARIO	MAXHI NonCancerChronic	MAXHI Acute
1	ALL	258771.79	4084351.29	7.10710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.620E-04	0.00E+00
2	ALL	258854.63	4084404.68	2.29430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.169E-04	0.00E+00
3	ALL	258839.82	4084405.13	2.49640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.271E-04	0.00E+00
4	ALL	258767.07	4084392.87	4.60590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.346E-04	0.00E+00
5	ALL	259413.55	4084209.66	6.29950E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.208E-05	0.00E+00
6	ALL	259392.22	4084265.46	5.58810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.846E-05	0.00E+00
7	ALL	259370.89	4084321.25	4.92790E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.510E-05	0.00E+00
8	ALL	259349.55	4084377.04	4.34720E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.214E-05	0.00E+00
9	ALL	259328.22	4084432.83	3.89700E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.985E-05	0.00E+00
10	ALL	259306.89	4084488.62	3.49930E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.782E-05	0.00E+00
11	ALL	259285.56	4084544.41	3.18660E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.623E-05	0.00E+00
12	ALL	259264.23	4084600.20	2.94300E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.499E-05	0.00E+00
13	ALL	259242.90	4084656.00	2.75290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.402E-05	0.00E+00
14	ALL	259194.28	4084723.93	2.69080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.370E-05	0.00E+00
15	ALL	259139.71	4084748.21	2.88890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.471E-05	0.00E+00
16	ALL	259085.14	4084772.49	3.11590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.587E-05	0.00E+00
17	ALL	259030.57	4084796.77	3.34830E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.705E-05	0.00E+00
18	ALL	258975.99	4084821.06	3.56590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.816E-05	0.00E+00
19	ALL	258921.42	4084845.34	3.75360E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.912E-05	0.00E+00
20	ALL	258866.85	4084869.62	3.90730E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.990E-05	0.00E+00
21	ALL	258812.28	4084893.90	4.03600E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.056E-05	0.00E+00
22	ALL	258757.71	4084918.18	4.15140E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.114E-05	0.00E+00
23	ALL	259423.37	4084151.85	7.30110E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.719E-05	0.00E+00
24	ALL	259421.67	4084092.01	8.68140E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.422E-05	0.00E+00
25	ALL	259523.59	4084206.33	4.80530E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.447E-05	0.00E+00
26	ALL	259502.43	4084261.68	4.32020E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.200E-05	0.00E+00
27	ALL	259481.27	4084317.02	3.86540E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.969E-05	0.00E+00
28	ALL	259460.11	4084372.37	3.45680E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.761E-05	0.00E+00
29	ALL	259438.95	4084427.71	3.13050E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.594E-05	0.00E+00
30	ALL	259417.79	4084483.06	2.83460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.444E-05	0.00E+00
31	ALL	259396.62	4084538.41	2.59510E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.322E-05	0.00E+00
32	ALL	259375.46	4084593.75	2.40450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.225E-05	0.00E+00
33	ALL	259354.30	4084649.10	2.25290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.147E-05	0.00E+00
34	ALL	259333.14	4084704.44	2.13190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.086E-05	0.00E+00
35	ALL	259311.98	4084759.79	2.03440E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.036E-05	0.00E+00
36	ALL	259274.33	4084799.51	2.04800E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.043E-05	0.00E+00
37	ALL	259220.20	4084823.59	2.18590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.113E-05	0.00E+00
38	ALL	259166.06	4084847.68	2.33990E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.192E-05	0.00E+00
39	ALL	259111.92	4084871.77	2.50070E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.274E-05	0.00E+00
40	ALL	259057.79	4084895.86	2.65770E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.354E-05	0.00E+00
41	ALL	259003.65	4084919.95	2.79900E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.426E-05	0.00E+00
42	ALL	258949.52	4084944.03	2.91740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.486E-05	0.00E+00
43	ALL	258895.38	4084968.12	3.01230E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.534E-05	0.00E+00
44	ALL	258841.24	4084992.21	3.09060E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.574E-05	0.00E+00
45	ALL	258787.11	4085016.30	3.16180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.610E-05	0.00E+00
46	ALL	258732.97	4085040.39	3.23250E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.646E-05	0.00E+00
47	ALL	259533.32	4084148.74	5.48230E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.792E-05	0.00E+00
48	ALL	259531.63	4084088.90	6.40910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.264E-05	0.00E+00
49	ALL	258432.62	4084049.36	1.16500E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.933E-04	0.00E+00
50	ALL	258394.03	4084051.05	8.18810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.170E-04	0.00E+00
51	ALL	258455.35	4084022.86	8.58650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.373E-04	0.00E+00
52	ALL	258407.45	4084024.89	6.08560E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.099E-04	0.00E+00
53	ALL	258837.42	4083782.54	2.76430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.408E-04	0.00E+00
54	ALL	258895.19	4083788.44	3.05970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.558E-04	0.00E+00
55	ALL	258979.89	4083870.61	4.52280E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.304E-04	0.00E+00
56	ALL	258693.45	4083606.06	7.59740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.869E-05	0.00E+00
57	ALL	258727.72	4083618.67	8.70510E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.434E-05	0.00E+00
58	ALL	258771.60	4083627.20	1.00400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.114E-05	0.00E+00
59	ALL	258802.19	4083638.19	1.13550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.783E-05	0.00E+00
60	ALL	258832.46	4083660.61	1.36000E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.926E-05	0.00E+00
61	ALL	258882.36	4083669.86	1.56590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.975E-05	0.00E+00
62	ALL	258894.00	4083704.06	1.91030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.730E-05	0.00E+00
63	ALL	258933.35	4083694.38	1.91130E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.735E-05	0.00E+00
64	ALL	258967.63	4083706.99	2.09730E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.068E-04	0.00E+00
65	ALL	259001.90	4083719.61	2.26050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.151E-04	0.00E+00
66	ALL	259048.89	4083777.14	2.83560E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.444E-04	0.00E+00
67	ALL	259082.91	4083805.09	2.99200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.524E-04	0.00E+00
68	ALL	259078.00	4083822.40	3.18220E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.621E-04	0.00E+00
69	ALL	258659.18	4083593.44	6.69660E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.411E-05	0.00E+00
70	ALL	258620.59	4083595.13	6.24620E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.181E-05	0.00E+00

71	ALL	258582.00	4083596.83	5.86330E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.986E-05	0.00E+00
72	ALL	258543.41	4083598.52	5.54820E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.826E-05	0.00E+00
73	ALL	258504.82	4083600.21	5.30270E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.701E-05	0.00E+00
74	ALL	258466.22	4083601.90	5.12730E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.611E-05	0.00E+00
75	ALL	258427.63	4083603.60	5.03100E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.562E-05	0.00E+00
76	ALL	258389.04	4083605.29	5.09890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.597E-05	0.00E+00
77	ALL	258698.48	4083526.75	5.55030E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.827E-05	0.00E+00
78	ALL	258715.65	4083527.38	5.74910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.928E-05	0.00E+00
79	ALL	258759.76	4083522.35	6.14930E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.132E-05	0.00E+00
80	ALL	258794.89	4083535.28	6.95750E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.544E-05	0.00E+00
81	ALL	258830.03	4083548.22	7.89200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.020E-05	0.00E+00
82	ALL	258865.16	4083561.15	8.96710E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.567E-05	0.00E+00
83	ALL	258900.29	4083574.08	1.01570E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.173E-05	0.00E+00
84	ALL	258935.43	4083587.02	1.14120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.812E-05	0.00E+00
85	ALL	258970.56	4083599.95	1.27250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.481E-05	0.00E+00
86	ALL	259005.70	4083612.89	1.40290E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.145E-05	0.00E+00
87	ALL	259040.83	4083625.82	1.52520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.768E-05	0.00E+00
88	ALL	259075.96	4083638.76	1.63120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.308E-05	0.00E+00
89	ALL	259104.34	4083715.55	2.16360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.102E-04	0.00E+00
90	ALL	259172.18	4083718.97	2.04430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.041E-04	0.00E+00
91	ALL	259186.67	4083749.30	2.16140E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.101E-04	0.00E+00
92	ALL	259201.16	4083815.52	2.38190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.213E-04	0.00E+00
93	ALL	259180.70	4083813.74	2.49690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.272E-04	0.00E+00
94	ALL	259189.52	4083854.46	2.58320E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.316E-04	0.00E+00
95	ALL	259208.10	4083891.91	2.50420E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.275E-04	0.00E+00
96	ALL	259247.03	4083917.32	2.18700E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.114E-04	0.00E+00
97	ALL	259253.30	4083964.35	2.06010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.049E-04	0.00E+00
98	ALL	258656.61	4083462.55	4.15220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.115E-05	0.00E+00
99	ALL	258621.02	4083463.50	3.96090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.017E-05	0.00E+00
100	ALL	258582.43	4083465.19	3.79220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.931E-05	0.00E+00
101	ALL	258543.83	4083466.88	3.65340E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.861E-05	0.00E+00
102	ALL	258505.24	4083468.57	3.54240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.804E-05	0.00E+00
103	ALL	258466.65	4083470.27	3.45620E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.760E-05	0.00E+00
104	ALL	258428.06	4083471.96	3.39300E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.728E-05	0.00E+00
105	ALL	258389.47	4083473.65	3.34770E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.705E-05	0.00E+00
106	ALL	258685.31	4083386.82	3.44250E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.753E-05	0.00E+00
107	ALL	258721.07	4083399.98	3.76570E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.918E-05	0.00E+00
108	ALL	258756.84	4083413.15	4.14860E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.113E-05	0.00E+00
109	ALL	258801.60	4083413.40	4.47700E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.280E-05	0.00E+00
110	ALL	258841.28	4083456.31	5.58200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.843E-05	0.00E+00
111	ALL	258864.13	4083452.65	5.74040E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.924E-05	0.00E+00
112	ALL	258906.01	4083454.15	6.21600E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.166E-05	0.00E+00
113	ALL	258926.22	4083457.88	6.53190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.327E-05	0.00E+00
114	ALL	258978.10	4083529.93	9.49290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.835E-05	0.00E+00
115	ALL	259025.53	4083531.43	1.01550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.172E-05	0.00E+00
116	ALL	259060.74	4083450.71	7.75150E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.948E-05	0.00E+00
117	ALL	259078.73	4083531.65	1.07300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.465E-05	0.00E+00
118	ALL	259114.49	4083544.82	1.15680E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.892E-05	0.00E+00
119	ALL	259150.26	4083557.99	1.22910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.260E-05	0.00E+00
120	ALL	259201.73	4083605.88	1.43410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.304E-05	0.00E+00
121	ALL	259217.44	4083640.60	1.57270E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.010E-05	0.00E+00
122	ALL	259233.15	4083675.33	1.69650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.641E-05	0.00E+00
123	ALL	259248.86	4083710.05	1.79360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.135E-05	0.00E+00
124	ALL	259239.07	4083760.47	2.00550E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.021E-04	0.00E+00
125	ALL	259280.28	4083779.50	1.88150E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.583E-05	0.00E+00
126	ALL	259287.49	4083821.31	1.91210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.739E-05	0.00E+00
127	ALL	259313.59	4083842.80	1.78900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.112E-05	0.00E+00
128	ALL	259305.21	4083878.94	1.82800E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.310E-05	0.00E+00
129	ALL	259298.24	4083891.93	1.86060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.476E-05	0.00E+00
130	ALL	259358.83	4083953.11	1.43410E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.304E-05	0.00E+00
131	ALL	259374.54	4083987.84	1.28510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.545E-05	0.00E+00
132	ALL	259390.25	4084022.56	1.13720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.792E-05	0.00E+00
133	ALL	259405.96	4084057.28	9.96860E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.077E-05	0.00E+00
134	ALL	258649.54	4083373.65	3.17180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.615E-05	0.00E+00
135	ALL	258610.95	4083375.34	3.05080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.554E-05	0.00E+00
136	ALL	258572.36	4083377.04	2.94830E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.502E-05	0.00E+00
137	ALL	258533.77	4083378.73	2.86080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.457E-05	0.00E+00
138	ALL	258495.17	4083380.42	2.78450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.418E-05	0.00E+00
139	ALL	258456.58	4083382.12	2.71610E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.383E-05	0.00E+00
140	ALL	258417.99	4083383.81	2.65180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.351E-05	0.00E+00
141	ALL	258379.40	4083385.50	2.59170E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.320E-05	0.00E+00
142	ALL	258680.97	4083277.10	2.57320E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.311E-05	0.00E+00
143	ALL	258717.22	4083290.45	2.77090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.411E-05	0.00E+00
144	ALL	258753.47	4083303.79	3.00310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.530E-05	0.00E+00
145	ALL	258789.71	4083317.14	3.27360E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.667E-05	0.00E+00
146	ALL	258825.96	4083330.48	3.59070E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.829E-05	0.00E+00
147	ALL	258862.21	4083343.83	3.95180E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.013E-05	0.00E+00
148	ALL	258898.46	4083357.17	4.37220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.227E-05	0.00E+00
149	ALL	258934.71	4083370.52	4.84050E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.465E-05	0.00E+00
150	ALL	258970.96	4083383.86	5.36870E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.734E-05	0.00E+00
151	ALL	259007.21	4083397.20	5.94740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.029E-05	0.00E+00
152	ALL	259043.46	4083410.55	6.56540E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.344E-05	0.00E+00
153	ALL	259079.70	4083423.89	7.19830E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.666E-05	0.00E+00
154	ALL	259115.95	4083437.24	7.84740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.997E-05	0.00E+00
155	ALL	259152.20	4083450.58	8.48450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.321E-05	0.00E+00
156	ALL	259188.45	4083463.93	9.08000E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.625E-05	0.00E+00
157	ALL	259224.70	4083477.27	9.60610E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.893E-05	0.00E+00
158	ALL	259276.87	4083525.81	1.10940E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.651E-05	0.00E+00
159	ALL	259292.79	4083561.00	1.21010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.163E-05	0.00E+00
160	ALL	259308.72	4083596.20	1.30240E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.633E-05	0.00E+00

161	ALL	259324.64	4083631.39	1.38020E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.029E-05	0.00E+00
162	ALL	259340.56	4083666.58	1.43780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.323E-05	0.00E+00
163	ALL	259356.48	4083701.78	1.46940E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.484E-05	0.00E+00
164	ALL	259372.41	4083736.97	1.47170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.496E-05	0.00E+00
165	ALL	259388.33	4083772.16	1.44710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.370E-05	0.00E+00
166	ALL	259404.25	4083807.35	1.39530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.106E-05	0.00E+00
167	ALL	259420.17	4083842.55	1.32170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.732E-05	0.00E+00
168	ALL	259436.10	4083877.74	1.23250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.277E-05	0.00E+00
169	ALL	259452.02	4083912.93	1.13250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.768E-05	0.00E+00
170	ALL	259467.94	4083948.13	1.02750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.233E-05	0.00E+00
171	ALL	259483.86	4083983.32	9.22420E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.698E-05	0.00E+00
172	ALL	259499.79	4084018.51	8.21330E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.183E-05	0.00E+00
173	ALL	259515.71	4084053.70	7.26970E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.703E-05	0.00E+00
174	ALL	258644.72	4083263.76	2.40460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.225E-05	0.00E+00
175	ALL	258606.13	4083265.45	2.33110E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.187E-05	0.00E+00
176	ALL	258567.54	4083267.14	2.26780E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.155E-05	0.00E+00
177	ALL	258528.95	4083268.84	2.21320E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.127E-05	0.00E+00
178	ALL	258490.35	4083270.53	2.16520E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.103E-05	0.00E+00
179	ALL	258451.76	4083272.22	2.12240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.081E-05	0.00E+00
180	ALL	258413.17	4083273.91	2.08380E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.061E-05	0.00E+00
181	ALL	258374.58	4083275.61	2.04830E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.043E-05	0.00E+00
182	ALL	258427.55	4084018.70	6.52110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.321E-04	0.00E+00
183	ALL	257682.15	4084127.78	6.47220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.296E-05	0.00E+00
184	ALL	257701.63	4084074.74	6.25030E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.183E-05	0.00E+00
185	ALL	257721.10	4084021.70	6.05130E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.082E-05	0.00E+00
186	ALL	257740.57	4083968.66	5.83830E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.974E-05	0.00E+00
187	ALL	257760.04	4083915.61	5.57400E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.839E-05	0.00E+00
188	ALL	257779.51	4083862.57	5.24270E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.670E-05	0.00E+00
189	ALL	257798.98	4083809.53	4.85390E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.472E-05	0.00E+00
190	ALL	257818.45	4083756.49	4.43220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.257E-05	0.00E+00
191	ALL	257837.92	4083703.45	4.00510E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.040E-05	0.00E+00
192	ALL	257857.39	4083650.41	3.59570E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.831E-05	0.00E+00
193	ALL	257892.74	4083611.97	3.36220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.712E-05	0.00E+00
194	ALL	257943.97	4083588.13	3.27010E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.666E-05	0.00E+00
195	ALL	257995.20	4083564.29	3.17030E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.615E-05	0.00E+00
196	ALL	258147.34	4083482.78	2.81700E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.435E-05	0.00E+00
197	ALL	258200.11	4083468.94	2.81270E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.433E-05	0.00E+00
198	ALL	258251.33	4083445.10	2.74640E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.399E-05	0.00E+00
199	ALL	258302.56	4083421.26	2.68220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.366E-05	0.00E+00
200	ALL	257673.55	4084182.53	6.90780E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.518E-05	0.00E+00
201	ALL	257675.80	4084238.99	7.60370E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.873E-05	0.00E+00
202	ALL	257572.23	4084132.20	5.27990E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.689E-05	0.00E+00
203	ALL	257591.68	4084079.22	5.11890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.607E-05	0.00E+00
204	ALL	257611.13	4084026.24	4.98250E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.538E-05	0.00E+00
205	ALL	257630.58	4083973.26	4.85010E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.470E-05	0.00E+00
206	ALL	257650.02	4083920.28	4.69550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.391E-05	0.00E+00
207	ALL	257669.47	4083867.30	4.49800E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.291E-05	0.00E+00
208	ALL	257688.92	4083814.32	4.25250E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.166E-05	0.00E+00
209	ALL	257708.37	4083761.35	3.96820E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.021E-05	0.00E+00
210	ALL	257727.82	4083708.37	3.66090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.865E-05	0.00E+00
211	ALL	257747.26	4083655.39	3.34820E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.705E-05	0.00E+00
212	ALL	257766.71	4083602.41	3.04420E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.550E-05	0.00E+00
213	ALL	257811.74	4083537.52	2.72670E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.389E-05	0.00E+00
214	ALL	257862.91	4083513.71	2.65450E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.352E-05	0.00E+00
215	ALL	257914.08	4083489.90	2.57560E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.312E-05	0.00E+00
216	ALL	257965.25	4083466.09	2.49570E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.271E-05	0.00E+00
217	ALL	258016.41	4083442.28	2.41850E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.232E-05	0.00E+00
218	ALL	258067.58	4083418.47	2.34780E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.196E-05	0.00E+00
219	ALL	258118.75	4083394.66	2.28440E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.164E-05	0.00E+00
220	ALL	258169.91	4083370.85	2.22860E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.135E-05	0.00E+00
221	ALL	258221.08	4083347.04	2.17880E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.110E-05	0.00E+00
222	ALL	258272.25	4083323.23	2.13300E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.086E-05	0.00E+00
223	ALL	258323.41	4083299.42	2.08960E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.064E-05	0.00E+00
224	ALL	257563.63	4084186.92	5.59310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.849E-05	0.00E+00
225	ALL	257565.89	4084243.38	6.08790E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.101E-05	0.00E+00
226	ALL	258382.28	4084295.95	1.71470E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.733E-04	0.00E+00
227	ALL	258398.86	4084935.93	6.49660E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.309E-05	0.00E+00
228	ALL	258363.89	4084922.61	7.02980E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.580E-05	0.00E+00
229	ALL	258328.92	4084909.29	7.54910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.845E-05	0.00E+00
230	ALL	258293.94	4084895.97	8.07700E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.114E-05	0.00E+00
231	ALL	258258.97	4084882.66	8.59890E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.380E-05	0.00E+00
232	ALL	258224.00	4084869.34	9.10220E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.636E-05	0.00E+00
233	ALL	258189.03	4084856.02	9.57550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.877E-05	0.00E+00
234	ALL	258154.05	4084842.70	1.00120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.099E-05	0.00E+00
235	ALL	258119.08	4084829.39	1.04050E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.299E-05	0.00E+00
236	ALL	258084.11	4084816.07	1.07490E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.475E-05	0.00E+00
237	ALL	258049.14	4084802.75	1.10380E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.622E-05	0.00E+00
238	ALL	258014.16	4084789.43	1.12620E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.736E-05	0.00E+00
239	ALL	257979.19	4084776.12	1.14140E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.813E-05	0.00E+00
240	ALL	257944.22	4084762.80	1.14910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.852E-05	0.00E+00
241	ALL	257893.68	4084715.45	1.21640E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.195E-05	0.00E+00
242	ALL	257878.12	4084681.42	1.27930E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.516E-05	0.00E+00
243	ALL	257862.56	4084647.38	1.33020E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.775E-05	0.00E+00
244	ALL	257846.99	4084613.35	1.36430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.948E-05	0.00E+00
245	ALL	257831.43	4084579.32	1.38040E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.031E-05	0.00E+00
246	ALL	257815.87	4084545.28	1.37630E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.010E-05	0.00E+00
247	ALL	257800.30	4084511.25	1.35100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.881E-05	0.00E+00
248	ALL	257784.74	4084477.22	1.30560E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.649E-05	0.00E+00
249	ALL	257769.18	4084443.19	1.24180E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.325E-05	0.00E+00
250	ALL	257753.61	4084409.15	1.16690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.943E-05	0.00E+00

251	ALL	257738.05	4084375.12	1.08350E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.519E-05	0.00E+00
252	ALL	257722.49	4084341.09	9.98090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.083E-05	0.00E+00
253	ALL	257706.93	4084307.06	9.13080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.650E-05	0.00E+00
254	ALL	257691.36	4084273.02	8.32970E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.242E-05	0.00E+00
255	ALL	258433.83	4084949.25	6.02110E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.067E-05	0.00E+00
256	ALL	258472.31	4084948.28	5.79020E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.949E-05	0.00E+00
257	ALL	258510.78	4084947.31	5.54930E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.826E-05	0.00E+00
258	ALL	258549.25	4084946.34	5.29860E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.699E-05	0.00E+00
259	ALL	258587.72	4084945.37	5.03970E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.567E-05	0.00E+00
260	ALL	258626.19	4084944.40	4.77590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.432E-05	0.00E+00
261	ALL	258664.66	4084943.43	4.51320E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.299E-05	0.00E+00
262	ALL	258703.13	4084942.47	4.25810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.169E-05	0.00E+00
263	ALL	258401.16	4085045.71	4.77880E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.434E-05	0.00E+00
264	ALL	258365.71	4085032.22	5.10790E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.602E-05	0.00E+00
265	ALL	258330.27	4085018.72	5.45730E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.779E-05	0.00E+00
266	ALL	258294.82	4085005.22	5.84260E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.976E-05	0.00E+00
267	ALL	258259.38	4084991.72	6.21810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.167E-05	0.00E+00
268	ALL	258223.93	4084978.23	6.59170E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.357E-05	0.00E+00
269	ALL	258188.49	4084964.73	6.95820E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.544E-05	0.00E+00
270	ALL	258153.04	4084951.23	7.31010E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.723E-05	0.00E+00
271	ALL	258117.60	4084937.73	7.64140E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.892E-05	0.00E+00
272	ALL	258082.15	4084924.23	7.94810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.048E-05	0.00E+00
273	ALL	258046.71	4084910.74	8.22680E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.190E-05	0.00E+00
274	ALL	258011.26	4084897.24	8.47490E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.316E-05	0.00E+00
275	ALL	257975.82	4084883.74	8.68790E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.425E-05	0.00E+00
276	ALL	257940.37	4084870.24	8.86210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.514E-05	0.00E+00
277	ALL	257904.93	4084856.75	8.99410E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.581E-05	0.00E+00
278	ALL	257869.48	4084843.25	9.08210E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.626E-05	0.00E+00
279	ALL	257818.26	4084795.26	9.64610E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.913E-05	0.00E+00
280	ALL	257802.49	4084760.77	1.01300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.159E-05	0.00E+00
281	ALL	257786.72	4084726.27	1.05520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.374E-05	0.00E+00
282	ALL	257770.94	4084691.78	1.08970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.550E-05	0.00E+00
283	ALL	257755.17	4084657.29	1.11500E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.679E-05	0.00E+00
284	ALL	257739.39	4084622.80	1.12430E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.726E-05	0.00E+00
285	ALL	257723.62	4084588.30	1.11930E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.701E-05	0.00E+00
286	ALL	257707.85	4084553.81	1.09950E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.600E-05	0.00E+00
287	ALL	257692.07	4084519.32	1.06580E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.428E-05	0.00E+00
288	ALL	257676.30	4084484.83	1.02020E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.196E-05	0.00E+00
289	ALL	257660.53	4084450.33	9.65670E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.918E-05	0.00E+00
290	ALL	257644.75	4084415.84	9.05230E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.610E-05	0.00E+00
291	ALL	257628.98	4084381.35	8.41960E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.288E-05	0.00E+00
292	ALL	257613.21	4084346.85	7.78300E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.964E-05	0.00E+00
293	ALL	257597.43	4084312.36	7.17190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.653E-05	0.00E+00
294	ALL	257581.66	4084277.87	6.60490E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.364E-05	0.00E+00
295	ALL	258436.60	4085059.21	4.46740E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.275E-05	0.00E+00
296	ALL	258475.07	4085058.24	4.30720E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.194E-05	0.00E+00
297	ALL	258513.55	4085057.27	4.14060E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.109E-05	0.00E+00
298	ALL	258552.02	4085056.31	3.96790E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.021E-05	0.00E+00
299	ALL	258590.49	4085055.34	3.79090E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.931E-05	0.00E+00
300	ALL	258628.96	4085054.37	3.61250E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.840E-05	0.00E+00
301	ALL	258667.43	4085053.40	3.43690E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.750E-05	0.00E+00
302	ALL	258404.04	4084257.27	2.78860E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.420E-03	0.00E+00
303	ALL	258415.08	4084289.21	2.00610E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.022E-03	0.00E+00
304	ALL	258414.69	4084274.53	2.31200E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.178E-03	0.00E+00
305	ALL	258429.94	4084296.83	1.97590E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.006E-03	0.00E+00
306	ALL	258441.68	4084257.32	3.01720E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.537E-03	0.00E+00
307	ALL	258519.90	4084270.62	4.20110E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.140E-03	0.00E+00
308	ALL	258532.02	4084270.62	4.89450E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.493E-03	0.00E+00
309	ALL	258539.83	4084255.54	5.64270E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.874E-03	0.00E+00
310	ALL	258521.86	4084223.21	5.99250E-06	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.052E-03	0.00E+00
311	ALL	258781.30	4084394.27	4.06610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.071E-04	0.00E+00
312	ALL	258796.19	4084395.23	3.60440E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.836E-04	0.00E+00
313	ALL	258857.92	4084341.90	3.64450E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.856E-04	0.00E+00
314	ALL	258381.67	4084021.46	4.83110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.461E-04	0.00E+00
315	ALL	258309.03	4084063.67	5.04290E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.568E-04	0.00E+00
316	ALL	258300.45	4084056.72	4.46170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.272E-04	0.00E+00
317	ALL	258297.18	4084048.35	4.04900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.062E-04	0.00E+00
318	ALL	258532.20	4083943.49	4.56350E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.324E-04	0.00E+00
319	ALL	258531.59	4083928.98	3.90090E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.987E-04	0.00E+00
320	ALL	258548.95	4083919.18	3.80240E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.937E-04	0.00E+00
321	ALL	258310.01	4084835.46	9.79120E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.987E-05	0.00E+00
322	ALL	258327.51	4084834.54	9.71130E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.946E-05	0.00E+00
323	ALL	258800.04	4083832.11	3.60840E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.838E-04	0.00E+00
324	ALL	258819.84	4083833.03	3.73780E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.904E-04	0.00E+00
325	ALL	258837.33	4083829.81	3.73850E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.904E-04	0.00E+00
326	ALL	258798.66	4083787.91	2.67630E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.363E-04	0.00E+00
327	ALL	258816.61	4083789.29	2.78920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.421E-04	0.00E+00
328	ALL	258875.08	4083784.69	2.94110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.498E-04	0.00E+00
329	ALL	258851.14	4083784.69	2.85720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.455E-04	0.00E+00
330	ALL	258914.21	4083783.77	3.01690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.537E-04	0.00E+00
331	ALL	258856.20	4083828.88	3.78510E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.928E-04	0.00E+00
332	ALL	258876.46	4083830.73	3.87890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.976E-04	0.00E+00
333	ALL	258898.10	4083827.96	3.84970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.961E-04	0.00E+00
334	ALL	258915.44	4083822.94	3.75190E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.911E-04	0.00E+00
335	ALL	258931.54	4083824.89	3.78930E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.930E-04	0.00E+00
336	ALL	258953.60	4083825.45	3.77130E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.921E-04	0.00E+00
337	ALL	258970.84	4083826.87	3.75530E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.913E-04	0.00E+00
338	ALL	258993.46	4083824.33	3.63280E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.850E-04	0.00E+00
339	ALL	258930.98	4083783.33	3.03150E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.544E-04	0.00E+00
340	ALL	258950.49	4083783.61	3.04930E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.553E-04	0.00E+00

341	ALL	258972.03	4083780.69	3.00470E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.530E-04	0.00E+00
342	ALL	259008.61	4083779.36	2.94960E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.502E-04	0.00E+00
343	ALL	258989.99	4083781.69	3.00590E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.531E-04	0.00E+00
344	ALL	259010.28	4083825.59	3.58210E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.824E-04	0.00E+00
345	ALL	259031.90	4083822.93	3.44300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.754E-04	0.00E+00
346	ALL	259027.91	4083781.35	2.93670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.496E-04	0.00E+00
347	ALL	258997.31	4083873.16	4.42690E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.255E-04	0.00E+00
348	ALL	259017.93	4083871.16	4.21110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.145E-04	0.00E+00
349	ALL	259033.23	4083867.17	4.01710E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.046E-04	0.00E+00
350	ALL	259060.17	4083870.83	3.80860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.940E-04	0.00E+00
351	ALL	259092.77	4083789.00	2.80010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.426E-04	0.00E+00
352	ALL	258799.98	4083743.62	2.03340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.036E-04	0.00E+00
353	ALL	258817.23	4083744.18	2.10940E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.074E-04	0.00E+00
354	ALL	258838.72	4083742.49	2.17250E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.107E-04	0.00E+00
355	ALL	258854.27	4083743.05	2.23730E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.140E-04	0.00E+00
356	ALL	258873.78	4083741.92	2.28890E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.166E-04	0.00E+00
357	ALL	258891.87	4083741.07	2.33270E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.188E-04	0.00E+00
358	ALL	258909.12	4083742.77	2.40060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.223E-04	0.00E+00
359	ALL	258927.50	4083741.92	2.42990E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.238E-04	0.00E+00
360	ALL	258946.72	4083741.64	2.45980E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.253E-04	0.00E+00
361	ALL	258965.10	4083740.79	2.47200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.259E-04	0.00E+00
362	ALL	258984.89	4083739.94	2.47650E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.261E-04	0.00E+00
363	ALL	259002.70	4083739.09	2.47110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.259E-04	0.00E+00
364	ALL	258797.44	4083705.16	1.61310E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.216E-05	0.00E+00
365	ALL	258817.51	4083704.60	1.67840E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.548E-05	0.00E+00
366	ALL	258839.00	4083706.01	1.76260E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.977E-05	0.00E+00
367	ALL	258855.96	4083705.73	1.81400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.239E-05	0.00E+00
368	ALL	258877.74	4083702.62	1.84910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.418E-05	0.00E+00
369	ALL	258912.45	4083702.25	1.94060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.883E-05	0.00E+00
370	ALL	258949.94	4083702.25	2.02100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.029E-04	0.00E+00
371	ALL	258984.07	4083700.32	2.05240E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.045E-04	0.00E+00
372	ALL	259002.81	4083699.84	2.06580E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.052E-04	0.00E+00
373	ALL	258898.77	4083648.91	1.44750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.372E-05	0.00E+00
374	ALL	258627.60	4083540.66	5.15430E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.625E-05	0.00E+00
375	ALL	258513.83	4083537.00	4.36480E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.223E-05	0.00E+00
376	ALL	258774.97	4083660.95	1.20130E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.118E-05	0.00E+00
377	ALL	258769.92	4083651.33	1.12960E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.753E-05	0.00E+00
378	ALL	258774.97	4083637.63	1.06560E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.427E-05	0.00E+00
379	ALL	258773.05	4083614.79	9.48200E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.829E-05	0.00E+00
380	ALL	258800.45	4083672.96	1.35680E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.910E-05	0.00E+00
381	ALL	258800.93	4083660.95	1.27340E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.486E-05	0.00E+00
382	ALL	258800.45	4083651.81	1.21220E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.174E-05	0.00E+00
383	ALL	258832.17	4083650.61	1.28970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.569E-05	0.00E+00
384	ALL	258833.86	4083672.48	1.45300E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.400E-05	0.00E+00
385	ALL	258832.90	4083638.59	1.21480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.187E-05	0.00E+00
386	ALL	258853.33	4083670.80	1.49570E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.618E-05	0.00E+00
387	ALL	258851.89	4083659.98	1.40900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.176E-05	0.00E+00
388	ALL	258850.45	4083648.21	1.32170E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.731E-05	0.00E+00
389	ALL	258899.25	4083659.25	1.52610E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.773E-05	0.00E+00
390	ALL	258879.12	4083659.84	1.47920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.534E-05	0.00E+00
391	ALL	258879.84	4083649.03	1.40240E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.142E-05	0.00E+00
392	ALL	258879.84	4083637.01	1.31970E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.721E-05	0.00E+00
393	ALL	258852.44	4083637.97	1.25920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.413E-05	0.00E+00
394	ALL	258900.03	4083669.22	1.60770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.188E-05	0.00E+00
395	ALL	258773.78	4083671.75	1.26870E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.462E-05	0.00E+00
396	ALL	258896.43	4083635.32	1.34720E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.861E-05	0.00E+00
397	ALL	259101.17	4083742.27	2.37900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.212E-04	0.00E+00
398	ALL	257956.80	4083551.58	3.01620E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.536E-05	0.00E+00
399	ALL	258299.79	4083477.86	3.11950E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.589E-05	0.00E+00
400	ALL	258436.73	4083663.40	6.17910E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.147E-05	0.00E+00
401	ALL	258437.84	4083647.84	5.85550E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.982E-05	0.00E+00
402	ALL	258459.51	4083635.62	5.71410E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.910E-05	0.00E+00
403	ALL	258376.97	4083538.26	4.25680E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.168E-05	0.00E+00
404	ALL	258393.50	4083537.79	4.15410E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.116E-05	0.00E+00
405	ALL	258307.43	4083534.01	4.20810E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.143E-05	0.00E+00
406	ALL	258272.12	4083541.20	3.71000E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.890E-05	0.00E+00
407	ALL	258098.15	4083481.43	2.73620E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.394E-05	0.00E+00
408	ALL	258061.23	4083493.74	2.76560E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.409E-05	0.00E+00
409	ALL	258226.60	4083477.59	2.92480E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.490E-05	0.00E+00
410	ALL	258361.21	4083459.13	3.11330E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.586E-05	0.00E+00
411	ALL	258020.46	4083486.82	2.67230E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.361E-05	0.00E+00
412	ALL	258042.00	4083487.59	2.70280E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.377E-05	0.00E+00
413	ALL	258275.83	4083476.05	3.03080E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.544E-05	0.00E+00
414	ALL	258711.10	4083462.61	4.52680E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.306E-05	0.00E+00
415	ALL	258766.68	4083459.83	4.93680E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.514E-05	0.00E+00
416	ALL	258799.47	4083558.75	7.75640E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.950E-05	0.00E+00
417	ALL	258964.79	4083455.94	6.91420E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.521E-05	0.00E+00
418	ALL	259000.10	4083453.98	7.24590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.690E-05	0.00E+00
419	ALL	258916.41	4083410.17	5.38350E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.742E-05	0.00E+00
420	ALL	258494.66	4083420.63	3.08320E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.570E-05	0.00E+00
421	ALL	258674.47	4083415.40	3.68590E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.877E-05	0.00E+00
422	ALL	258431.23	4083427.17	2.99290E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.524E-05	0.00E+00
423	ALL	259186.93	4083925.38	2.71010E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.380E-04	0.00E+00
424	ALL	259176.19	4083917.25	2.81660E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.435E-04	0.00E+00
425	ALL	259161.40	4083909.71	2.95920E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.507E-04	0.00E+00
426	ALL	259201.76	4083935.11	2.55940E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.304E-04	0.00E+00
427	ALL	259213.57	4083943.61	2.43880E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.242E-04	0.00E+00
428	ALL	259226.33	4083951.64	2.31100E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.177E-04	0.00E+00
429	ALL	259264.60	4083975.74	1.94520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.907E-05	0.00E+00
430	ALL	259240.03	4083958.26	2.18080E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.111E-04	0.00E+00

431	ALL	259278.30	4083983.30	1.82520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.296E-05	0.00E+00
432	ALL	259136.50	4083874.19	3.09770E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.578E-04	0.00E+00
433	ALL	259146.90	4083859.07	2.93910E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.497E-04	0.00E+00
434	ALL	259153.04	4083843.01	2.81480E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.434E-04	0.00E+00
435	ALL	259181.39	4083875.14	2.70150E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.376E-04	0.00E+00
436	ALL	259278.25	4083934.67	1.93760E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.868E-05	0.00E+00
437	ALL	259286.28	4083919.55	1.90670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.711E-05	0.00E+00
438	ALL	259258.88	4083901.13	2.11120E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.075E-04	0.00E+00
439	ALL	259219.19	4083874.19	2.39830E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.222E-04	0.00E+00
440	ALL	259290.53	4083907.74	1.89360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.644E-05	0.00E+00
441	ALL	259286.28	4083919.55	1.90670E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.711E-05	0.00E+00
442	ALL	259290.53	4083907.74	1.89360E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.644E-05	0.00E+00
443	ALL	259220.60	4083817.02	2.27260E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.158E-04	0.00E+00
444	ALL	259245.17	4083818.91	2.13700E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.088E-04	0.00E+00
445	ALL	259278.25	4083840.65	1.97950E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.008E-04	0.00E+00
446	ALL	259309.43	4083860.96	1.81060E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.222E-05	0.00E+00
447	ALL	259321.72	4083822.70	1.74230E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.874E-05	0.00E+00
448	ALL	259297.42	4083771.34	1.79350E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.134E-05	0.00E+00
449	ALL	259328.16	4083772.65	1.67200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.515E-05	0.00E+00
450	ALL	259209.79	4083758.26	2.11460E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.077E-04	0.00E+00
451	ALL	259098.67	4083698.32	2.04110E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.040E-04	0.00E+00
452	ALL	259175.62	4083673.70	1.78870E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	9.110E-05	0.00E+00
453	ALL	259178.70	4083648.30	1.65220E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.415E-05	0.00E+00
454	ALL	259175.62	4083607.52	1.45370E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.404E-05	0.00E+00
455	ALL	259255.64	4083650.61	1.55810E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.935E-05	0.00E+00
456	ALL	259254.87	4083599.06	1.36750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.965E-05	0.00E+00
457	ALL	259301.81	4083715.25	1.65580E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.433E-05	0.00E+00
458	ALL	259299.50	4083656.00	1.49620E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.620E-05	0.00E+00
459	ALL	258884.76	4083606.75	1.14900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.852E-05	0.00E+00
460	ALL	258922.14	4083520.12	8.33240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.244E-05	0.00E+00
461	ALL	258873.46	4083521.06	7.65310E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.898E-05	0.00E+00
462	ALL	258831.41	4083523.90	7.13460E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.634E-05	0.00E+00
463	ALL	258896.62	4083543.27	8.79240E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.478E-05	0.00E+00
464	ALL	258884.76	4083606.75	1.14900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.852E-05	0.00E+00
465	ALL	258844.64	4083588.64	9.76660E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	4.974E-05	0.00E+00
466	ALL	258879.61	4083590.53	1.05520E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.374E-05	0.00E+00
467	ALL	258859.29	4083606.12	1.09150E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.559E-05	0.00E+00
468	ALL	258909.38	4083593.84	1.13030E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.757E-05	0.00E+00
469	ALL	258926.86	4083669.92	1.67750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.544E-05	0.00E+00
470	ALL	258924.03	4083638.26	1.42820E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	7.274E-05	0.00E+00
471	ALL	259224.41	4083564.62	1.25680E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	6.401E-05	0.00E+00
472	ALL	259174.70	4083526.03	1.10900E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	5.648E-05	0.00E+00
473	ALL	258768.08	4083878.27	4.79750E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.443E-04	0.00E+00
474	ALL	258815.83	4083880.24	5.17200E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.634E-04	0.00E+00
475	ALL	258898.26	4083873.04	5.01860E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.556E-04	0.00E+00
476	ALL	258854.43	4083876.97	5.16070E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.628E-04	0.00E+00
477	ALL	258934.24	4083871.73	4.84760E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	2.469E-04	0.00E+00
478	ALL	258760.89	4083832.48	3.37000E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.716E-04	0.00E+00
479	ALL	258760.89	4083778.84	2.33400E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	1.189E-04	0.00E+00
480	ALL	258759.58	4083718.01	1.59290E-07	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	8.113E-05	0.00E+00
481	ALL	258345.05	4084976.54	6.07190E-08	3.3YrCancerHighEnd_InhSoilDermMMilkCrops	3.092E-05	0.00E+00

HARP2 - HRACalc (dated 22118) 12/26/2023 10:22:42 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 3.3

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 1.3
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True

Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters
MitigatedCancerRisk.csv
Cancer risk total by receptor saved to: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters
MitigatedCancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters
MitigatedNCChronicRisk.csv
Chronic risk total by receptor saved to: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters
MitigatedNCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters
MitigatedNCAcuteRisk.csv
Acute risk total by receptor saved to: F:\Move\0029-0004\HARP (L3 Filters)\hra\Level 3 Filters
MitigatedNCAcuteRiskSumByRec.csv
HRA ran successfully

Health Risk Screening

Operational Screening Calculations and Prioritization

Diesel PM Screening — Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in grey areas.
Author (Prioritization Calculator)	*Matthew Cegielski* *Last Update* *October 13, 2016*
Date Updated with Project Emissions	December 22, 2023
Facility:	**TM6467 Residential Development Project (Diesel PM Screening Analysis)**
ID#:	—
Project #:	**Truck Run and Idle Emissions**
Unit and Process#	**Mobile Source Diesel (Trucks Visiting the TM6467 Residential Project)**
Operating Hours hr/yr	4,193.70 **(operating hours assumed based on idle hours)**

Receptor Proximity and Proximity Factors		Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	**1.000**	1.73E+00	5.37E-03	0.00E+00	1.73E+00
100≤R<250	**0.250**	4.34E-01	1.34E-03	0.00E+00	4.34E-01
250≤R<500	**0.040**	6.94E-02	2.15E-04	0.00E+00	6.94E-02
500≤R<1000	**0.011**	1.91E-02	5.91E-05	0.00E+00	1.91E-02
1000≤R<1500	**0.003**	5.20E-03	1.61E-05	0.00E+00	5.20E-03
1500≤R<2000	**0.002**	3.47E-03	1.07E-05	0.00E+00	3.47E-03
2000<R	**0.001**	1.73E-03	5.37E-06	0.00E+00	1.73E-03

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Mobile Source Diesel (Trucks visiting TM6467)

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	7.51E-01	6.80E-04	1.79E-04	1.73E+00	5.37E-03	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**1.73E+00**	**5.37E-03**	**0.00E+00**

TM6467 (Bonadelle Homes) Residential Development Project—Health Risk Screening Analysis for Project Operations

Diesel Truck Trips

	Trucks Onsite Daily	Average Daily Truck Trips
Heavy Truck Trips	**22.98**	**45.96**

Truck Assumptions

Trucks Onsite per Day	22.98
Trucks Onsite per Year	8,387.4
Idling Events per Truck per day	2
Idling Time per Event (minutes)	15
Idling Minutes/Year	251,622
Idling Hours/Year	4,194

	Truck Entering	Trucks Exiting	Total
Average Travel Distance Onsite (ft)	660	660	1,320

(0.25 mile on-site and 0.25 mile off-site assumed for this localized assessment - residential project)

	Miles/Trip	Truck Trips/Year	Miles/Year
Offsite Miles Estimate	0.50	16,774.8	8,387.4

	Distance Onsite (ft) in and out	Distance to Receptor Meters	Direction to Receptor	Idling Emissions (lbs/year)	Running Emissions (lbs/yr)	Total Truck Emissions (lbs/year)	Grand Total (lbs/yr)	Average Lbs/Day	Max Lbs/Day*	Max lbs/Hr
Emissions	1,320	<100 M	All	0.02	0.73	**0.7510**	0.75	0.00206	0.00617	0.00051

*Max daily assumed to be 3 times the daily average. Max hr based on 12 hrs/day

Running Emission Calculations **EMFAC2021 Rates**

Idling Emission Rate for Diesel g/day	0.03057
g/lb conversion factor	0.00220
HDT Onsite Running Emissions 5 mph g/mile	0.09473
HDT Running Emissions Onroad 5-25 mph	0.03120

EMFAC2021 PM10 running emissions Aggregated Fleet Age in 2025

EMFAC2021 Average Running Emissions

	PM10_RUNEX 5-25 MPH	PM10 RUNEX 5 MPH
Weighted Averages (Based on Project Fleet)	**0.03120**	**0.09473**

	Distance (Feet)	Distance (Miles)	Miles/Year/ Truck	Trucks/Day	Emission (g/mi)	Emissions g/year	Emission lbs/year	Emissions lbs/hour
Onsite Running Emissions	1,320.00	0.25	91.3	23.0	0.09473	198.64	0.44	9.998E-05

	Distance (Feet)	Miles/ Round Trip	Miles/Year/ Truck	Trucks/Day	Emissions Rate (g/mi)	Emissions g/year	Emission lbs/year	Emissions lbs/hour
Offsite Running Emissions	2,640.00	0.50	182.50	23.0	0.03120	130.86	0.29	6.586E-05
						Total Running	**0.72642**	**0.00017**

Total Emissions	**Lbs/Year**	**Max Lbs/Hours**
Onsite Running Emissions	0.4379	0.0001000
Offsite Running Emissions	0.2885	0.0000659
Idling Emissions	0.0246	0.0005144
Total	**0.7510200**	**0.0006802**

Health Risk Prioritization Results (Receptor 0-100 M)

	Cancer Score	Chronic Score	Acute Score
Prioritization Score Truck Run and Idle	1.73486	0.00537	0.00000

Operational Fuel Calculation—Project-generated Operational Trips

Daily Truck Trips

TM6467 (Bonadelle Homes) Residential Development Project - Buildout Operations in the Earliest Operational Year (2025)

	Weekday	Saturday	Sunday
Trips per Day	1,528	1,536	1,374

	Total Daily Project Trips
Total Average Daily Trips (All Vehicles)	**1,507**

By Vehicle Type (Average Fleet Mix for the 2025 Operational Year for Passenger Vehicles)

	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Percentage	0.524400	0.212000	0.167700	0.056300	0.000800	0.000900	0.007600	0.021200	0.000000	0.004300	0.002500	0.000100	0.002200
Daily Trips	790.182401	319.448263	252.695631	84.834609	1.205465	1.356148	11.451919	31.944826	0.000000	6.479375	3.767079	0.150683	3.315029

Heavy Trucks Only	Trips
LHD1	1.205
LHD2	1.356
MHD	11.452
HHD	31.945
Heavy Trucks Total	45.958

On-site Truck Running and Idling Emissions for the Health Risk Screening Analysis—TM6467 (Bonadelle Homes) Residential Development Project

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: Fresno
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed, kWh/mile for Energy Consumption, gallon/mile for Fuel Consumption. PHEV calculated based on total VMT.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
Fresno	2025	HHDT	Aggregate	5	Diesel	857.4503495	17.51587214	0.102468249	0.107101408	3407.996547	0.024967783	0.536931244	0.537549512	0.611959201	1.301614027	0.032271689
Fresno	2025	HHDT	Aggregate	10	Diesel	13969.83279	8.65398252	0.017641697	0.018439376	2913.839393	0.004938893	0.459076583	0.106333018	0.121052047	0.696227094	0.027592317
Fresno	2025	HHDT	Aggregate	15	Diesel	32029.86622	5.437358417	0.009268271	0.009687342	2340.94009	0.001920525	0.368816064	0.041348381	0.047071984	0.375514473	0.022167303
Fresno	2025	HHDT	Aggregate	20	Diesel	57194.44454	3.649101502	0.006152006	0.006430173	2015.922125	0.00102755	0.317609352	0.022122861	0.025185193	0.242174401	0.019089577
Fresno	2025	HHDT	Aggregate	25	Diesel	38307.83276	3.233244633	0.006760988	0.007066689	1837.375886	0.000896407	0.289479319	0.019299389	0.021970886	0.201257942	0.017398851
						Total	38.48955921	0.142291211	0.148724988	12516.07404	0.033751157	1.971912562	0.726653162	0.827239311	2.816787937	0.118519737
Fresno	2025	LHDT1	Aggregate	5	Diesel	6751.530575	2.397229884	0.097406458	0.101810746	1197.553449	0.02039803	0.188675034	0.439157572	0.499951699	1.42410766	0.011347428
Fresno	2025	LHDT1	Aggregate	10	Diesel	22451.91635	2.218190698	0.079550778	0.083147711	1037.93604	0.016705383	0.163527246	0.359657064	0.409445656	1.134530715	0.009834971
Fresno	2025	LHDT1	Aggregate	15	Diesel	48624.41884	2.066767668	0.065430581	0.068389062	872.8093262	0.013854448	0.137511465	0.298278112	0.339569799	0.910699412	0.008270312
Fresno	2025	LHDT1	Aggregate	20	Diesel	53308.06867	1.936266316	0.053994169	0.056435546	755.0549701	0.011573023	0.118959218	0.249160363	0.283652508	0.732359417	0.00715453
Fresno	2025	LHDT1	Aggregate	25	Diesel	57053.85517	1.836519452	0.044648588	0.046667399	656.5354517	0.009707638	0.103437428	0.20899972	0.237932286	0.588243728	0.006221007
						Total	10.45497402	0.341030573	0.356450463	4519.889237	0.072238521	0.71211039	1.555252831	1.770551947	4.789940932	0.042828248
Fresno	2025	LHDT2	Aggregate	5	Diesel	2578.872246	2.204346482	0.087644898	0.091607811	1416.164313	0.018331403	0.223117264	0.394664315	0.449299084	1.270634549	0.013418877
Fresno	2025	LHDT2	Aggregate	10	Diesel	8575.925608	2.00497901	0.072325003	0.075595219	1235.016665	0.015266185	0.194577378	0.328671971	0.374171188	1.02350789	0.011702411
Fresno	2025	LHDT2	Aggregate	15	Diesel	18572.99805	1.834120384	0.059968561	0.062680074	1050.998741	0.012836735	0.16558528	0.276367348	0.314625851	0.826923089	0.009958747
Fresno	2025	LHDT2	Aggregate	20	Diesel	20362.00492	1.685790151	0.04980263	0.052054484	909.7801851	0.010846393	0.143336239	0.233516464	0.265842969	0.666547641	0.00862063
Fresno	2025	LHDT2	Aggregate	25	Diesel	21792.7775	1.568566168	0.04139142	0.043262957	790.8279193	0.009184282	0.124595261	0.19773218	0.225104941	0.534408719	0.007493496
						Total	9.297802194	0.311132513	0.325200544	5402.787823	0.066464998	0.851211422	1.430952279	1.629044034	4.322021888	0.05119416
Fresno	2025	MHDT	Aggregate	5	Diesel	914.5255078	8.31258318	0.057268373	0.059857794	2352.7897	0.013591775	0.370682975	0.292627188	0.333133779	0.503326638	0.022279512
Fresno	2025	MHDT	Aggregate	10	Diesel	9656.337095	3.311432272	0.031402369	0.032822245	1976.654318	0.006747503	0.311422693	0.145271898	0.165380998	0.366664561	0.018717734
Fresno	2025	MHDT	Aggregate	15	Diesel	16936.82856	2.020978917	0.019201516	0.020069723	1553.280671	0.00322682	0.244720002	0.069472558	0.079089219	0.229497892	0.014708639
Fresno	2025	MHDT	Aggregate	20	Diesel	22472.26029	1.513133134	0.012062961	0.012608395	1322.621735	0.001562347	0.208379593	0.033636897	0.038293047	0.162479673	0.012524437
Fresno	2025	MHDT	Aggregate	25	Diesel	30544.12223	1.255039727	0.009432078	0.009858555	1193.191921	0.001126752	0.187987873	0.024258664	0.027616643	0.130453078	0.011298814
						Total	16.41316723	0.129367297	0.135216712	8398.538345	0.026255198	1.323193137	0.565267206	0.643513686	1.392421843	0.079529136

Running Emissions 5-25 MPH Averaged

	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
HHDT	**7.6979**	**0.0285**	**0.0297**	**2503.2148**	**0.0068**	**0.3944**	**0.1453**	**0.1654**	**0.5634**	**0.0237**
LHDT1	**2.0910**	**0.0682**	**0.0713**	**903.9778**	**0.0144**	**0.1424**	**0.3111**	**0.3541**	**0.9580**	**0.0086**
LHDT2	**1.8596**	**0.0622**	**0.0650**	**1080.5576**	**0.0133**	**0.1702**	**0.2862**	**0.3258**	**0.8644**	**0.0102**
MHDT	**3.2826**	**0.0259**	**0.0270**	**1679.7077**	**0.0053**	**0.2646**	**0.1131**	**0.1287**	**0.2785**	**0.0159**

HHDT		**LHDT1**		**LHDT2**		**MHDT**	
Localized Miles per Trip	0.50	Miles per Trip	0.50	Miles per Trip	0.50	Miles per Trip	0.50
Daily Trucks	15.97	Daily Trucks	0.60	Daily Trucks	0.68	Daily Trucks	5.73
Daily Trips	31.94	Daily Trips	1.21	Daily Trips	1.36	Daily Trips	11.45

Onsite Truck Max Daily Emissions	**ROG**	**NO_X**	**CO**	**SO2**	**PM10**	**PM2.5**
HHDT (g/day)	2.3213	122.9542	8.9982	0.3786	0.4751	0.4545
LHDT1 (g/day)	0.1875	1.2603	0.5774	0.0052	0.0430	0.0411
LHDT2 (g/day)	0.1941	1.2609	0.5861	0.0069	0.0441	0.0422
MHDT (g/day)	0.6473	18.7962	1.5946	0.0911	0.1548	0.1482
Total Trucks (g/day)	3.3502	144.2717	11.7563	0.4818	0.7170	0.6860
Running Emissions lbs/day	0.0074	0.3181	0.0259	0.0011	0.0016	0.0015
Idling Emissions Lbs/Day	0.238	2.912	3.547	0.005	0.000	0.000
Total Emissions/Day	**0.246**	**3.230**	**3.573**	**0.0064**	**0.002**	**0.002**

g/lb conversion factor		0.00220

Idling Minutes/Day Per Truck	15
Max Trucks per Day	22.98
Number Idling Trucks per Day	22.98
Max Trucks per Day—HHDT	15.97
Max Trucks per Day—LHDT1	0.60
Max Trucks per Day—LHDT2	0.68
Max Trucks per Day—MHDT	5.73

Idling Emissions	**Calendar Year**	**Season**	**Region**	**Vehicle Category**	**Fuel**	**Pollutant**	**g/vehicle/day**	**g/day**	**Max lbs/day**
IDLEX	2025	Annual	FRESNO	HHDT	DSL	ROG	6.6763	106.6364	0.235093
IDLEX	2025	Annual	FRESNO	LHDT1	DSL	ROG	0.1098	0.0662	0.000146
IDLEX	2025	Annual	FRESNO	LHDT2	DSL	ROG	0.1098	0.0744	0.000164
IDLEX	2025	Annual	FRESNO	MHDT	DSL	ROG	0.2262	1.2950	0.002855
IDLEX	2025	Annual	FRESNO	HHDT	DSL	NOx	78.1690	1,248.5483	2.752578
IDLEX	2025	Annual	FRESNO	LHDT1	DSL	NOx	2.1244	1.2804	0.002823
IDLEX	2025	Annual	FRESNO	LHDT2	DSL	NOx	2.0745	1.4067	0.003101
IDLEX	2025	Annual	FRESNO	MHDT	DSL	NOx	12.1612	69.6348	0.153518
IDLEX	2025	Annual	FRESNO	HHDT	DSL	CO	98.0188	1,565.5966	3.451550
IDLEX	2025	Annual	FRESNO	LHDT1	DSL	CO	0.9097	0.5483	0.001209
IDLEX	2025	Annual	FRESNO	LHDT2	DSL	CO	0.9097	0.6169	0.001360
IDLEX	2025	Annual	FRESNO	MHDT	DSL	CO	7.3364	42.0082	0.092612
IDLEX	2025	Annual	FRESNO	HHDT	DSL	SO2	0.1445	2.3083	0.005089
IDLEX	2025	Annual	FRESNO	LHDT1	DSL	SO2	0.0013	0.0008	0.000002
IDLEX	2025	Annual	FRESNO	LHDT2	DSL	SO2	0.0020	0.0014	0.000003
IDLEX	2025	Annual	FRESNO	MHDT	DSL	SO2	0.0206	0.1181	0.000260
IDLEX	2025	Annual	FRESNO	HHDT	DSL	PM10	0.0334	0.0334	0.000074
IDLEX	2025	Annual	FRESNO	LHDT1	DSL	PM10	0.0278	0.0278	0.000061
IDLEX	2025	Annual	FRESNO	LHDT2	DSL	PM10	0.0278	0.0278	0.000061
IDLEX	2025	Annual	FRESNO	MHDT	DSL	PM10	0.0233	0.0233	0.000051
IDLEX	2025	Annual	FRESNO	HHDT	DSL	PM2.5	0.0320	0.0320	0.000070
IDLEX	2025	Annual	FRESNO	LHDT1	DSL	PM2.5	0.0266	0.0266	0.000059
IDLEX	2025	Annual	FRESNO	LHDT2	DSL	PM2.5	0.0266	0.0266	0.000059
IDLEX	2025	Annual	FRESNO	MHDT	DSL	PM2.5	0.0223	0.0223	0.000049

For Weighted Average for Project (5-25 MPH)

	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
Weighted Average Using Project Truck Fleet Percentages										
HHDT	7.697911843	0.028458242	0.029744998	2503.214808	0.006750231	0.394382512	0.145330632	0.165447862	0.563357587	0.023703947
LHDT1	2.090994804	0.068206115	0.071290093	903.9778474	0.014447704	0.142422078	0.311050566	0.354110389	0.957988186	0.00856565
LHDT2	1.859560439	0.062226503	0.065040109	1080.557565	0.013293	0.170242284	0.286190456	0.325808807	0.864404378	0.010238832
MHDT	3.282633446	0.025873459	0.027043342	1679.707669	0.00525104	0.264638627	0.113053441	0.128702737	0.278484369	0.015905827
HHDT	122.9542283	0.4545468	0.47509939	39982.3811	0.107817486	6.299240425	2.321280902	2.642601608	8.998180133	0.37860924
LHDT1	1.260310675	0.041110047	0.042968861	544.8568925	0.008708102	0.085842425	0.187480308	0.213433866	0.577410683	0.005162796
LHDT2	1.260919851	0.042194182	0.044102016	732.6981444	0.009013639	0.115436891	0.194058348	0.220922527	0.586130257	0.006942687
MHDT	18.79622593	0.148150378	0.154849081	9617.937965	0.030067239	1.515310043	0.647339418	0.736946651	1.594590196	0.091076121
Total	144.2716847	0.686001408	0.717019347	50877.8741	0.155606466	8.015829785	3.350158976	3.813904653	11.75631127	0.481790844
Weighted Average	6.278365426	0.029853173	0.031203001	2214.085781	0.006771629	0.348830116	0.145791063	0.165972187	0.5116071	0.020966408

Max Trucks per Day—HHDT	15.97
Max Trucks per Day—LHDT1	0.60
Max Trucks per Day—LHDT2	0.68
Max Trucks per Day—MHDT	5.73
Total	22.98

For Weighted Average for Project (5 MPH)

	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
Weighted Average Using Project Truck Fleet Percentages										
HHDT	17.51587214	0.102468249	0.107101408	3407.996547	0.024967783	0.536931244	0.537549512	0.611959201	1.301614027	0.032271689
LHDT1	2.397229884	0.097406458	0.101810746	1197.553449	0.02039803	0.188675034	0.439157572	0.499951699	1.42410766	0.011347428
LHDT2	2.204346482	0.087644898	0.091607811	1416.164313	0.018331403	0.223117264	0.394664315	0.449299084	1.270634549	0.013418877
MHDT	8.31258318	0.057268373	0.059857794	2352.7897	0.013591775	0.370682975	0.292627188	0.333133779	0.503326638	0.022279512
HHDT	279.7707464	1.636665201	1.710667939	54433.92884	0.398795739	8.576087656	8.585962898	9.774465185	20.78991699	0.515456755
LHDT1	1.444888532	0.058710045	0.061364653	721.8044699	0.012294557	0.113720588	0.264694573	0.301337173	0.858356072	0.006839464
LHDT2	1.494710351	0.059429739	0.062116888	960.2644026	0.01243005	0.151290048	0.267611667	0.304658091	0.861584432	0.009098993
MHDT	47.59751404	0.327916379	0.342743303	13471.97837	0.077825952	2.122515678	1.675571409	1.907510502	2.882027907	0.127571579
Total	330.3078593	2.082721364	2.176892782	69587.97608	0.501346298	10.96361397	10.79384055	12.28797095	25.3918854	0.658966792
Weighted Average	14.37422352	0.09063515	0.094733269	3028.305546	0.021817415	0.477110772	0.469722631	0.534743682	1.104995313	0.02867669

Max Trucks per Day—HHDT	15.97
Max Trucks per Day—LHDT1	0.60
Max Trucks per Day—LHDT2	0.68
Max Trucks per Day—MHDT	5.73
Total	22.98

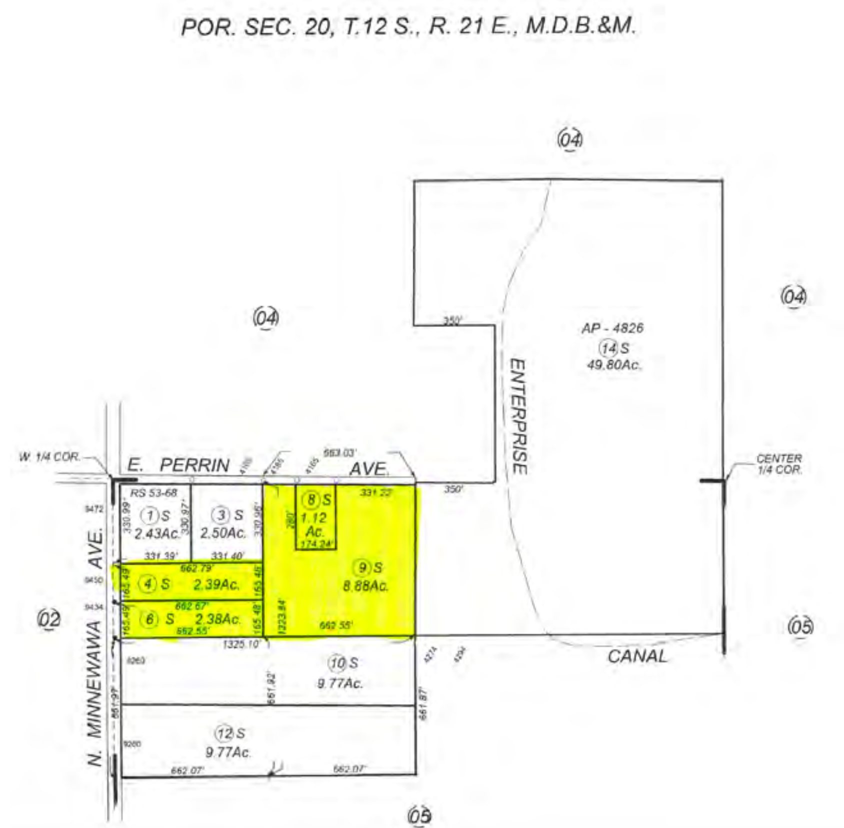
For Weighted Average for Project (Idle)

	PM10_IDLEX (g/d)
Weighted Average Using Project Truck Fleet Percentages	
HHDT	0.033404105
LHDT1	0.027772597
LHDT2	0.02777247
MHDT	0.023309869
HHDT	0.533544165
LHDT1	0.016739449
LHDT2	0.018831794
MHDT	0.133471363
Total	0.70258677
Weighted Average	0.030574929

BIOLOGICAL RESOURCE ASSESSMENT

TM 6467 Perrin Avenue at Minnewawa Ave.
Clovis, California

APNs: 049-022-017 (20.12 acres)



Prepared for:

Bonadelle Neighborhoods

ARGONAUT
ECOLOGICAL
CONSULTING, INC.

November 22, 2023

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1.0 EXECUTIVE SUMMARY AND INTRODUCTION

EXECUTIVE SUMMARY

Argonaut Ecological, Inc. conducted a biological evaluation of an approximately 15-acre site near Minnewawa Avenue and Perrin Avenue in Clovis, California (See Figure 1).

The assessment included evaluating the types of habitats present and sensitive species associated with those habitats. The biological evaluation focused on mapping existing habitat types based on a site walk and a review of public and commercial databases, aerial photographs (current and historical), and other published information and available data.

The Study Area is in an area that was historically in agricultural production. The Study Area is developed with rural residential homes, pasture (previously irrigated), landscaped areas, and a horse paddock. There are no sensitive habitats within the Study Area, including waters/wetlands or critical habitat for species of concern. The Study Area potentially provides a habitat for nesting raptors (burrowing owl) and migratory birds.

1.1 INTRODUCTION

Argonaut conducted a biological resource assessment of the approximately 15-acre site. The property has three homes (one vacant) within the Study Area. Bonadelle Neighborhoods proposes to build residential homes. The timing and phasing would depend on market conditions.

1.2 STUDY OBJECTIVES

This report describes the biological resources present within and adjacent to the Study Area, describes the area's biological characteristics, and evaluates the Study Area's likelihood to support sensitive biological resources (such as wetlands, creeks/drainages, and special status species). This evaluation relied on available literature, aerial photography, historic topographic and aerial maps, and a site visit. For this study, wetland habitat includes those areas possibly considered "Waters of the U.S." by the U.S. Army Corps of Engineers (Army Corps) or Waters of the State of California. Section 1.2.1 describes wetlands as a subset of "Waters of the U.S." under the Federal Clean Water Act (CWA).

This report assesses the project's potential effects on biological resources and evaluates whether any associated regulatory approvals or permits are required. This report also evaluates the potential impacts that site development may have on protected habitat, species protected by the Federal Endangered Species Act (ESA), or those protected under the California Environmental Quality Act (CEQA) or California Endangered Species Act

1.3 REGULATORY JURISDICTION AND BACKGROUND

Several agencies share regulatory jurisdiction over biological resources. The following is a brief description of the primary jurisdiction of each agency.

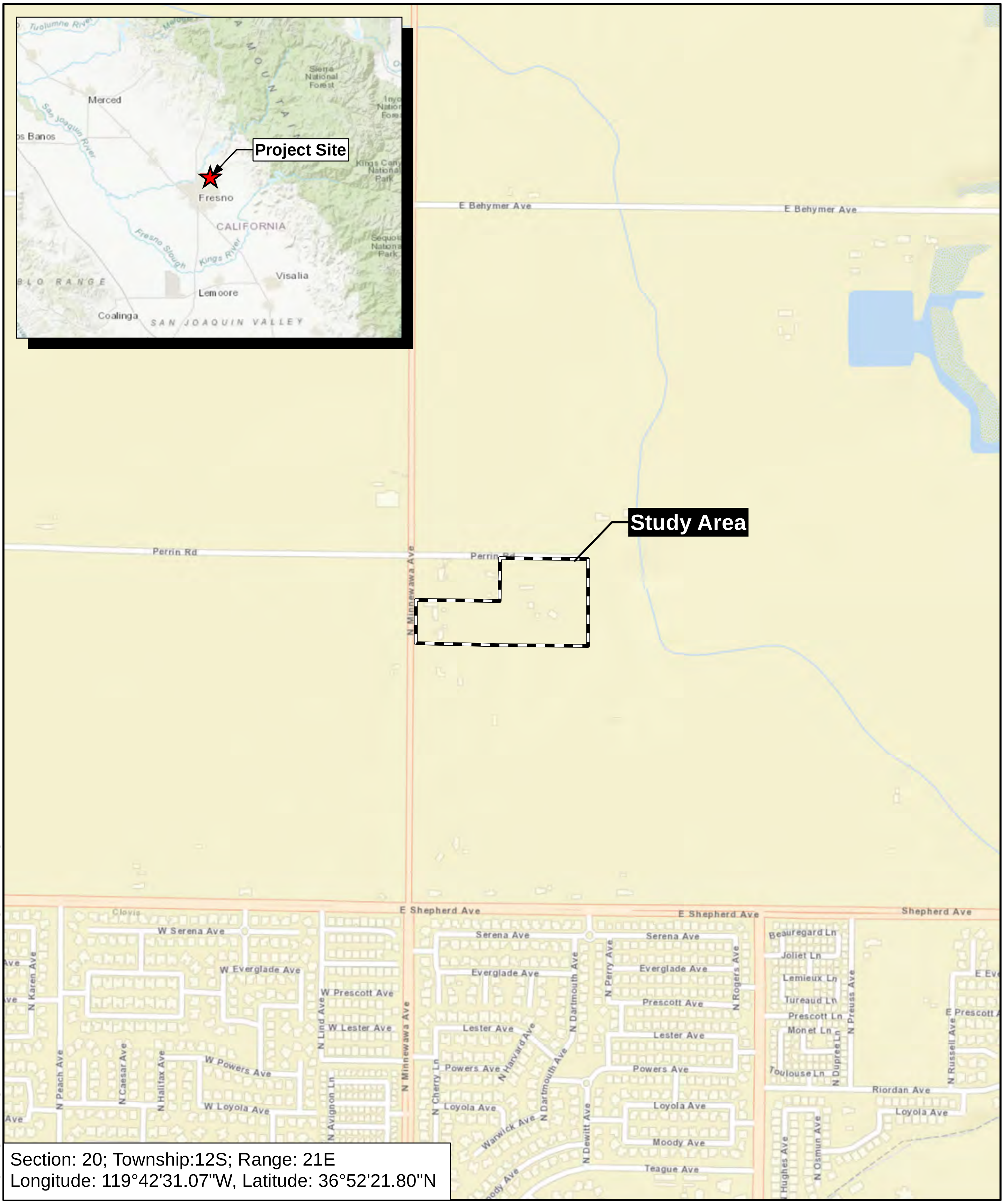

Figure 1

REGIONAL LOCATION AND VICINITY

TM 6467 PERRIN AVE AND MINNEWAWA

Fresno County, CA

ARGONAUT ECOLOGICAL CONSULTING INC.

Basemap Source: ESRI (2023)

Wetland Protection

U.S. Army Corps of Engineers

Wetlands are a type of water in the U.S. The U.S. Army Corps of Engineers (Army Corps) and the U.S. Environmental Protection Agency (EPA) regulate the placement of fill into the Waters of the U.S. under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbor Act. For this purpose, "Waters of the U.S." is legally defined under Section 404 of the Federal CWA and includes interstate streams, creeks, and adjacent wetlands. The Army Corps defines wetlands as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (Environmental Laboratory 1987). In California, seasonally inundated areas that meet the criteria of all three wetland parameters (soils, hydrology, and vegetation), as defined in the recently issued Wetland Delineation Manual for the Arid West (USACE 2006), are also considered jurisdictional wetlands.

Since 2001, several U.S. Supreme Court rulings regarding the regulation of isolated, intrastate Waters by the Army Corps have limited the scope of federal jurisdiction under the CWA and excluded many California wetlands from federal regulation.

In December 2019, the U.S. EPA and the U.S. Army published the final rule to repeal the 2015 Clean Water Rule. The "Clean Water Rule" clarified what constitutes Waters of the U.S., and presumably, more precisely defined and made permitting more predictable, thus less costly, and more straightforward.

After several challenges to the "Clean Water Rule," the U.S. EPA and the Department of the Army proposed the pre-2015 (pre-Obama-era rules) definition "of Waters of the United States," updated to reflect consideration of Supreme Court decisions. The new rule went into effect on May 23, 2023; however, on May 25, 2023, the U.S. Supreme Court issued a decision in the case of *Sackett v. Environmental Protection Agency that rolled back the definition of Waters of the U.S. to better align with the original definition as included in the Rapanos decision*. The new definition limits "Waters" as "limited geographic[al] features that are described in ordinary parlance as 'streams, oceans, rivers, and lakes" and to "adjacent wetlands that are 'indistinguishable' from those bodies of water due to a continuous surface connection." The prior use of a "significant nexus" was set aside by the Court.

Waters typically do not include prior converted cropland (those areas converted before December 23, 1985). Notwithstanding the classification of a wetland as a prior converted cropland by any federal agency for the CWA, the final authority to determine jurisdiction remains with the U.S. EPA

California State Water Resources Control Board

Since 1993, California has had a Wetlands Conservation Policy (a.k.a. Executive Order W-51 59- 93). It is commonly called the *No Net Loss policy* for wetlands, establishing a state mandate for developing and adopting a policy framework and strategy to protect the State's wetland ecosystems. The policy was to be implemented voluntarily and was expressly not to be implemented on a "project-by-project" basis (See EO W-59-93, Section III).

In 2020, California adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. The State definition of wetland differs from the Federal definition in that the state definition may include areas with no vegetation, assuming the other criteria are present. Wetlands of the State include 1) natural wetlands, 2) wetlands created by modification of Waters of the State (at any point in history), and 3) artificial wetlands that meet specific criteria. The State definition only exempts a few types of Waters. Water features excluded from the State's definition include industrial or municipal wastewater, certain stormwater treatment facilities, agricultural crop irrigation, industrial processing or cooling, and fields flooded for rice growing.

Listed Protected Species and Habitat Protection

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) implements the Migratory Bird Treaty Act (16 USC Section 703-711), Bald and Golden Eagle Protection Act (16 United States Code [USC] Section 668), and Federal Endangered Species Act (FESA; 16 USC § 153 *et seq.)*.

The **Migratory Bird Treaty Act (MBTA**) was first enacted in 1918 to protect migratory birds between the United States and Great Britain (acting on behalf of Canada). The MBTA makes it illegal for anyone to take, possess, import, transport, purchase, barter, offer for sale, or purchase any migratory birds, nests, or eggs unless a federal agency has issued a permit. The USFWS has statutory authority and responsibility for enforcing the MBTA. This act was revised in 2004 to include all species native to the U.S. or its territories due to natural biological or ecological processes (70 FR 12710, March 15, 2005). The MBTA does not include nonnative species whose occurrences in the U.S. result solely from intentional or unintentional human introduction. The USFWS maintains a list of bird species not protected under the MBTA.

In January 2021, the USFWS published a new rule in the Federal Register. Under the rule change, the unintentional killing of migratory birds does not violate the MBTA. Only the intentional "pursuing, hunting, taking, capturing, killing, or attempting to do the same ... directed at migratory birds, their nests, or their eggs" would be illegal under the changes.

The **Federal Endangered Species Act (FESA)** prohibits "take" "of any federally listed wildlife species (the destruction of federally listed plants on private property is not prohibited and does not require a permit**).** "Take" under the federal definition means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. "Incidental take" is harm or death that may occur during the implementation of an otherwise lawful activity. "Candidate Species"have the full protection of FESA. However, the USFWS advises project applicants that it is prudent to address these species since they could be elevated to "listed status" before the completion of projects with long planning or development schedules.

The Projects that would result in "take" "of any federally-listed threatened or endangered species can obtain authorization from the USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA. The authorization process determines if a project would jeopardize a ‘listed species' continued existence and what mitigation measures would be required to avoid jeopardizing the species.

An Incidental Take Permit (ITP) or Take Permit is required when an activity would either kill, harm, harass or interrupt a listed species' breeding or nesting. The FESA definition of "harm" is somewhat less definitive since it includes ubiquitous activities. In 1999, the USFWS clarified the term "harm" as it applies to the ESA in the Federal Register. As stated, the final rule defined the term "harm" "to include any act that causes actual harm (kills or injures fish or wildlife) and emphasizes that such actions may have significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) is a Trustee Agency responsible under the California Environmental Quality Act (CEQA) for reviewing and evaluating project impacts on plant and wildlife resources. Under the Fish and Game Code Section 1802, the CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitats necessary for biologically sustainable populations. The California Fish and Game Code also provides authority for the CDFW to regulate projects that could result in the "take" of any species listed by the State as threatened or endangered (Section 2081). CDFW also has authority over all state streams, as described below.

Perennial and intermittent streams also fall under the jurisdiction of CDFW according to Sections 1601-1603 of the Fish and Game Code (Streambed Alteration Agreements). CDFW's jurisdictional extent includes work within the stream zone, including the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream, or lake. Before issuing a 1601 or 1603 Streambed Alteration Agreement, the CDFW must demonstrate compliance with CEQA. In most cases, CDFW relies on the CEQA review performed by the local lead agency. However, in cases where no CEQA review was required for the project, CDFW would act as the lead agency under CEQA.

The CDFW also has the authority to protect state-listed species issues under Section 2081 Incidental Take Permit if a project has the potential to negatively affect state-protected plant or animal species or their habitats, either directly or indirectly. Protected species include those "listed" by the State as endangered or threatened. Besides listed species, other species protection categories include "fully protected" and California Species of Special Concern (CSC). Adverse impacts to species that are "fully protected" are prohibited.

Under the California Fish & Game Code (FGC Section 3503), "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird…." Birds of prey (falcons, hawks, owls, and eagles) get extra protection under the law (FGC Section 3503.5).

As with USFWS, CDFW does not have the authority to require a landowner to apply for an ITP authorizing take. Instead, the landowner is legally obligated to avoid taking state-listed species if it does not seek an ITP. CDFW (and USFWS) can initiate an enforcement action if they believe that an illegal take has occurred or will occur.

California Endangered Species Act

The California Endangered Species Act (CESA) protects candidate plants and animal species and those listed under CESA as rare, threatened, or endangered. CESA prohibits the taking of any such species unless authorized. Section 2081 authorizes the State to issue ITPs. The state definition of taking applies only to acts that result in death or adverse impacts on protected species. The CESA mirrors the federal regulation as it relates to "take"; however, there is no State equivalent definition of "harm" or "harass." Incidental take is also not defined by the CESA statute or regulation. Unlike FESA, CESA does qualify that incidental take "is not prohibited if it is the result of an act that occurs on a farm or ranch during an otherwise lawful routine and ongoing agricultural activity." Where disagreement occurs (and in some cases, this has been the subject of court cases) is in the common understanding of "routine and ongoing agricultural activity."

California Environmental Quality Act

The CEQA Guidelines require a review of projects to determine their environmental effects and identify mitigation measures to reduce impacts to a less than significant level. The Guidelines state that an effect may be significant if it affects rare and endangered species. Section 15380 of the Guidelines defines *rare* to include listed species and allows agencies to consider rare species other than those designated as State or Federal threatened or endangered but that meet the standards for rare under the Federal or State endangered species acts. On this basis, plants designated as rare by non-regulatory organizations (e.g., California Native Plant Society), species of special concern defined by CDFW, candidate species defined by USFWS, and other designations must be considered in CEQA analyses.

Land Use Entitlements

City of Clovis

The Project site is located in Madera County. The City is responsible for all local land-use decisions within its jurisdiction under CEQA and would serve as the lead agency. As the lead agency, the City will consider the recommendations of other responsible agencies during the CEQA review.

Figure 2

STUDY AREA/AERIAL

TM 6467 PERRIN AVE AND MINNEWAWA

Fresno County, CA

ARGONAUT ECOLOGICAL CONSULTING INC.

Aerial Source: Google Earth (06/2022)

3.0 PHYSICAL RESOURCES, RESULTS, AND CONCLUSIONS

Section 3.1, below, describes the physical features (i.e., land use, soils, vegetation, hydrology, etc.) and the study area's biological features. The physical components and land use strongly influence the types of plants and animals present. This section also describes the habitats present and the specific biological resources observed during the site review.

Section 3.2 presents conclusions, and Section 3.3 contains recommended avoidance and minimization measures to avoid potential impacts.

The following is not an exhaustive inventory of plants and animals present. Instead, the discussion provides sufficient information to characterize the habitat and habitat components present on site. This field survey identified the biological resources present. The biological evaluation discusses the habitat present and the potential for that habitat to support any species considered unique, sensitive, or protected by current law. The conclusion section (3.2) summarizes the results of the data review, fieldwork, and evaluation of biological resources and potential impacts. The conclusion sections also include recommendations for measures to minimize any potential impacts.

3.1 PHYSICAL RESOURCES

Climate

The Study Area climate is typical of the central San Joaquin Valley, with long, hot, dry summers and cool, mild winters. In the winter, rainfall averages approximately 9.99 inches per year, falling mainly between November and April (Western Regional Climate Center, 2004). During 2021, the Fresno region had a total of 8.22 inches of rainfall; in 2022, there was a total of 5.43 inches. Since the fall of 2022, the regional rainfall near Fresno region totaled 21 inches (through May 2023).

Topography, Drainage, and Soils

The Study Area lies within the Central Valley and is 375 feet (above mean sea level). The elevation has remained roughly the same since the early 1900s. The Study Area slopes toward the southwest. Figure 3 shows a topographic map of the area from 1922.

Land Use

The Study Area is historically rural agricultural in Clovis, but the existing homes sites have been there since 1993. The property is currently zoned as AE-20 (agricultural). The surrounding land uses is agriculture.

Figure 3

Topographic Map 1922

ARGONAUT ECOLOGICAL CONSULTING, INC.

There are a few rural residential homes and three residences within the Study Area. One of the homes is vacant

Habitat

There are several California habitat classification systems. Most classification systems describe natural communities without established developed or agricultural habitat classifications. CALVEG is a USDA Forest Service product providing a comprehensive spatial dataset of existing vegetation covering California. The data were created using a combination of automated systematic procedures, remote sensing classification, photo editing, and field-based observations. Analyses are based "on a crosswalk (combination) of the CALVEG classifications to the California Wildlife Habitat Relationships (CWHR)." Calveg lists the site as an "Agricultural/Non-native/Ruderal" habitat and indicates the Study Area previously was planted in orchards. Attachment "A" provides photographs of the Study Area, and Figure 4 shows the habitats present.

The onsite habitat is rural residential, including landscaped areas surrounding the existing home sites, ruderal (disturbed habitat),a horse paddock, and pastureland previously irrigated). The pastureland is characterized by non-native weedy species (dove weed, wild oats, storks 'bill, brome, and mustard. There is a hedge row of wild rose along a portion of the southern property boundary. The property immediately south of the Study Area is under development (construction). There are a few scattered old orchard trees, a Cyprus tree, and numerous landscape trees (Japanese zelkova, glossy privet, white mulberry, etc.) in the Study Area. There are also areas of bare ground (horse paddock), paved areas (driveways), and a few large mature trees (eucalyptus, locust, and olive). In the northern portion of the Study Area, there is a landscape mound in the front yard of the vacant home that supports a colony of ground squirrels. No evidence of burrowing owl was found, but future occupation is possible given the presence of suitable burrows.

Bird species observed include mourning dove, starling, and crow. There are several large mature trees within and adjacent to the Study Area. There is also a hedge row of rose bushes along the southern edge of the Study Area and other shrubs within the site that could be used for nesting habitat for migratory species

Waters/Wetland

According to the National Wetland Inventory (NWI) Map there are no mapped Waters (streams, drainages, wetlands) within or near the Study Area. The entire Study Area was walked to look for any evidence of potential wetlands/waters or any other aquatic habitat (either perennial or seasonal), and none were present.

A dry stock pond is located in the southeast corner of the Study Area. This feature was excavated in an upland area sometime between 1999-2022. The surrounding pastureland appears to be irrigated (based on a review of aerial photographs from 2002-20222). There is no wetland habitat within this dry feature. The soils were inspected to determine if they were hydric (wetland soils), and no hydric soils were present. This feature is not a wetland.

Special Status Species

A query of the California Natural Diversity Database (CNDDB) (Attachment B) and the USFWS IPaC was performed to determine which special status species could be present within the Study Area. No critical habitat exists for any species within or near the Study Area. The CNDDB Bios mapping is shown in Figure 5. This map shows the location of known records of special status species near the Study Area, and Table 1 includes a summary of the CNDDB query results.

Birds

The CNDDB and the IPaC include bird species potentially present within or near the Study Area, including migratory birds. Swainson's hawk (*Buteo swainsoni)* is a large raptor, a State threatened species that nests in mature trees and forages within agricultural areas. Burrowing owl **(***Athenea cunicularia)* is a small ground-nesting owl (California species of special concern) that depends on ground-burrowing mammals for burrows for nesting. Some suitable habitat is present for this species.

Amphibians, Reptiles, and Invertebrates

Numerous invertebrate species are included in the CNDDB. No suitable habitat is present for the identified species.

Plants

The CNDDB includes four special status species listed within the region. No suitable habitat exists for any special-status plant species within or near the Study Area.

Figure 4

HABITAT MAP

TM 6467 PERRIN AVE AND MINNEWAWA

Fresno County, CA

ARGONAUT ECOLOGICAL CONSULTING INC.

Aerial Source: Google Earth (06/2022)

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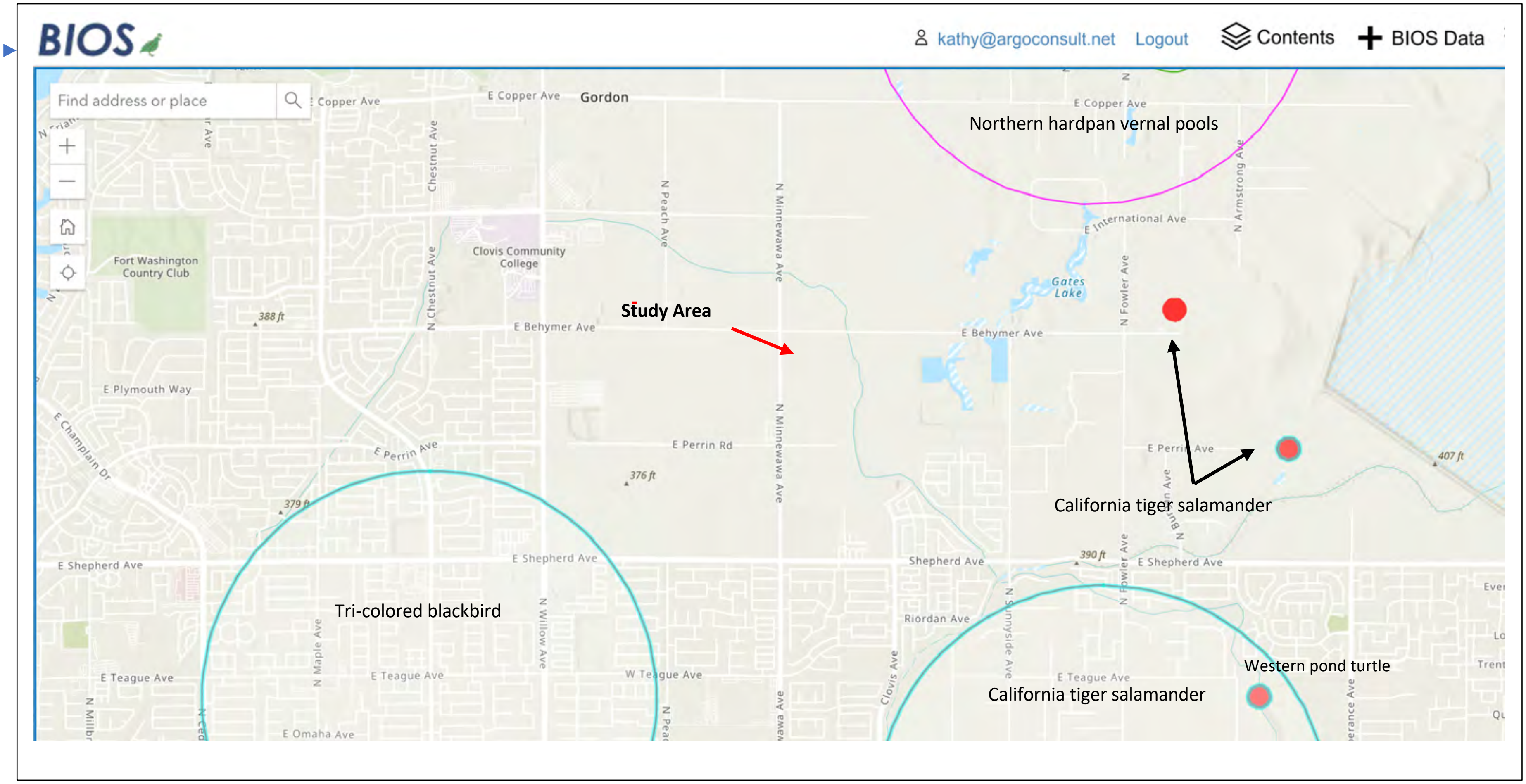

Figure 5

CNDDB BIOS Mapping

ARGONAUT ECOLOGICAL CONSULTING, INC.

Table 1 Summary of Special Status Species, Potential Occurrence, and Impact				
Common Name	***Scientific Name***	***Status*[1]**	***Effects*[2]**	***Occurrence in the Study Area*[3]**
Mammals				
American badger	*Taxidea taxus*	--/--	NE	**Absent.** Occurs in open areas with a suitable prey base (small rodents and mammals). Burrows underground. No evidence of occupation within the Study Area and no suitable prey base was observed.

Birds				
Western yellow-billed cuckoo	*Coccyzus americanus occidental*	FT/CE	NE	**Absent.** Associated with riparian corridors near streams and other water bodies. No suitable habitat is present.
Tricolored blackbird	*Agelaius tricolor*	--/CT	NE	**Absent.** Nests in tule stands or other emergent habitat. No suitable habitat present.
Burrowing owl	*Athenea cunicularia*	--/-- SSC	ME	**Potentially Present.** Associated with a ground burrowing mammals (i.e. ground squirrels). Found in open grassland with suitable prey base. Ground squirrels within the Study Area.
Least Bell's vireo	*Vireo bellii pusillus*	FE/CE	NE	**Absent.** Associated with willow riparian habitat. No suitable habitat present.
Swainson's hawk	*Buteo swainsoni*	--/CT	ME	**Potentially Present.** Nests in mature trees. A few mature trees are within or immediately adjacent to the Study Area. No old nests were observed. Hawk could occasionally forage within the area.
Double-crested cormorant	*Nannoperum auritum*	--/--	NE	**Absent.** Nests in riparian habitat over water. No suitable habitat present.
Amphibians, Reptiles, and Invertebrates				
California tiger salamander	*Ambystoma californiense pop 1*	FT/CT	NE	**Absent.** Breeds in seasonal wetlands/vernal pools or stock ponds without a predator population. No suitable breeding habitat is present, and no breeding habitat within 1.3 miles of the Study Area, thus indicating the site is not used for upland aestivation**.**
Western spadefoot	*Spea hammondii*	--/--	NE	**Absent.** Requires seasonal wetlands for breeding and no suitable habitat on or near the Study Area.
Coast horned lizard (Blainville's horned lizard)	*Phrynosoma blainvillii*	--/--	NE	**Absent.** Blainville's Horned Lizards are frequently found near ant hills in open areas of sandy soil and low vegetation in valleys, foothills, and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and

				patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and dirt roads. The only known records within the Fresno Region are four records from the 1800s.
Northern California legless lizard	*Anniella pulchra*	--/--	NE	**Absent.** Occurs in moist, warm loose soil with plant cover. Moisture is essential. Two individuals collected in the Fresno region in 1880. No suitable habitat present within or near the Study Area.
Western pond turtle	*Emys marmorata*	FC/--	NE	**Absent.** Semi-aquatic turtle. No suitable habitat present within or near the Study Area.
California glossy snake		--/-- SSC	NE	**Absent.** One record from Fresno region in 1890. Reported from a range of scrub and grassland habitats, often with loose or sandy soils.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT/--	NE	**Absent**. No suitable habitat onsite since there are no seasonal wetlands or ponds within the Study Area.
California linderiella	*Linderiella occidentalis*	--/--	NE	**Absent**. No suitable habitat onsite since there are no seasonal wetlands or ponds within the Study Area.
Crotch bumble bee	*Bombus crotchii*	--/CC	NE	**Likely Absent.** Most observations of this species occur in southern California coastal areas. One record from Fresno (1892). Inhabits grassland and scrub areas, requiring a hotter and drier environment than other bumblebee species. The presence of a small habitat unit makes it unlikely that a species is present.
American bumble bee	*Bombus pensylvanicus*	--/--	NE	**Likely absent.** Habitat requirements
Hurd's metapogon robberfly	*Metapogon hurdi*	--/--	NE	**Absent**. Limited habitat information is available. Known from dunes at Antioch and in Fresno.
Antioch efferian robberfly	*Efferia antiochi*	--/--	NE	**Absent**. Little habitat information available. Known from dunes at Antioch, Fresno, Scout Island, and San Joaquin River,
Molestan blister beetle	*Lytta molesta*	--/--	NE	**Absent.** Occurs in wetlands and vernal pools—no specific occurrence. No suitable habitat is present within the Study Area.
Plants				
Sanford's arrowhead	*Saggittaria sanfordii*	--/--	NE	**Absent.** Inhabitants slow-moving streams and sloughs. No suitable habitat present.
California jewelflower	*Caulanthus californicus*	FE/CE	NE	**Absent.** Chenopod scrub, valley, and foothill grassland. No suitable habitat present.
Greene's tuctoria	*Tuctoria greenei*	FE/-- Rare 1B.1	NE	**Absent.** Dry bottom of vernal pools in open grassland habitat. No suitable habitat present.
Madera leptosiphon	*Le[tpso[jpm serri;atis*	--/--	NE	**Absent.** Cismontane woodland, lower montane coniferous forest. No suitable habitat present.

1 **Status= Listing of special status species, unless otherwise indicated**

CE: California listed as Endangered

CT: California listed as Threatened

CC: California candidate species

SSC: California Species of Special Concern

FE: Federally listed as Endangered FT: Federally listed as Threatened

2 **Effects = Effect determination**

NE: No Effect

ME: May Effect, not likely to adversely affect

Definition of Occurrence Indicators:

Present/Potentially: Species recorded in the area and some habitat elements in the Study Area similar to known occurrences.
Absent/Likely Absent: Species not recorded in Study Area and suitable or critical habitat components are absent.

Source: CNDDB = California Natural Diversity Database provided by CDFG and U.S. Fish and Wildlife Service, Information for Planning and Consultation (IPaC). Accessed online on November 4, 2023.

3.2 CONCLUSIONS

CONCLUSIONS

- The Study Area has been developed for rural residential/small farms.
- The habitat value of the Study Area is limited and consists of landscape areas, formerly irrigated pasture, ruderal (disturbed habitat), and a horse paddock. The only wildlife observed were a few birds and ground squirrels.
- The Study Area has some suitable nesting habitat for raptors and migratory birds.
- The Study Area has some ground-burrowing mammal burrows (active).
- No potential waters (Federal or State waters) or wetlands exist within or near the Study Area.

RECOMMENDATION

If ground disturbance (including grading, grubbing, home demolition, tree removal, or construction equipment and materials mobilization) is initiated during the nesting season (Feb 1 – Aug 31), a pre-construction survey for potential nesting raptors, migratory birds, and burrowing is recommended.

References

California Natural Diversity Database (CNDDB) Online. Subscription with updates. Available at: URL https://www.wildlife.ca.gov/Data/CNDDB

California Wetlands Monitoring Workgroup (CWMW). EcoAtlas. Accessed [date retrieved]. https://www.ecoatlas.org.

National Resource Conservation Service (NRCS), Web Soils Survey. Available at: URL https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

U.S. Fish and Wildlife Service. Information for Planning and Consultation (IPaC). Available at URL: https://ipac.ecosphere.fws.gov/

U.S. Fish and Wildlife Service, National Wetland Inventory Maps. Available at URL: https://www.fws.gov/wetlands/data/mapper.html

U.S. Geologic Survey, Historic topographic Map, Clovis. 1926, University of Texas, Austin, Perry-Castañeda Map Collection. Available at: https://legacy.lib.utexas.edu/maps/

Attachment A: Photographs

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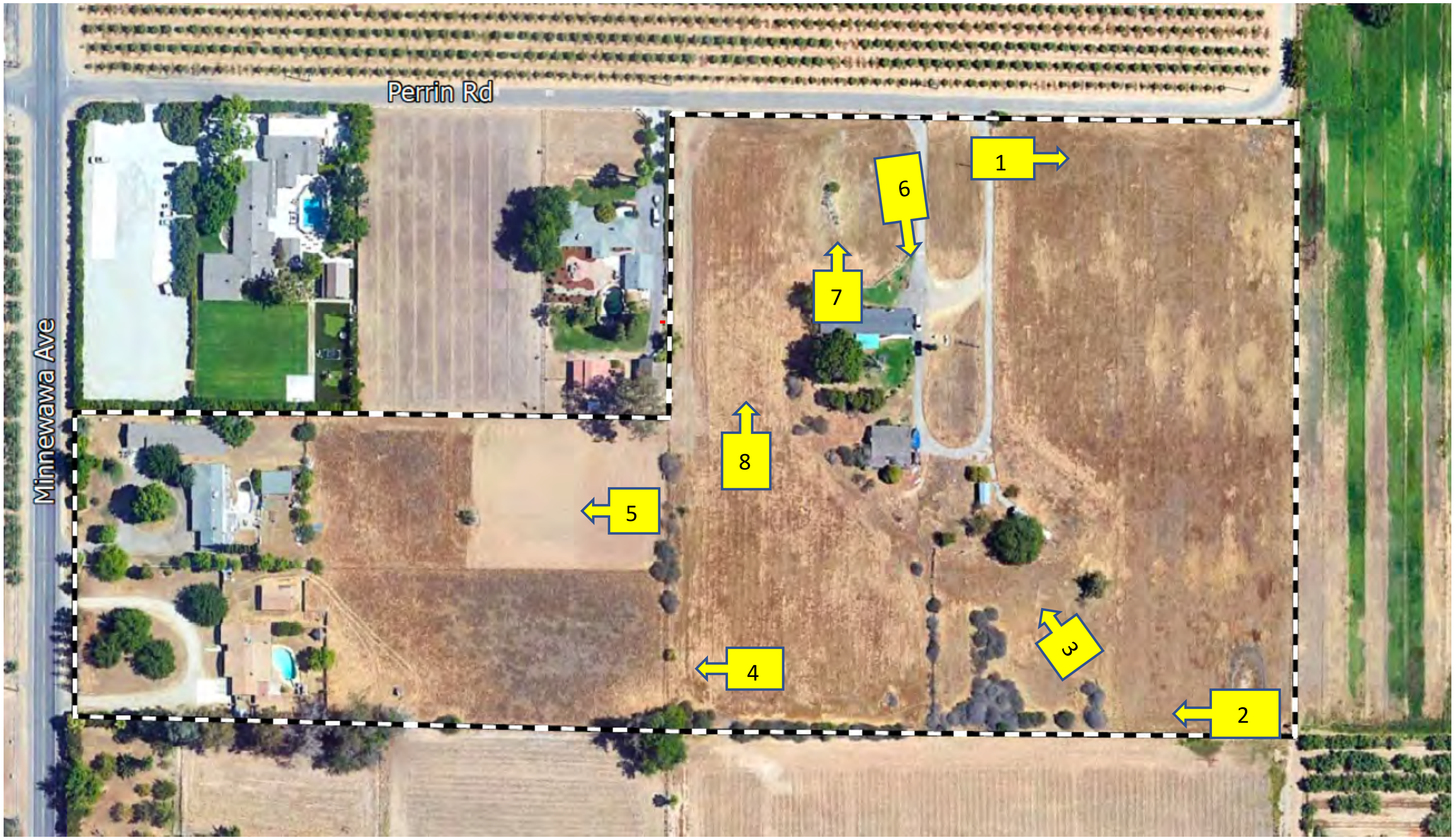

Photo Key

TM 6467 Perrin at Minnewawa

ARGONAUT
ECOLOGICAL
CONSULTING, INC.

Photographic Documentation

Client: TM 6467 Perrin at Minnewawa
Location: Clovis, Ca

Prepared by: Argonaut Ecological, Inc.
Photographer: K. Kinsland

Photograph No. 1

Direction: East

Description: View looking east along the north edge of the Study Area, along Perrin Ave.

Photograph No. 2

Direction: West

Description: View of southern edge of Study Area, looking west across formerly irrigated pasture.

Client: TM 6467 Perrin at Minnewawa
Location: Clovis, Ca

Prepared by: Argonaut Ecological, Inc.
Photographer: K. Kinsland

Photograph No. 3

Direction: Northwest

Description:
View looking north toward abandoned residence outbuildings.

Photograph No. 4

Direction: West

Description:
View looking west along southern edge of Study Area looking toward two home sites.

Photographic Documentation

Client: TM 6467 Perrin at Minnewawa
Location: Clovis, Ca

Prepared by: Argonaut Ecological, Inc.
Photographer: K. Kinsland

Photograph No. 5

Direction: West

Description:
Fiew of horse training/paddock area, looking west.

Photograph No. 5

Direction: South

Description: View of landscape areas along driveway.

Client: TM 6467 Perrin at Minnewawa
Location: Clovis, Ca

Prepared by: Argonaut Ecological, Inc.
Photographer: K. Kinsland

Photograph No. 7

Direction: North

Description:
View of landscaped area with large ground squirrel population.

Photograph No. 8

Direction: Northeast

Description:
View of ruderal habitat looking north toward Perrin Road.

CULTURAL RESOURCE ASSESSMENT FOR THE

TENTATIVE MAP 6467 PROJECT

CITY OF CLOVIS, CALIFORNIA

Prepared by

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December 15, 2023
(Job #23-100)

INTRODUCTION

Bonadelle Neighborhoods proposes to build residential homes on a 15-acre property located at the southeast corner of the intersection of Perrin Avenue and Minnewawa Avenue in Clovis, California. The project site is made up of four previously developed parcels. The Proposed Project would include the development of 162 single-family homes, and a 13-acre park/green space, and two points of ingress/egress (one on Minnewawa Avenue and the other on Perrin Avenue). The total anticipated density is 11.61 units per acre. One outlet is in the northeast corner at the intersection of Perrin Avenue and Clovis Avenue. The timing and phasing would depend on market conditions.

The site is a portion of the southeast quarter of Section 20, Township 12 South, Range 21 East, Mount Diablo Base and Meridian, and mapped on the Clovis USGS topographic quadrangle (Figures 1 and 2).

Melinda A. Peak, senior historian/archeologist with Peak & Associates, Inc. served as principal investigator for the study with Michael Lawson (resumes, Appendix 1) completing the field survey.

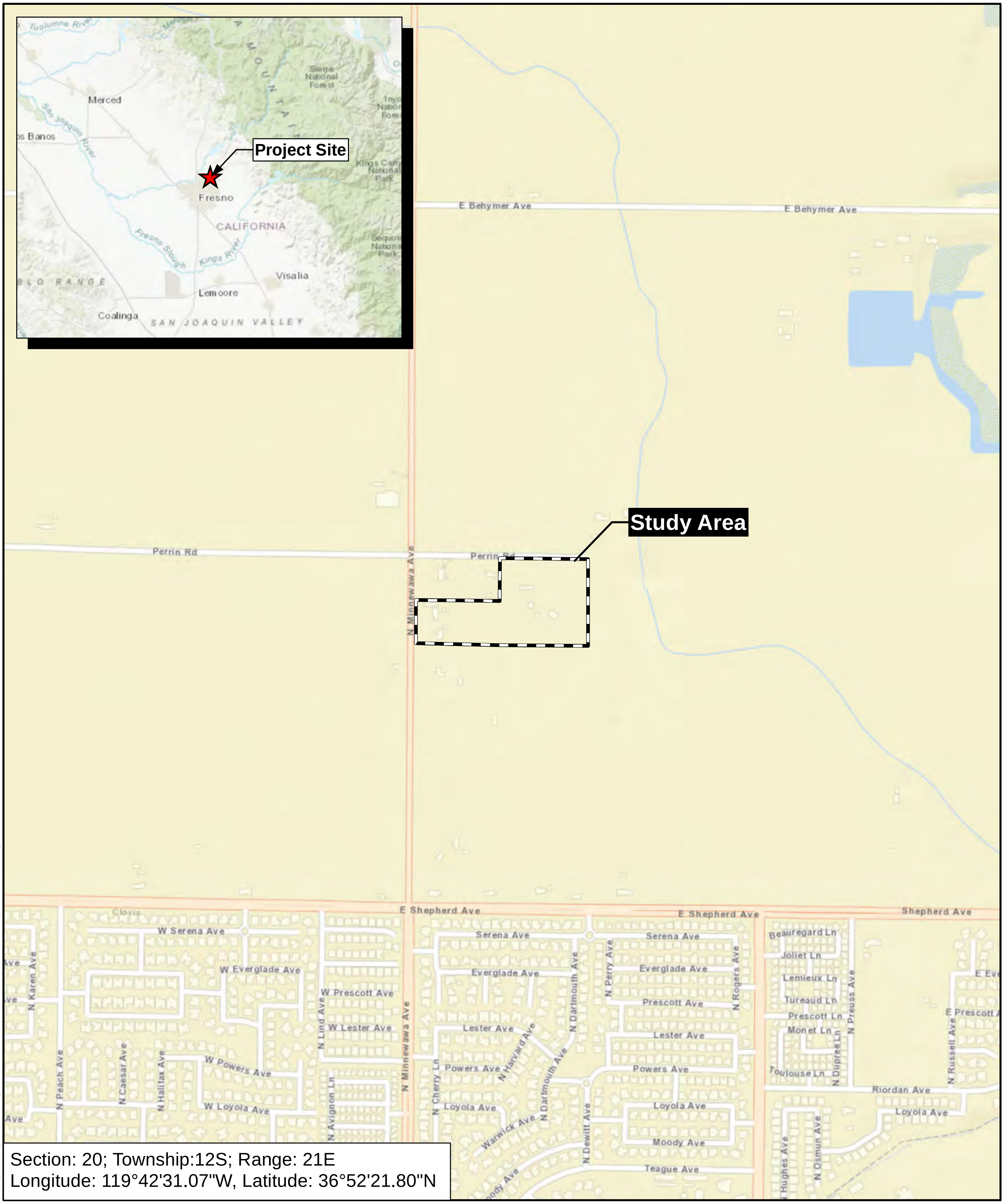
STATE REGULATIONS

State historic preservation regulations affecting this project include the statutes and guidelines contained in the California Environmental Quality Act (CEQA; Public Resources Code sections 21083.2 and 21084.1 and sections 15064.5 and 15126.4 (b) of the CEQA Guidelines). CEQA Section 15064.5 requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. Public Resources Code Section 21098.1 further cites: A project 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.

An "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR), *CEQA and Archaeological Resources,* 1994. The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory.

In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of



N

0 500 1,000

Feet

Figure 1

REGIONAL LOCATION AND VICINITY

TM 6467 PERRIN AVE AND MINNEWAWA

Fresno County, CA

ARGONAUT ECOLOGICAL CONSULTING INC.

Basemap Source: ESRI (2023)

0 100 200
Feet

N

Study Area (±15 acres)

Figure 2

STUDY AREA/AERIAL

TM 6467 PERRIN AVE AND MINNEWAWA

Fresno County, CA

ARGONAUT ECOLOGICAL CONSULTING INC.

Aerial Source: Google Earth (06/2022)

those remains (California Health and Safety Code Section 7050.5, California Public Resources Codes Sections 5097.94 et al).

The California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project will impact a site, it needs to be determined whether the site is an historical resource. The criteria are set forth in Section 15064.5(a) (3) of the CEQA Guidelines, and are defined as any resource that does any of the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. 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

D. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the CEQA Guidelines, Section 15064.5(a) (4) states:

> The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

California Health and Safety Code Sections 7050.5, 7051, and 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

California Public Resources Code Section 15064.5(e)

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction. The section establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project and establishes the Native American Heritage Commission as the entity responsible to resolve disputes regarding the disposition of such remains.

Assembly Bill 52

Assembly Bill (AB) 52 establishes a formal consultation process for California tribes as part of CEQA and equates significant impacts on tribal cultural resources with significant environmental impacts. AB 52 defines a "California Native American Tribe" as a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission. AB 52 requires formal consultation with California Native American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that consultation address project alternatives, mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached. Under AB 52, such measures shall be recommended for inclusion in the environmental document and adopted mitigation monitoring program if determined to avoid or lessen a significant impact on a tribal cultural resource.

CULTURAL SETTING

Archeology

The Central Valley region was among the first in the state to attract intensive fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data, but the emphasis has been in the northern portion of the valley. In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and excavation were conducted by the Sacramento Junior College (Lillard and Purves 1936).

Excavation data, in particular from the stratified Windmiller site (CA-SAC-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

In the southern San Joaquin Valley, with the exception of Hewes's excavation at CA-FRE-48 (the Tranquility Site), the foci of early investigations have been the old shorelines of the interior lakes; Tulare, Kern, and Buena Vista. In 1899, Dr. P. M. Jones directed fieldwork in the Buena Vista-Tulare Lake area of Kern County. Jones investigated 150 mounds and conducted trenching of several sites including CA-KER-53. In 1909, N. C. Nelson investigated prehistoric Site CA-KER-49, which is located to the west of Buena Vista Lake. Later, four surveys and excavations were conducted in the same locale under the auspices of the University of California. A compilation of these investigation results was published in 1926 by Gifford and Schenck.

As a result of this early work, an elaborate culture complex was defined for the late prehistoric period. This complex can be ascribed probably to the Yokuts and their direct ancestors. The material culture of this late temporal period complex included steatite vessels and beads, finely-made projectile points, pottery, shaped stone mortars, *Tivela* disc beads, use of asphaltum, and the presence of metates and manos. Flexed burials were the predominant interment mode. Earlier complexes underlying the late cultural expressions were represented by chipped stone crescents, large projectile points, atlatl spurs, and weights. Mortuary practices, generally thought to be related, include extended rather than flexed burial position, a situation analogous to that of the northern valley (Gifford and Schenck 1926; Lillard, Heizer, and Fenenga 1939; Moratto 1972).

Presence of "Early Man," although not found in direct association with extinct animals, is demonstrated by the frequency of chipped stone crescents and fluted points similar to those of the Clovis-Folsom Complex in the American Southwest. Although fluted points have been found near the shores of Tulare Lake, an area that has also produced surface finds of extinct mammal bone of Pleistocene age, the association is not substantiated by controlled excavations and remains speculative (Riddell and Olsen 1969). Most of the point collection had been acquired by D. Witt over a period of 30 years.

Under the direction of Wedel, the Civil Works Administration with the Smithsonian Institution, initiated the first major excavations using stratigraphic controls. Investigations of CA-KER-39 and CA-KER-60 as well as several smaller sites near Buena Vista Lake produced evidence of two distinct cultural entities or occupation periods. Wedel lacked methods for dating these two entities by cross-comparison of the assemblages. He stated that the early occupation at Buena Vista Lake appeared to be temporally older and less developed than the Early Horizon of the Delta region, and compared this early component to the Oak Grove or Milling Stone culture of the Santa Barbara area (Rogers 1939). He divided the later cultural entity into two distinct phases, both clearly distinguished from the earlier cultural phase by artifact types. Wedel (1941:144-145) estimated that neither of these cultural periods exceeded 1500 B.P. (Years Before the Present). Later, other investigators proposed far earlier ages for these early occupations, with dates ranging from 2000 to 7000 B.P. (Baumhoff and Olmstead 1963, 1964; Heizer 1964; Meighan 1959).

Later investigations in 1963 and 1964 at CA-KER-116 near Buena Vista Lake produced materials that appear like those from Wedel's early occupation. These materials occurred in the lower levels of the "upper deposit," while an even deeper cultural deposit yielded materials similar to those of the San Dieguito Complex. Artifacts included a chipped stone crescent, crude point fragments, and an atlatl spur. Radiocarbon age determinations on shell from the lowest cultural levels returned a date of circa 8200 B.P. (Fredrickson and Grossman 1966, 1977; Fredrickson 1967).

Despite the previously mentioned investigations, the prehistory of the southern San Joaquin remains as yet poorly understood, without a tightly defined chronological sequence of cultural development.

Ethnology

Ethnographic literature is often uncertain in definition of cultural boundaries for Indian groups. Early displacement by white intrusion resulted in population shifts to avoid conflict with the Spanish, and later with the miners and settlers. The ravages of disease and warfare decimated the native people, further weakening cultural identity. Informants were often uncertain of original territories of the various tribal groupings.

The Foothill Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber 1925). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925).

The Foothill Yokuts were a group of about 15 named tribes who occupied the western Sierra Nevada foothills from the Fresno River to the Kern River. A further subdivision separated the groups into northern, central and southern groups. The area controlled by individual groups varied over time. There is no information to indicate that there was a village in the Project vicinity, but this does not preclude the possibility.

Trade was well developed, with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the San Joaquin Valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and to some extent from the Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among many items exported to the east by Yokuts traders (Davis 1961).

Economic subsistence was based on the acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs which formed a maze within the valley provided abundant food resources such as fish, shellfish, and turtles. Game, wild fowl, and small mammals were trapped and hunted to provide protein augmentation of the diet.

In general, the eastern portion of the San Joaquin Valley provided a lush environment of varied food resources, with the estimated large population centers reflecting this abundance (Cook 1955; Baumhoff 1963).

Settlements were oriented along the water ways, with their village sites normally placed adjacent to these features for their nearby water and food resources. House structures varied in size and shape (Latta 1949; Kroeber 1925). The housepit depressions ranged in diameter from between 3 to 18 meters.

Latta (1949:99) reported that a village of 200 to 300 Yokuts might have four or five large houses that were used for ten or twelve years or until a family member died, at which time the Indians burned the house in which the death had occurred. If a sick or aged person died outside the dwelling, the family did not burn the house. When a Northern Yokuts died, his body was cremated or buried in a flexed position. Southern tribes normally buried their dead, although they did cremate shamans, persons who died away from their village and, among the Tachi, persons of great importance.

The Yokuts experienced severe depopulation after contact with the Spanish and subsequent explorers. The most devastating impacts of the Spanish colonization effort were not the result of military conflicts, but came from Old World diseases newly introduced to the native people.

Historical Context

Early Explorations

The early recorded inhabitants of the region were members of the Yokuts tribe. Although the Spanish missions were established closer to the Pacific coast between 1769 and 1817, the general Project site area was first visited in the early 1800s by Spanish explorers, who visited the San Joaquin Valley with three goals: to search for runaway neophytes from the missions in the coastal regions, to punish the Indian raiders, and to select sites for new missions. In 1806, a group led by Gabriel Moraga and Father Pedro Muñoz, left Mission San Juan Bautista heading north to about the Mokelumne River**.** They then turned south, and travelled along the edge of the mountains crossing the San Joaquin River and passing through Tejon Pass, arriving at Mission San Fernando. In 1815, José Dolores Pico marched an expedition group from Monterey into the region. Following the San Joaquin River, he passed through the area in search of runaways, traveling as far south as the Kern River. The expedition returned to the starting point in Monterey with nine prisoners and a number of horses.

After control of California passed from Spain to Mexico in 1822, Mexican explorations into the interior continued, with José Dolores Pico conducting a major expedition along the San Joaquin River in 1825-1826. This expedition was considered successful in that some neophytes were captured, hostile Indians killed, some of the tribal groups intimidated, and some stolen horses recovered. In 1828, Sebastián Rodríguez led a similar expedition into the same region. His expedition captured a number of neophytes as well as some of the stolen horses, an item that had become an important dietary staple for the Indian tribes in the San Joaquin Valley region (Beck and Haase 1974).

The early expeditions did not leave physical evidence, but the Native American populations were affected severely by the diseases brought in to the Native populations of the Central Valley in the early 1830s.

Later History

The extension of the railroad system throughout the San Joaquin Valley allowed the increased expansion of a market for the agricultural production of the region. A branch line of the Southern Pacific Railroad (first known as the Pollasky Railroad or the San Joaquin Railroad) was built through this region circa 1891. Marcus Pollasky served as the promoter, and monies were raised locally for the construction costs. Clovis Cole, the owner of the large wheat ranch, donated land for the route, and a station was established here on the line and named Clovis (Gudde 1969; City of Clovis 1962).

After the completion of the railroad, the construction of the flume from Shaver Lake to the east was soon completed by the Fresno Flume and Irrigation Company. The 45-mile-long flume could deliver 200,000 board feet of lumber through the vee-shaped watercourse in a 24-hour period. At the end of the flume, there was a finishing and distributing plant. Other, better grade lumber was delivered to Clovis down Tollhouse Grade, hauled by ox and horse teams. In the early years, 140 men were employed by the lumber company, with an annual payroll of $450,000. The Clovis lumber plant occupied a 40-acre site. The factory, warehouse, planing mill and engine house all burned to the ground in 1898, but were soon rebuilt. As many as 400 men were employed by the company. The mill was located on the south side of Fifth Street (City of Clovis 1962; Clovis Centennial Book Committee 2011).

The mill in Clovis produced "ordinary lines of lumber," shakes, trays, sweat boxes, raisin boxes, orange boxes, cedar posts, ties, poles, also pine and oak cordwood (*Fresno Republican* 1897: 96). The ever-increasing agricultural use of the San Joaquin Valley, due to improvements and expansion of irrigation systems, led to a large market for the fruit packing boxes, allowing shipment of the produce to a wider marketplace.

Clovis was laid out by a licensed surveyor, working for the co-owners of the land: Clovis Cole, Clarence Pallos, and George Owen. Early homes were utilitarian, and the streets were ungraded (City of Clovis 1962).

The town's population expanded rapidly from about 500 residents in 1905 to about 1,000 in 1910. Nearby, the population was increasing within the local rural agricultural colonies, with large acreages broken up into 20-acre tracts advertised for sale to Midwesterners. By 1919, local population had grown to 1,500. At this point, the lumber business is still the main support of the economy, but the area produced huge crops of Malaga grapes and figs (Clovis Centennial Book Committee 2011; Vandor 1919:269).

For the first 21 years, there was no organized government in Clovis. Late in 1911, and election was held, and the City of Clovis incorporated in 1912. Most of the early businesses in town were located on Front Street, now known as Clovis Avenue, on the west side of the tracks (City of Clovis 1962).

RESEARCH

A record search was conducted for the project site area, with a 0.25-mile radius, through the Southern San Joaquin Valley Archaeological Information Center of the California Historical Resources Information System on November 11, 2023 (RS#23-469, Appendix 2).

There are no resources reported in the project site area. Within a 0.25-mile buffer, the Enterprise Canal has been recorded as P-10-005934. Three different surveys have covered portions of the project site (FR-1219, FR-02203, and FR-02289, see Report list, Appendix 2).

FIELD ASSESSMENT

Michael Lawson conducted a field survey of the project site on November 16, 2023, using complete inspection techniques where possible. The survey area is in a rural agricultural location with no crops or livestock present. Soil is tilled or fallow with dry grass stubble. Fields are flat and possibly leveled but no difference in elevation between plots. Modern barbed wire fencing with wooden and steel t-posts encompasses the agricultural fields.

The soil type and coloration are similar throughout the survey area with very slight variation because of increased organic components in areas used for livestock and crops, or around residences. Soil type appears as silty sand, tan in appearance, with little stone component larger than pea-sized pebbles of sandstone and granitic elements such as feldspar, mica, and quartz.

Trees and plants are mostly present around buildings and include introduced palm, mimosa, privet, and eucalyptus, along with grasses. Native trees and plants include datura, coyote melon, valley oak and black walnut.

Ground visibility was good throughout the survey area due to tilling, weed control, animal paths and burrowing animal activity.

In open fields, 10-meter wide parallel transects were walked for general coverage. Closer inspection no more than 2 meters wide was used around and between buildings.

No prehistoric resources were observed during the survey. Three residences on the property are more than 50 years in age, and each has been recorded and evaluated. DPR 523 forms are available in Appendix 3.

SITE DESCRIPTIONS

4165 E Perrin Avenue

The residence is currently vacant and boarded-up. The complex includes a Ranch-style home, consistent with 1950s-1960s construction style and building components, including stucco siding, poured concrete foundation, attached open breezeway parking, and brick chimney. Door and window styles are unknown due to boarding. Electrical and plumbing hardware match equipment available between 1950-1970. It was constructed in 1959, according to the County Assessor.

The house features a carport on the eastern end of the building, which appears to have been created by knocking out walls at this end leaving the roof. This leaves the brick chimney at the northeast corner of the living area, which is not likely to have been its original situation.

There are two outbuildings. The first is a low barn or equipment shed with an open parking stall on one end. The windows are an aluminum-framed crank-out type and a steel-framed multi pane type. Exterior siding is rough paneling, and roof is wooden shake—possibly original. The foundation is not visible for inspection and thus unknown in type. The era of construction appears to be about the same as that of the residence.

The other outbuilding is a small shed with the same siding as the first outbuilding, but with a corrugated steel roof, wooden framed windows, and unknown foundation.

9452 N Minnewawa Avenue

There are two residences at this address. One residence, currently occupied by the original owner, is a long narrow building, oriented north-south and set back from the street. The other is north of the first and oriented east-west. This is a modern home, dated 2008 per Assessor, and is currently vacant. Google Earth historic aerials confirm the construction date and indicate that the building replaced a storage structure that had occupied the area.

The owner claims the occupied house was built in the mid-1960s, which is consistent with its appearance and other houses in the immediate area. It is a Ranch Style with aluminum-framed windows, wood panel and stucco siding, new replacement composite roofing, brick chimney and a poured concrete foundation. It is a side-gabled building with a cross gable on the north side. This appears to be strictly decorative, because it does not extend out from the main mass of the building on the front and does not appear on the rear elevation at all. About 40% of Ranch houses have a cross gable (McAlester, 2015:598).

The rear has roof extensions for the full width of the building supported by square wood columns This is uncommon in Ranch-style houses in general. Behind both houses is a detached two-car garage with plywood siding, roller steel doors, composite roofing, and a poured concrete foundation. Its age appears consistent with 1980s construction.

9534 N Minnewawa Avenue

This building, currently occupied by a renter, is reported to have been constructed in the late 1960s by the owner and in 1965 by the County Assessor. There is a shed in the same style as the house, identified by the owner as built at the same time as the residence.

The house has combined stucco/brick exterior, attached garage, concrete foundation, replacement composite roofing, wide eaves, replacement vinyl-framed windows and electrical and plumbing equipment consistent with a 1960s construction date.

The house does not fit comfortably into any defined style in residential architecture. It has most in common with Minimal Traditional, in that it has no architectural decorative features at all. However, it is newer than the dates when most Minimal Traditional homes were built, and it has other features that do not conform. It is a side gabled building with an attached garage on the south under its own gable and two cross-gabled sections facing the street (west) flanking the entry way. On the rear the northern side gable is repeated, but most of the rear is occupied by a shed roofed segment facing an in-ground pool. This may be a feature added after the initial construction.

EVALUATION OF RESOURCES

All buildings, built between 1959 and 2008, are of relatively recent construction in the same styles of many residential buildings in California in the post-World War II era. Under the California Register of Historical Resources (CRHR), a building can be significant if it is associated with an important event (Criterion A). No known important events took place on this property. Similarly, a building could be important for tis association with a person important in the past (Criterion B). There appears to be no such association with past owners of the parcels. The third applicable criterion for judging importance, Criterion C, is related to the style or design of the buildings. The buildings are all average examples of their style, with many far better examples are present throughout Clovis and California. We conclude that the buildings are not important and there are no significant properties in the project area.

RECOMMENDATIONS

Although no prehistoric sites were found during the survey, there is a slight possibility that a site may exist and be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for on-the-spot evaluation of the finding.

Discovery of Human Remains

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area suspected to overlie adjacent remains until the Fresno County Coroner has determined that the remains are not subject to any provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

If the Fresno County Coroner determines that the remains are not subject to his or her authority and if the County Coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone, the Native American Heritage Commission (NAHC).

After notification, the NAHC will follow the procedures outlined in Public Resources Code Section 5097.98, that include notification of most likely descendants (MLDs), and recommendations for treatment of the remains. The MLDs will have 48 hours after notification by the NAHC to make their recommendations (PRC Section 5097.98).

REFERENCES

Baumhoff, Martin A.

1963 Ecological Determinants of Aboriginal California Populations. *University of California Publications in American Archaeology and Ethnology* 49(2): 155-236. Berkeley.

Baumhoff, Martin A., and David Olmsted

1963 Radiocarbon support for Glottochronology. *American Anthropologist* 65(2): 278-284.

1964 Notes on Palaihnihan culture history: glottochronology and archaeology. Studies in California linguistics, edited by William Bright, pp. 1-12. *University of California Publications in Linguistics* 34. Berkeley.

Beardsley, Richard K.

1954 Temporal and Areal Relationships in Central California Archeology (parts 1 and 2). *University of California Archaeological Survey Reports* 24, 25. Berkeley.

Beck, Warren A., and Ynez D. Haase

1974 *Historical Atlas of California*. University of Oklahoma Press, Norman.

City of Clovis

1962 *The History of Clovis: 50 Years of Progress*. Published booklet, on file, California Room of the California State Library, Sacramento.

Clough, Charles W., and William B. Secrest, Jr.

1984 *Fresno County—The Pioneer Years: From the Beginning to 1900*. Panorama West Books, Fresno.

Clovis Centennial Book Committee

2011 *Images of America: Clovis*. Arcadia Publishing.

Cook, Sherburne F.

1960 Colonial expeditions to the interior of California: Central Valley 1800-1820. *University of California Anthropological Records* 16(6): 239-292. Berkeley.

1955a The Aboriginal Populations of the San Joaquin Valley, California. *University of California Press Anthropological Records* 16(2). Berkeley.

1955b The epidemic of 1830-33 in California and Oregon. *University of California Publications in American Archaeology and Ethnology* 43(3): 303-326. Berkeley.

Davis, James T.
1961 Trade Routes and Economic Exchange among the Indians of California. *University of California Archaeological Survey Reports* 54:1-71. Berkeley.

Elliott, Wallace W.
1882 *History of Fresno County, California with Illustrations*. Wallace W. Elliott & Company, Publishers, San Francisco.

Fickewirth, Alvin A.
1992 *California Railroads*. Golden West Books. San Marino, CA.

Fredrickson, David A.
1967 Additional C-14 dates for water resources investigations at Buena Vista Lake. *Society for California Archaeology Newsletter* 1(5).

Frickstad, Walter
1955 *A Century of California Post Offices*. Pacific Rotapress Printing Company, Oakland.

Fredrickson, David A., and J. Grossman
1966 Radiocarbon Dating of an Early Site at Buena Vista Lake, California. Paper read before the annual meeting of the Society for American Archaeology, Reno.

1977 A San Dieguito Component at Buena Vista Lake, California. *The Journal of California Anthropology* 4(2): 173-190.

Fresno Republican newspaper
1897 *Imperial Fresno*. Facsimile reproduction, published 1979 by the Fresno City and County Historical Society.

Gates, Paul W.
1991 *Land and Law in California: Essays on Land Policies*. Iowa State University Press, Ames.

Gifford, E. W., and W. E. Schenck
1926 Archaeology of the Southern San Joaquin Valley, California. *University of California Publications in American Archaeology and Ethnology*, Vol. 23, No. 1.

Gudde, Erwin
1969 *California Place Names*. University of California Press, Berkeley.

Hayes, Derek
2007 *Historical Atlas of California*. University of California Press, Berkeley.

Hofsommer, Don L.
1986 *The Southern Pacific, 1901-1985*. Texas A &M University Press, College Station.

Hoover, Mildred, Hero E. Rensch, Ethel G. Rensch (William N. Abeloe, editor)
1970 *Historic Spots in California* (Third Edition). Stanford University Press, Stanford.

Kroeber, Alfred L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology Bulletin* 78. Washington, D.C.

Latta, Franklin F.
1949 *Handbook of the Yokuts Indians*. Bear State Books, Oildale, California.

Lewis Publishing Company
1892 *A Memorial and Biographical History of the Counties of Fresno, Tulare, and Kern. California*. Chicago: The Lewis Publishing Company.

Lillard, Jeremiah B., Robert F. Heizer and Franklin Fenenga
1939 An Introduction to the Archaeology of Central California. *Sacramento Junior College, Department of Anthropology Bulletin* 2. Sacramento.

Lillard, Jeremiah B., and William K. Purves
1936 The Archeology of the Deer Creek-Cosumnes Area, Sacramento County, California. *Sacramento Junior College, Department of Anthropology Bulletin* 1.

Meighan, Clement W.
1959 California Cultures and the Concept of an Archaic Stage. *American Antiquity* 24(3): 289-318.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Inc., New York.

Riddell, Francis A., and William H. Olsen
1969 An Early Man Site in the San Joaquin Valley, California. *American Antiquity* 34(2): 121-131. Washington, D.C.

Rogers, Malcolm J.
1939 Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. *San Diego Museum Papers* 3. San Diego.

Schenck, W. Egbert and Elmer Dawson
1929 Archaeology of the Northern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 25(4): 289-413. Berkeley.

Smith, Wallace
1960 *Garden of the Sun*. Eighth edition. Privately printed.

Thompson, Thomas H.
1891 *Official Historical Atlas Map of Fresno County*. Thomas H. Thompson, Tulare, California.

Vandor, Paul E.
1919 *History of Fresno County, California*. Historic Record Company, Los Angeles.

Wedel, Waldo R.
1941 Archaeological Investigations at Buena Vista Lake, Kern County, California. *Bureau of American Ethnology Bulletin* 130. Washington, D.C.

Winchell, Lilbourne Alsip
1933 *History of Fresno County and the San Joaquin Valley*. Fresno: A. H. Cawston. Publisher.

APPENDIX 1

Resumes

PEAK & ASSOCIATES, INC.
RESUME

MELINDA A. PEAK **January 2023**
Senior Historian/Archeologist
3941 Park Drive, Suite 20 #329
El Dorado Hills, CA 95762
(916) 939-2405

PROFESSIONAL EXPERIENCE

Ms. Peak has served as the principal investigator on a wide range of prehistoric and historic excavations throughout California. She has directed laboratory analyses of archeological materials, including the historic period. She has also conducted a wide variety of cultural resource assessments in California, including documentary research, field survey, Native American consultation, and report preparation.

In addition, Ms. Peak has developed a second field of expertise in applied history, specializing in site-specific research for historic period resources. She is a registered professional historian and has completed a number of historical research projects for a wide variety of site types.

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, architectural historian, prehistoric archeologist, and historic archeologist.

EDUCATION

M.A. - History - California State University, Sacramento, 1989
Thesis: *The Bellevue Mine: A Historical Resources Management Site Study in Plumas and Sierra Counties, California*
B.A. - Anthropology - University of California, Berkeley

PROJECTS

In recent months, Ms. Peak has completed several determinations of eligibility and effect documents in coordination with the Corps of Engineers for projects requiring federal permits, assessing the eligibility of a number of sites for the National Register of Historic Places.

She has also completed historical research projects on a wide variety of topics for a number of projects including the development of navigation and landings on the Napa River, wineries, farmhouses dating to the 1860s, bridges, an early roadhouse, Folsom Dam, and a section of an electric railway line.

In recent years, Ms. Peak has prepared a number of cultural resource overviews and predictive models for blocks of land proposed for future development for general and specific plans. She has been able to direct many surveys of these areas, allowing the model to be tested.

She served as principal investigator for the multi-phase Twelve Bridges Golf Club project in Placer County. She served as liaison with the various agencies, helped prepare the historic properties treatment plan, managed the various phases of test and data recovery excavations, and completed the final report on the analysis of the test phase excavations of several prehistoric sites. She is currently involved as the principal investigator for the Teichert Quarry project adjacent to Twelve Bridges in the City of Rocklin, coordinating contacts with Native Americans, the Corps of Engineers, and the Office of Historic Preservation.

Ms. Peak has served as project manager for a number of major survey and excavation projects in recent years, including the many surveys and site definition excavations for the 172-mile-long Pacific Pipeline proposed for construction in Santa Barbara, Ventura, and Los Angeles counties. She also completed an archival study in the City of Los Angeles for the project. She also served as principal investigator for a major coaxial cable removal project for AT&T.

Additionally, she completed a number of small surveys, served as a construction monitor at several urban sites, and conducted emergency recovery excavations for sites found during monitoring. She has directed the excavations of several historic complexes in Sacramento, Placer, and El Dorado Counties.

Ms. Peak is the author of a chapter and two sections of a published history (1999) of Sacramento County, *Sacramento: Gold Rush Legacy, Metropolitan Legacy*. She served as the consultant for a children's book on California, published by Capstone Press in 2003 in the Land of Liberty series.

PEAK & ASSOCIATES, INC.
RESUME

MICHAEL LAWSON **January 2023**
Archeological Field Director
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95672
(916) 939-2405

PROFESSIONAL EXPERIENCE

Mr. Lawson has compiled an excellent record of undertaking excavation and survey projects for both the public and private sectors over the past thirty years. He has conducted a number of surveys throughout northern and central California and Hawaii, as well as serving as an archeological technician, site monitor, crew chief and field director for a number of excavation projects.

Mr. Lawson is qualified by the Bureau of Land Management as a field director for archeological surveys and excavations. In 2022, he led teams as the field director on several field surveys in the Sierras for the proposed undergrounding of PG&E transmission lines, dealing with both historic and prehistoric cultural resources. Lawson works for several firms based in the Sacramento Area and Bay Area.

EDUCATION

B.A. - Anthropology - California State University, Sacramento

Special Course: Comparative Osteology. University of Tennessee, Knoxville. Forensic Anthropology Center. January 2018.

The special course included: intensive lab and outdoor study with human example from outdoor research facility, including typical and non-metric examples, compared with fifty non-human species most confused with human remains. Work at the outdoor research facility "The Body Farm" study included survey, photography, collection, and identification of faunal and human bone fragments, with a Power Point presentation discussing finds.

EXPERIENCE

- Extensive monitoring of open space, streets and project development areas for prehistoric period and historic period resources. Areas monitored include Sutter Street in Folsom; Mud Creek Archeological District in Chico; Camp Roberts, San Luis Obispo County; Avila Beach, San Luis Obispo County; Edgewood Golf Course, South Lake Tahoe; Davis Water Project, Davis; Star Bend levee section, Sutter County; Feather River levees, Sutter County; Bodega Bay, Sonoma County; San Jose BART line extension, Santa Clara County; and numerous sites for PG&E in San Francisco.

- Over thirty years of experience working in cultural resource management, volunteer, and academic settings in California historic, proto-historic, and prehistoric archaeology.

- Expertise in pedestrian survey, excavation, feature (including burial) exposure, laboratory techniques, research. Field positions include field director, assistant field director, crew chief and lead technician.

APPENDIX 2

Record Search

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

11/13/2023

Robert Gerry
Peak & Associates, Inc.
3941 Park Drive Ste 30-329
El Dorado Hills, CA 95762

Re: TM 6467
Records Search File No.: 23-469

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Clovis, Friant USGS 7.5’ quad. The following reflects the results of the records search for the project area and the 0.25 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ GIS data

Resources within project area:	None
Resources within 0.25 mile radius:	P-10-005934
Reports within project area:	FR-01219, 02203, 02289
Reports within 0.25 mile radius:	FR-03067

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Resource Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Resource Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Report Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Resource Record Copies: ☒ enclosed ☐ not requested ☐ nothing listed

Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed

OHP Built Environment Resources Directory: ☐ enclosed ☐ not requested ☒ nothing listed

Archaeological Determinations of Eligibility: ☐ enclosed ☐ not requested ☒ nothing listed

CA Inventory of Historic Resources (1976): ☐ enclosed ☒ not requested ☐ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see
https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see
http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see
http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or
http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see
https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

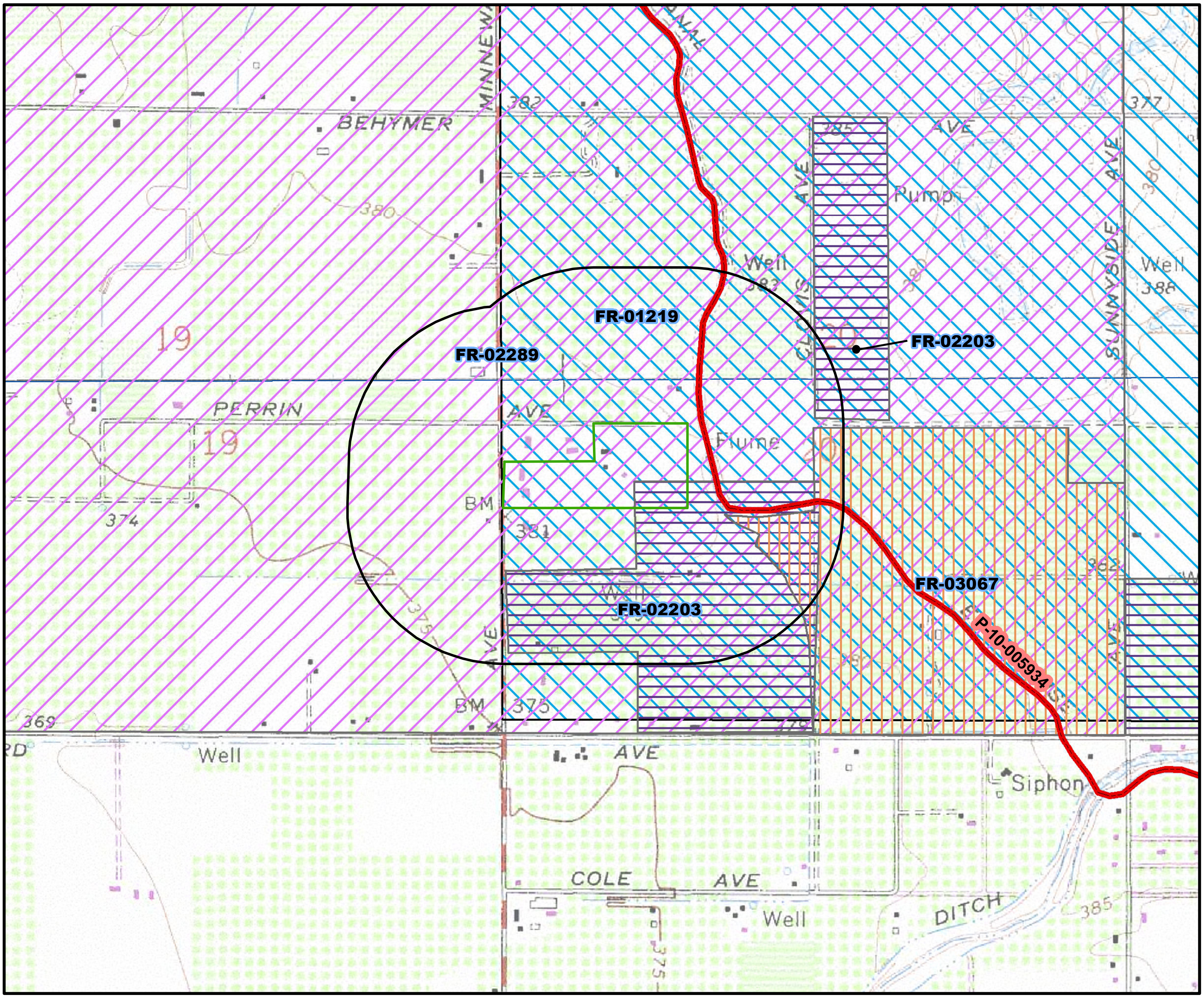
Sincerely,

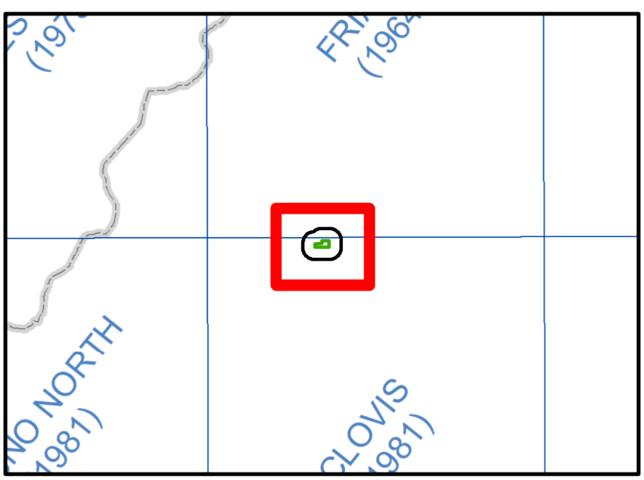
Jeremy E David
Assistant Coordinator

California
Historical
Resources
Information
System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic





May depict confidential cultural resource locations. Do not distribute.

Map pages depicting no data have been excluded.

Project Area
Record Search radius

N W E S

0 0.075 0.15 0.3 Miles
0 0.1 0.2 0.4 Kilometers

SSJV Information Center Record Search 23-469
Requester: Robert Gerry, Peak & Associates, Inc.
Project Name: TM 6467
USGS 7.5' Quad(s): Clovis, Friant
County: Fresno

Resource List

SSJVIC Record Search 23-469

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-005934	CA-FRE-003564H	Resource Name - Enterprise Canal; OTIS Resource Number - 534499; OHP Property Number - 163775	Structure	Historic	HP20	2007 (R. Baloian, Applied EarthWorks, Inc.); 2013 (Randy Baloian, Applied EarthWorks, Inc.); 2017 (Ward Stanley and Randy Baloian, Applied EarthWorks, Inc.)	FR-02615, FR-02919, FR-03067

Report List

SSJVIC Record Search 23-469

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-01219		1993	Bissonnette, Linda Dick	Fresno Metropolitan Flood Control District Drainage Area "BY" Facilities	Cultural Resources Consulting	
FR-02203		2006	Varner, Dudley M.	A Cultural Resource Study of the Battlin Brooks Property, Fresno County, California	Varner Associates	
FR-02289		2006	Nettles, Wendy M. and Baloian, Randy	Cultural Resources Reconnaissance Survey of the City of Clovis Northwest Urban Center Specific Plan Area, Fresno County, California	Applied EarthWorks, Inc.	10-006109
FR-03067		2018	Stanley, Ward, Baloian, Randy, and Baloian, Mary	Cultural Resource Inventory and Evaluation for the Tract 6200 Development in the City of Clovis, Fresno County, California	Applied EarthWorks, Inc.	10-005934

APPENDIX 2

DPR 523 Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 of 5 | *Resource Name or #: TM6467 Building 1

P1. Other Identifier:

***P2. Location:** ☐ Not for Publication ■ Unrestricted ***a. County:** Fresno
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Clovis **Date:** 1964 **T** 12S ; **R** 21E ; NW¼ **of** SW¼ **of Sec** 20 ; M.D. **B.M.**
c. Address: 4165 E Perrin Road City: Clovis Zip: 93619
d. UTM: Zone: 11 ; (NAD27) 02 58 695 mE/ 40 83 038 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to r n to driveway. 220 feet south to residence.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The residence is currently vacant and boarded-up. The complex includes a ranch-style home, consistent with 1950's-60's construction style and building components, including stucco siding, poured concrete foundation, attached open breezeway parking, and brick chimney. Door and window styles are unknown due to boarding. Electrical and plumbing hardware match equipment available between 1950-1970.

The house features a carport on the eastern end of the building, which appears to have been created by knocking out walls at this end leaving the roof. This leaves the brick chimney at the northeast corner of the living area, which is not likely to have been its original situation.

There are two out buldings. The first is a low barn or equipment shed with an open parking stall on one end. The windows are an aluminum-framed crank-out type and a steel-framed multi pane type. Exterior siding is rough paneling, and roof is wooden shake—possibly original. The foundation is not visible for inspection and thus unknown in type. The era of construction appears similar to the residence.

The other outbuilding is a small shed with the same siding as the first outbuilding, but with a corrugated steel roof, wooden framed windows and unknown foundation.

***P3b. Resource Attributes:** (List attributes and codes) HP2 - Single Family Property

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) Looking south at front elevation. 11/16/23

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1959 per Assessor

***P7. Owner and Address:**

***P8. Recorded by:** (Name, affiliation, and address)
Lawson/Gerry
Peak & Associates, Inc.
3941 Park Drive, Ste 20-329
El Dorado Hills, CA 95762

***P9. Date Recorded:** 11/16/23

***P10. Survey Type:** (Describe)
Complete pedestrian. For proposed development.

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Cultural Resources Assessment of the TM6467 Project, Clovis, Fresno County, California. Peak & Associates, Inc. 2023.

***Attachments:** ☐NONE ■Location Map ■Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) TM6467 Building 1

B1. Historic Name:
B2. Common Name: 4165 E Perrin Road
B3. Original Use: Residence B4. Present Use: Vacant
*B5. **Architectural Style:** Ranch Style, Side-Gabled subtype.
*B6. **Construction History:** (Construction date, alterations, and date of alterations)
Constructed 1959, according to the County Assessor's records.

*B7. **Moved?** ■No ☐Yes (C) ☐Unknown **Date:** **Original Location:**
*B8. **Related Features:** Barn and storage shed.
B9a. Architect: Unknown b. Builder: Unknown
*B10. **Significance: Theme:** **Area:**
Period of Significance: **Property Type:** **Applicable Criteria:**
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

To be eligible for the California Register of Historical Resources (CRHR) a property must meet at least one of four criteria. CRHR Criterion A requires that the property be related to important historical events. There is no known association of this small rural property with such events. Similarly, there are no associations with important people in history (CRHR Criterion B).

The building is in poor condition and has had a major alteration to form the carport. This is not in line with any recognized architectural style. It is not an unusually good example of the style, in fact, it is in rather poor repair and shows evidence of several repairs and patches in addition to the carport. It is not eligible under CRHR Criterion C.

The building is quite recent and this, coupled with the absence of a well or privy pit, indicates that it has no likelihood of returning important data through historical archeology (CRHR Criterion D).

We conclude the building is not eligible for the California Register.

B11. Additional Resource Attributes: (List attributes and codes) none
*B12. **References:** McAlester, Virginia Savage 2015 *A Field Guide to American Houses.* Alfred A. Knopf, New York.

B13. Remarks:

***B14. Evaluator:** M. Peak

***Date of Evaluation:** 2023

(Sketch Map with north arrow required)

(See attached sketch map)

(This space reserved for official comments.)

State of California — The Resources Agency **DEPARTMENT OF PARKS AND RECREATION** **CONTINUATION SHEET**	**Primary #** **HRI#** **Trinomial**

Page of ***Resource Name or #** (Assigned by recorder) TM6467 Building 1

***Recorded by:** Lawson/Gerry ***Date:** 10/30/23 ■ Continuation ☐ Update

Building 1 looking east

Outbuilding 1 looking east

State of California – Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

Page 4 **of** 5 ***Resource Name or #** (Assigned by recorder) TM6467 Building 1

***Drawn by:** Google Earth and Gerry ***Date of map:** 10/30/2023

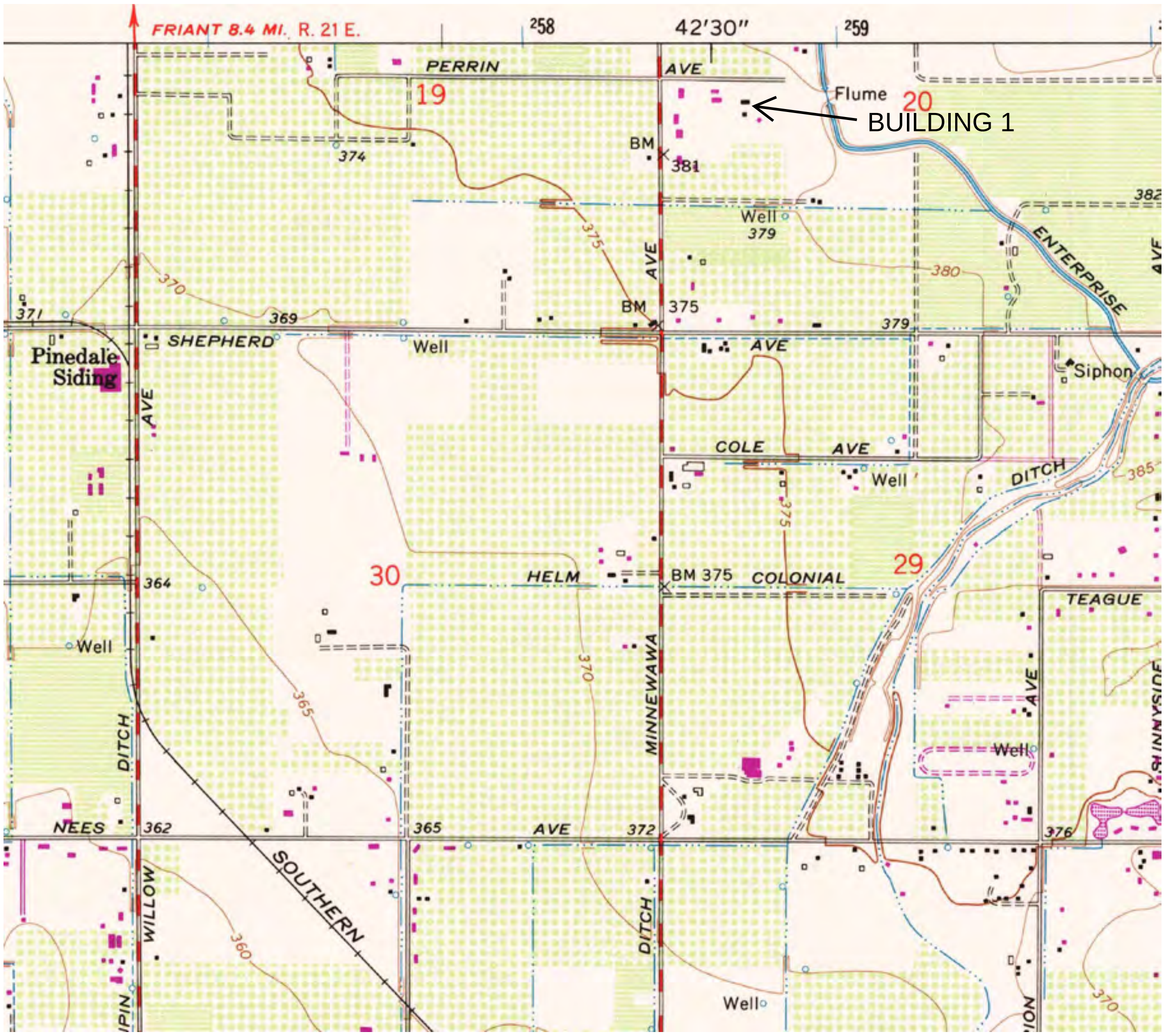
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

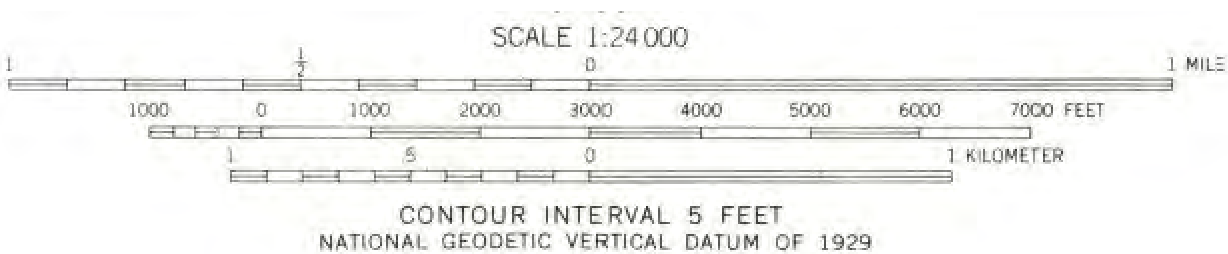
Primary #
HRI#
Trinomial

***Resource Name or #:** TM6467 Building 1

***Map Name:** Clovis 7.5'

***Scale:** 1: 24,0000 ***Date of Map:** 1964





State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

Page 1 of 5 *Resource Name or #: TM6467 Building 2

P1. Other Identifier:

***P2. Location:** ☐ Not for Publication ■ Unrestricted ***a. County:** Fresno
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Clovis **Date:** 1964 **T** 12S ; **R** 21E ; NW¼ **of** SW¼ **of Sec** 20 ; M.D. **B.M.**
c. Address: 9452 N Minnewawa Avenue City: Clovis Zip: 93619
d. UTM: Zone: 11 ; (NAD27) 02 58 481 mE/ 40 83 984 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 375'
About 480' S of Perrin Road to the driveway.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

There are two residences at this address. One residence, currently occupied by the original owner, is a long narrow building oriented north-south and set back from the street. The other is north of the first and oriented east west. This is a modern home, dated 2008 per Assessor, and is currently vacant. Google Earth historic aerials confirm the construction date and indicate that it replaced a storage structure that had occupied the area.

The owner claims the occupied house was built in the mid 1960's, which is consistent with its appearance and other houses in the immediate area.. It is a Ranch Style with aluminum-framed windows, wood panel and stucco siding, new replacement composite roofing, brick chimney and a poured concrete foundation. It is a sidegabled building with a cross gable on the north side. This appears to be strictly decorative, because it does not extend out from the main mass of the building on the front and does not appear on the rear elevation at all. About 40% of Ranch houses have a cross gable (McAlester, 2015:598).

The rear has roof extensions for the full width of the building supported by square wood columns This is unusual in Ranch houses.

Behind both houses is a detached two-car garage with plywood siding, roller steel doors, composite roofing, and a a poured concrete foundation. Its age appears consistent with 1980's construction.

***P3b. Resource Attributes:** (List attributes and codes) HP2 - Single Family Property

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) Looking east at front elevation. 11/16/23

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1965 per owner

P7. Owner and Address:

9454 Minnewawa Ave
Clovis

***P8. Recorded by:** (Name, affiliation, and address)
Lawson/Gerry
Peak & Associates, Inc.
3941 Park Drive, Ste 20-329
El Dorado Hills, CA 95762

***P9. Date Recorded:** 11/16/23

***P10. Survey Type:** (Describe)
Complete pedestrian. For proposed development.

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Cultural Resources Assessment of the TM6467 Project, Clovis, Fresno County, California. Peak & Associates, Inc. 2023.

***Attachments:** ☐NONE ■Location Map ■Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) 6467 Building 2

B1. Historic Name:

B2. Common Name: 9452 N Minnewawa Avenue

B3. Original Use: Residence   B4. Present Use: Vacant

***B5. Architectural Style:** It is a cross gabled Ranch style which describes about 40% of the Ranch houses built in the US (McAlester 2015:598). It is thoroughly stereotypical of that style.

***B6. Construction History:** (Construction date, alterations, and date of alterations)
Constructed 1965, according to the County Assessor's records.

***B7. Moved?** ■No ☐Yes (C) ☐Unknown **Date:** **Original Location:**

***B8. Related Features:** There is a garage located behind (east) of the residence using similar exterior materials as the residence.

B9a. Architect: Unknown   b. Builder: Unknown

***B10. Significance: Theme:** **Area:**

Period of Significance: **Property Type:** **Applicable Criteria:**

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

To be eligible for the California Register of Historical Resources (CRHR) a property must meet at least one of four criteria. CRHR Criterion A requires that the property be related to important historical events. There is no known association of this small rural property with such events. Similarly, there are no associations with important people in history (CRHR Criterion B).

The building is in a very common architectural style, and it is not an unusually fine exemplar of that style. . There is nothing in particular wrong with it, but there is nothing remarkable about it either. It is not eligible under CRHR Criterion C.

The building is quite recent and this, coupled with the absence of a well or privy pit, indicates that it has no likelihood of returning important data through historical archeology (CRHR Criterion D).

We conclude the building is not eligible for the California Register.

B11. Additional Resource Attributes: (List attributes and codes) none

***B12. References:** McAlester, Virginia Savage 2015 *A Field Guide to American Houses.* Alfred A. Knopf, New York.

B13. Remarks:

***B14. Evaluator:** M. Peak

***Date of Evaluation:** 2023

(Sketch Map with north arrow required)

(See attached sketch map)

(This space reserved for official comments.)

***Resource Name or #** (Assigned by recorder) TM6467 Building 2

***Recorded by:** Lawson/Gerry ***Date:** 10/30/23 ■ Continuation ☐ Update

Garage behind 1965 house

Newer house on property looking NE

State of California ♁ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

Page 4 **of** 5 ***Resource Name or #** (Assigned by recorder) TM6467 Building 2

***Drawn by:** Google Earth and Gerry ***Date of map:** 10/30/2023

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

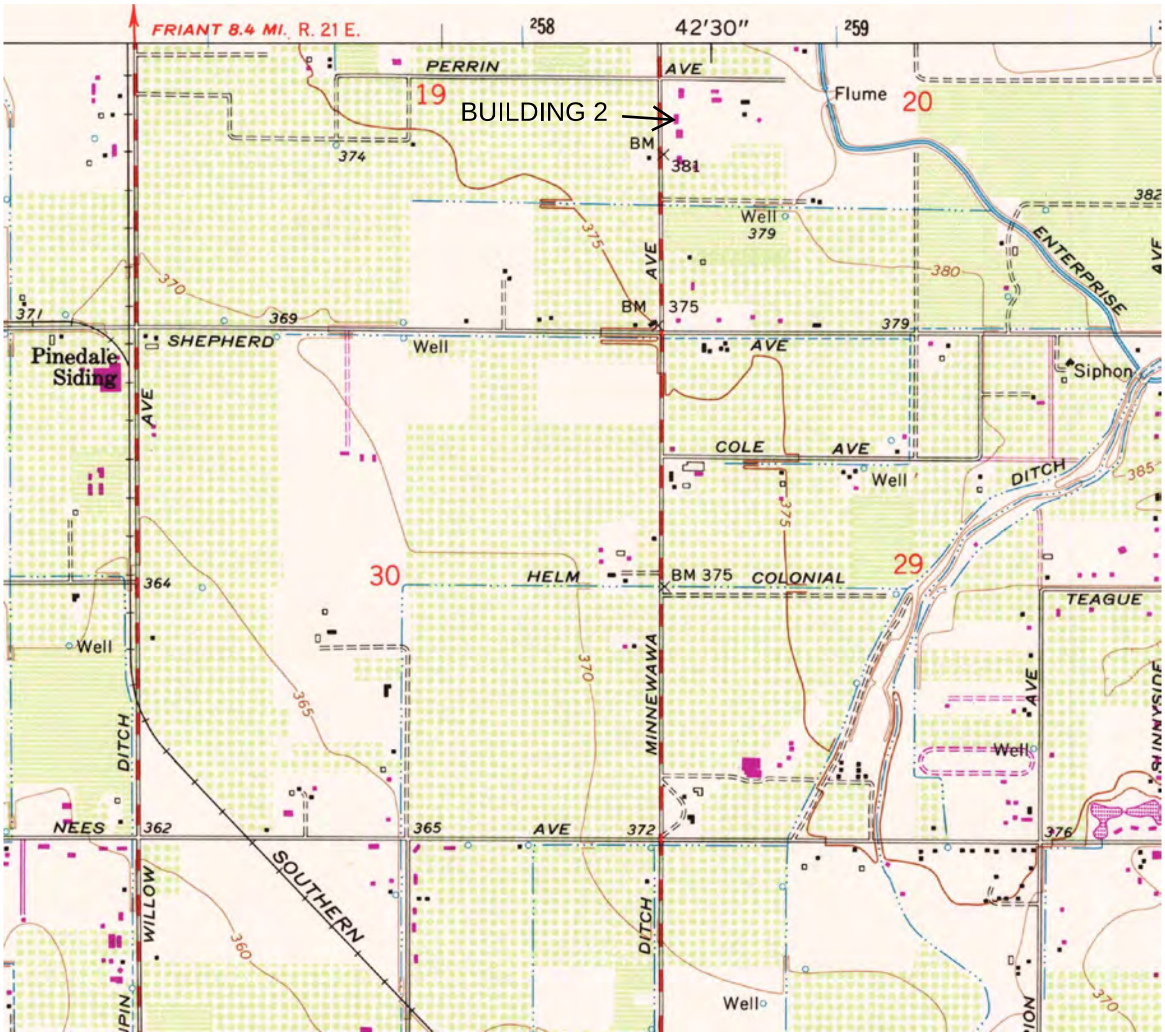
Page 5 **of** 5

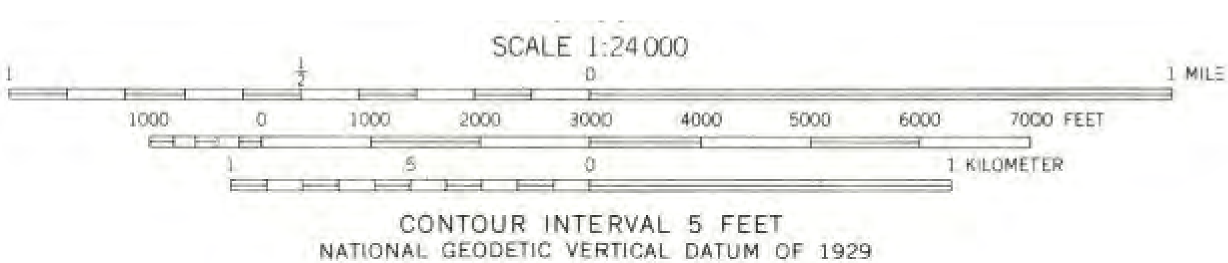
***Resource Name or #:** TM6467 Building 2

***Map Name:** Clovis 7.5'

***Scale:** 1: 24,0000

***Date of Map:** 1964





State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or #: TM6467 Building 3

P1. Other Identifier:

***P2. Location:** ☐ Not for Publication ■ Unrestricted ***a. County:** Fresno

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Clovis **Date:** 1964 **T** 12S ; **R** 21E ; NW¼ **of** SW¼ **of Sec** 20 ; M.D. **B.M.**

c. Address: 9434 N Minnewawa Avenue City: Clovis Zip: 93619

d. UTM: Zone: 11 ; (NAD27) 02 58 492 mE/ 40 83 933 mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 375'
About 640' S of Perrin Road to the northern access of a U-shaped driveway.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This building, currently occupied by a renter, is reported to have been constructed in the late 1960's by the owner and in 1965 by the County Assessor. There is a shed in the same style as the house that the owner says was built at the same time.

The house has combined stucco/brick exterior, attached garage, concrete foundation, replacement composite roofing, wide eves, replacement vinyl-framed windows and electrical and plumbing equipment consistent with a 1960's construction date.

The house does not fit comfortably into any defined style in residential architecture. It has most in common with Minimal Traditional, in that it has no architectural decorative features at all. However, it is newer than the dates when most Minimal Traditionals were built and it has other features that do not conform. It is a side gabled building with an attached garage on the south under its own gable and two crossgabled sections facing the street (west) flanking the entry way. On the rear the northern side gable is repeated, but most of the rear is occupied by a shed roofed segment facing an in-ground pool. This may be a feature added after the initial construction.

***P3b. Resource Attributes:** (List attributes and codes) HP2 - Single Family Property

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) Looking east at front elevation. 11/16/23

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both
1965 per Assessor

***P7. Owner and Address:**

9454 Minnewawa Ave
Clovis

***P8. Recorded by:** (Name, affiliation, and address)
Lawson/Gerry
Peak & Associates, Inc.
3941 Park Drive, Ste 20-329
El Dorado Hills, CA 95762

***P9. Date Recorded:** 11/16/23

***P10. Survey Type:** (Describe)
Complete pedestrian. For proposed development.

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Cultural Resources Assessment of the TM6467 Project, Clovis, Fresno County, California. Peak & Associates, Inc. 2023.

***Attachments:** ☐NONE ■Location Map ■Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) 6467 Building 3

B1. Historic Name:
B2. Common Name: 9434 N Minnewawa Avenue
B3. Original Use: Residence   B4. Present Use: Vacant

***B5. Architectural Style:** The house does not fit comfortably into any defined style in residential architecture. It has most in common with Minimal Traditional, in that it has no architectural decorative features at all. However, it is newer than the dates when most Minimal Traditionals were built, and it has other features that do not conform.

***B6. Construction History:** (Construction date, alterations, and date of alterations)
Constructed 1965, according to the County Assessor's records.

***B7. Moved?** ■No ☐Yes (C) ☐Unknown **Date:** **Original Location:**

***B8. Related Features:** There is a storage structure located near the northeast corner of the residence using the aame exterior materials as the residence.

B9a. Architect: Unknown   b. Builder: Unknown

***B10. Significance: Theme:** **Area:**
Period of Significance: **Property Type:** **Applicable Criteria:**
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

To be eligible for the California Register of Historical Resources (CRHR) a property must meet at least one of four criteria. CRHR Criterion A requires that the property be related to important historical events. There is no known association of this small rural property with such events. Similarly, there are no associations with important people in history (CRHR Criterion B).

The building is in no particular architectural style. The double front-facing gables do not conform to a recognized style of the era. It is not an unusually good example of any style. It is not eligible under CRHR Criterion C.

The building is quite recent and this, coupled with the absence of a well or privy pit, indicates that it has no likelihood of returning important data through historical archeology (CRHR Criterion D).

We conclude the building is not eligible for the California Register.

B11. Additional Resource Attributes: (List attributes and codes) none

***B12. References:** McAlester, Virginia Savage 2015 *A Field Guide to American Houses.* Alfred A. Knopf, New York.

B13. Remarks:

***B14. Evaluator:** M. Peak

***Date of Evaluation:** 2023

(This space reserved for official comments.)

(Sketch Map with north arrow required)

(See attached sketch map)

State of California ♁ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

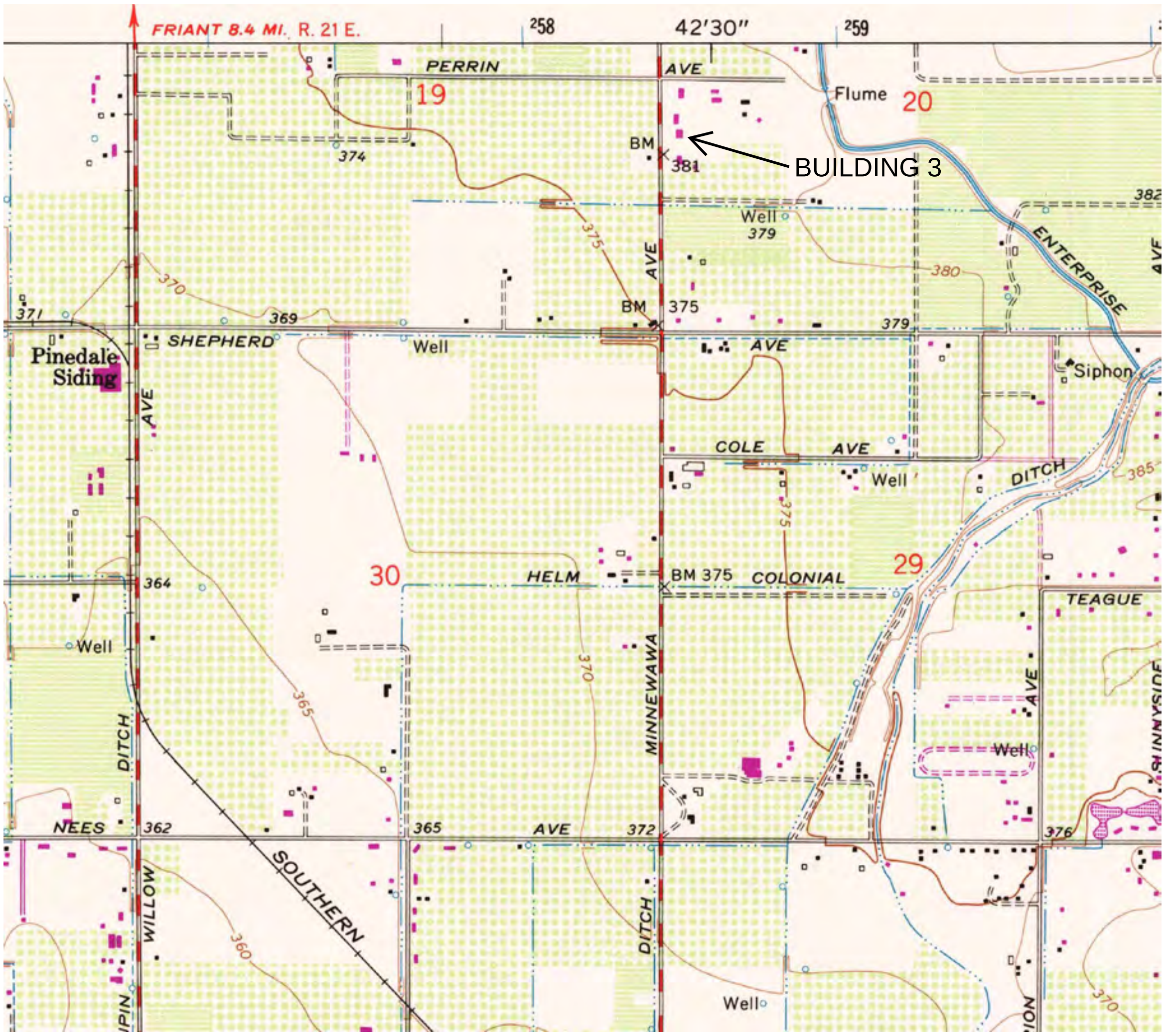
Page 3 of 4 *Resource Name or # (Assigned by recorder) TM6467 Building 3

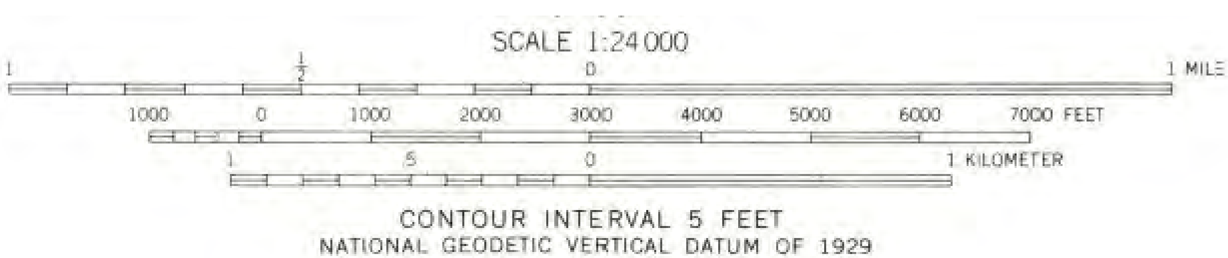
*Drawn by: Google Earth and Gerry *Date of map: 10/30/2023

State of California — The Resources Agency **DEPARTMENT OF PARKS AND RECREATION** **LOCATION MAP**	**Primary #** **HRI#** **Trinomial**

Page 4 **of** 4 ***Resource Name or #:** TM6467 Building 3

***Map Name:** Clovis 7.5' ***Scale:** 1: 24,0000 ***Date of Map:** 1964





Traffic Impact Analysis Report

Clovis and Perrin Subdivision

Located on the Southwest Corner of Clovis Avenue at Minnewawa Avenue

In the City of Clovis, California

Prepared for:

Bonadelle Neighborhoods
7030 North Fruit Avenue, Suite 101
Fresno, CA 93711

April 17, 2024

Project No. 006-049

JLB TRAFFIC ENGINEERING, INC.

Traffic Engineering, Transportation Planning, & Parking Solutions
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Phone: (559) 570-8991
www.JLBtraffic.com

Traffic Engineering, Transportation Planning, & Parking Solutions

Traffic Impact Analysis Report

For the Clovis and Perrin Subdivision located on the Southwest Corner of Clovis Avenue at Perrin Avenue

In the City of Clovis, CA

April 17, 2024

This Traffic Impact Analysis Report has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions and decisions are based.

Prepared by:

Jose Luis Benavides, PE, TE

President

REGISTERED PROFESSIONAL ENGINEER
JOSE LUIS BENAVIDES
No.T 2328
Exp:06/30/23
TRAFFIC
STATE OF CALIFORNIA

Traffic Engineering, Transportation Planning, & Parking Solutions
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Phone: (559) 570-8991
www.JLBtraffic.com

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Introduction and Summary

Introduction

This Report describes a Traffic Impact Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for the Clovis and Perrin Subdivision (Project) located on the southwest corner of Clovis Avenue at Perrin Avenue in the City of Clovis. The Project proposes to develop 162 single family residential units. Based on information provided to JLB, the Project is consistent with the City of Clovis *General Plan*. Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term and long-term roadway needs, determine potential roadway improvement measures and identify any critical traffic issues that should be addressed in the ongoing planning process. The TIA primarily focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. The Scope of Work was prepared via consultation with City of Clovis, City of Fresno, County of Fresno and Caltrans staff.

Summary

The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policies of the City of Clovis, County of Fresno and Caltrans.

Existing Traffic Conditions

- At present, the study intersection of Minnewawa Avenue at Behymer Avenue exceeds its LOS threshold during both peak periods. Additional details as to the recommended improvements for this intersection are presented later in this Report.
- At present, all study segments operate at an acceptable LOS during both peak periods.

Existing plus Project Traffic Conditions

- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- At buildout, the proposed Project is estimated to generate a maximum of 1,528 daily trips, 113 AM peak hour trips and 152 PM peak hour trips.
- Under this scenario, the study intersection of Minnewawa Avenue at Behymer Avenue is projected to exceed its LOS threshold during both peak periods. Additional details as to the recommended improvements for this intersection are presented later in this Report.
- Under this scenario, all study segments are projected to operate at an acceptable LOS during both peak periods.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 114,510 weekday daily trips, 8,607 weekday AM peak hour trips and 11,147 weekday PM peak hour trips.
- Under this scenario, the study intersections of Minnewawa Avenue at Behymer Avenue, Peach Avenue at Shepherd Avenue and Minnewawa Avenue at Shepherd Avenue are projected to exceed their LOS thresholds during both peak periods. Additional details as to the recommended improvements for these intersections are presented later in this Report.
- Under this scenario, the study segments of Shepherd Avenue between Willow Avenue and Peach Avenue and Shepherd Avenue between Peach Avenue and Minnewawa Avenue are projected to exceed their LOS thresholds during one or both peak periods. Additional details as to the recommended improvements for these intersections are presented later in this Report.

Cumulative Year 2046 plus Project Traffic Conditions

- Under this scenario, the study intersections of Minnewawa Avenue at Behymer Avenue, Minnewawa Avenue at Perrin Avenue, Clovis Avenue at Baron Avenue, Peach Avenue at Shepherd Avenue and Minnewawa Avenue at Shepherd Avenue are projected to exceed their LOS threshold during one or both peak periods. Additional details as to the recommended improvements for these intersections are presented later in this Report.
- Under this scenario, the study segments of Shepherd Avenue between Willow Avenue and Peach Avenue and Shepherd Avenue between Peach Avenue and Minnewawa Avenue are projected to exceed their LOS thresholds during both peak periods. Additional details as to the recommended improvements for these intersections are presented later in this Report.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Scope of Work

The TIA focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. On October 11, 2023, a Draft Scope of Work for the preparation of a Traffic Impact Analysis for this Project was provided to the City of Clovis, City of Fresno, County of Fresno and Caltrans for their review and comment.

On October 11, 2023, Caltrans replied that they had no comments on the proposed scope. On October 11, 2023, the City of Fresno replied that they had no comments on the proposed scope. On October 12, 2023, the County requested that the following study facilities be included in the analysis. The requested facilities include the intersections of Minnewawa Avenue at Behymer Avenue, Willow Avenue at Behymer Avenue and Willow Avenue at Shepherd Avenue. The requested facilities include the segments of Minnewawa Avenue between Shepherd Avenue and Perrin Avenue, Minnewawa Avenue between Perrin Avenue and Behymer Avenue, Behymer Avenue between Willow Avenue and Minnewawa Avenue, Shepherd Avenue between Willow Avenue and Peach Avenue, Shepherd Avenue between Peach Avenue and Minnewawa Avenue and Shepherd Avenue between Minnewawa Avenue and DeWitt Avenue. On October 16, 2023, the City of Clovis requested the intersection of Minnewawa Avenue at International Avenue, Willow Avenue and International Avenue and Peach Avenue at Shepherd Avenue be included in the analysis as well as the near term projects of Tract 6343, Tract 6205 and Heritage Grove – The Avenue. Based on further discussions with the City of Clovis and County of Fresno, the intersections of Willow Avenue at International Avenue, Minnewawa Avenue at International Avenue, Willow Avenue at Behymer Avenue and Willow Avenue at Shepherd Avenue as well as the segments of Behymer Avenue between Willow Avenue and Minnewawa Avenue and Shepherd Avenue between Minnewawa Avenue and DeWitt Avenue were no longer requested. The removal of these requested facilities centered around a project trip distribution which displayed that the minimum trip thresholds were not met by the requested agency or that they were not within the jurisdiction of the requested agency.

Based on the comments received, in addition to the facilities included in the Draft Scope of Work, this TIA also analyzes the intersections of Minnewawa Avenue at Behymer Avenue and Peach Avenue at Shepherd Avenue as well as the segments Minnewawa Avenue between Shepherd Avenue and Perrin Avenue, Minnewawa Avenue between Perrin Avenue and Shepherd Avenue, Shepherd Avenue between Willow Avenue and Peach Avenue and Shepherd Avenue between Peach Avenue and Minnewawa Avenue. Furthermore, this TIA includes the near term project of Tract 6343, Tract 6205 and Heritage Grove – The Avenue. The Scope of Work and the comments received from the lead agency and responsible agencies are included in Appendix A.

Study Facilities

Roadway closures along Shepherd Avenue due to construction are projected to carry into late 2024 and possibly into 2025. For this reason, the City of Clovis agreed to allow a combination of recent and historical traffic counts to be utilized in this TIA. The historical count was conducted in February 2020, whereas the recent counts were conducted in September 2023, November 2023, February 2024 and March 2024. The City of Clovis accepted a growth rate of 2.00% in the AM peak and 3.44% in the PM peak for the traffic count of Peach Avenue at Shepherd Avenue which was collected in February 2020. The intersection turning movement counts included pedestrian and bicycle volumes. The traffic counts for the existing study intersections are contained in Appendix B. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 2.

Study Intersections

1. Minnewawa Avenue / Behymer Avenue
2. Minnewawa Avenue / Perrin Avenue
3. Clovis Avenue / Perrin Avenue (Future)
4. Clovis Avenue / Baron Avenue
5. Peach Avenue / Shepherd Avenue
6. Minnewawa Avenue / Shepherd Avenue
7. Clovis Avenue / Shepherd Avenue

Study Segments

1. Minnewawa Avenue between Behymer Avenue and Perrin Avenue
2. Minnewawa Avenue between Perrin Avenue and Shepherd Avenue
3. Shepherd Avenue between Willow Avenue and Peach Avenue
4. Shepherd Avenue between Peach Avenue and Minnewawa Avenue

Study Scenarios

Existing Traffic Conditions

This scenario evaluates the Existing Traffic Conditions based on Year 2024 traffic volumes. To determine the Year 2024 traffic volumes, the traffic counts conducted in February 2020 were expanded by a growth rate of a growth rate of 2.00% for the AM peak and 3.44% for the PM peak as agreed upon by the City of Clovis. No adjustments were made to the counts collected in September 2023 or November 2023 as those were less than six months old at the time of the collection of the most recent 2024 counts. The most recent counts were collected in February and March 2024.

Existing plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by adding the Project Only Trips to the Existing Traffic Conditions scenario. The Project Only Trips to the study facilities were developed based on existing travel patterns, the Fresno COG ABM Project Select Zone, the surrounding roadway network, engineering judgment, knowledge of the study area, existing residential and commercial densities, and the *City of Clovis General Plan* Circulation Element in the vicinity of the Project site. The Fresno COG Project Select Zone was prepared by Kittelson & Associates and plots are contained in Appendix C.

Near Term plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the Near Term related trips to the Existing plus Project Traffic Conditions scenario.

Cumulative Year 2046 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadways conditions based on the Cumulative Year 2046 plus Project Traffic Conditions. The Cumulative Year 2046 plus Project traffic volumes were obtained by using the Fresno COG activity-based model (ABM) (Base Year 2019 and Cumulative Year 2046) and existing traffic counts. Under this scenario, the increment method was utilized to determine the Cumulative Year 2046 plus Project traffic volumes. The Fresno COG ABM results were prepared by Kittelson & Associates and plots are contained in Appendix C.

LOS Methodology

LOS is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 7th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. U-turn movements were analyzed using HCM 2000 methodologies and would yield more accurate results for the reason that HCM 6 Edition methodologies do not allow the analysis of U-turns. Lane configurations not reflective of existing conditions are a result of software limitations and thus represent a worst-case scenario. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

While LOS is no longer the criteria of significance for traffic impacts in the state of California, the City of Clovis continues to apply congestion-related conditions or requirements for land development projects through planning approval processes outside of CEQA Guidelines in order to continue the implementation of *City of Clovis General Plan* policies.

LOS Thresholds

The *City of Clovis General Plan* has established LOS D as the acceptable level of traffic congestion on most major streets. Therefore, LOS D is used to evaluate the potential significance of LOS impacts to City of Clovis roadway facilities pursuant to the *City of Clovis General Plan*.

The *Fresno County General Plan* has established LOS C as the acceptable level of traffic congestion on county roads and streets that fall entirely outside the Sphere of Influence (SOI) of a City (Fresno County 2000). For those areas that fall within the SOI of a City, the LOS threshold of the City is used in this report. In this case, all study facilities fall within the City of Clovis SOI, therefore, the City of Clovis LOS thresholds are utilized.

Caltrans no longer considers delay as a significant impact to the environment, for land use projects and plans. According to the Caltrans document VMT Focused Transportation Impact Study Guidelines dated May 2020, Caltrans review of land use projects and plans is focused on a VMT metric consistent with CEQA. In this TIA, however, all study intersections fall within the City of Clovis SOI. Therefore, the City of Clovis LOS thresholds are utilized.

Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Yellow time consistent with the *California Manual on Uniform Traffic Control Devices* (CA MUTCD) based on approach speeds (Caltrans, 2024).
- Yellow time of 3.2 seconds for left-turn phases.
- All-red clearance intervals of 1.0 second for all phases.
- Walk intervals of 7.0 seconds.
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted and 2.0 seconds added.
- An average of 10 pedestrian calls per hour at signalized intersections.
- At existing intersections, the heavy vehicle factor observed for each intersection or a minimum of 3 percent were utilized under all scenarios.
- The number of observed pedestrians at existing intersections was utilized under all study scenarios.
- At existing intersections, the observed approach Peak Hour Factor (PHF) is utilized in the Existing, Existing plus Project and Near Term plus Project scenarios.
- For both Cumulative Year 2046 scenarios, the following PHF was utilized to reflect traffic operations and an increase in future traffic volumes. As roadways start to reach their saturated flow rates, PHF's tend to increase to 0.90 or higher in urban settings. A PHF of 0.92, or the existing PHF if higher, is utilized for all study intersections.

Existing Traffic Conditions

Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below.

Peach Avenue is an existing north-south two-lane collector divided by a two-way left-turn lane in the vicinity of the proposed Project site. In this area, Peach Avenue exists between Shepherd Avenue and Herndon Avenue. The *City of Clovis General Plan* Circulation Element designates Peach Avenue as a collector through the City of Clovis SOI.

Minnewawa Avenue is an existing north-south two-lane undivided thematic street (collector) adjacent to the proposed Project site. In this area, Minnewawa Avenue exists between Copper Avenue and Villa Avenue. The *City of Clovis General Plan* Circulation Element designates Minnewawa Avenue as a collector between Copper Avenue and Behymer Avenue, an arterial between Behymer Avenue and Alluvial Avenue and a collector between Bullard Avenue and Ashlan Avenue.

Clovis Avenue is an existing north-south four-lane divided arterial in the vicinity of the proposed Project site. In this area, Clovis Avenue exists between Baron Avenue and the City of Clovis southern boundary. The *City of Clovis General Plan* Circulation Element designates Clovis Avenue as an arterial between Copper Avenue and the City of Clovis southern boundary.

Behymer Avenue is an existing east-west two-lane undivided arterial in the vicinity of the proposed Project site. In this area, Behymer Avenue exists between Willow Avenue and Fowler Avenue. The *City of Clovis General Plan* Circulation Element designates Behymer Avenue as an arterial between Willow Avenue and Clovis Avenue and a collector between Clovis Avenue and Fowler Avenue.

Perrin Avenue is an existing east-west two-lane undivided collector adjacent to the proposed Project site. In this area, Perrin Avenue exists between Willow Avenue and Minnewawa Avenue. The *City of Clovis General Plan* Circulation Element designates Perrin Avenue as a collector between Willow Avenue and Minnewawa Avenue.

Shepherd Avenue is an existing east-west four-lane divided arterial in the vicinity of the proposed Project site. In this area, Shepherd Avenue exists between Willow Avenue and State Route 168. The *City of Clovis General Plan* Circulation Element designates Shepherd Avenue as an arterial between Willow Avenue and Clovis Avenue and an expressway between Clovis Avenue and State Route 168.

Traffic Signal Warrants

The CA MUTCD indicates that an engineering study of traffic conditions, pedestrian characteristics and physical features of an intersection shall be conducted to determine whether the installation of traffic signal controls are justified. The CA MUTCD provides a total of nine (9) warrants to evaluate the need for traffic signal controls. These warrants include 1) Eight-Hour Vehicular Volume, 2) Four-Hour Vehicular Volume, 3) Peak Hour, 4) Pedestrian Volume, 5) School Crossing, 6) Coordinated Signal System, 7) Crash Experience, 8) Roadway Network and 9) Intersection Near a Grade Crossing. Signalization of an intersection may be appropriate if one or more of the signal warrants are satisfied. However, the CA MUTCD also states that "The satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic control signal" (Caltrans, 2024).

If traffic signal warrants are satisfied when a LOS threshold impact is identified at an unsignalized intersection, then installation of a traffic signal control may serve as an improvement measure. For instances where traffic signal warrants are satisfied, traffic signal control is not considered to be the default improvement measure. Since the installation of a traffic signal control typically results in additional delay to a larger percentage of road users, an attempt is made to improve the intersection approach lane geometrics in order to improve its LOS while maintaining the existing intersection controls. If the additional lanes do not result in acceptable LOS at the intersection, then in those cases implementation of a traffic signal control or a roundabout would be considered.

Warrant 3 was prepared for the unsignalized intersections under the Existing Traffic Conditions scenario. These warrants are contained in Appendix I. At present, Warrant 3 is met for the intersections of Minnewawa Avenue at Behymer Avenue and Peach Avenue at Shepherd Avenue during both peak periods. Based on the operational analysis and engineering judgment, signalization of these intersections is not recommended. The CA MUTCD states "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal."

Results of Existing Level of Service Analysis

Figure 2 illustrates the Existing Traffic Conditions turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix E. Table I presents a summary of the Existing peak hour LOS at the study intersections. Table II presents a summary of the Existing peak hour LOS at the study segments.

At present, the intersection of Minnewawa Avenue at Behymer Avenue exceeds its LOS threshold during both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at this intersection.

- Minnewawa Avenue / Behymer Avenue
  - Add a northbound left-turn lane,
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane; and
  - Modify the southbound left-through-right lane to a through-right lane.

Table I: Existing Intersection LOS Results

ID	Intersection	Intersection Control	AM (7 - 9) Peak Hour		PM (4 - 6) Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**39.5**	**E**	**55.9**	**F**
		All-Way Stop (Improved)	24.3	C	24.8	C
2	Minnewawa Avenue / Perrin Avenue	Two-Way Stop	14.3	B	16.3	C
3	Clovis Avenue / Perrin Avenue	Does Not Exist	-	-	-	-
4	Clovis Avenue / Baron Avenue	Does Not Exist	-	-	-	-
5	Peach Avenue / Shepherd Avenue	Two -Way Stop	16.7	C	26.0	D
6	Minnewawa Avenue / Shepherd Avenue	Traffic Signal	21.5	C	20.8	C
7	Clovis Avenue / Shepherd Avenue	Traffic Signal	19.9	B	20.1	C

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

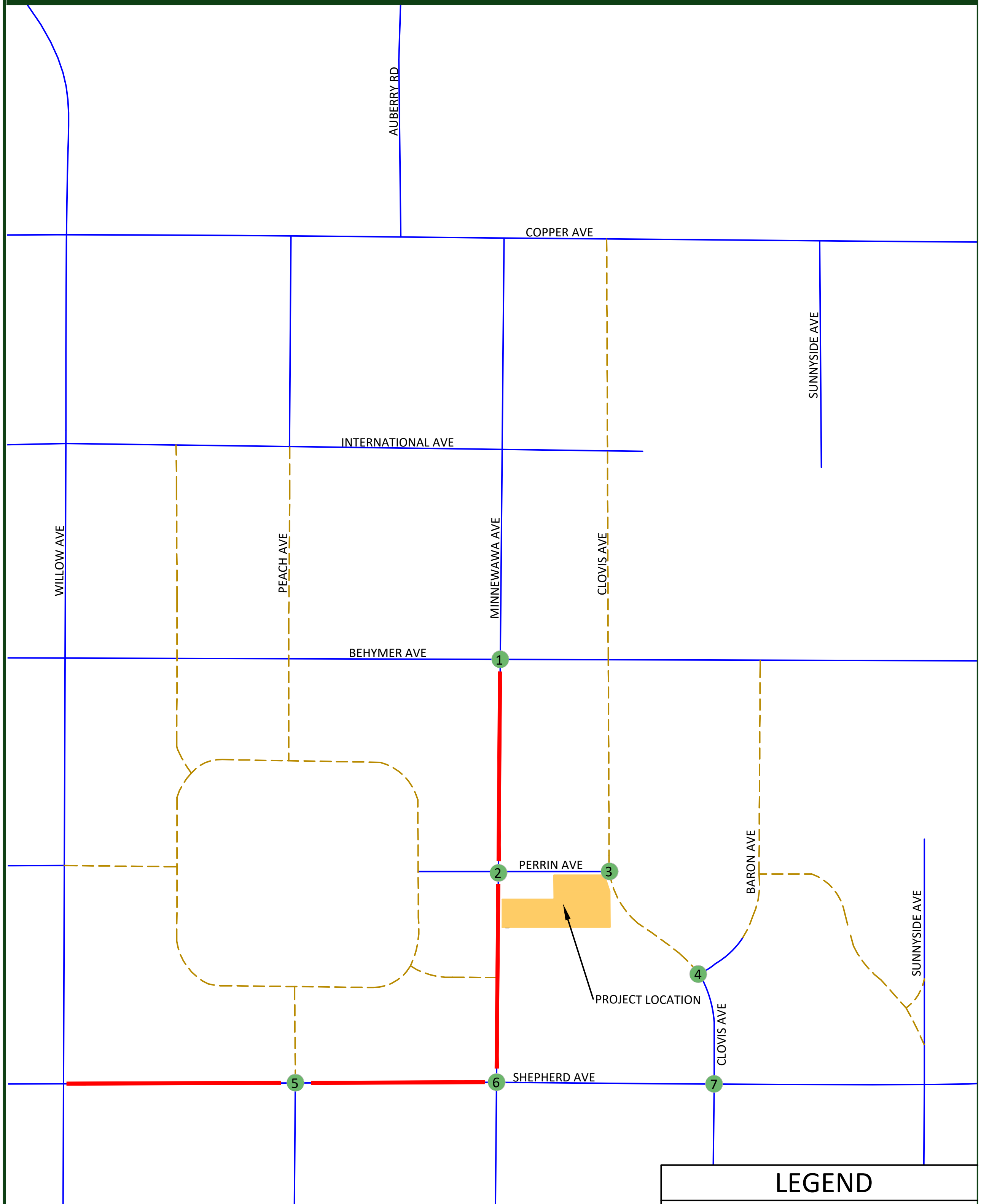
At present, all study segments operate at an acceptable LOS during both peak periods.

Table II: Existing Segment LOS Results

ID	Segment	Limits	Lanes	AM Peak Volume	AM LOS	PM Peak Volume	PM LOS
1	Minnewawa Avenue	Behymer Avenue and Perrin Avenue	2	689	B	689	C
2	Minnewawa Avenue	Perrin Avenue and Shepherd Avenue	2	704	B	703	C
3	Shepherd Avenue	Willow Avenue and Peach Avenue	3	1,082	C	1,246	C
4	Shepherd Avenue	Peach Avenue and Minnewawa Avenue	3	1,229	D	1,216	C

Clovis and Perrin Subdivision - City of Clovis
Vicinity Map

Figure 1



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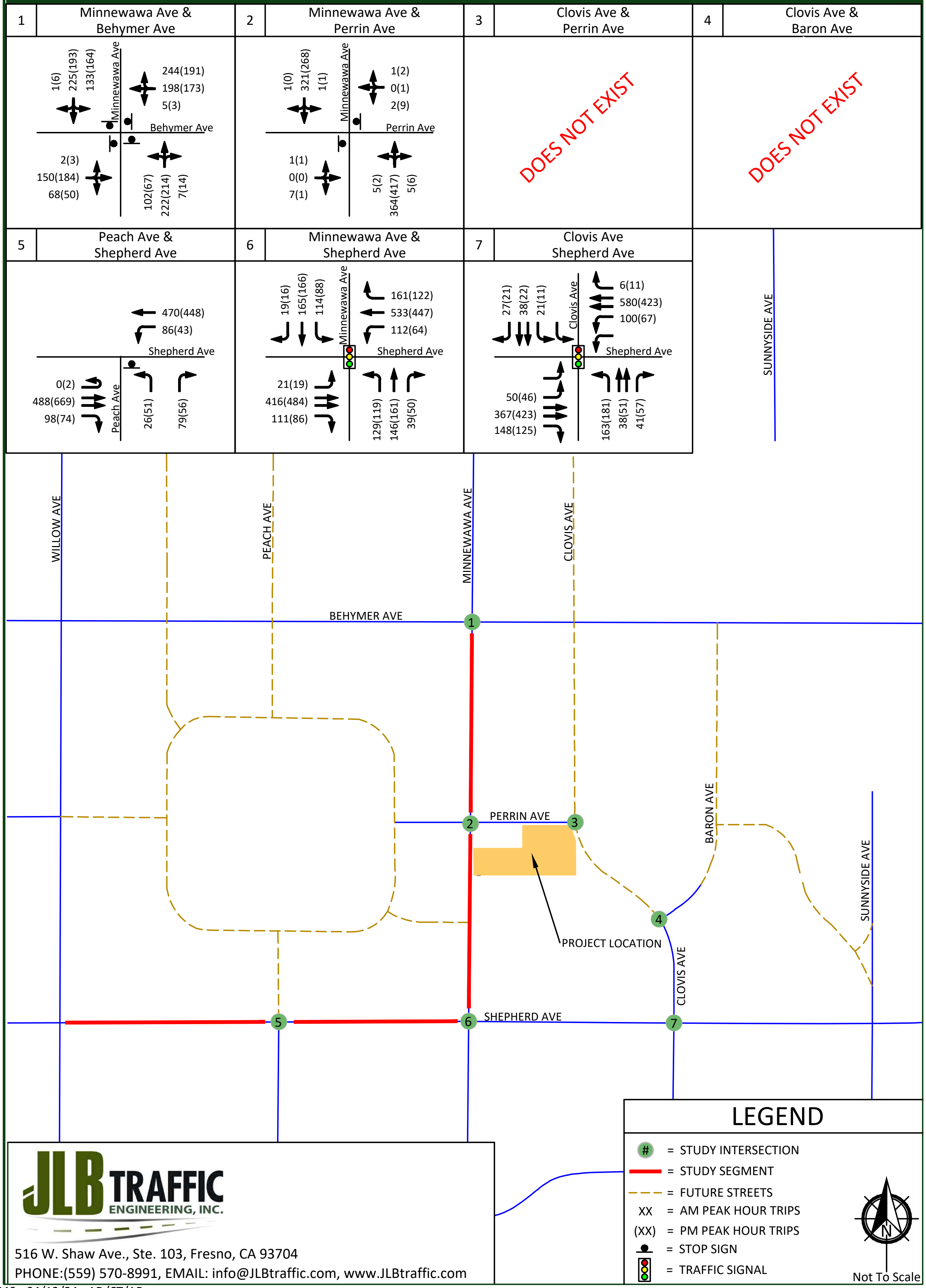
Clovis and Perrin Subdivision - City of Clovis
Existing - Traffic Volumes, Geometrics and Controls

Figure 2



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Existing plus Project Traffic Conditions

Project Description

The Project is proposing to develop the southwest corner of Clovis Avenue and Perrin Avenue with 162 single family residential units. Based on information provided to JLB, the Project is consistent with the City of Clovis *General Plan*. Figure 3 illustrates the latest Project Site Plan.

Project Access

Based on the latest Project Site Plan, access to and from the Project site will be from two (2) access points. Project Driveway A is located on the south side of Perrin Avenue approximately 900 feet east of Minnewawa Avenue and is proposed to have full access. Project Driveway B is located on the east side of Minnewawa Avenue approximately 425 feet south of Perrin Avenue and proposed to have full access.

JLB analyzed the location of the existing and proposed roadways and access points relative to those in the vicinity of the Project site. A review of the existing and proposed roadways and access points indicates that they are located at points that minimize traffic operational impacts to existing and future roadway networks. The latest Project Site Plan can be found in Figure 3.

Project Trip Generation

The trip generation rates for the proposed Project were obtained from the 11th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table III presents the trip generation for the proposed Project with trip generation rates for 162 dwelling units of Single-Family Detached Housing (210). At buildout, the proposed Project is estimated to generate approximately 1,528 daily trips, 113 AM peak hour trips and 152 PM peak hour trips.

Table III: Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM Peak Hour*						*PM Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In* %	*Out* %	*In*	*Out*	*Total*	*Trip Rate*	*In* %	*Out* %	*In*	*Out*	*Total*
Single-Family Detached Housing (210)	162	d.u.	9.43	1,528	0.70	26	74	29	84	113	0.94	63	37	96	56	152
Total Driveway Trips				**1,528**				**29**	**84**	**113**				**96**	**56**	**152**

Note: d.u. = Dwelling Units

Trip Distribution

The trip distribution assumptions were developed based on existing travel patterns, the Fresno COG ABM Project Select Zone, the existing roadway network, engineering judgment, existing residential and commercial densities and the *Clovis General Plan* Circulation Element in the vicinity of the Project site. The Project's trip generation data was provided to Kittelson & Associates to conduct a Project-specific Traffic Analysis Zone (TAZ) analysis using the Fresno COG ABM (Cumulative Year 2046). The Fresno COG Project Select Zone results are contained in Appendix C. Figure 4 illustrates the Project Only Trips at the study intersections.

Active Transportation Plan

The City of Clovis *Active Transportation Plan* (ATP) is an extensive guide detailing the conception for active transportation in the City of Clovis that was adopted in September 2023. This ATP provides strategies to promote the use of walking, bicycling, transit and other alternative modes of transportation. In order to achieve these goals for active transportation, this ATP proposes a comprehensive network of citywide bikeways, trails and sidewalks. The recommended network would add 27 miles of Class I Bike Paths, 85 miles of Class II Bike Lanes, 11 miles of Class III Bike Routes, 8 miles of Paseos for a total of 131 miles of additional bikeways. This ATP also recommends bicycle detection at traffic signals, destination signage, bicycle parking and bikeway maintenance. This network will be constructed in conjunction with adjacent land developments, roadway maintenance and active transportation infrastructure projects using funds from different local, state and federal sources.

Bikeways

The City of Clovis ATP classifies bicycle facilities into the following types:

- Class I Bikeway (Shared-Use Paths and Trails) – Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians with crossflow minimized.
- Class II Bikeway (Bike Lane and Buffered Bike Lane) – Provides a striped lane for one-way bike travel on a street or highway.
- Class III Bikeway (Shared Roadway and Bicycle Boulevard) – Provides a shared use with pedestrians or motor vehicle traffic, typically on lower volume roadways.
- Class IV Bikeways (Separated Bike Lane) – Provides a protected lane for one-way bike travel (one-way cycle track) and protected lanes for two-way bike travel (two-way cycle track) on a street or highway.

Class II (Bike Lane) Bikeways exist in the vicinity of the Project site. In the vicinity of the Project site, Class II Bikeways exist along portions of Shepherd Avenue, Peach Avenue, Minnewawa Avenue and Clovis Avenue. The City of Clovis ATP recommends that Class I and Class II Bikeways be implemented adjacent to and in the vicinity of the Project site (City of Clovis, 2023). Adjacent to the Project site, a Class I Bikeway is planned along the west side of Minnewawa Avenue and a Class II Bikeway is planned along Perrin Avenue. In the vicinity of the Project site, Class II Bikeways are planned on Behymer Avenue, Perrin Avenue, Shepherd Avenue, Peach Avenue, Minnewawa Avenue and Clovis Avenue. In the vicinity of the Project site, a Class I Bikeway is planned on Clovis Avenue. Therefore, it is recommended that the Project construct a Class II Bikeway on its frontage to Perrin Avenue.

Transit

Clovis Stageline and Round Up are the transit operators in the City of Clovis. At present, there is one (1) Stageline route that operates in the vicinity of the proposed Project site, Route 80. Stageline Route 80 operates on Clovis Unified School District schedule only. This route operates between 7:39 AM - 8:00 AM and 3:25 PM - 3:47 PM, stopping at each stop once during each operational period. This route starts at the intersection of Sunnyside Avenue at Fifth Avenue and goes to the intersection of Peach Avenue at Teague Avenue in the morning and reverses the route in the afternoon. The nearest stop to the Project is located at Buchanan High School.

Roadway Network

The Existing plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place with the exception of the Project with its access points, the extension of Clovis Avenue north of Baron Avenue to Perrin Avenue and the extension of Perrin Avenue east of Minnewawa Avenue to Clovis Avenue. Figure 5 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Traffic Signal Warrants

Warrant 3 was prepared for the unsignalized study intersections under the Existing plus Project Traffic Conditions scenario. These warrants are contained in Appendix I. Under this scenario, the intersections of Minnewawa Avenue at Behymer Avenue and Peach Avenue at Shepherd Avenue are projected to satisfy the peak hour signal warrant during both peak periods. Based on the operational analysis and engineering judgment, signalization of these intersections is not recommended. The CA MUTCD states “satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal.”

Results of Existing plus Project Level of Service Analysis

Figure 5 illustrates the Existing plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project Traffic Conditions scenario are provided in Appendix F. Table IV presents a summary of the Existing plus Project peak hour LOS at the study intersections. Table V presents a summary of the Existing plus Project peak hour LOS at the study segments.

Under this scenario, the intersection of Minnewawa Avenue at Behymer Avenue is projected to exceed its LOS threshold during both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at this intersection.

- Minnewawa Avenue / Behymer Avenue
  - Add a northbound left-turn lane,
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane; and
  - Modify the southbound left-through-right lane to a through-right lane.

Table IV: Existing plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM (7 - 9) Peak Hour		PM (4 - 6) Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**45.5**	**E**	**57.7**	**F**
		All-Way Stop (Improved)	25.2	D	25.4	D
2	Minnewawa Avenue / Perrin Avenue	Two-Way Stop	12.0	B	14.3	B
3	Clovis Avenue / Perrin Avenue	Does Not Exist	-	-	-	-
4	Clovis Avenue / Baron Avenue	Two -Way Stop	9.5	A	9.6	A
5	Peach Avenue / Shepherd Avenue	Two -Way Stop	17.1	C	27.2	D
6	Minnewawa Avenue / Shepherd Avenue	Traffic Signal	23.3	C	22.6	C
7	Clovis Avenue / Shepherd Avenue	Traffic Signal	18.9	B	19.0	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Under this scenario, all study segments are projected to operate at an acceptable LOS during both peak periods.

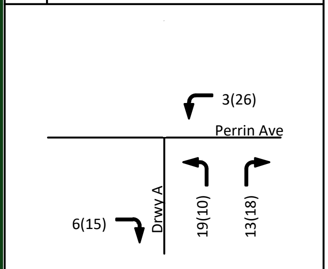
Table V: Existing plus Project Segment LOS Results

ID	Segment	Limits	Lanes	AM Peak Volume	AM LOS	PM Peak Volume	PM LOS
1	Minnewawa Avenue	Behymer Avenue and Perrin Avenue	2	710	B	699	C
2	Minnewawa Avenue	Perrin Avenue and Shepherd Avenue	2	590	B	622	B
3	Shepherd Avenue	Willow Avenue and Peach Avenue	3	1,102	C	1,280	C
4	Shepherd Avenue	Peach Avenue and Minnewawa Avenue	3	1,251	D	1,253	C

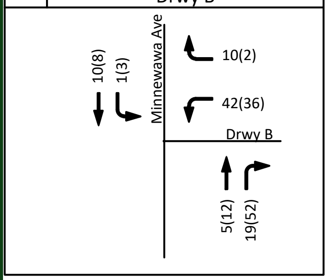
Clovis and Perrin Subdivision - City of Clovis
Project Site Plan

Figure 3

A — Drwy A / Perrin Ave



B — Minnewawa Ave / Drwy B



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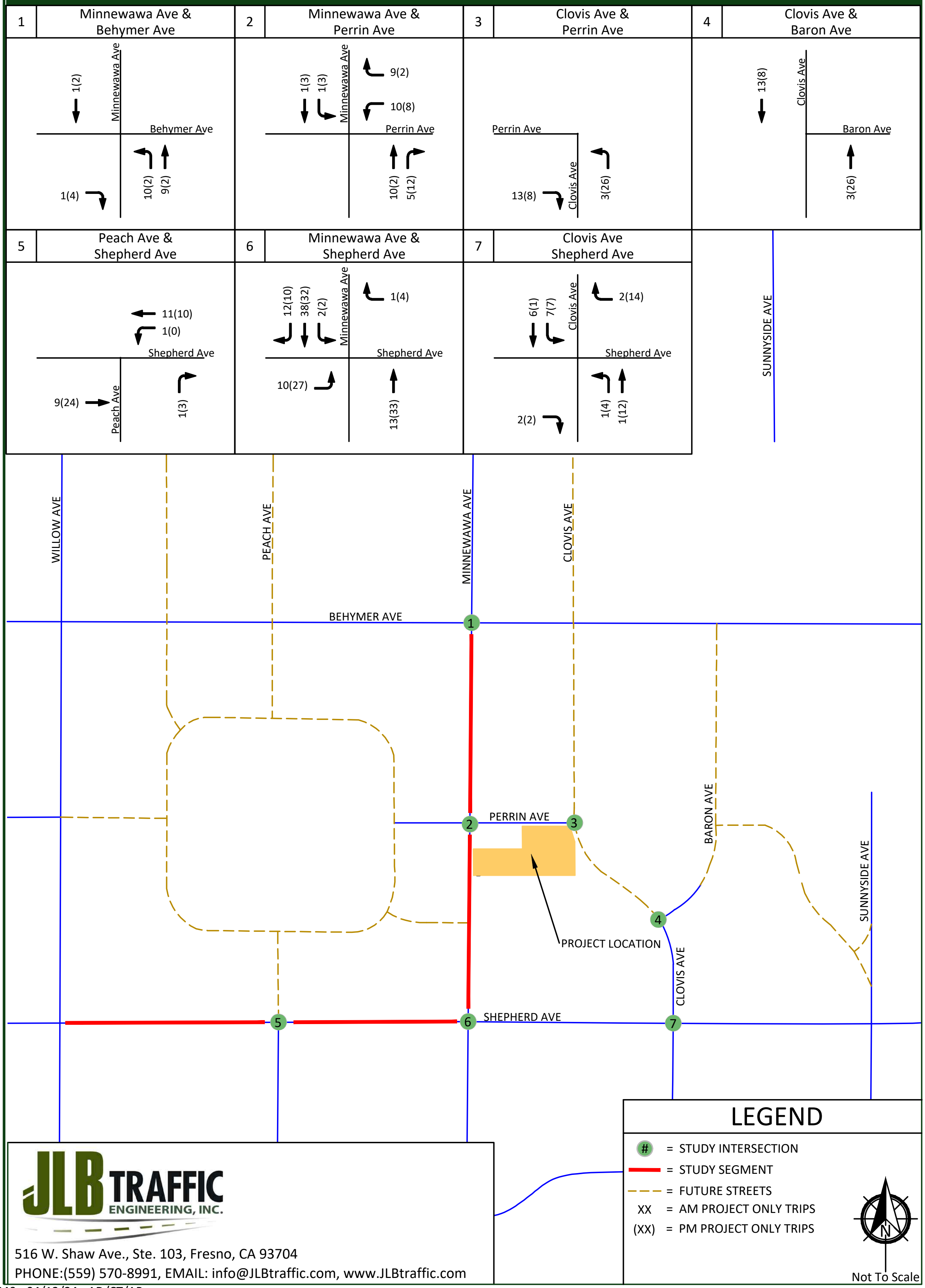
Not To Scale

Clovis and Perrin Subdivision - City of Clovis
Project Only Trips

Figure 4



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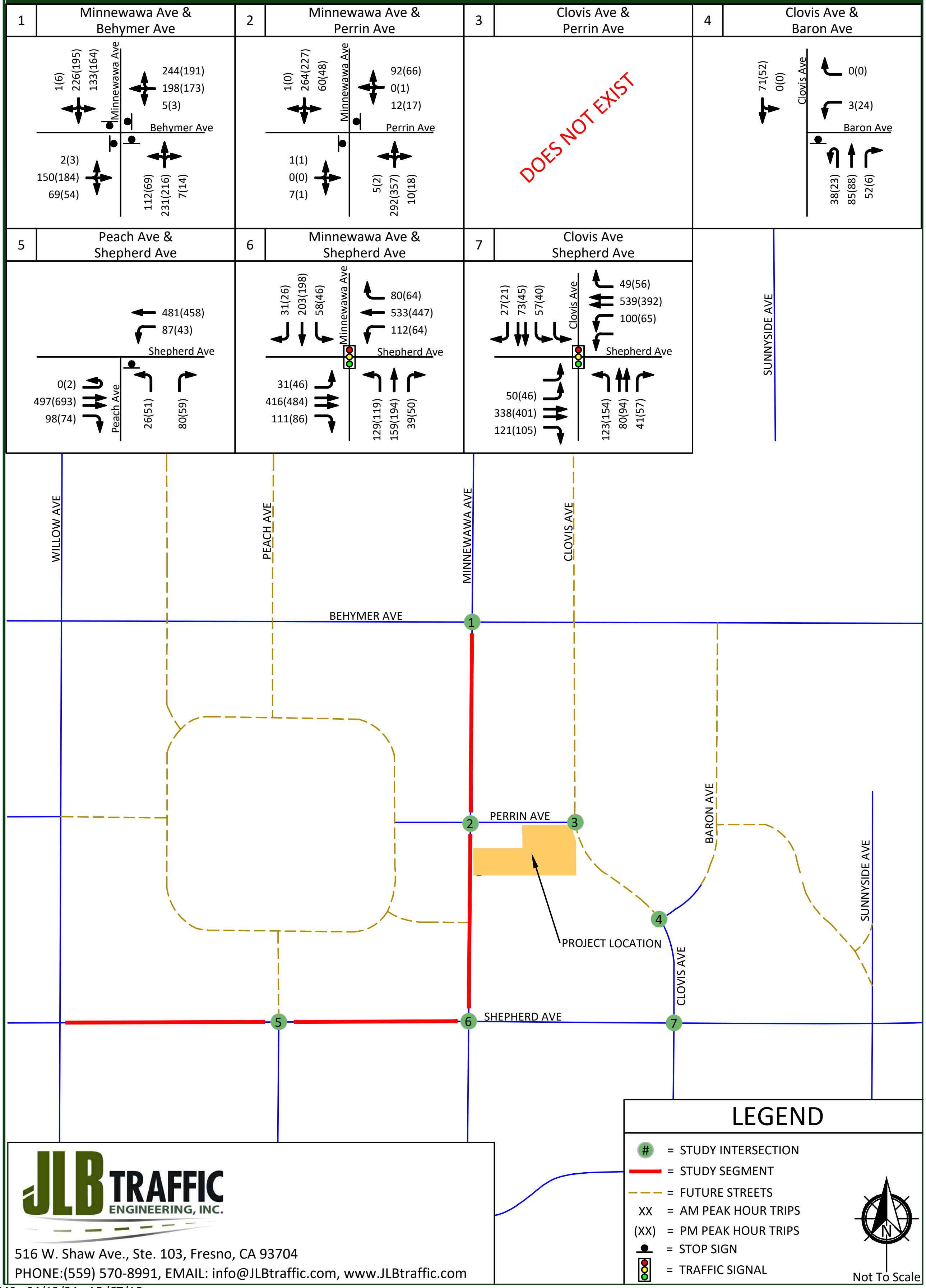
Clovis and Perrin Subdivision - City of Clovis
Existing plus Project - Traffic Volumes, Geometrics and Controls

Figure 5



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Near Term plus Project Traffic Conditions

Description of Near Term Projects

Near Term Projects consist of developments that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Clovis, County of Fresno and Caltrans staff were consulted throughout the preparation of this TIA regarding Near Term Projects that could potentially impact study facilities. JLB staff conducted a reconnaissance of the surrounding area to confirm the Near Term Projects. Therefore, the Near Term Projects listed in Table VI were within proximity of the Project site.

Table VI: Near Term Projects' Trip Generation

Near Term Project ID	*Near Term Project Name*	*Daily Trips*	*AM Peak Hour*	*PM Peak Hour*
A	Clovis Community Medical Center[2]	21,006	1,135	1,857
B	Copper River Ranch[2]	26,553	1,768	2,343
C	Golden Triangle[2]	8,881	628	840
D	Harlan Ranch Commercial[1]	7,409	277	708
E	Heritage Grove – The Avenue[1]	3,786	192	380
F	Locan 35[2]	595	47	62
G	P21-01385[1]	7,364	510	550
H	P21-02506[1]	708	43	54
I	P22-00358[1]	482	46	36
J	Research and Technology Park[3]	16,053	2,349	2,152
K	TT 6154[1]	57	4	6
L	TT 6200[2]	3,776	296	396
M	TT 6205[3]	5,705	424	569
N	TT 6264[1]	66	5	7
O	TT 6284[3]	585	43	58
P	TT 6343[3]	5,564	413	555
Q	TT 6375[3]	3,649	271	364
R	TT 6452[3]	1,443	107	144
S	TT 6268[1]	94	7	10
T	TT 6367[1]	47	3	5
U	Tru Hotel Site[1]	687	39	51
Total Near Term Project Trips		**114,510**	**8,607**	**11,147**

Note: 1 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information
2 = Trip Generation based on JLB Traffic Engineering, Inc. Traffic Impact Analysis Report
3 = Trip Generation based on a Traffic Impact Analysis Report by another Traffic Engineering Firm

The trip generation listed in Table VI is that which is anticipated to be added to the streets and highways by Near Term Projects between the time of the preparation of this Report and five (5) years after buildout of the proposed Project. As shown in Table VI, the total trip generation for the Near Term Projects is 114,510 weekday daily trips, 8,607 weekday AM peak hour trips and 11,147 weekday PM peak hour trips. Figure 6 illustrates the location of the Near Term Projects and their combined trip assignment to the study intersections and segments under the Near Term plus Project Traffic Conditions scenario.

Roadway Network

The Near Term plus Project Traffic Conditions scenario assumes that the Existing plus Project Traffic Conditions roadway geometrics and traffic controls will remain in place. Figure 7 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Traffic Signal Warrants

Warrant 3 was prepared for the unsignalized study intersections under the Near Term plus Project Traffic Conditions scenario. These warrants are contained in Appendix I. Under this scenario, the intersections of Minnewawa Avenue at Behymer Avenue, Minnewawa Avenue at Perrin Avenue, Clovis Avenue at Baron Avenue and Peach Avenue at Shepherd Avenue are projected to satisfy the peak hour signal warrant during both peak periods. Based on the traffic signal warrants, operational analysis and engineering judgment, signalization of the intersections of Minnewawa Avenue at Behymer Avenue and Peach Avenue at Shepherd Avenue are recommended.

Results of Near Term plus Project Level of Service Analysis

Figure 7 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix G. Table VII presents a summary of the Near Term plus Project peak hour LOS at the study intersections. Table VIII presents a summary of the Near Term plus Project peak hour LOS at the study segments.

Under this scenario, the study intersections of Minnewawa Avenue at Behymer Avenue, Peach Avenue at Shepherd Avenue and Minnewawa Avenue at Shepherd Avenue are projected to exceed their LOS thresholds during both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these intersections.

- Minnewawa Avenue / Behymer Avenue
  - Add an eastbound left-turn lane;
  - Modify the eastbound left-through-right lane to a through-right lane;
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through-right lane;
  - Add a northbound left-turn lane,
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane; and
  - Signalize the intersection with protective left-turn and pedestrian phasing.
- Peach Avenue / Shepherd Avenue
  - Add a second westbound through lane with a receiving lane west of Peach Avenue; and
  - Signalize the intersection with protective left-turn and pedestrian phasing.

- Minnewawa Avenue / Shepherd Avenue
  - Modify the westbound right-turn lane to a through-right lane with a receiving lane west of Minnewawa Avenue; and
  - Modify the traffic signal to accommodate the additional lane.

Table VII: Near Term plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM (7 - 9) Peak Hour		PM (4 - 6) Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**107.1**	**F**	**>120.0**	**F**
		Traffic Signal (Improved)	27.5	C	29.9	C
2	Minnewawa Avenue / Perrin Avenue	Two-Way Stop	13.7	B	19.2	C
3	Clovis Avenue / Perrin Avenue	Does Not Exist	-	-	-	-
4	Clovis Avenue / Baron Avenue	Two-Way Stop	26.2	D	26.5	D
5	Peach Avenue / Shepherd Avenue	Two -Way Stop	**106.7**	**F**	**>120.0**	**F**
		Traffic Signal (Improved)	25.0	C	23.0	C
6	Minnewawa Avenue / Shepherd Avenue	Traffic Signal	**80.0**	**E**	**90.1**	**F**
		Traffic Signal (Improved)	41.7	D	44.3	D
7	Clovis Avenue / Shepherd Avenue	Traffic Signal	40.8	D	44.7	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Under this scenario, the study segments of Shepherd Avenue between Willow Avenue and Peach Avenue and Shepherd Avenue between Peach Avenue and Minnewawa Avenue are projected to exceed their LOS thresholds during one or both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these segments.

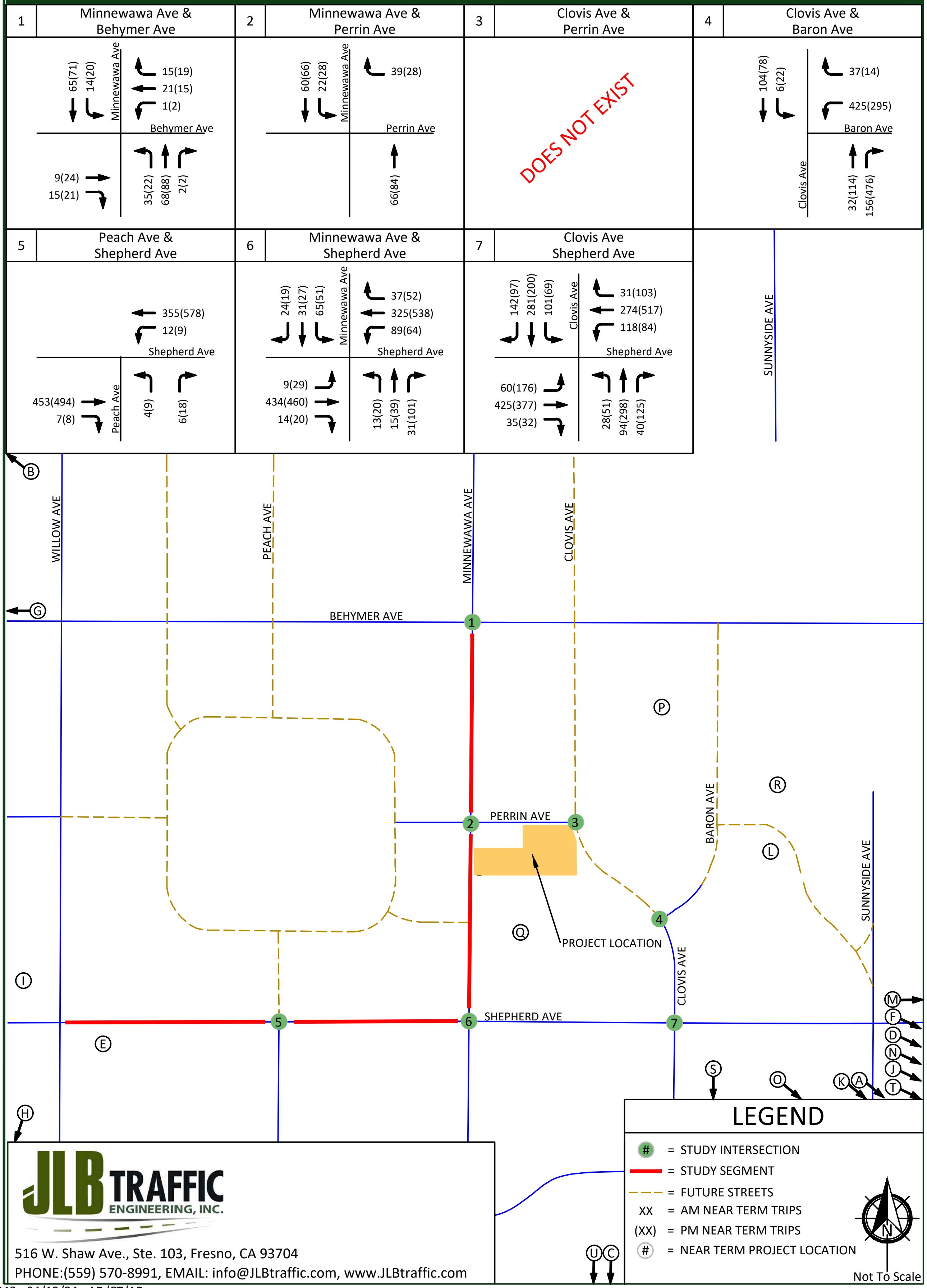
- Shepherd Avenue between Willow Avenue and Peach Avenue
  - Add a second westbound through lane.
- Shepherd Avenue between Peach Avenue and Minnewawa Avenue
  - Add a second westbound through lane.

Table VIII: Near Term plus Project Segment LOS Results

ID	Segment	Limits	Lanes	AM Peak Volume	AM LOS	PM Peak Volume	PM LOS
1	Minnewawa Avenue	Behymer Avenue and Perrin Avenue	2	897	C	905	C
2	Minnewawa Avenue	Perrin Avenue and Shepherd Avenue	2	743	B	791	C
3	Shepherd Avenue	Willow Avenue and Peach Avenue	3	1,921	D	2,369	E
		Willow Avenue and Peach Avenue (Imp.)	4		B		B
4	Shepherd Avenue	Peach Avenue and Minnewawa Avenue (Imp.)	3	2,070	E	2,352	E
			4		B		B

Clovis and Perrin Subdivision - City of Clovis
Near Term Projects' Trip Assignment

Figure 6



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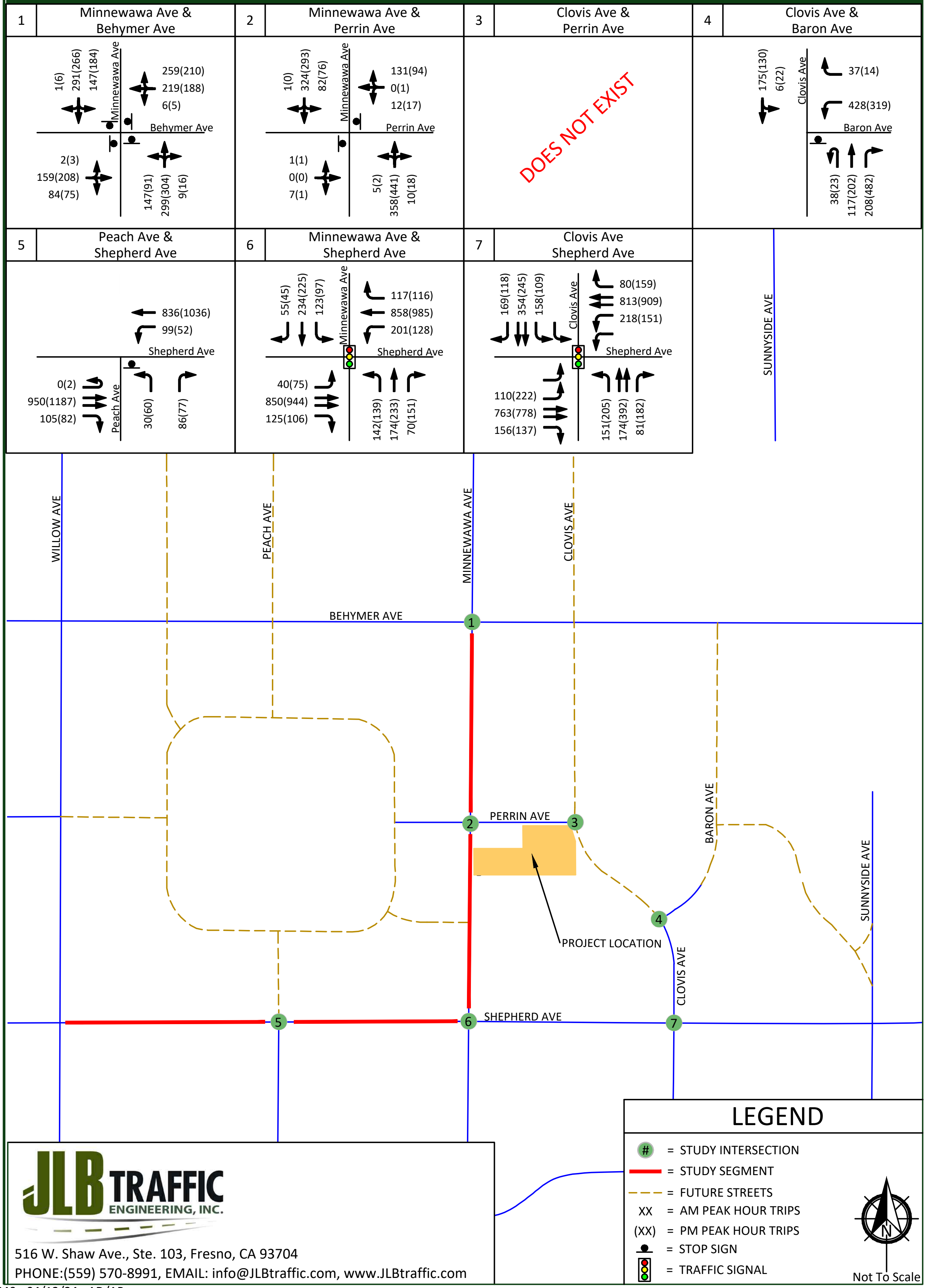
Clovis and Perrin Subdivision - City of Clovis
Near Term plus Project - Traffic Volumes, Geometrics and Controls

Figure 7



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Cumulative Year 2046 plus Project Traffic Conditions

Roadway Network

The Cumulative Year 2046 plus Project Traffic Conditions scenario assumes that the Near Term plus Project roadway geometrics and traffic controls will remain in place with two exceptions. The two exceptions include the extension of Clovis Avenue north of Perrin Avenue to Copper Avenue and the extension of Peach Avenue north of Shepherd Avenue to Pryor Avenue. Figure 8 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Traffic Signal Warrants

Warrant 3 was prepared for the unsignalized study intersections under the Cumulative Year 2046 plus Project Traffic Conditions scenario. These warrants are contained in Appendix I. Under this scenario, the intersections of Minnewawa Avenue at Behymer Avenue, Minnewawa Avenue at Perrin Avenue, Clovis Avenue at Perrin Avenue, Clovis Avenue at Baron Avenue and Peach Avenue at Shepherd Avenue are projected to satisfy the peak hour signal warrant during one or both peak periods. Based on the traffic signal warrants, operational analysis and engineering judgment, signalization of the intersections of Minnewawa Avenue at Behymer Avenue, Clovis Avenue at Baron Avenue and Peach Avenue at Shepherd Avenue are recommended.

Results of Cumulative Year 2046 plus Project Level of Service Analysis

Figure 8 illustrates the Cumulative Year 2046 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2046 plus Project Traffic Conditions scenario are provided in Appendix H. Table IX presents a summary of the Cumulative Year 2046 plus Project peak hour LOS at the study intersections. Table X presents a summary of the Cumulative Year 2046 plus Project peak hour LOS at the study segments.

Under this scenario, the study intersections of Minnewawa Avenue at Behymer Avenue, Minnewawa Avenue at Perrin Avenue, Clovis Avenue at Baron Avenue, Peach Avenue at Shepherd Avenue and Minnewawa Avenue at Shepherd Avenue are projected to exceed their LOS thresholds during one or both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these intersections.

- Minnewawa Avenue / Behymer Avenue
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through-right lane;
    - Add a northbound left-turn lane,
    - Modify the northbound left-through-right lane to a through-right lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through-right lane to a through-right lane; and
    - Signalize the intersection with protective left-turn and pedestrian phasing.

- Minnewawa Avenue / Perrin Avenue
  - Add an eastbound left-turn lane;
  - Modify the eastbound left-through-right lane to a through lane;
  - Add an eastbound right-turn lane;
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through-right lane;
  - Add a northbound left-turn lane,
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane; and
  - Modify the southbound left-through-right lane to a through-right lane.
- Clovis Avenue / Baron Avenue
  - Add a southbound left-turn lane; and
  - Signalize the intersection with protective left-turn and pedestrian phasing.
- Peach Avenue / Shepherd Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a second westbound through lane with a receiving lane west of Peach Avenue;
  - Add a westbound right-turn lane; and
  - Signalize the intersection with protective left-turn and pedestrian phasing.
- Minnewawa Avenue / Shepherd Avenue
  - Add a westbound through lane with receiving lane west of Minnewawa Avenue; and
  - Modify the traffic signal to accommodate the additional lane.

Table IX: Cumulative Year 2046 plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM (7 - 9) Peak Hour		PM (4 - 6) Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Minnewawa Avenue / Behymer Avenue	All-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Traffic Signal (Improved)	34.2	C	37.2	D
2	Minnewawa Avenue / Perrin Avenue	Two-Way Stop	31.0	D	**69.6**	**F**
		Two-Way Stop (Improved)	23.6	C	33.4	D
3	Clovis Avenue / Perrin Avenue	Two-Way Stop	34.9	D	34.8	D
4	Clovis Avenue / Baron Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Traffic Signal (Improved)	28.3	C	23.8	C
5	Peach Avenue / Shepherd Avenue	Two -Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Traffic Signal (Improved)	39.6	D	28.2	C
6	Minnewawa Avenue / Shepherd Avenue	Traffic Signal	**74.3**	**E**	**104.9**	**F**
		Traffic Signal (Improved)	52.9	D	53.2	D
7	Clovis Avenue / Shepherd Avenue	Traffic Signal	46.6	D	48.5	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

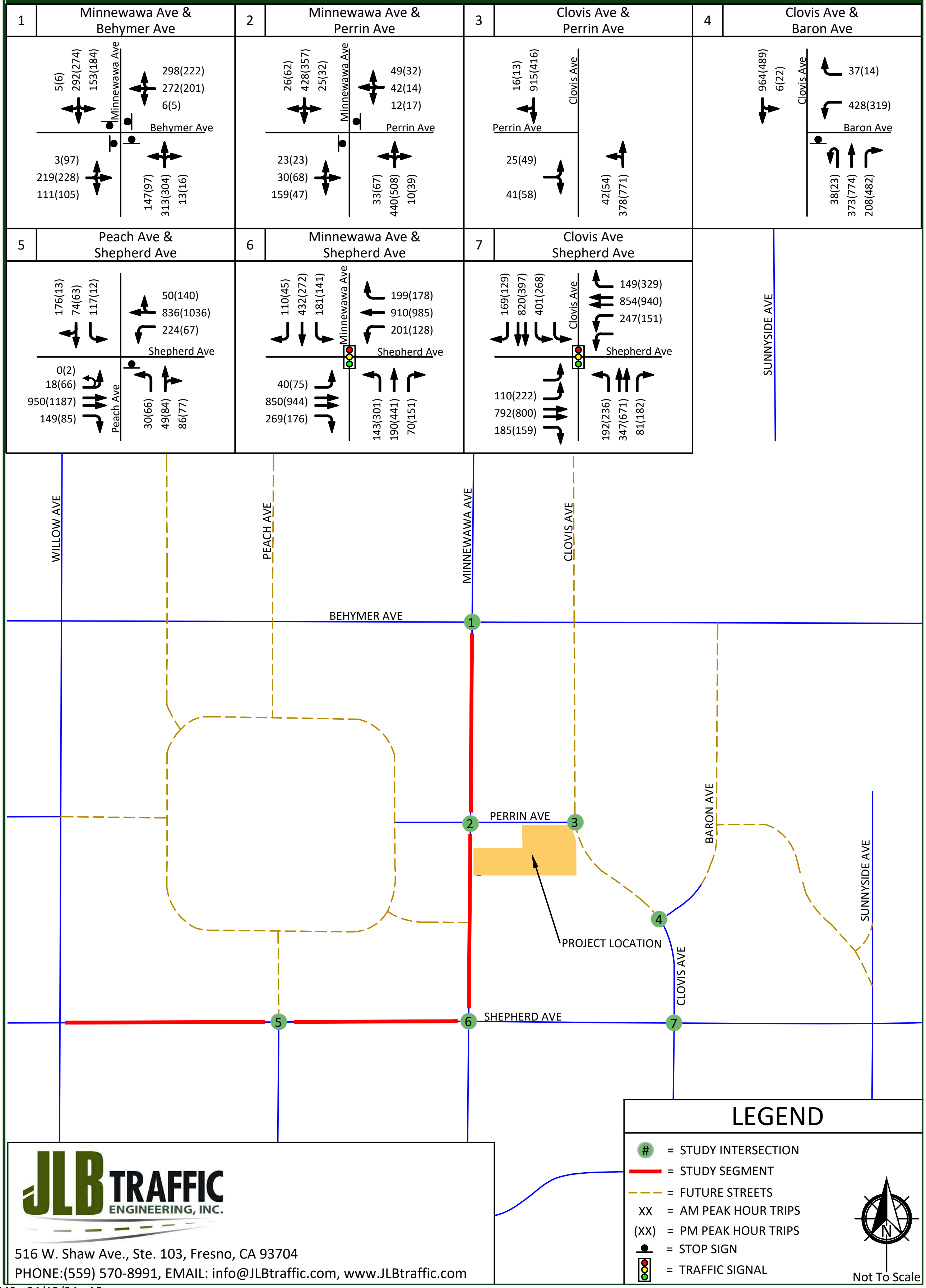
Under this scenario, the study segments of Shepherd Avenue between Willow Avenue and Peach Avenue and Shepherd Avenue between Peach Avenue and Minnewawa Avenue are projected to exceed their LOS thresholds during one or both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these segments.

- Shepherd Avenue between Willow Avenue and Peach Avenue
    - Add a second westbound through lane.
- Shepherd Avenue between Peach Avenue and Minnewawa Avenue
    - Add a second westbound through lane.

Table X: Cumulative Year 2046 plus Project Segment LOS Results

<table>
<tr><th>ID</th><th>Segment</th><th>Limits</th><th>Lanes</th><th>AM Peak Volume</th><th>AM LOS</th><th>PM Peak Volume</th><th>PM LOS</th></tr>
<tr><td>1</td><td>Minnewawa Avenue</td><td>Behymer Avenue and Perrin Avenue</td><td>2</td><td>991</td><td>C</td><td>1,014</td><td>C</td></tr>
<tr><td>2</td><td>Minnewawa Avenue</td><td>Perrin Avenue and Shepherd Avenue</td><td>2</td><td>1,152</td><td>D</td><td>1,152</td><td>D</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Shepherd Avenue</td><td>Willow Avenue and Peach Avenue</td><td>3</td><td rowspan="2">2,159</td><td>E</td><td rowspan="2">2,457</td><td>E</td></tr>
<tr><td>Willow Avenue and Peach Avenue (Imp.)</td><td>4</td><td>B</td><td>B</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Shepherd Avenue</td><td>Peach Avenue and Minnewawa Avenue</td><td>3</td><td rowspan="2">2,322</td><td>E</td><td rowspan="2">2,526</td><td>E</td></tr>
<tr><td>Peach Avenue and Minnewawa Avenue (Imp.)</td><td>4</td><td>B</td><td>B</td></tr>
</table>

Clovis and Perrin Subdivision - City of Clovis Figure 8
Cumulative Year 2046 plus Project - Traffic Volumes, Geometrics and Controls



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Queuing Analysis

Table XI provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix D contains the methodologies used to evaluate these intersections. Queuing analyses were completed using SimTraffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the *Synchro Studio 12 User Guide*, “the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes” (Cubic ITS, Inc., 2023). The queues shown in Table XI are the 95th percentile queue lengths for the respective lane movements.

The *California Highway Design Manual* (CA HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. According to the CA HDM, tapers for right-turn lanes are “usually unnecessary since main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift were needed, the approach taper would use the same formula as for a left-turn lane” (Caltrans, 2019). Therefore, a bay taper length pursuant to the CA HDM would need to be added, as necessary, to the recommended storage lengths presented in Table XI.

The storage capacity for the Cumulative Year 2046 plus Project Traffic Conditions shall be based on the SimTraffic output files and engineering judgment. The values in bold presented in Table XI are the projected queue lengths that will likely need to be accommodated by the Cumulative Year 2046 scenarios. At the remaining approaches of the study intersections, the existing storage capacity will be sufficient to accommodate the maximum queue.

Table XI: Queuing Analysis

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term plus Project		Cumulative Year 2046 plus Project	
				AM	PM	AM	PM	AM	PM	AM	PM
1	Minnewawa Avenue / Behymer Avenue	Eastbound Left	*	*	*	*	*	9	20	13	**113**
		Eastbound Through-Right	*	*	*	*	*	109	150	167	179
		Eastbound Left-Through-Right	>500	84	82	97	67	*	*	*	*
		Westbound Left	*	*	*	*	*	28	27	**129**	19
		Westbound Through-Right	*	*	*	*	*	309	172	537	261
		Westbound Left-Through-Right	>500	153	92	139	125	*	*	*	*
		Northbound Left	*	58	56	69	55	130	97	144	**151**
		Northbound Through-Right	*	94	101	99	72	191	210	233	273
		Southbound Left	*	65	60	47	64	158	171	147	**281**
		Southbound Through-Right	*	81	77	98	68	163	154	175	285
2	Minnewawa Avenue / Perrin Avenue	Eastbound Left	*	*	*	*	*	*	*	36	**42**
		Eastbound Through	*	*	*	*	*	*	*	47	76
		Eastbound Right	*	*	*	*	*	*	*	**83**	41
		Eastbound Left-Through-Right	>500	22	11	21	11	22	8	*	*
		Westbound Left	*	*	*	*	*	*	*	33	**35**
		Westbound Through-Right	*	*	*	*	*	*	*	40	47
		Westbound Left-Through-Right	>500	19	23	71	51	70	79	*	*
		Northbound Left	*	*	*	*	*	*	*	21	**37**
		Northbound Through-Right	*	*	*	*	*	*	*	0	4
		Northbound Left-Through-Right	>500	0	0	8	7	0	0	*	*
		Southbound Left	*	*	*	*	*	*	*	**28**	27
		Southbound Through-Right	*	*	*	*	*	*	*	0	7
		Southbound Left-Through-Right	>500	0	0	91	35	61	89	*	*
3	Clovis Avenue / Perrin Avenue	Eastbound Left-Right	*	*	*	*	*	*	*	65	107
		Northbound Left-Through	*	*	*	*	*	*	*	214	77
		Southbound Through-Right	*	*	*	*	*	*	*	0	0

Note: * = Does not exist or is not projected to exist

Table XI: Queuing Analysis (Continued)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term plus Project		Cumulative Year 2046 plus Project	
				AM	PM	AM	PM	AM	PM	AM	PM
4	Clovis Avenue / Baron Avenue	Westbound Left	100	*	*	8	32	193	133	216	**231**
		Westbound Right	>300	*	*	0	0	184	24	732	388
		Northbound Left	140	*	*	16	12	29	21	77	64
		Northbound Through	*	*	*	0	0	0	0	181	252
		Northbound Right	>300	*	*	0	0	0	13	84	105
		Southbound Left	*	*	*	*	*	*	*	20	**60**
		Southbound Through	*	*	*	*	*	*	*	1114	274
		Southbound Left-Through	*	*	*	0	0	19	65	*	*
5	Peach Avenue / Shepherd Avenue	Eastbound Left	250	0	0	0	0	0	14	49	**188**
		Eastbound Through	>500	0	0	0	0	218	267	346	389
		Eastbound Through	>500	0	0	0	0	228	270	388	409
		Eastbound Right	100	0	18	13	7	101	73	**232**	161
		Westbound Left	250	68	52	61	50	139	163	**412**	109
		Westbound Through	>500	0	0	0	0	148	253	499	341
		Westbound Through	*	*	*	*	*	166	270	407	359
		Westbound Right	*	*	*	*	*	*	*	**133**	78
		Northbound Left	220	36	60	41	71	72	85	58	116
		Northbound Through-Right	*	*	*	*	*	*	*	175	233
		Northbound Right	>300	30	41	37	37	53	57	*	*
		Southbound Left	*	*	*	*	*	*	*	**156**	37
		Southbound Through-Right	*	*	*	*	*	*	*	237	109

Note: * = Does not exist or is not projected to exist

Table XI: Queuing Analysis (Continued)

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term plus Project		Cumulative Year 2046 plus Project	
				AM	PM	AM	PM	AM	PM	AM	PM
6	Minnewawa Avenue / Shepherd Avenue	Eastbound Left	240	35	39	55	68	85	179	93	192
		Eastbound Through	>500	113	138	101	143	305	359	362	435
		Eastbound Through	>500	134	161	123	164	340	358	379	467
		Eastbound Right	50	61	100	76	100	158	143	190	**193**
		Westbound Left	220	187	97	182	251	262	149	221	321
		Westbound Through	>500	499	333	322	441	303	305	325	432
		Westbound Through	*	*	*	*	*	*	*	325	452
		Westbound Through-Right	*	*	*	*	*	300	325	*	*
		Westbound Right	190	275	181	199	156	*	*	149	**391**
		Northbound Left	230	117	142	165	123	180	193	207	**382**
		Northbound Through	>500	115	131	155	128	186	220	179	479
		Northbound Right	>300	26	35	38	40	62	110	47	98
		Southbound Left	260	125	138	89	64	139	176	**282**	199
		Southbound Through	>500	154	130	168	165	266	226	423	295
		Southbound Right	15	42	37	41	41	46	146	**239**	148
7	Clovis Avenue / Shepherd Avenue	Eastbound Dual Lefts	250	42	44	55	45	122	253	142	303
		Eastbound Through	>500	99	154	161	188	293	375	353	511
		Eastbound Through	>500	96	126	119	174	258	352	354	484
		Eastbound Right	50	74	91	88	86	101	103	137	**141**
		Westbound Dual Lefts	250	72	61	67	42	146	98	181	179
		Westbound Through	>500	217	150	203	175	286	315	296	376
		Westbound Through	>500	195	134	192	138	286	313	302	416
		Westbound Right	175	0	19	28	32	140	232	114	**351**
		Northbound Left	230	219	271	109	171	179	263	186	**325**
		Northbound Through	>500	34	51	55	69	113	245	178	402
		Northbound Through	>500	12	33	38	25	116	272	176	397
		Northbound Right	50	25	43	23	30	69	130	96	**131**
		Southbound Dual Left	250	23	15	51	45	108	82	225	191
		Southbound Through	>500	51	28	63	28	170	122	342	233
		Southbound Through	>500	13	10	54	23	172	130	359	230
		Southbound Right	100	24	25	42	17	83	71	**250**	138

Note: * = Does not exist or is not projected to exist

Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

Existing Traffic Conditions

- At present, the study intersection of Minnewawa Avenue at Behymer Avenue exceeds its LOS threshold during both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at this intersection.
    - Minnewawa Avenue/ Behymer Avenue
        - Add a northbound left-turn lane;
        - Modify the northbound left-through-right lane to a through-right lane;
        - Add a southbound left-turn lane; and
        - Modify the southbound left-through-right lane to a through-right lane.
- At present, all study segments operate at an acceptable LOS during both peak periods.

Existing plus Project Traffic Conditions

- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- At buildout, the proposed Project is estimated to generate approximately 1,528 daily trips, 113 AM peak hour trips and 152 PM peak hour trips.
- Under this scenario, the study intersection of Minnewawa Avenue at Behymer Avenue is projected to exceed its LOS threshold during both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at this intersection.
    - Minnewawa Avenue/ Behymer Avenue
        - Add a northbound left-turn lane;
        - Modify the northbound left-through-right lane to a through-right lane;
        - Add a southbound left-turn lane; and
        - Modify the southbound left-through-right lane to a through-right lane.
- Under this scenario, all study segments are projected to operate at an acceptable LOS during both peak periods.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 114,510 weekday daily trips, 8,607 weekday AM peak hour trips and 11,147 weekday PM peak hour trips.
- Under this scenario, the study intersections of Minnewawa Avenue at Behymer Avenue, Peach Avenue at Shepherd Avenue and Minnewawa Avenue at Shepherd Avenue are projected to exceed their LOS thresholds during both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these intersections.

- Minnewawa Avenue/ Behymer Avenue
  - Add an eastbound left-turn lane;
  - Modify the eastbound left-through-right lane to a through-right lane;
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through-right lane;
  - Add a northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane; and
  - Signalize the intersection with protective left-turn and pedestrian phasing.
- Peach Avenue / Shepherd Avenue
  - Add a second westbound through lane with a receiving lane west of Peach Avenue; and
  - Signalize the intersection with protective left-turn and pedestrian phasing.
- Minnewawa Avenue / Shepherd Avenue
  - Modify the westbound right-turn lane to a through-right lane with a receiving lane west of Minnewawa Avenue; and
  - Modify the traffic signal to accommodate the additional lane.

- Under this scenario, the study segments of Shepherd Avenue between Willow Avenue and Peach Avenue and Shepherd Avenue between Peach Avenue and Minnewawa Avenue are projected to exceed their LOS thresholds during one or both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these segments.
  - Shepherd Avenue between Willow Avenue and Peach Avenue
    - Add a second westbound through lane.
  - Shepherd Avenue between Peach Avenue and Minnewawa Avenue
    - Add a second westbound through lane.

Cumulative Year 2046 plus Project Traffic Conditions

- Under this scenario, the study intersections of Minnewawa Avenue at Behymer Avenue, Minnewawa Avenue at Perrin Avenue, Clovis Avenue at Baron Avenue, Peach Avenue at Shepherd Avenue and Minnewawa Avenue at Shepherd Avenue are projected to exceed their LOS thresholds during one or both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these intersections.
  - Minnewawa Avenue/ Behymer Avenue
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through-right lane;
    - Add a northbound left-turn lane;
    - Modify the northbound left-through-right lane to a through-right lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through-right lane to a through-right lane; and
    - Signalize the intersection with protective left-turn and pedestrian phasing.

  - Minnewawa Avenue / Perrin Avenue
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through lane;
    - Add an eastbound right-turn lane;
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through-right lane;
    - Add a northbound left-turn lane;
    - Modify the northbound left-through-right lane to a through-right lane;
    - Add a southbound left-turn lane; and
    - Modify the southbound left-through-right lane to a though-right lane.
  - Clovis Avenue / Baron Avenue
    - Add a southbound left-turn lane; and
    - Signalize the intersection with protective left-turn and pedestrian phasing.
  - Peach Avenue / Shepherd Avenue
    - Modify the westbound through-right lane to a through lane;
    - Add a second westbound through lane with a receiving lane west of Peach Avenue;
    - Add a westbound right-turn lane; and
    - Signalize the intersection with protective left-turn and pedestrian phasing.
  - Minnewawa Avenue / Shepherd Avenue
    - Add a westbound through lane with receiving lane west of Minnewawa Avenue; and
    - Modify the traffic signal to accommodate the additional lane.
- Under this scenario, the study segments of Shepherd Avenue between Willow Avenue and Peach Avenue and Shepherd Avenue between Peach Avenue and Minnewawa Avenue are projected to exceed their LOS thresholds during both peak periods. It is recommended that the following improvements be considered for implementation to improve the LOS at these segments.
  - Shepherd Avenue between Willow Avenue and Peach Avenue
    - Add a second westbound through lane.
  - Shepherd Avenue between Peach Avenue and Minnewawa Avenue
    - Add a second westbound through lane.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Study Participants

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References

Caltrans. 2019. "Highway Design Manual". Sacramento: State of California.

Caltrans. 2024. "California Manual on Uniform Traffic Control Devices". Sacramento: State of California.

Caltrans. 2020. “Vehicle Miles Traveled-Focused Transportation Impact Study Guide”. Sacramento: State of California.

City of Clovis. 2014. "Traffic Impact Study Guidelines". Clovis: City of Clovis.

City of Clovis. 2014. "General Plan". Clovis: City of Clovis.

County of Fresno. 2000. "Fresno County General Plan". Fresno: Fresno County.

County of Fresno. 2014. "Guidelines for The Preparation of Traffic Impact Studies Within the County of Fresno". Fresno: County of Fresno.

Cubic ITS, Inc. 2019. “Synchro Studio 11 User Guide”. Sugar Land: Trafficware, LLC.

Institute of Transportation Engineers. 2017. "Trip Generation Manual". Washington: Institute of Transportation Engineers.

National Academies of Sciences, Engineering, and Medicine. 2022. “Highway Capacity Manual 7th Edition: A Guide for Multimodal Mobility Analysis” Washington: The National Academies Press.

Transportation Research Board. 2016. "Highway Capacity Manual". Washington: The National Academy of Sciences.

Appendix A: Scope of Work

October 11, 2023

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1033 Fifth Street
Clovis, CA 93612

Via Email Only: seans@cityofclovis.com

Subject: ***Proposed Scope of Work for the Preparation of a Traffic Impact Analysis and Vehicle Miles Traveled Analysis for the Single-Family Residential Project in the City of Clovis (JLB Project 006-049)***

Dear Mr. Smith,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Draft Scope of Work for the preparation of a **Traffic Impact Analysis (TIA)** and **Vehicle Miles Traveled (VMT) Analysis** for Single-Family Residential **(Project)** located on the southwest corner of Clovis Avenue and Perrin Avenue in the City of Clovis. The project will include approximately 162 single family residential units. Based on information provided to JLB, the Project is consistent with the City of Clovis General Plan. An aerial of the Project Vicinity and Project Site Plan are shown in Exhibits A and B, respectively.

The purpose of the TIA and VMT analysis are to evaluate the potential on-site and off-site traffic impacts, identify roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. JLB proposes the following Scope of Work to evaluate the on-site and off-site traffic impacts of the proposed Project.

Scope of Work

- JLB will obtain recent or schedule and conduct new traffic counts at the study facility(ies) as necessary. These counts will include pedestrians and vehicles.
- JLB will request a Fresno Council of Governments (Fresno COG) traffic forecast model run for the Project (Select Zone Analysis) which will include the Project and the streets to be analyzed. The Fresno COG traffic forecasting model will be used to forecast traffic volumes for the Base Year 2023 and Cumulative Year 2046 scenarios.
- JLB will perform a site visit to observe existing traffic conditions, especially during the AM and PM peak hours. Existing roadway conditions, including intersection geometrics and traffic controls will be verified.
- JLB will evaluate on-site circulation and provide recommendations as necessary to improve circulation to and within the Project site.
- JLB will prepare CA MUTCD Warrant 3 “Peak Hour” for unsignalized study intersections under all study scenarios.
- JLB will qualitatively analyze existing and planned transit routes in the vicinity of the Project.

- JLB will qualitatively analyze existing and planned bikeways in the vicinity of the Project.
- JLB will forecast trip distribution based on turn count information, knowledge of the existing and planned circulation network in the vicinity of the Project, and the Fresno COG Activity Based Model (ABM).
- JLB will evaluate existing and forecasted levels of service (LOS) at the study intersection(s). JLB will use HCM 6th or HCM 2000 methodologies (as appropriate) within Synchro to perform this analysis for the AM and PM peak hours. JLB will identify the causes of poor LOS.

Study Scenarios

1. Existing Traffic Conditions with needed improvements (if any);
2. Existing plus Project Traffic Conditions with proposed improvement measures (if any);
3. Near Term plus Project Traffic Conditions with proposed improvement measures (if any); and
4. Cumulative Year 2046 plus Project Traffic Conditions with proposed improvement measures (if any).

Weekday peak hours to be analyzed (Tuesday, Wednesday, or Thursday only)

1. 7 - 9 AM peak hour
2. 4 - 6 PM peak hour

Study Intersections

1. Perrin Avenue / Minnewawa Avenue
2. Perrin Avenue / Clovis Avenue
3. Baron Avenue / Clovis Avenue
4. Shepherd Avenue / Minnewawa Avenue
5. Shepherd Avenue / Clovis Avenue

Queuing analysis is included in the proposed Scope of Work for the study intersection(s) listed above under all study scenarios. This analysis will be utilized to recommend minimum storage lengths for left-turn and right-turn lanes at all study intersections.

Study Segments

1. None

Project Only Trip Assignment to the following State facilities

1. None

Trip Generation

The trip generation rates for the proposed Project were obtained from the 11th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the trip generation rates for the proposed Project with trip generation rates for Single-Family Detached Housing (210). At buildout, the Project is estimated to generate approximately 1,528 daily trips, 113 AM peak hour trips and 152 PM peak hour trips.

Table I: Project Trip Generation

Land Use (ITE Code)	Size	Unit	Daily		AM Peak Hour						PM Peak Hour					
			Rate	Total	Trip Rate	In %	Out %	In	Out	Total	Trip Rate	In %	Out %	In	Out	Total
Single-Family Detached Housing (210)	162	d.u.	9.43	1,528	0.70	26	74	29	84	113	0.94	63	37	96	56	152
Total Driveway Trips				**1,528**				**29**	**84**	**113**				**96**	**56**	**152**

Near Term Projects to be Included

Based on our local knowledge of the study area and consultation with City of Clovis Planning & Development staff, JLB proposes to include near term projects in the vicinity of the proposed Project under the Near Term plus Project scenario. The near term projects proposed to be included in the Near Term scenario are:

Project Name	General Location
1. CCMC	NEC Temperance Ave and Herndon Ave
2. Harlan Ranch	NEC DeWolf Ave and Owens Mountain Pkwy
3. R&T Park	Temperance Ave and Alluvial Ave
4. Tract 6050	NWC Clovis Ave and Shepherd Ave
5. Tract 6109	SEC Temperance Ave and Powers Ave
6. Tract 6200	NEC Clovis Ave and Shepherd Ave
7. Tract 6264	NEC Locan Ave and Teague Ave
8. Tract 6284	SWQ Fowler Ave and Teague Ave
9. Tract 6332	NEQ Locan Ave and Teague Ave
10. Tract 6389	NEQ Locan Ave and Teague Ave

The Scope of Work is based on our understanding of this Project and our experience with similar TIAs. JLB hereby requests written comments (letter or email) to the above scope of work preferably by November 3, 2023. In the absence of comments by November 3, 2023, it will be assumed that the Scope of Work is acceptable to the agency(ies) that have not submitted any comments. If you have any questions, require additional information, or need additional time to review the above Draft Scope of Work please contact me by phone at (559) 317-6243, or via email at marndt@JLBtraffic.com.

Sincerely,

Matt Arndt

Matthew Arndt
Engineer I/II

cc:

Hector Luna, County of Fresno
Harmanjit Dhaliwal, City of Fresno
David Padilla, Caltrans
Jose Benavides, JLB Traffic Engineering, Inc.

Z:\01 Projects\006 Clovis\006-049 Clovis Perrin TIA VMT\Draft Scope of Work\L20231011 Clovis Perrin TIA Draft Scope of Work.docx

Exhibit A – Project Vicinity

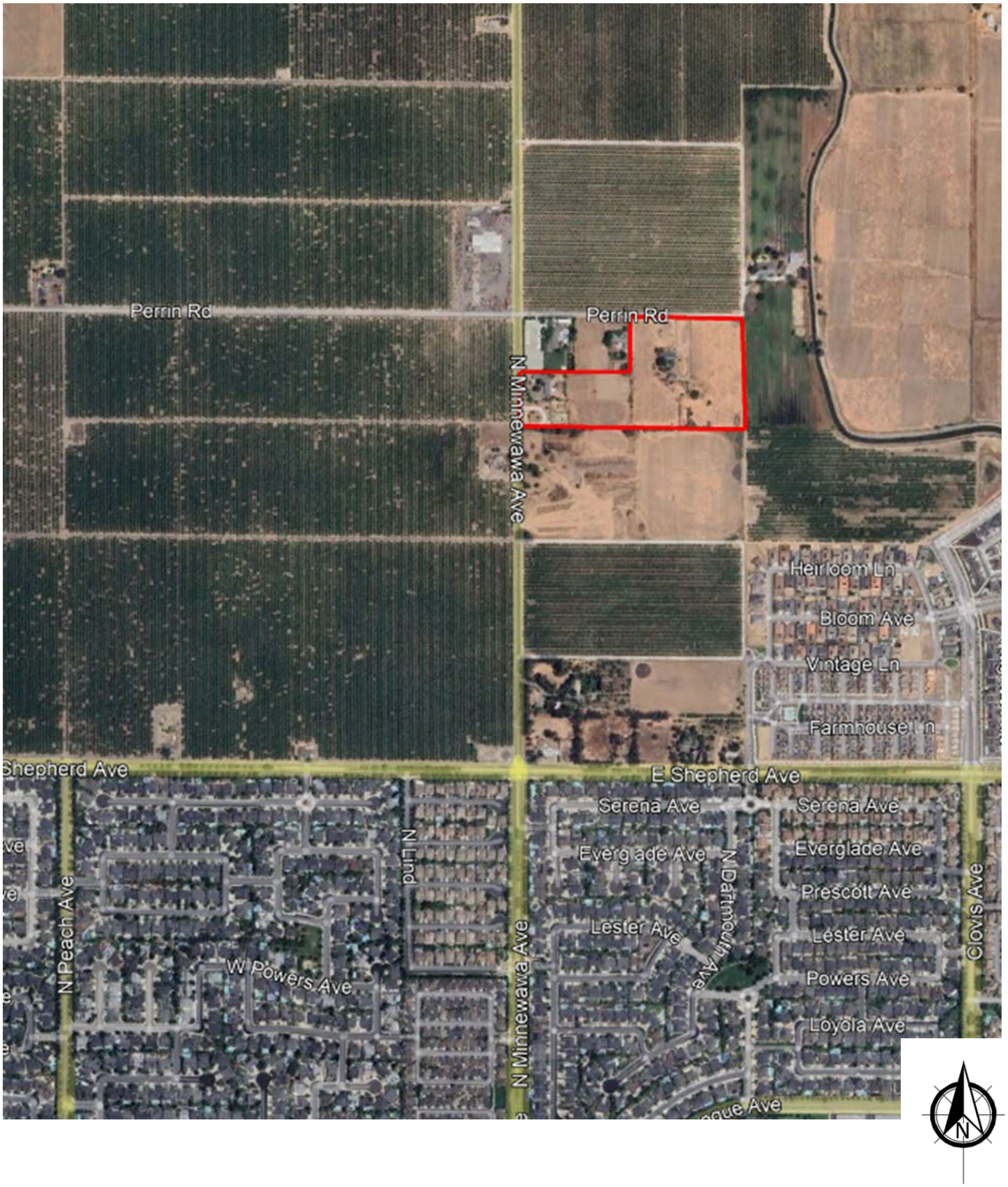
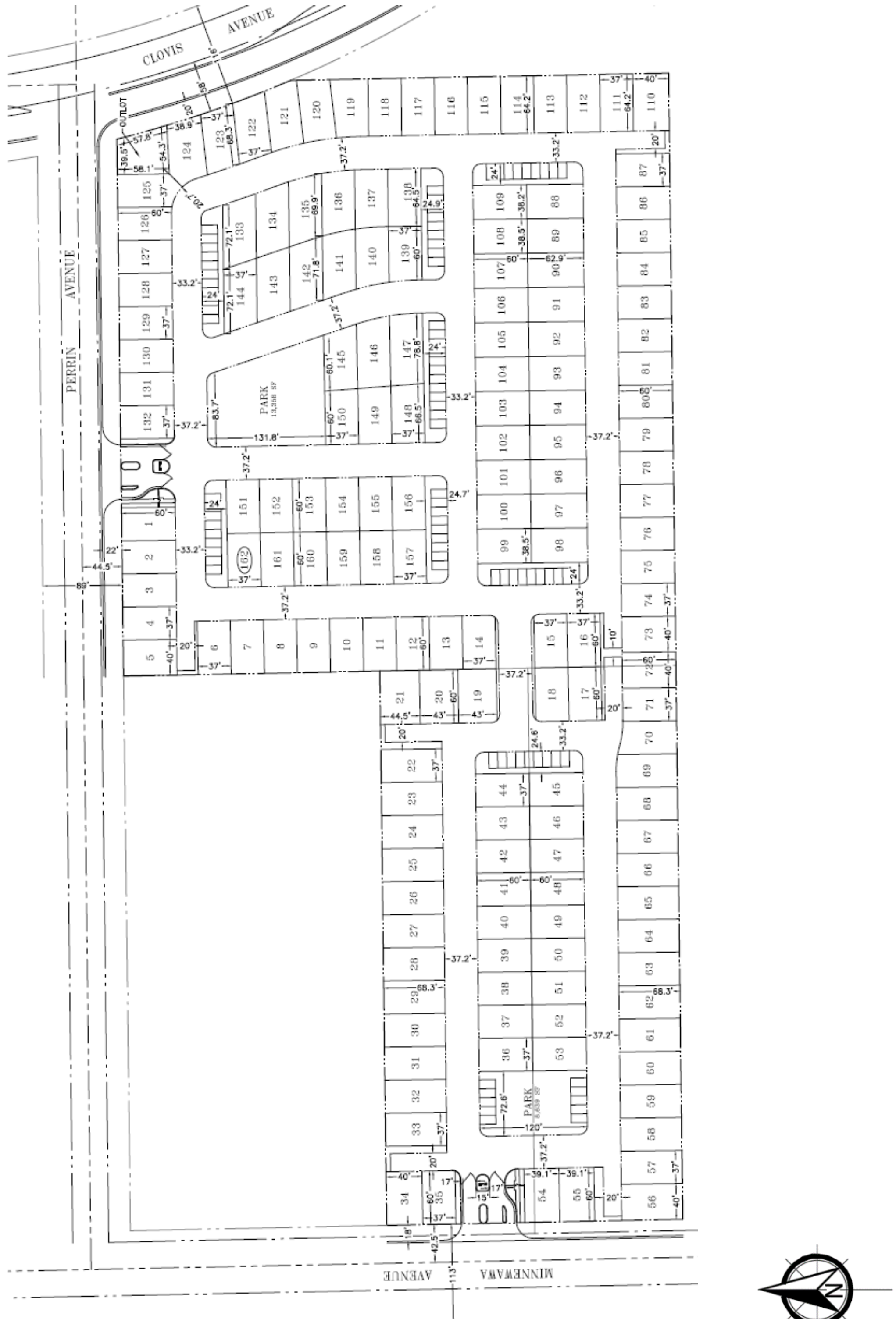


Exhibit B – Project Site Plan



Matt Arndt

From: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Sent: Wednesday, October 11, 2023 4:35 PM
To: Matt Arndt; Sean Smith
Cc: Luna, Hector; Harmanjit Dhaliwal; Jose Benavides; Xiong, Christopher@DOT
Subject: RE: Clovis Perrin Residential TIA Draft Scope of Work

Hello Matt,

We are satisfied with the TIA SOW. Please route the TIA once completed for our review.

Christopher: When you have an opportunity, please upload the project to GTS for our records.

Thank you,

David Padilla, Branch Chief
Caltrans Transportation Planning
(559) 905-9371

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Wednesday, October 11, 2023 8:45 AM
To: Sean Smith <SeanS@ci.clovis.ca.us>
Cc: Luna, Hector <HLuna@fresnocountyca.gov>; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Jose Benavides <jbenavides@jlbtraffic.com>
Subject: Clovis Perrin Residential TIA Draft Scope of Work

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello,

Attached is the Draft Scope of Work for the preparation of a Traffic Impact Analysis for a residential subdivision on the southwest corner of Clovis Avenue and Perrin Avenue in the City of Clovis.

We kindly ask that you take a moment to review and comment on the proposed Draft Scope of Work. If you have any questions or require additional information, please contact me by phone at (559) 317-6243 or by responding to this email. We appreciate your time and attention to this matter and look forward to hearing from you soon.

Sincerely,

Matthew Arndt

JLB TRAFFIC ENGINEERING

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

Matt Arndt

From: Jose Benavides
Sent: Tuesday, January 23, 2024 1:50 PM
To: Luna, Hector
Cc: Harmanjit Dhaliwal; Padilla, Dave@DOT; Matt Arndt; Sean Smith
Subject: RE: Clovis Perrin Residential TIA Draft Scope of Work

Good afternoon Hector,

Via this email I would like to summarize our conversation related to the scope of work for the Clovis Perrin Residential Development Project. If I misinterpreted anything please let us know.

Based on our conversation the County of Fresno has agreed that analysis of the two intersections and three segments is no longer necessary. The instructions to be removed from the scope of work are 1) Minnewawa Avenue at Behymer Avenue, and Willow Avenue at Shepherd Avenue. The segments to be removed from the scope of work are 1) Behymer Avenue between Willow and Peach, 2) Behymer Avenue between Peach and Minnewawa, and 3) Shepherd Avenue between Minnewawa and DeWitt. As such the following list of intersections and segments are to be included in the final scope of work at the request of the County:

Intersections:

- Behymer Avenue and Willow Avenue

Segments:

- Minnewawa Avenue: Shepherd Avenue to Perrin Avenue
- Minnewawa Avenue: Perrin Avenue to Behymer Avenue
- Behymer Avenue: Peach Avenue to Minnewawa Avenue
- Shepherd Avenue: Peach Avenue to Minnewawa Avenue

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

JLB TRAFFIC ENGINEERING, INC.

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Direct: (559) 317-6249
Main: (559) 570-8991
Cell: (559) 694-6000
Fax: (559) 317-6854
www.JLBtraffic.com

Matt Arndt

From: Luna, Hector <HLuna@fresnocountyca.gov>
Sent: Thursday, October 12, 2023 8:45 AM
To: Matt Arndt; Sean Smith
Cc: Harmanjit Dhaliwal; Padilla, Dave@DOT; Jose Benavides
Subject: RE: Clovis Perrin Residential TIA Draft Scope of Work

Good morning Matt,

The County requests the following intersections and segments be analyzed:

Intersections:
- Behymer Avenue and Minnewawa Avenue
- Behymer Avenue and Willow Avenue
- Willow Avenue and Shepherd Avenue

Segments:
- Minnewawa Avenue: Shepherd Avenue to Perrin Avenue
- Minnewawa Avenue: Perrin Avenue to Behymer Avenue
- Behymer Avenue: Willow Avenue to Minnewawa Avenue
- Shepherd Avenue: Willow Avenue to Peach Avenue
- Shepherd Avenue: Peach Avenue to Minnewawa Avenue
- Shepherd Avenue: Minnewawa to Dewitt Avenue

Please route the TIA once completed for our review, thank you for the opportunity for the review of the Scope of Work.

Regards,

Hector E. Luna| **Senior Planner**
Department of Public Works and Planning |
Water and Natural Resources Division |
Transportation Planning Unit
2220 Tulare St. 6th Floor Fresno, CA 93721
Main Office: (559) 600-4292 | Direct: (559) 600-9672
Email: hluna@FresnoCountyCa.gov
Your input matters! Customer Service Survey

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Wednesday, October 11, 2023 8:45 AM
To: Sean Smith <SeanS@ci.clovis.ca.us>
Cc: Luna, Hector <HLuna@fresnocountyca.gov>; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Jose Benavides <jbenavides@jlbtraffic.com>
Subject: Clovis Perrin Residential TIA Draft Scope of Work

Hello,

Attached is the Draft Scope of Work for the preparation of a Traffic Impact Analysis for a residential subdivision on the southwest corner of Clovis Avenue and Perrin Avenue in the City of Clovis.

We kindly ask that you take a moment to review and comment on the proposed Draft Scope of Work. If you have any questions or require additional information, please contact me by phone at (559) 317-6243 or by responding to this email. We appreciate your time and attention to this matter and look forward to hearing from you soon.

Sincerely,

Matthew Arndt

JLB TRAFFIC ENGINEERING

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516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Office: (559) 570-8991
Direct: (559) 317-6243
Cell: (559) 360-1886
www.JLBtraffic.com

Matt Arndt

From: Sean Smith <SeanS@ci.clovis.ca.us>
Sent: Thursday, February 1, 2024 5:13 PM
To: Matt Arndt; Jose Benavides
Cc: Jeff Brown; Ruben Amavizca; Christopher Kelly; Tara West
Subject: RE: [External] Clovis Perrin Residential TIA Draft Scope of Work

Jose,
Thank you for the Teams meeting today. We talked about the project's anticipated trip distribution and timing. Based on the projected low trip count, the City of Clovis is agreeable to removing the following intersections from the scope of the study:

1. Willow-Behymer
2. Willow-International
3. Minnewawa-International

Please feel free to contact me or other Engineering staff with any questions.

Check https://cityofclovis.com/planning-and-development/engineering/resources-4/ for project status updates and other references.
The front counter is open 8am to 4:30pm; staff is otherwise available by appointment, email or phone.

Sean K. Smith PE QSD | Supervising Civil Engineer
City of Clovis | Engineering Division
Development Review
1033 Fifth Street, Clovis, CA 93612
p. 559.324.2363 | f. 559-324-2843 | m. 559-765-7505
seans@cityofclovis.com

cc: project file

From: Sean Smith
Sent: Monday, October 16, 2023 12:09 PM
To: Matt Arndt <marndt@jlbtraffic.com>
Cc: Luna, Hector <HLuna@fresnocountyca.gov>; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Jose Benavides <jbenavides@jlbtraffic.com>; Gene Abella <genea@ci.clovis.ca.us>; Jeff Brown <JBrown@ci.clovis.ca.us>; Ruben Amavizca <rubena@ci.clovis.ca.us>
Subject: RE: [External] Clovis Perrin Residential TIA Draft Scope of Work

Matt
The City has three (3) additional intersections to consider and three (3) additional projects to add to the Near Term list. The intersections are also in addition to the 3 that the County included by way of email from Hector Luna.

Intersections:

1. Minnewawa-International (due to school traffic)
2. Willow-International (due to school traffic)
3. Peach-Shepherd (due to increase to east-west trips with a potential to increase the delay for N/b Peach)

Additional Near Term Projects:
1. TM6343 (Wilson)
2. TM6205 (Wilson)
3. Commercial + MFR at SEC Willow-Shepherd (Ricchuitti)

Thank you for the work and collaboration on this project. Please feel free to contact me or other Engineering staff with any questions or additional issues that you'd like us to consider.

Check https://cityofclovis.com/planning-and-development/engineering/resources-4/ for project status updates and other references.
The front counter is open 8am to 4:30pm; staff is otherwise available by appointment, email or phone.

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City of Clovis | Engineering Division
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p. 559.324.2363 | f. 559-324-2843 | m. 559-765-7505
seans@cityofclovis.com

cc: project file

From: Sean Smith <SeanS@ci.clovis.ca.us>
Sent: Wednesday, October 11, 2023 1:50 PM
To: Matt Arndt <marndt@jlbtraffic.com>
Cc: Luna, Hector <HLuna@fresnocountyca.gov>; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Jose Benavides <jbenavides@jlbtraffic.com>
Subject: Re: [External] Clovis Perrin Residential TIA Draft Scope of Work

Received, we will review and respond.

Thank you,

Sean Smith PE QSD
DRU Manager, City of Clovis

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Wednesday, October 11, 2023 8:45:16 AM
To: Sean Smith <SeanS@ci.clovis.ca.us>
Cc: Luna, Hector <HLuna@fresnocountyca.gov>; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Jose Benavides <jbenavides@jlbtraffic.com>
Subject: [External] Clovis Perrin Residential TIA Draft Scope of Work

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Sincerely,

Matthew Arndt

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Office: (559) 570-8991
Direct: (559) 317-6243
Cell: (559) 360-1886
https://link.edgepilot.com/s/c5a6fb34/up3NtZ0wQEmVIVaQ7riLqQ?u=http://www.jlbtraffic.com/

Matt Arndt

From: Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Sent: Wednesday, October 11, 2023 4:46 PM
To: Matt Arndt; Sean Smith
Cc: Luna, Hector; Padilla, Dave@DOT; Jose Benavides; Jill Gormley; Scott Tyler
Subject: RE: Clovis Perrin Residential TIA Draft Scope of Work
Attachments: L20231011 Clovis Perrin TIA Draft Scope of Work.pdf

Good Afternoon Matt/Sean,

Thank you for the opportunity for the review of the Scope of Work. The City of Fresno will not need to review the Traffic Impact Analysis for the subject project. You will need to confirm with our Planning Department on the VMT Analysis.

Thanks,

Harmanjit Dhaliwal, PE
Licensed Engineer Manager
Land Planning & Subdivision Inspection Section, Public Works Department
2600 Fresno Street, Room 4064
Fresno, CA 93721-3623
Direct: (559) 621-8694
Main: (559) 621-8800
www.fresno.gov
Building a Better Fresno

ONEFRESNO
Let's Build Together!

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Wednesday, October 11, 2023 8:45 AM
To: Sean Smith <SeanS@ci.clovis.ca.us>
Cc: Luna, Hector <HLuna@fresnocountyca.gov>; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Jose Benavides <jbenavides@jlbtraffic.com>
Subject: Clovis Perrin Residential TIA Draft Scope of Work

External Email: Use caution with links and attachments

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Sincerely,

Matthew Arndt

JLB TRAFFIC ENGINEERING

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Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Office: (559) 570-8991
Direct: (559) 317-6243
Cell: (559) 360-1886
www.JLBtraffic.com

Appendix B: Traffic Counts

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

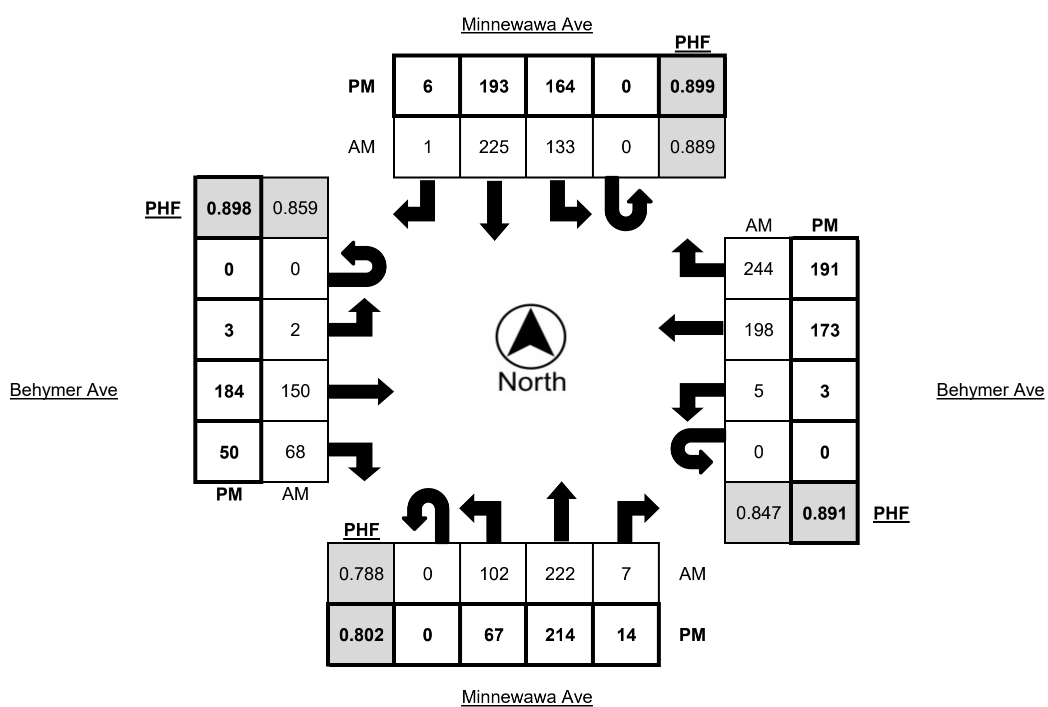
LOCATION	Minnewawa Ave @ Behymer Ave	**LATITUDE**	36.8812
COUNTY	Fresno	**LONGITUDE**	-119.7112
COLLECTION DATE	Thursday, September 14, 2023	**WEATHER**	Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	0	2	33	1	2	0	26	36	0	2	0	0	26	9	0	0	3	32	45	1
7:15 AM - 7:30 AM	0	9	40	2	1	0	36	39	0	1	0	0	27	9	1	0	3	46	44	3
7:30 AM - 7:45 AM	0	33	42	1	2	0	35	48	0	2	0	0	37	10	1	0	3	72	48	1
7:45 AM - 8:00 AM	0	28	47	1	2	0	25	51	0	0	0	2	36	26	1	0	2	54	76	5
8:00 AM - 8:15 AM	0	14	59	1	2	0	33	68	0	3	0	0	36	16	2	0	0	34	68	3
8:15 AM - 8:30 AM	0	27	74	4	3	0	40	58	1	3	0	0	41	16	1	0	0	38	52	1
8:30 AM - 8:45 AM	0	8	44	3	3	0	36	52	1	3	0	2	24	16	4	0	1	32	41	4
8:45 AM - 9:00 AM	0	9	42	2	2	0	22	36	0	3	0	1	15	11	0	0	4	43	36	3
TOTAL	**0**	**130**	**381**	**15**	**17**	**0**	**253**	**388**	**2**	**17**	**0**	**5**	**242**	**113**	**10**	**0**	**16**	**351**	**410**	**21**

	Northbound					Southbound					Eastbound					Westbound				
Time	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	16	55	2	0	0	26	45	0	0	0	0	46	14	0	0	0	35	30	2
4:15 PM - 4:30 PM	0	11	49	2	1	0	34	52	1	2	0	4	25	6	1	0	3	37	32	1
4:30 PM - 4:45 PM	0	14	57	1	1	0	37	36	0	2	0	0	40	10	0	0	0	22	39	0
4:45 PM - 5:00 PM	0	10	56	3	0	0	39	59	0	1	0	2	26	1	0	0	1	38	39	1
5:00 PM - 5:15 PM	0	11	51	1	0	0	38	40	3	2	0	0	39	11	0	0	1	41	56	0
5:15 PM - 5:30 PM	0	27	59	6	0	0	40	61	0	2	0	0	56	10	0	0	1	47	55	0
5:30 PM - 5:45 PM	0	20	61	4	1	0	45	43	1	0	0	2	55	7	1	0	1	42	46	0
5:45 PM - 6:00 PM	0	9	43	3	0	0	41	49	2	1	0	1	34	22	1	0	0	43	34	0
TOTAL	**0**	**118**	**431**	**22**	**3**	**0**	**300**	**385**	**7**	**10**	**0**	**9**	**321**	**81**	**3**	**0**	**7**	**305**	**331**	**4**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks	U-Turn	Left	Thru	Right	Trucks
7:30 AM - 8:30 AM	0	102	222	7	9	0	133	225	1	8	0	2	150	68	5	0	5	198	244	10
5:00 PM - 6:00 PM	0	67	214	14	1	0	164	193	6	5	0	3	184	50	2	0	3	173	191	0

	PHF	Trucks
AM	0.967	2.4%
PM	0.872	0.6%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

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www.metrotrafficdata.com

Turning Movement Report

Prepared For:
JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

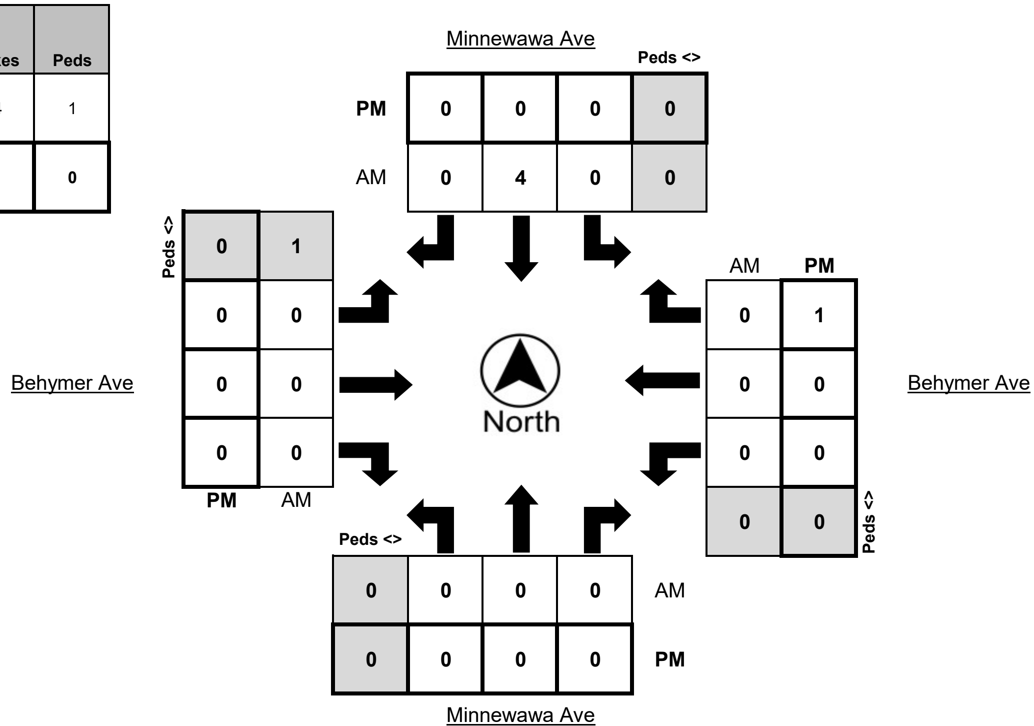
LOCATION Minnewawa Ave @ Behymer Ave
LATITUDE 36.8812
COUNTY Fresno
LONGITUDE -119.7112
COLLECTION DATE Thursday, September 14, 2023
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:00 AM - 8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

	Bikes	Peds
AM Peak Total	4	1
PM Peak Total	**1**	**0**



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Groups Printed- Unshifted

	MINNEWAWA From North				PERRIN From East				MINNEWAWA From South				PERRIN From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	48	0	0	0	0	0	0	0	42	3	0	2	0	2	0	97
07:15 AM	0	69	0	0	0	0	0	0	0	70	0	0	0	1	1	0	141
07:30 AM	0	63	0	0	1	0	0	0	0	71	1	0	0	0	0	0	136
07:45 AM	0	87	0	0	1	0	1	0	2	88	2	0	2	0	0	0	183
Total	0	267	0	0	2	0	1	0	2	271	6	0	4	1	3	0	557
08:00 AM	0	81	0	0	0	0	1	0	1	87	0	0	2	0	0	0	172
08:15 AM	1	82	0	0	0	0	0	0	2	101	2	0	1	0	0	0	189
08:30 AM	0	71	1	0	0	0	0	0	0	88	1	0	2	0	1	0	164
08:45 AM	0	53	1	0	0	0	0	0	1	67	0	0	1	0	0	0	123
Total	1	287	2	0	0	0	1	0	4	343	3	0	6	0	1	0	648
*** BREAK ***																	
04:00 PM	0	56	1	0	1	0	1	0	2	102	0	0	0	0	0	0	163
04:15 PM	0	79	0	0	2	0	1	0	0	104	1	0	1	0	0	0	188
04:30 PM	0	53	0	0	0	0	2	0	0	77	0	0	0	0	0	0	132
04:45 PM	0	76	0	0	0	0	1	0	0	86	1	0	0	0	0	0	164
Total	0	264	1	0	3	0	5	0	2	369	2	0	1	0	0	0	647
05:00 PM	0	54	0	0	1	1	1	0	4	98	0	0	1	0	1	0	161
05:15 PM	0	76	1	0	0	0	5	0	0	118	1	0	0	0	0	0	201
05:30 PM	0	62	0	0	1	0	2	0	2	115	0	0	0	0	0	0	182
05:45 PM	0	46	2	0	0	0	2	0	1	91	0	0	0	0	0	0	142
Total	0	238	3	0	2	1	10	0	7	422	1	0	1	0	1	0	686
Grand Total	1	1056	6	0	7	1	17	0	15	1405	12	0	12	1	5	0	2538
Apprch %	0.1	99.3	0.6	0	28	4	68	0	1	98.1	0.8	0	66.7	5.6	27.8	0	
Total %	0	41.6	0.2	0	0.3	0	0.7	0	0.6	55.4	0.5	0	0.5	0	0.2	0	

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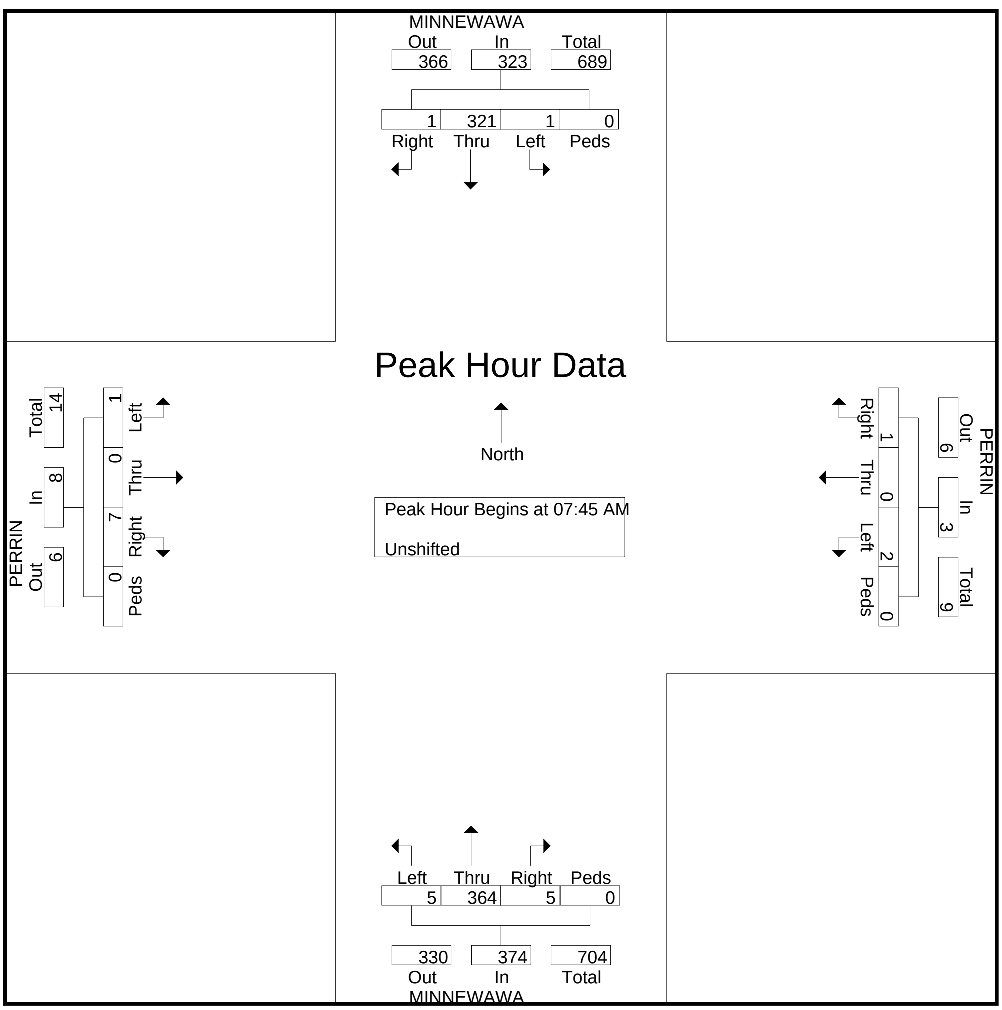
Site Code : 00000000
Start Date : 2/14/2024

	MINNEWAWA From North					PERRIN From East					MINNEWAWA From South					PERRIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	**87**	0	0	**87**	**1**	0	**1**	0	**2**	**2**	88	**2**	0	92	**2**	0	0	0	2	183
08:00 AM	0	81	0	0	81	0	0	1	0	1	1	87	0	0	88	2	0	0	0	2	172
08:15 AM	**1**	82	0	0	83	0	0	0	0	0	2	**101**	2	0	**105**	1	0	0	0	1	**189**
08:30 AM	0	71	**1**	0	72	0	0	0	0	0	0	88	1	0	89	2	0	**1**	0	**3**	164
Total Volume	1	321	1	0	323	1	0	2	0	3	5	364	5	0	374	7	0	1	0	8	708
% App. Total	0.3	99.4	0.3	0		33.3	0	66.7	0		1.3	97.3	1.3	0		87.5	0	12.5	0		
PHF	.250	.922	.250	.000	.928	.250	.000	.500	.000	.375	.625	.901	.625	.000	.890	.875	.000	.250	.000	.667	.937



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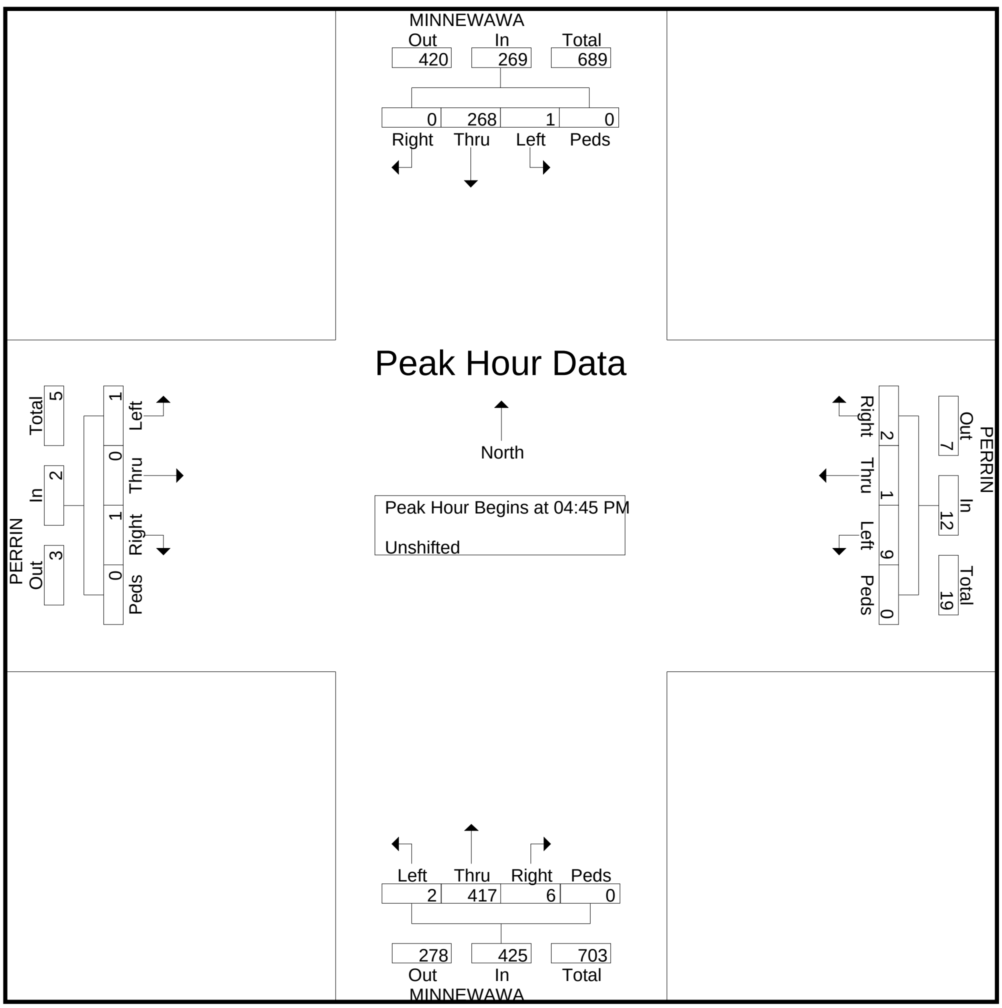
	MINNEWAWA From North					PERRIN From East					MINNEWAWA From South					PERRIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	**76**	0	0	76	0	0	1	0	1	0	86	**1**	0	87	0	0	0	0	0	164
05:00 PM	0	54	0	0	54	**1**	**1**	1	0	3	**4**	98	0	0	102	**1**	0	**1**	0	**2**	161
05:15 PM	0	76	**1**	0	**77**	0	0	**5**	0	**5**	0	**118**	1	0	**119**	0	0	0	0	0	**201**
05:30 PM	0	62	0	0	62	1	0	2	0	3	2	115	0	0	117	0	0	0	0	0	182
Total Volume	0	268	1	0	269	2	1	9	0	12	6	417	2	0	425	1	0	1	0	2	708
% App. Total	0	99.6	0.4	0		16.7	8.3	75	0		1.4	98.1	0.5	0		50	0	50	0		
PHF	.000	.882	.250	.000	.873	.500	.250	.450	.000	.600	.375	.883	.500	.000	.893	.250	.000	.250	.000	.250	.881



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Groups Printed- Bank 2

	MINNEWAWA From North				PERRIN From East				MINNEWAWA From South				PERRIN From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
*** BREAK ***																	
04:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
Grand Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total %	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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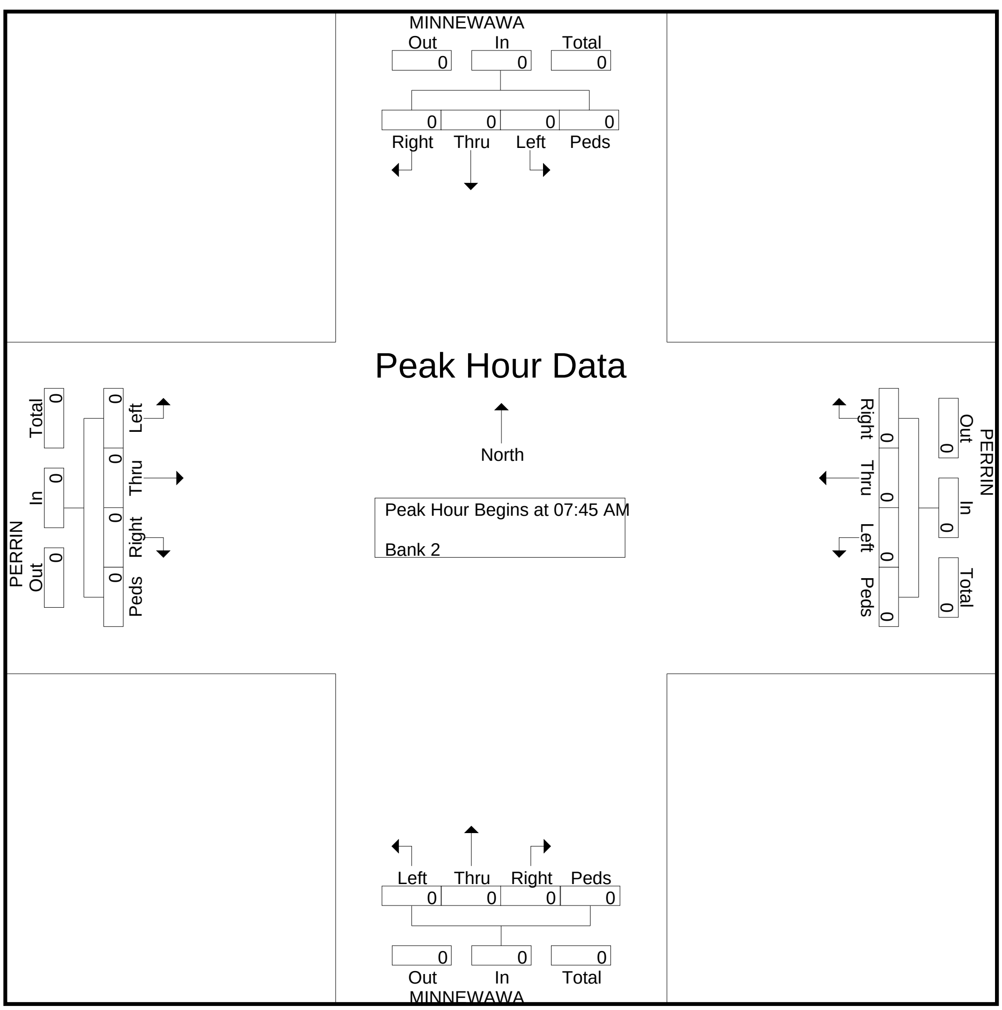
Start Date : 2/14/2024

	MINNEWAWA From North					PERRIN From East					MINNEWAWA From South					PERRIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



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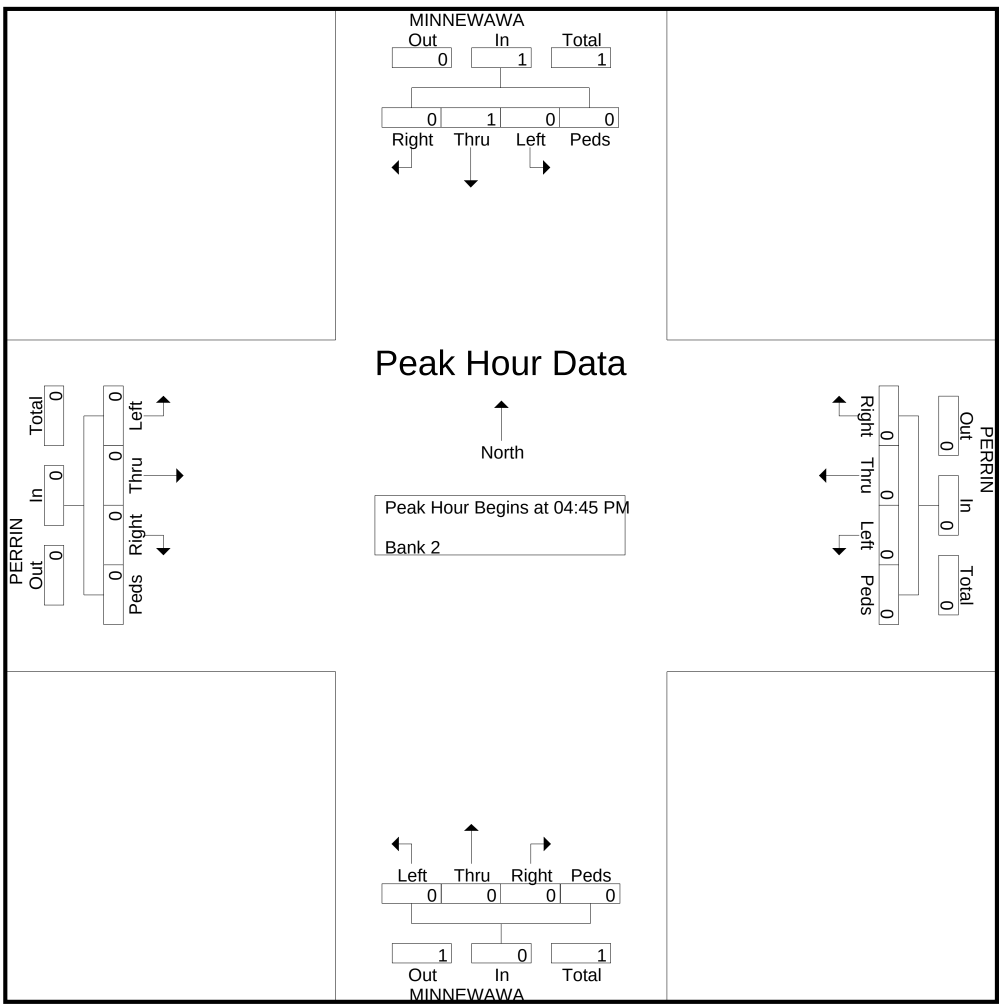
	MINNEWAWA From North					PERRIN From East					MINNEWAWA From South					PERRIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250



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File Name : Clovis at Baron
Site Code : 00000000
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Groups Printed- Unshifted - Bank 1

	CLOVIS From North				BARON From East				CLOVIS From South				BARON From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	19	0	8	0	0	0	0	0	27
07:15 AM	0	0	0	0	0	0	1	0	12	0	10	0	0	0	0	0	23
07:30 AM	0	0	0	0	0	0	0	0	14	0	9	0	0	0	0	0	23
07:45 AM	0	0	0	0	0	0	2	0	7	0	11	0	0	0	0	0	20
Total	0	0	0	0	0	0	3	0	52	0	38	0	0	0	0	0	93
08:00 AM	0	0	0	0	0	0	2	0	2	0	12	0	0	0	0	0	16
08:15 AM	0	0	0	0	0	0	7	0	6	0	6	0	0	0	0	0	19
08:30 AM	0	0	0	0	0	0	1	0	1	0	3	0	0	0	0	0	5
08:45 AM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5
Total	0	0	0	0	0	0	15	0	9	0	21	0	0	0	0	0	45
*** BREAK ***																	
03:45 PM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	9
Total	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	9
04:00 PM	0	0	0	0	1	0	8	0	1	0	1	0	0	0	0	0	11
04:15 PM	0	0	0	0	0	0	5	0	1	0	7	0	0	0	0	0	13
04:30 PM	0	0	0	0	0	0	7	0	2	0	5	0	0	0	0	1	15
04:45 PM	0	0	1	0	0	0	4	0	2	0	10	0	0	0	0	0	17
Total	0	0	1	0	1	0	24	0	6	0	23	0	0	0	0	1	56
05:00 PM	0	0	0	1	0	0	1	0	0	0	7	0	0	0	0	0	9
05:15 PM	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	11
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	1	6
Total	0	0	0	1	0	0	3	0	1	0	21	0	0	0	0	1	27
Grand Total	0	0	1	1	1	0	45	0	68	0	112	0	0	0	0	2	230
Apprch %	0	0	50	50	2.2	0	97.8	0	37.8	0	62.2	0	0	0	0	100	
Total %	0	0	0.4	0.4	0.4	0	19.6	0	29.6	0	48.7	0	0	0	0	0.9	
Unshifted	0	0	1	1	1	0	45	0	68	0	1	0	0	0	0	2	119
% Unshifted	0	0	100	100	100	0	100	0	100	0	0.9	0	0	0	0	100	51.7
Bank 1	0	0	0	0	0	0	0	0	0	0	111	0	0	0	0	0	111
% Bank 1	0	0	0	0	0	0	0	0	0	0	99.1	0	0	0	0	0	48.3

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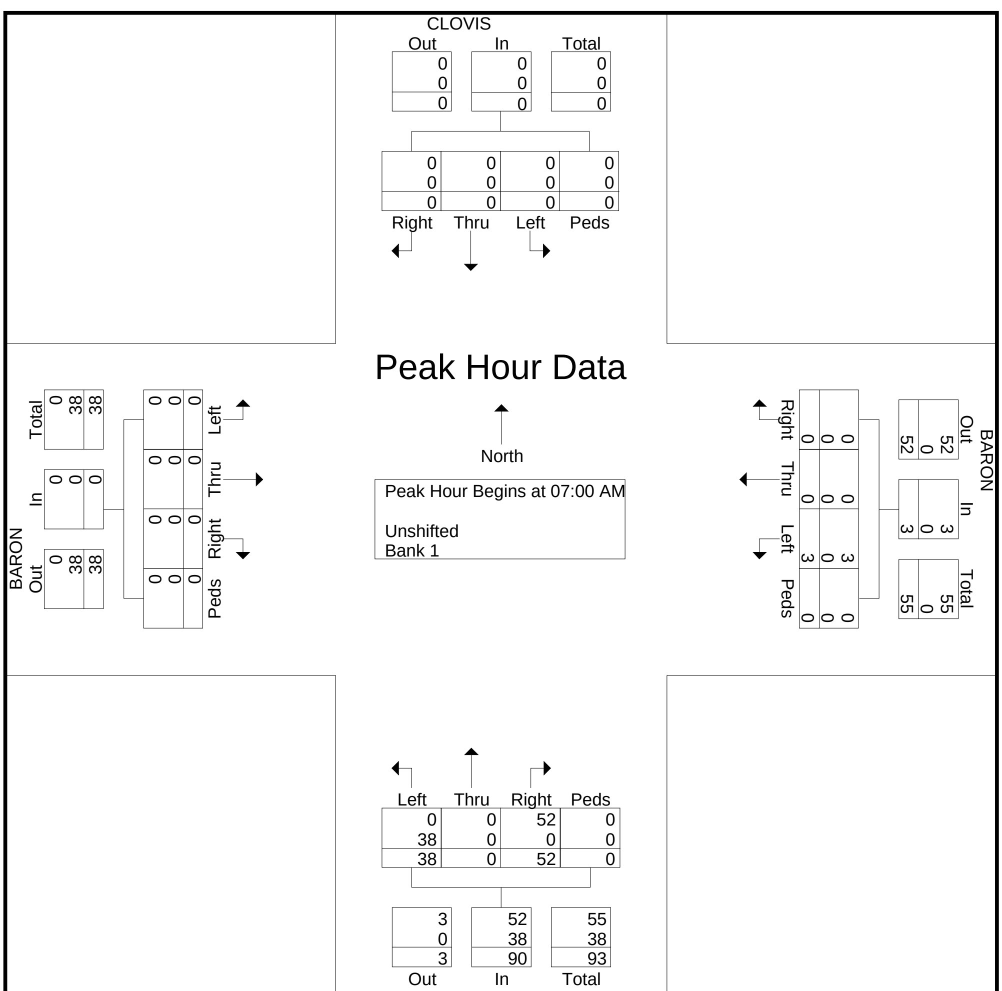
	CLOVIS From North					BARON From East					CLOVIS From South					BARON From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	**19**	0	8	0	**27**	0	0	0	0	0	**27**
07:15 AM	0	0	0	0	0	0	0	1	0	1	12	0	10	0	22	0	0	0	0	0	23
07:30 AM	0	0	0	0	0	0	0	0	0	0	14	0	9	0	23	0	0	0	0	0	23
07:45 AM	0	0	0	0	0	0	0	**2**	0	**2**	7	0	**11**	0	18	0	0	0	0	0	20
Total Volume	0	0	0	0	0	0	0	3	0	3	52	0	38	0	90	0	0	0	0	0	93
% App. Total	0	0	0	0		0	0	100	0		57.8	0	42.2	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.375	.000	.375	.684	.000	.864	.000	.833	.000	.000	.000	.000	.000	.861
Unshifted	0	0	0	0	0	0	0	3	0	3	52	0	0	0	52	0	0	0	0	0	55
% Unshifted	0	0	0	0	0	0	0	100	0	100	100	0	0	0	57.8	0	0	0	0	0	59.1
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	38	0	38	0	0	0	0	0	38
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	100	0	42.2	0	0	0	0	0	40.9



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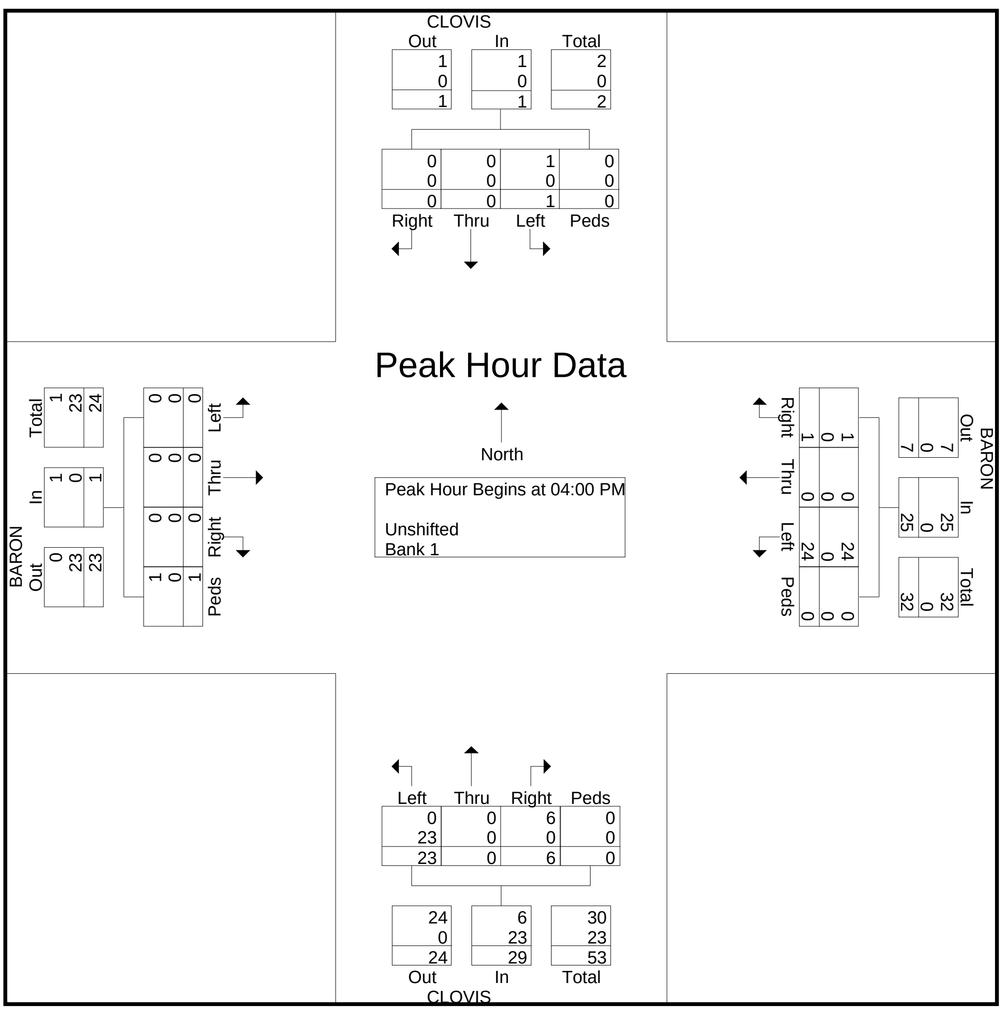
	CLOVIS From North					BARON From East					CLOVIS From South					BARON From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	**1**	0	**8**	0	**9**	1	0	1	0	2	0	0	0	0	0	11
04:15 PM	0	0	0	0	0	0	0	5	0	5	1	0	7	0	8	0	0	0	0	0	13
04:30 PM	0	0	0	0	0	0	0	7	0	7	**2**	0	5	0	7	0	0	0	**1**	**1**	15
04:45 PM	0	0	**1**	0	**1**	0	0	4	0	4	2	0	**10**	0	**12**	0	0	0	0	0	**17**
Total Volume	0	0	1	0	1	1	0	24	0	25	6	0	23	0	29	0	0	0	1	1	56
% App. Total	0	0	100	0		4	0	96	0		20.7	0	79.3	0		0	0	0	100		
PHF	.000	.000	.250	.000	.250	.250	.000	.750	.000	.694	.750	.000	.575	.000	.604	.000	.000	.000	.250	.250	.824
Unshifted	0	0	1	0	1	1	0	24	0	25	6	0	0	0	6	0	0	0	1	1	33
% Unshifted	0	0	100	0	100	100	0	100	0	100	100	0	0	0	20.7	0	0	0	100	100	58.9
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	23	0	23	0	0	0	0	0	23
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	100	0	79.3	0	0	0	0	0	41.1



Turning Movement Report

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Prepared For:
JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

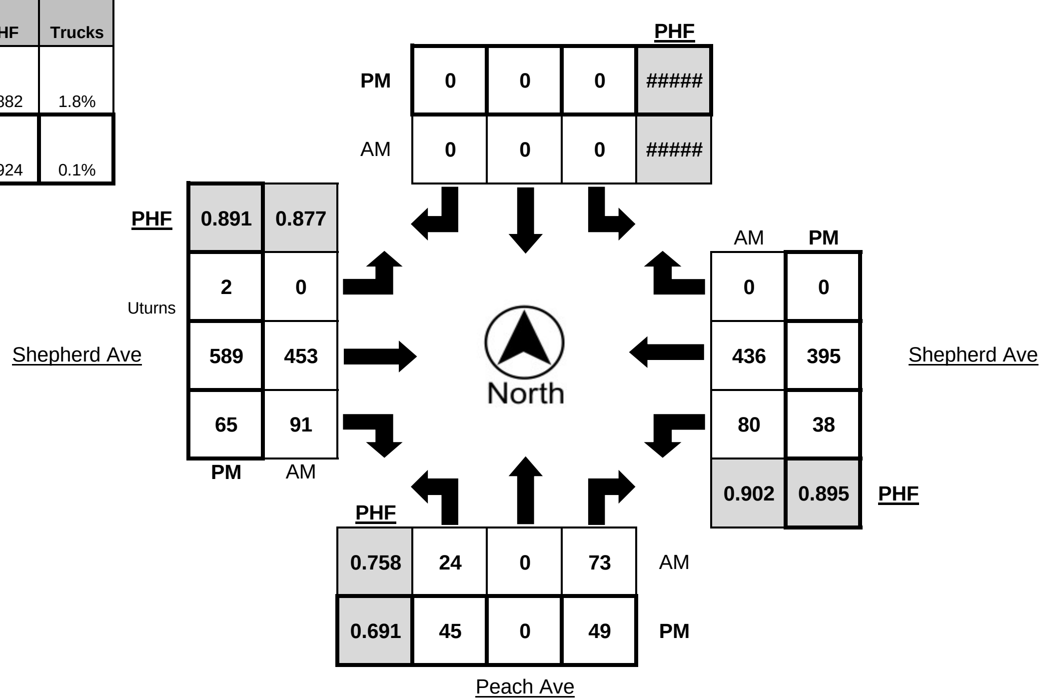
LOCATION Shepherd Ave @ Peach Ave
LATITUDE 36.8667
COUNTY Fresno
LONGITUDE -119.7201
COLLECTION DATE Tuesday, February 4, 2020
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	7	0	11	0	0	0	0	0	0	75	13	1	9	84	0	3
7:15 AM - 7:30 AM	15	0	15	2	0	0	0	0	0	92	17	3	13	97	0	4
7:30 AM - 7:45 AM	1	0	22	0	0	0	0	0	0	116	28	3	26	100	0	4
7:45 AM - 8:00 AM	5	0	25	1	0	0	0	0	0	134	21	4	34	109	0	2
8:00 AM - 8:15 AM	11	0	21	0	0	0	0	0	0	111	21	1	10	111	0	0
8:15 AM - 8:30 AM	7	0	5	0	0	0	0	0	0	92	21	6	10	116	0	0
8:30 AM - 8:45 AM	8	0	3	0	0	0	0	0	0	82	11	1	8	102	0	3
8:45 AM - 9:00 AM	6	0	7	0	0	0	0	0	0	68	14	2	4	99	0	0
TOTAL	**60**	**0**	**109**	**3**	**0**	**0**	**0**	**0**	**0**	**770**	**146**	**21**	**114**	**818**	**0**	**16**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	7	0	10	0	0	0	0	0	0	121	11	1	8	90	0	2
4:15 PM - 4:30 PM	12	0	6	1	0	0	0	0	0	136	12	0	7	105	0	0
4:30 PM - 4:45 PM	11	0	6	1	0	0	0	0	0	123	5	0	12	104	0	0
4:45 PM - 5:00 PM	15	0	7	0	0	0	0	0	1	143	13	0	7	94	0	0
5:00 PM - 5:15 PM	9	0	25	0	0	0	0	0	0	151	19	0	14	102	0	0
5:15 PM - 5:30 PM	15	0	9	0	0	0	0	0	0	166	18	0	8	87	0	0
5:30 PM - 5:45 PM	6	0	8	0	0	0	0	0	1	129	15	0	9	112	0	1
5:45 PM - 6:00 PM	9	0	6	0	0	0	0	0	1	119	26	2	7	105	0	0
TOTAL	**84**	**0**	**77**	**2**	**0**	**0**	**0**	**0**	**3**	**1088**	**119**	**3**	**72**	**799**	**0**	**3**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	24	0	73	1	0	0	0	0	0	453	91	14	80	436	0	6
4:45 PM - 5:45 PM	45	0	49	0	0	0	0	0	2	589	65	0	38	395	0	1

	PHF	Trucks
AM	0.882	1.8%
PM	0.924	0.1%



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Shepherd Ave @ Peach Ave

LATITUDE 36.8667

COUNTY Fresno

LONGITUDE -119.7201

COLLECTION DATE Tuesday, February 4, 2020

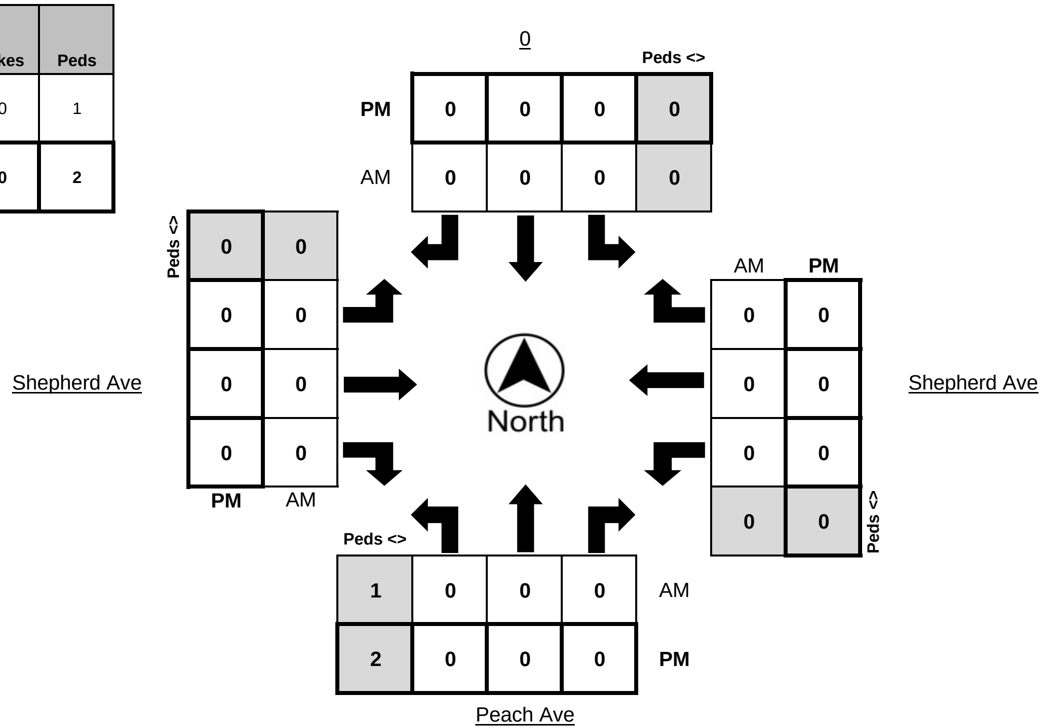
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	1
PM Peak Total	**0**	**2**



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Turning Movement Report

Prepared For:
JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Minnewawa Ave @ Shepherd Ave
LATITUDE 36.8666
COUNTY Fresno
LONGITUDE -119.7111
COLLECTION DATE Thursday, November 2, 2023
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks
7:00 AM - 7:15 AM	12	17	0	0	1	12	18	3	2	1	4	65	16	9	1	4	56	19	7	3
7:15 AM - 7:30 AM	15	31	4	1	0	23	43	3	0	1	2	92	14	4	3	15	78	16	7	2
7:30 AM - 7:45 AM	19	40	8	3	1	24	40	7	5	2	5	90	20	5	1	18	133	42	23	1
7:45 AM - 8:00 AM	29	28	7	2	0	30	34	4	2	1	5	120	31	4	2	19	149	38	21	3
8:00 AM - 8:15 AM	36	33	16	1	1	31	46	3	2	1	7	109	36	4	4	43	129	35	14	3
8:15 AM - 8:30 AM	45	45	8	2	4	29	45	5	3	4	4	97	24	3	5	32	122	46	21	5
8:30 AM - 8:45 AM	23	29	12	3	0	29	33	1	0	4	2	103	13	0	3	10	100	17	10	0
8:45 AM - 9:00 AM	19	17	4	1	2	20	36	2	0	1	3	80	14	0	0	3	96	23	6	2
TOTAL	**198**	**240**	**59**	**13**	**9**	**198**	**295**	**28**	**14**	**15**	**32**	**756**	**168**	**29**	**19**	**144**	**863**	**236**	**109**	**19**

	Northbound					Southbound					Eastbound					Westbound				
Time	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks
4:00 PM - 4:15 PM	22	37	10	2	0	25	35	0	0	5	7	112	15	2	4	4	108	29	11	1
4:15 PM - 4:30 PM	15	28	9	1	2	21	41	1	0	1	11	115	15	2	2	19	98	28	7	1
4:30 PM - 4:45 PM	19	31	8	1	0	28	33	2	2	1	4	123	13	2	2	8	103	24	7	2
4:45 PM - 5:00 PM	24	36	14	2	1	20	48	2	0	0	5	130	19	4	0	6	112	29	11	0
5:00 PM - 5:15 PM	22	32	12	2	1	19	31	2	1	1	3	124	13	2	1	12	108	26	11	0
5:15 PM - 5:30 PM	40	42	8	0	1	19	51	3	2	1	7	140	16	3	1	19	131	40	20	0
5:30 PM - 5:45 PM	34	40	20	3	0	25	43	2	0	0	7	94	29	4	1	19	93	28	8	1
5:45 PM - 6:00 PM	23	47	10	0	0	25	41	9	4	0	2	126	28	2	0	14	115	28	16	0
TOTAL	**199**	**293**	**91**	**11**	**5**	**182**	**323**	**21**	**9**	**9**	**46**	**964**	**148**	**21**	**11**	**101**	**868**	**232**	**91**	**5**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks
7:30 AM - 8:30 AM	129	146	39	8	6	114	165	19	12	8	21	416	111	16	12	112	533	161	79	12
5:00 PM - 6:00 PM	119	161	50	5	2	88	166	16	7	2	19	484	86	11	3	64	447	122	55	1

	PHF	Trucks
AM	0.938	1.9%
PM	0.883	0.4%

Minnewawa Ave

	(RTOR)				PHF
PM	7	16	166	88	0.9
AM	12	19	165	114	0.931

Shepherd Ave

PM	AM	
0.903	0.878	PHF
19	21	
484	416	
86	111	
11	16	(RTOR)

North

	AM	PM
(RTOR)	79	55
	161	122
	533	447
	112	64
PHF	0.973	0.833

Shepherd Ave

	PHF				(RTOR)
AM	0.801	129	146	39	8
PM	0.878	119	161	50	5

Minnewawa Ave

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
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Turning Movement Report

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JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

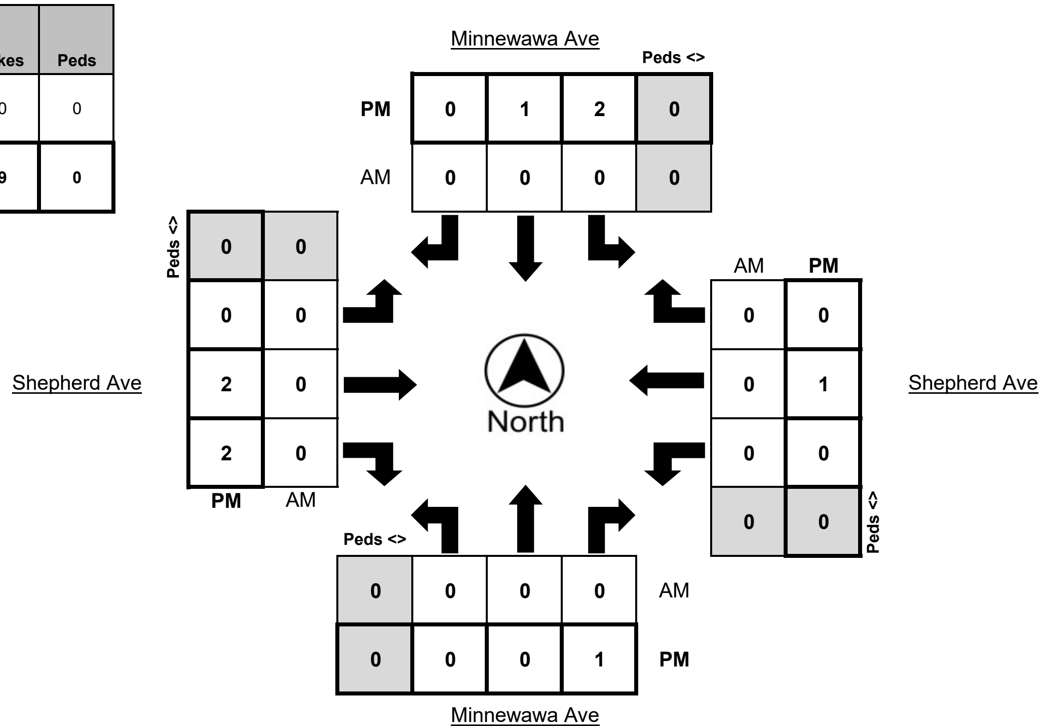
LOCATION Minnewawa Ave @ Shepherd Ave
LATITUDE 36.8666
COUNTY Fresno
LONGITUDE -119.7111
COLLECTION DATE Thursday, November 2, 2023
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
TOTAL	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**1**	**0**	**2**	**2**	**1**	**0**	**0**	**3**	**2**	**0**	**0**	**1**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	1	0	2	1	0	0	0	2	2	0	0	1	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**9**	**0**



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Fresno, CA 93704

LOCATION Clovis Ave @ Shepherd Ave
COUNTY Fresno
COLLECTION DATE Thursday, November 2, 2023

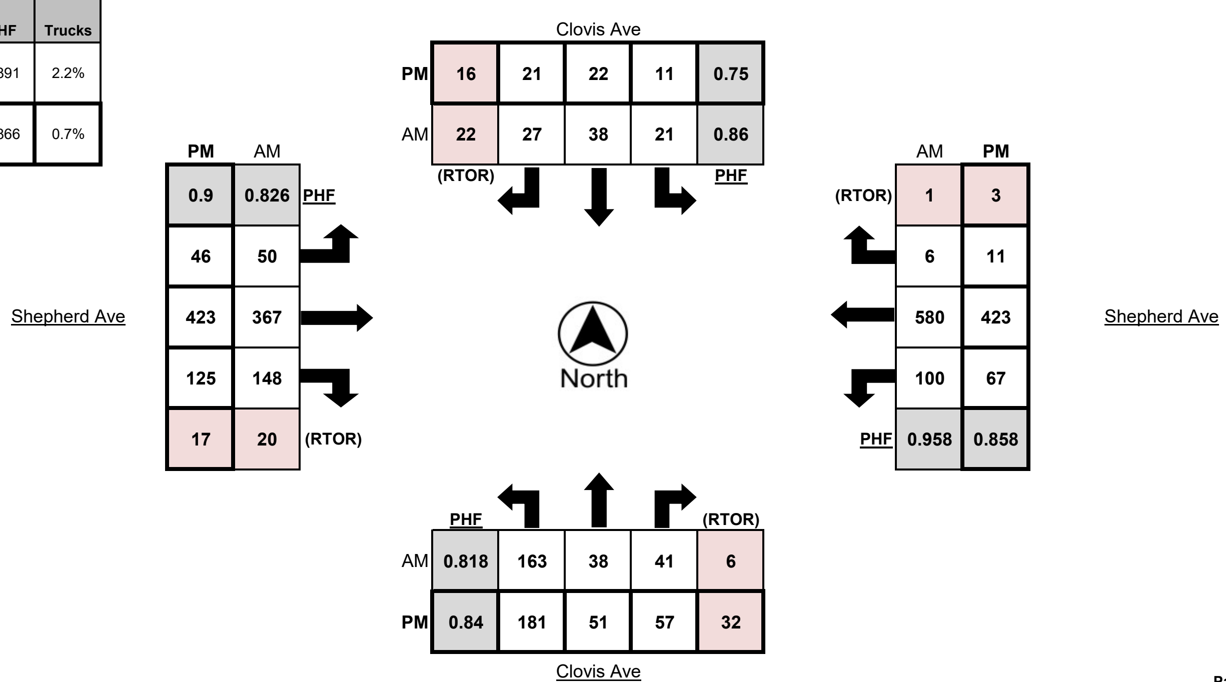
LATITUDE 36.8666
LONGITUDE -119.7021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks
7:00 AM - 7:15 AM	23	4	9	2	2	6	8	0	0	0	2	48	27	5	1	8	56	2	1	3
7:15 AM - 7:30 AM	14	6	4	0	0	4	14	10	6	0	1	88	28	5	3	13	81	4	0	4
7:30 AM - 7:45 AM	39	13	14	1	1	5	9	9	5	1	5	75	32	1	2	22	145	0	0	2
7:45 AM - 8:00 AM	51	11	12	3	3	6	9	10	8	0	14	108	49	9	2	27	143	3	1	2
8:00 AM - 8:15 AM	37	6	7	1	1	7	12	2	4	0	20	107	32	7	4	23	155	1	0	3
8:15 AM - 8:30 AM	36	8	8	1	1	3	8	6	5	0	11	77	35	3	8	28	137	2	0	4
8:30 AM - 8:45 AM	27	8	20	1	1	3	3	4	3	0	10	102	39	5	8	9	87	2	1	2
8:45 AM - 9:00 AM	30	5	4	0	0	5	8	4	3	1	13	67	26	7	0	16	78	1	0	1
TOTAL	**257**	**61**	**78**	**9**	**9**	**39**	**71**	**45**	**34**	**2**	**76**	**672**	**268**	**42**	**28**	**146**	**882**	**15**	**3**	**21**

	Northbound					Southbound					Eastbound					Westbound				
Time	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks
4:00 PM - 4:15 PM	51	4	13	6	1	4	11	6	4	0	11	94	26	14	4	9	79	0	0	3
4:15 PM - 4:30 PM	35	11	9	6	1	1	4	1	1	0	12	119	20	4	4	22	104	1	1	1
4:30 PM - 4:45 PM	41	18	15	6	1	1	7	6	1	0	11	101	30	6	2	13	92	2	0	1
4:45 PM - 5:00 PM	47	9	15	6	0	3	6	4	3	1	14	108	27	5	0	14	99	0	0	0
5:00 PM - 5:15 PM	30	12	15	10	0	2	3	4	2	0	11	91	35	3	3	13	102	1	1	1
5:15 PM - 5:30 PM	58	13	15	11	0	1	8	9	7	0	11	123	31	2	1	22	116	8	2	2
5:30 PM - 5:45 PM	46	17	12	5	1	5	5	4	4	0	10	101	32	7	0	18	106	2	0	1
5:45 PM - 6:00 PM	48	14	6	5	0	5	9	5	5	0	8	101	38	2	0	17	87	2	0	0
TOTAL	**356**	**98**	**100**	**55**	**4**	**22**	**53**	**39**	**27**	**1**	**88**	**838**	**239**	**43**	**14**	**128**	**785**	**16**	**4**	**9**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks	Left	Thru	Right	(RTOR)	Trucks
7:30 AM - 8:30 AM	163	38	41	6	6	21	38	27	22	1	50	367	148	20	16	100	580	6	1	11
4:45 PM - 5:45 PM	181	51	57	32	1	11	22	21	16	1	46	423	125	17	4	67	423	11	3	4

	PHF	Trucks
AM	0.891	2.2%
PM	0.866	0.7%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Clovis Ave @ Shepherd Ave **LATITUDE** 36.8666

COUNTY Fresno **LONGITUDE** -119.7021

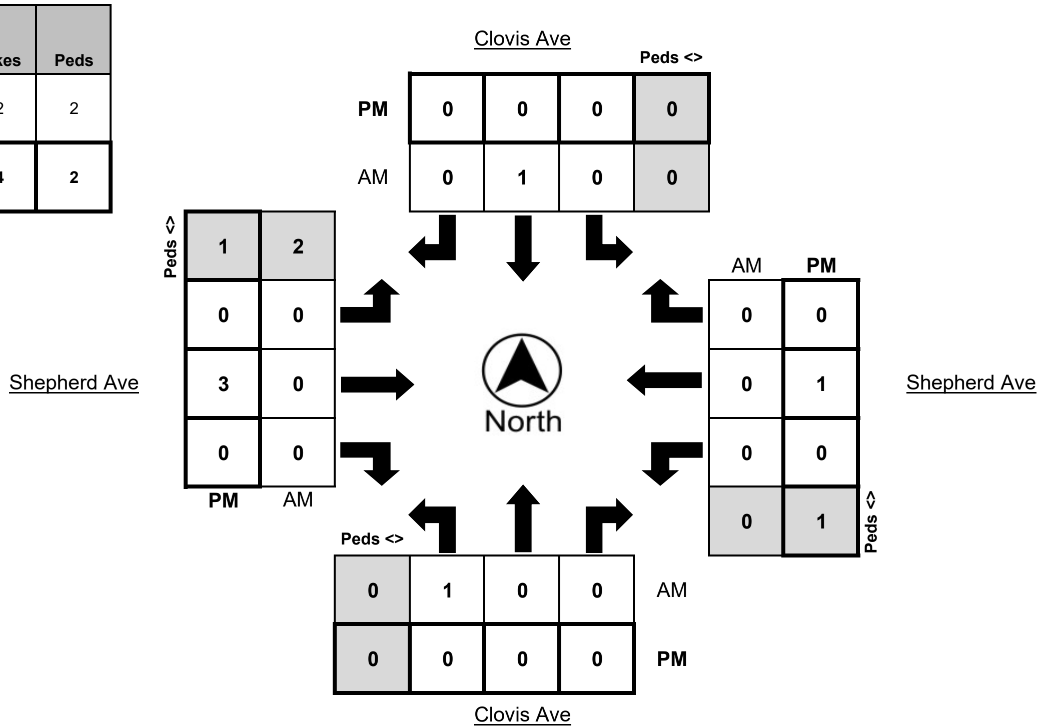
COLLECTION DATE Thursday, November 2, 2023 **WEATHER** Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
TOTAL	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**4**

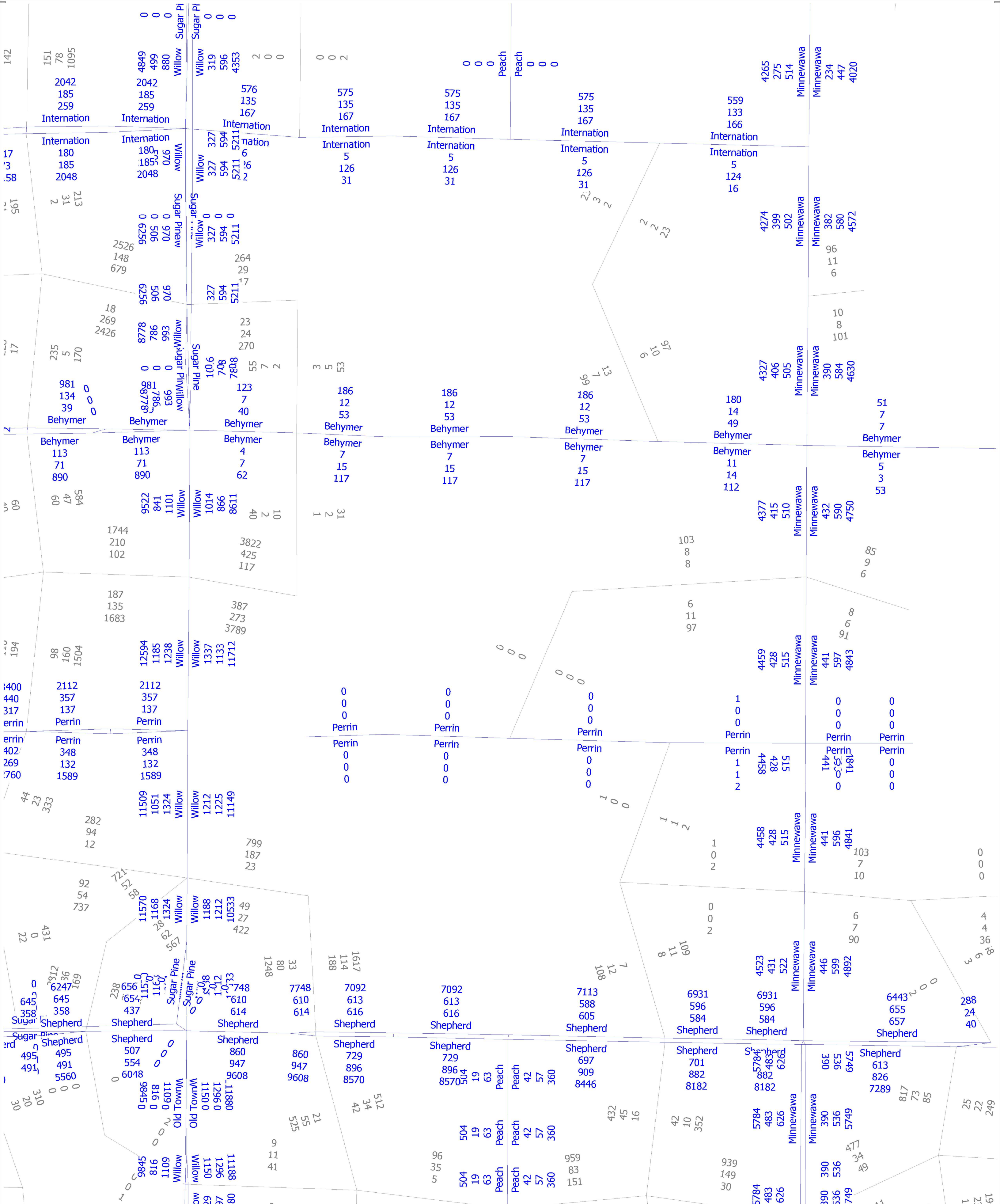
	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**5**	**1**	**1**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	3	0	1	0	1	0	1

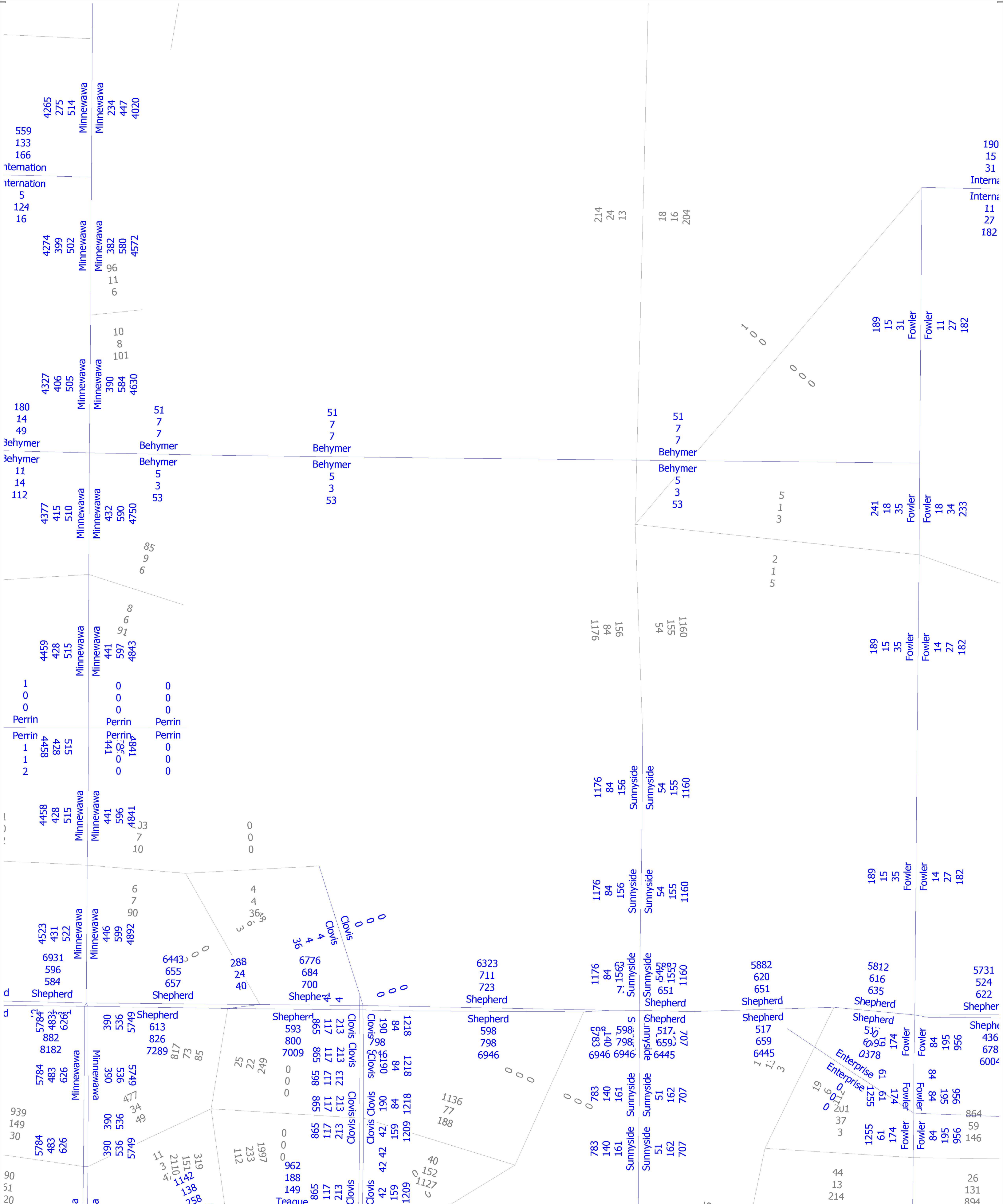
	Bikes	Peds
AM Peak Total	2	2
PM Peak Total	4	2



Appendix C: Traffic Modeling



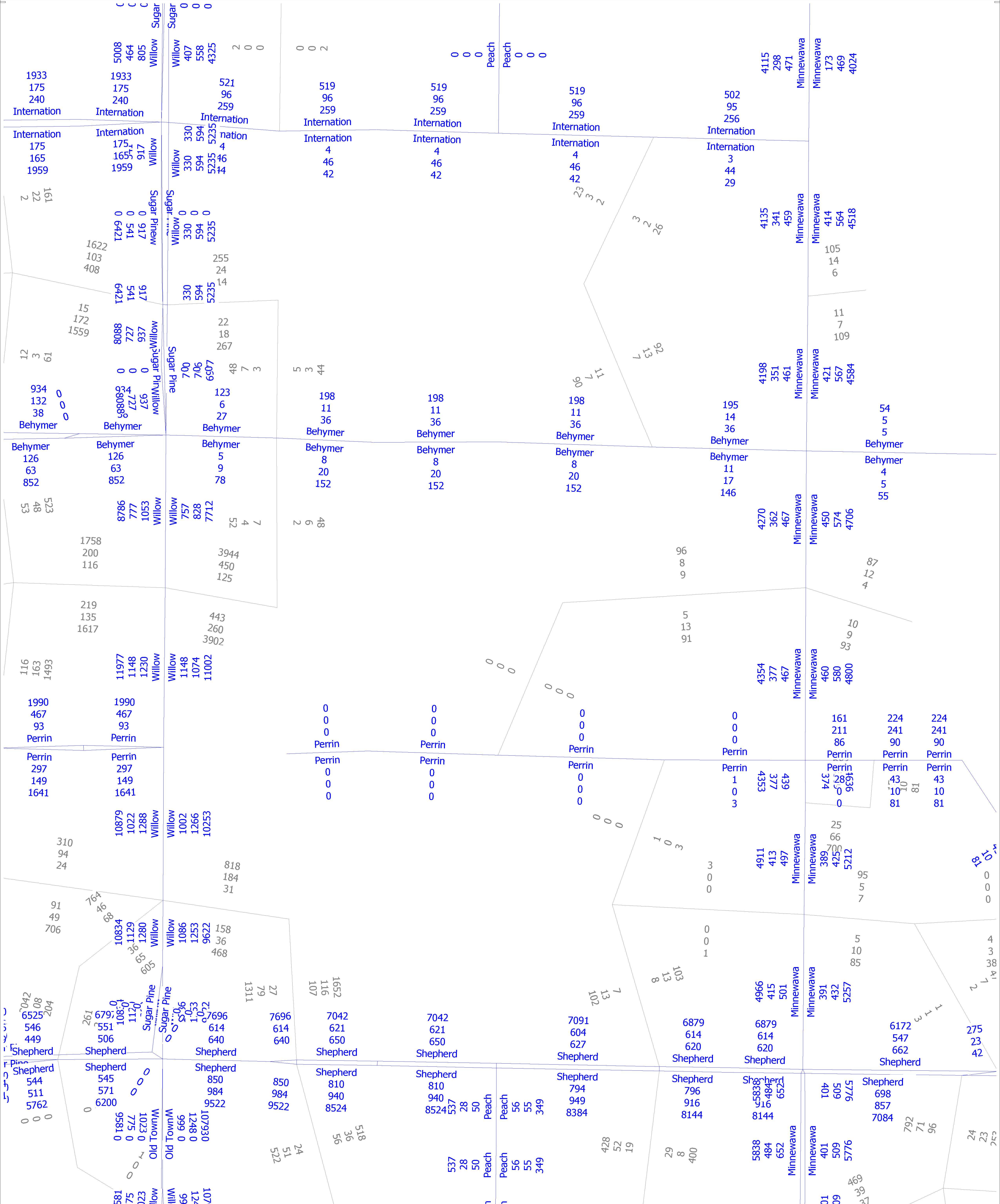
Clovis and Perrin Residential TIA
Base Year 2019 No Project
AM, PM and Daily Volumes



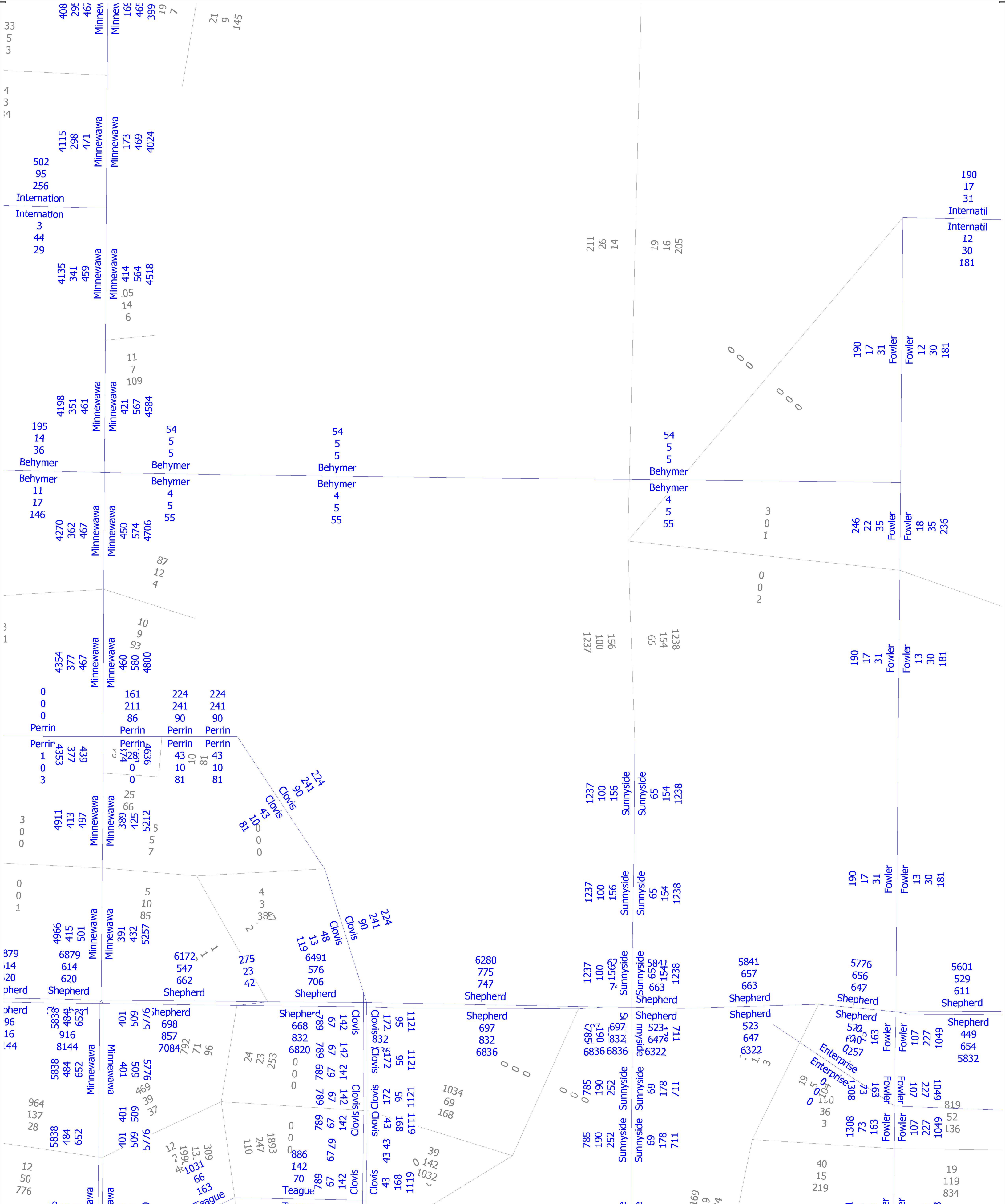
Clovis and Perrin Residential TIA

Base Year 2019 No Project

AM, PM and Daily Volumes



Clovis and Perrin TIA
Base Year 2019 plus Project
AM, PM and Daily Volumes



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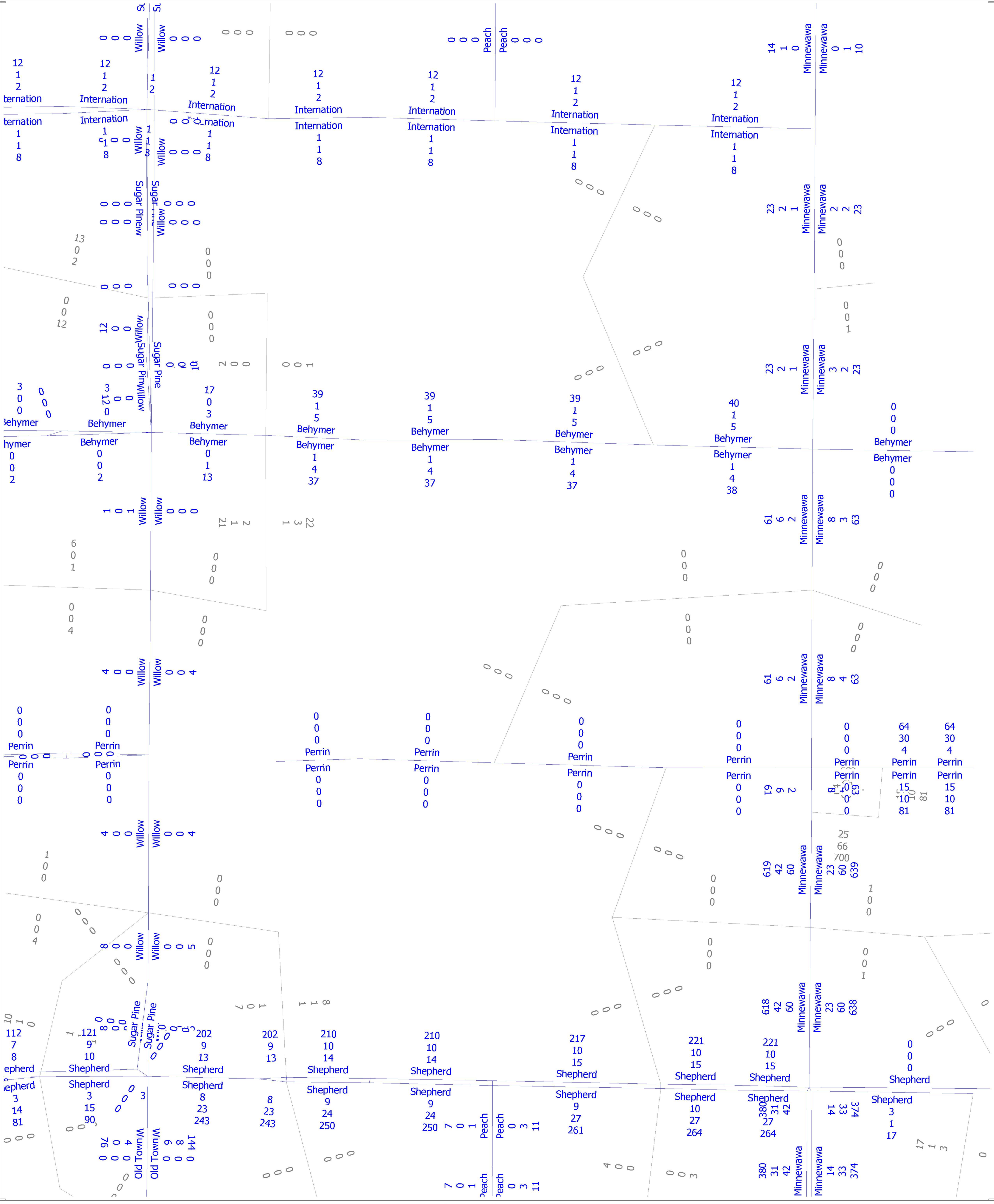
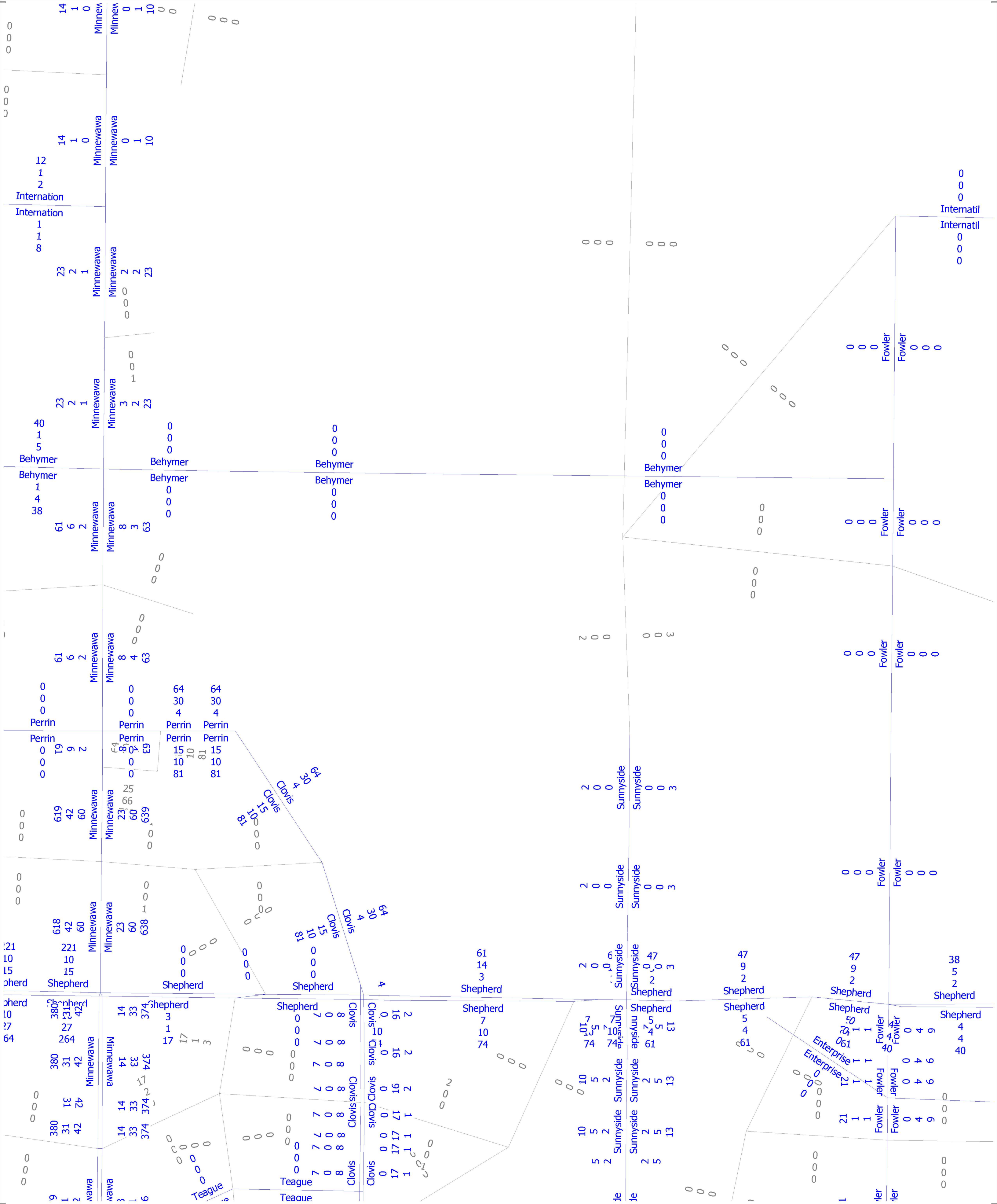
Base Year 2019 plus Project
AM, PM and Daily Volumes



Clovis and Perrin TIA

Base Year 2019 plus Project - Select Zone

AM, PM and Daily Volumes



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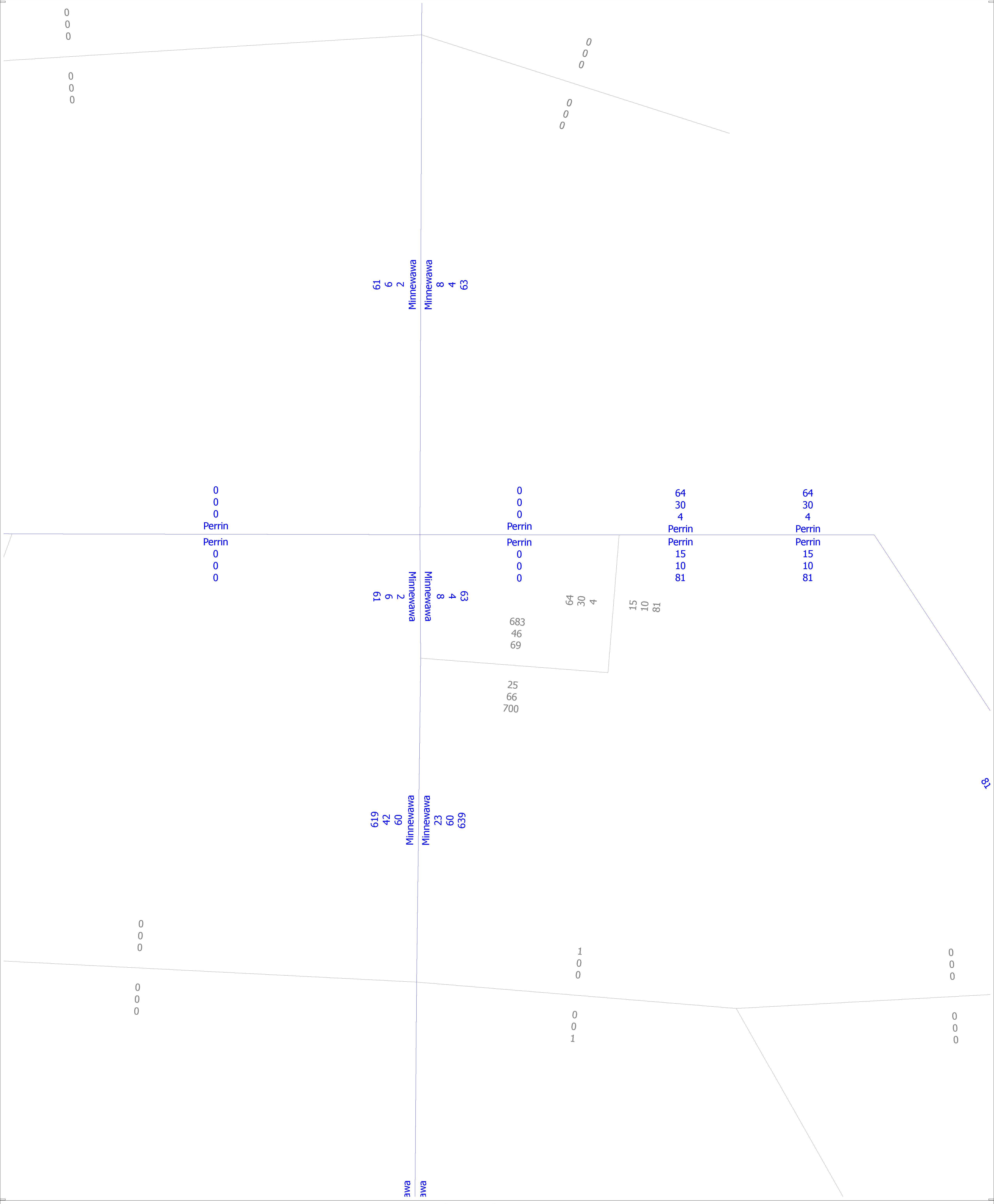
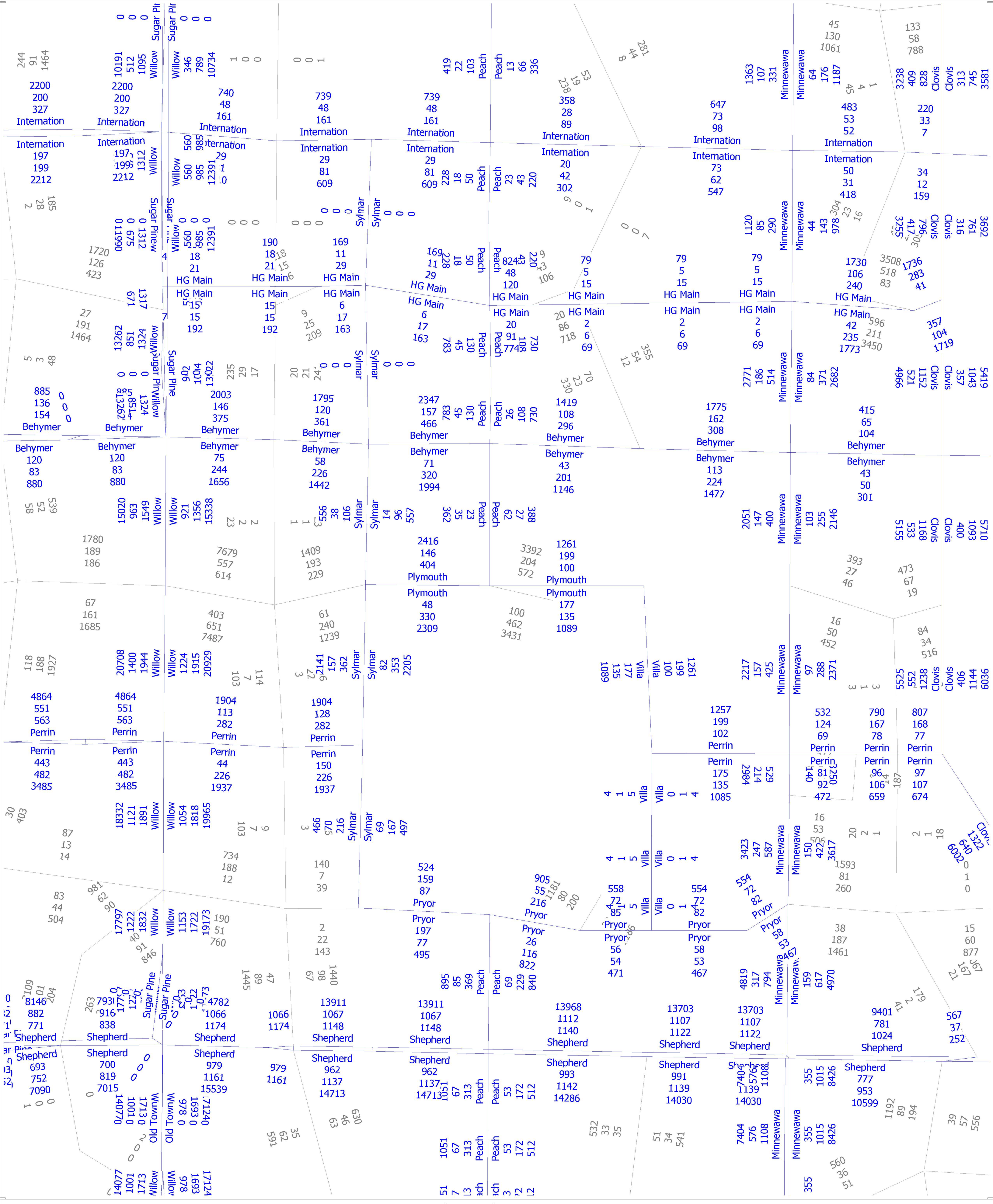
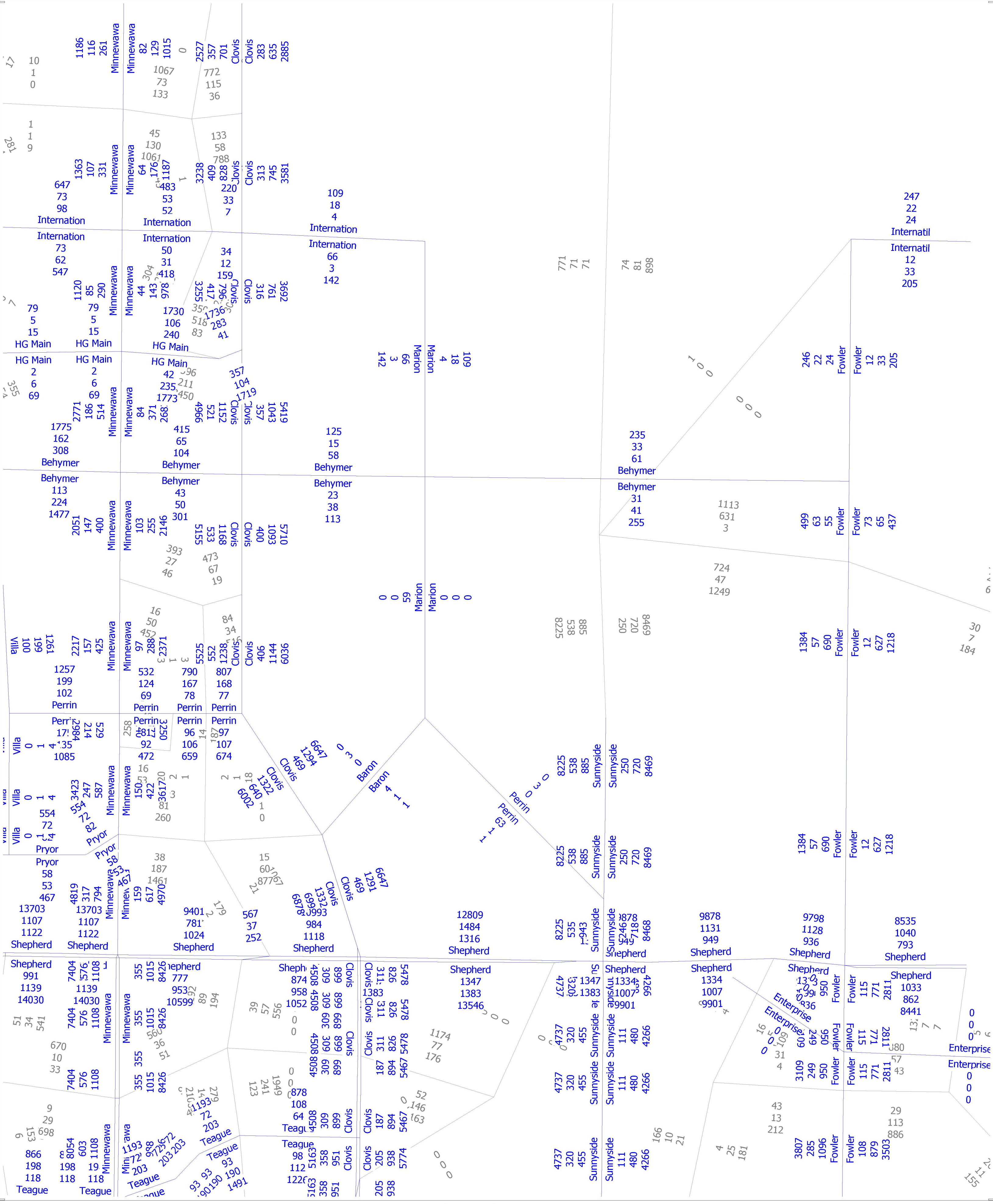
Base Year 2019 plus Project - Select Zone
AM, PM and Daily Volumes



Clovis and Perrin TIA
Base Year 2019 plus Project - Select Zone
AM, PM and Daily Volumes



Clovis and Perrin TIA
Cumulative Year 2046 plus Project
AM, PM and Dialy Volumes



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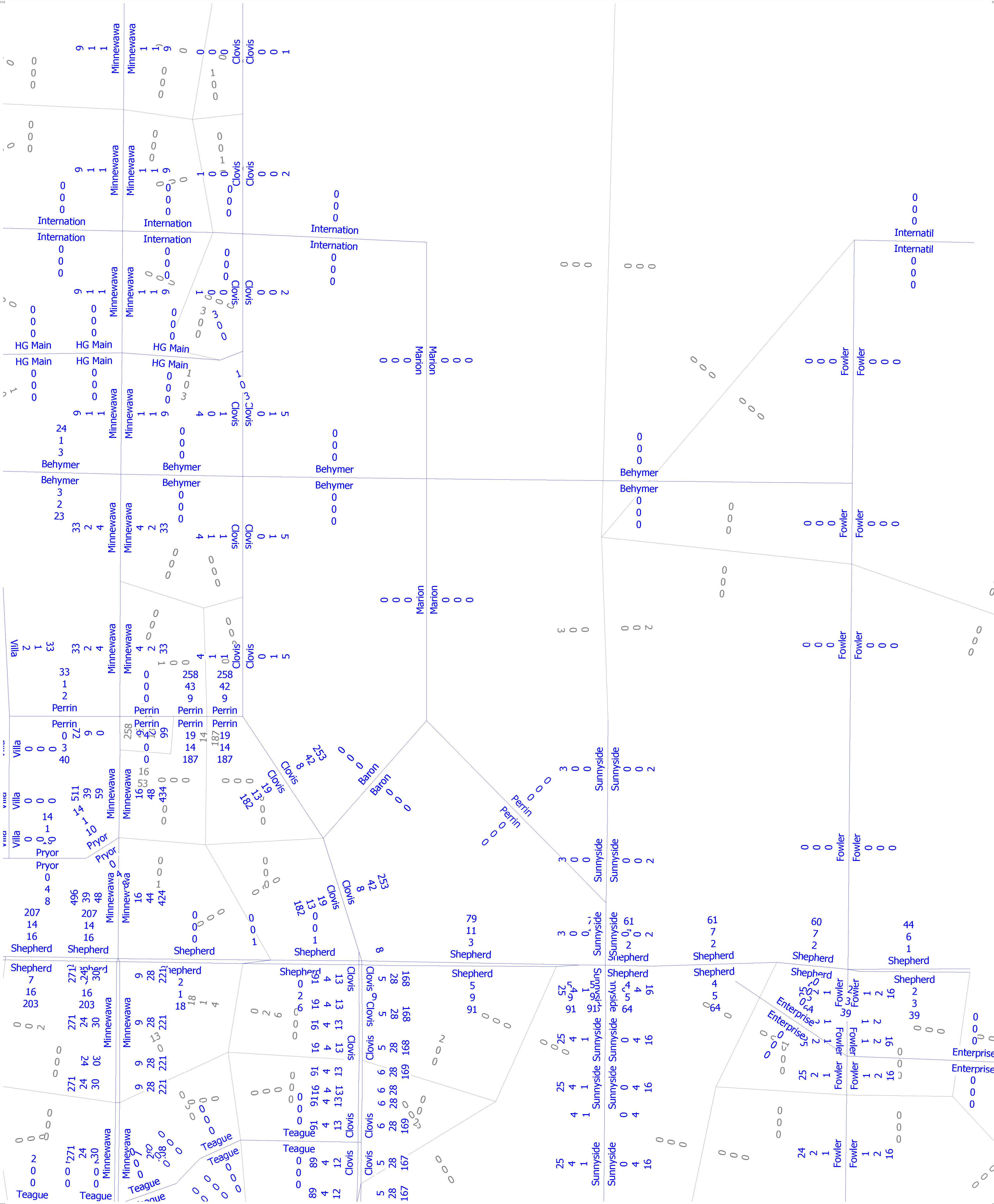
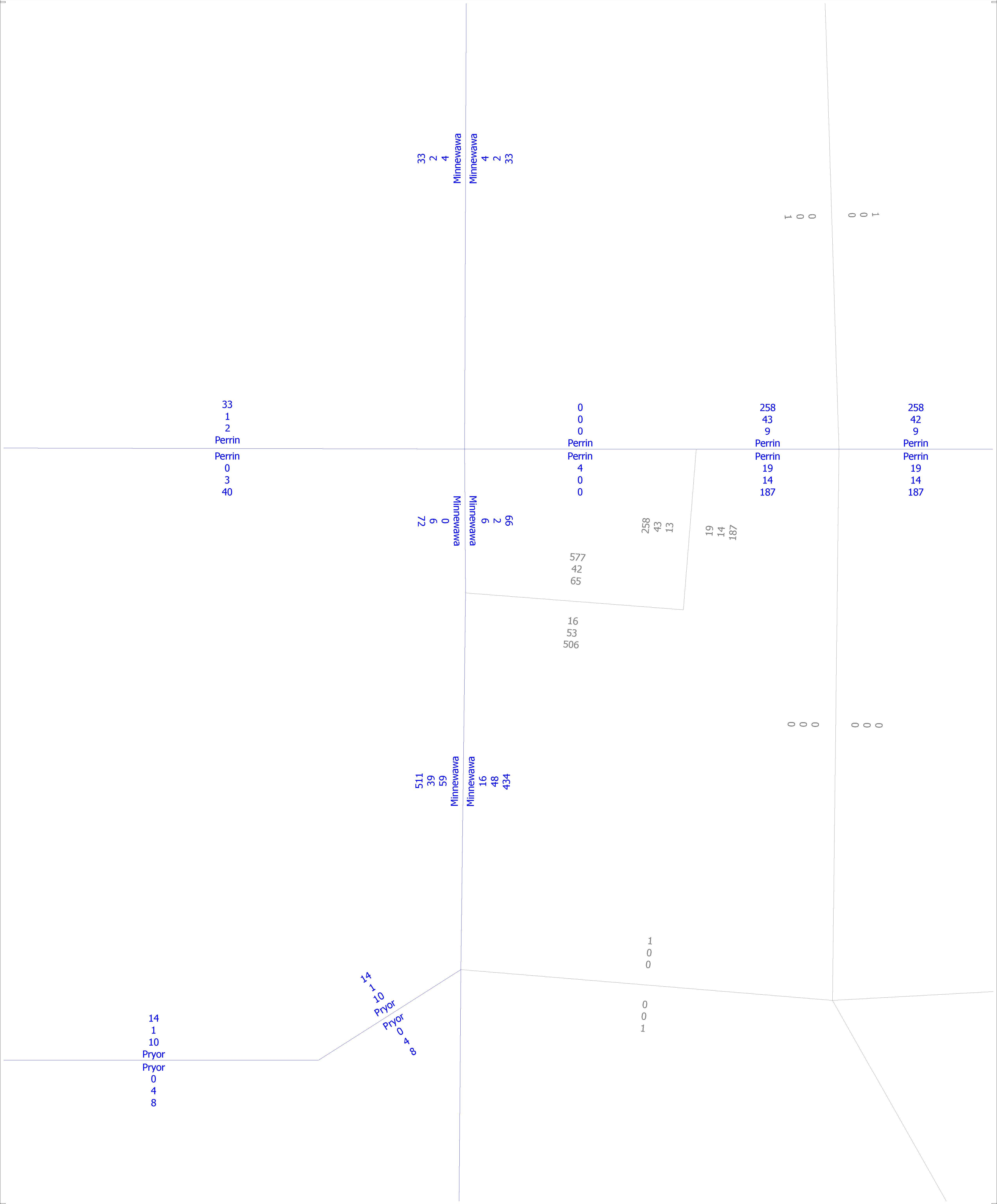
Cumulative Year 2046 plus Project
AM, PM and Dialy Volumes



Clovis and Perrin TIA
Cumulative Year 2046 plus Project - Select Zone
AM, PM and Dialy Volumes

cube



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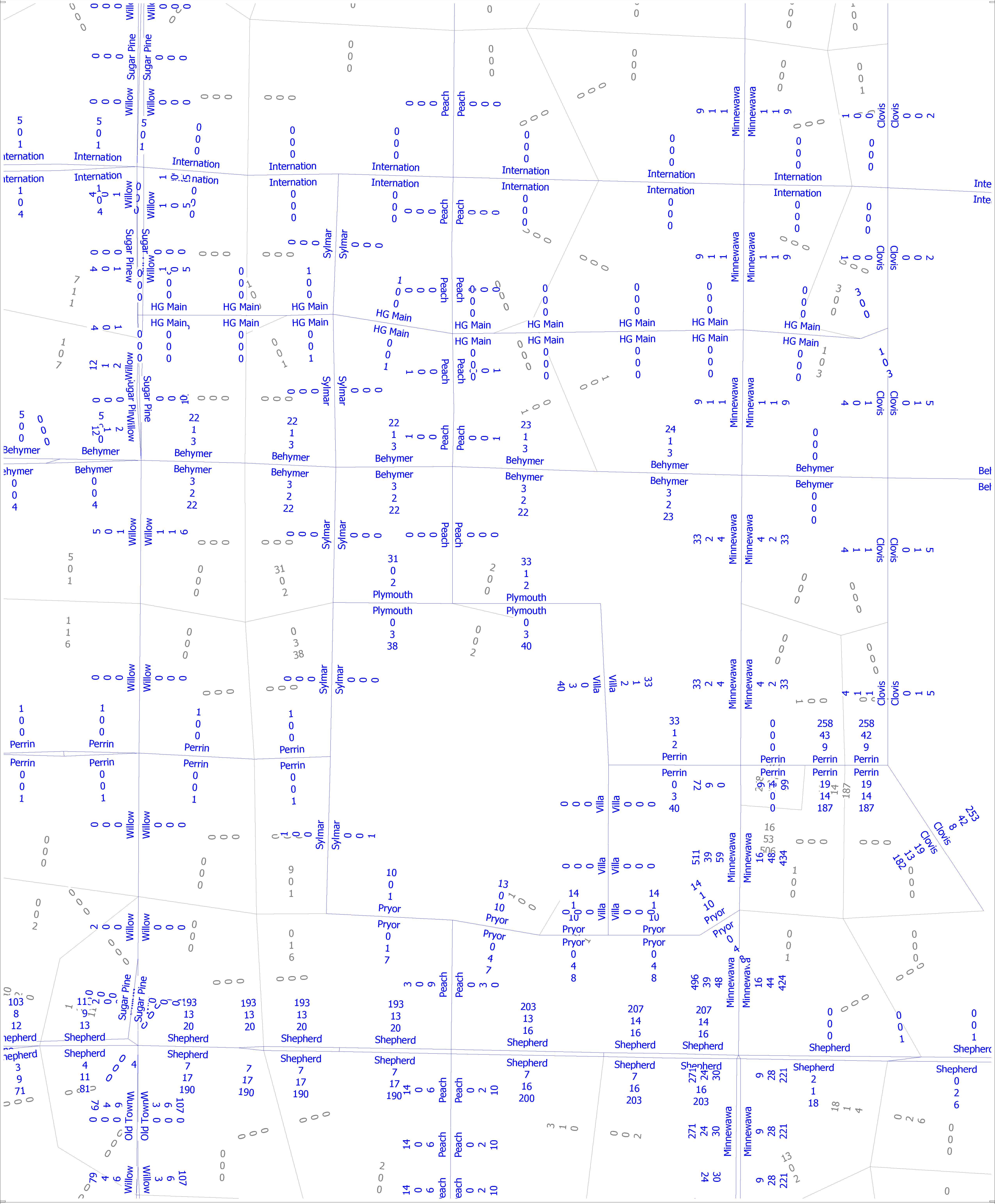
AM, PM and Dialy Volumes



Clovis and Perrin TIA
Cumulative Year 2046 plus Project - Select Zone
AM, PM and Dialy Volumes

Appendix D: Methodology

Levels of Service Methodology

The description and procedures for calculating capacity and level of service (LOS) are found in the Transportation Research Board, Highway Capacity Manual (HCM). The HCM 7th Edition represents the research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level of service (LOS), from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish an LOS.

Intersection Levels of Service

One of the more important elements limiting and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop signs and yield signs.

Signalized Intersections

LOS can be characterized for the entire intersection, each intersection approach and each lane group. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay and volume-to-capacity ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group. A description of LOS for signalized intersections is found in Table A-1.

Table A-1: Signalized Intersection LOS Description (Motorized Vehicle Mode)

Level of Service	*Description*	*Average Control Delay (Seconds per Vehicle)*
A	Operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is really low and either progression is exceptionally favorable or the cycle length is very short. If it's due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Operations with control delay between 10.1 to 20.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10.0 to 20.0
C	Operations with average control delays between 20.1 to 35.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio no greater than 1.0, the progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Operations with control delay between 35.1 to 55.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35 to 55
E	Operations with control delay between 55.1 to 80.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Operations with unacceptable control delay exceeding 80.0 seconds/vehicle and a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor and the cycle length is long. Most cycles fail to clear the queue.	>80

Note: Source: Highway Capacity Manual 7th Edition

All-Way Stop Controlled Intersections

All-way stop controlled intersections are common in the United States. They are characterized by having all approaches controlled by stop sign without any street having priority. Streets intersecting at all-way stop controlled intersections can be public or private. The intersection analysis boundaries for an all-way stop controlled intersection are assumed to be those of an isolated intersection, no upstream or downstream effects are accounted for in analysis.

Two-Way Stop Controlled Intersections

Two-way stop controlled (TWSC) intersections are also common in the United States. A typical configuration is a four-leg intersection in which one street, the major street, is uncontrolled and the other street, the minor street, is controlled by stop signs. The other typical intersection is a three-leg intersection in which a single minor street approach is controlled by a stop sign.

For the analysis of the motorized vehicle mode, the methodology addresses special circumstances that may exist at two-way stop controlled intersections including two-stage gap acceptance, approaches with shared lanes, the presence of upstream traffic signals and flared approaches for minor-street right-turning vehicles. Table A-2 provides a description of LOS at unsignalized intersections.

Table A-2: Unsignalized Intersection LOS Description (Motorized Vehicle Mode)

Control Delay (Seconds per Vehicle)	***LOS by Volume-to-Capacity Ratio***	
	v/c ≤ 1.0	***v/c > 1.0***
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Note: Source: HCM 7th Edition, Exhibit 21-8.

Roundabout Controlled Intersections

Roundabouts are intersections with a generally circular shape, characterized by yield on entry and circulation around a central island. Roundabouts have been used successfully throughout the world and are being used increasingly in the United States, especially since 1990. Intersection analysis models generally fall into two categories: regression models and analytical models. Regression models use field data to develop statistically derived relationships between geometric features and performance measures such as capacity and delay. Analytical models are based on traffic flow theory combined with field measures of driver behavior, resulting in an analytical formulation of the relationship of driver behavior, resulting in an analytical formulation of the relationship between those field measures and performance measures such as capacity and delay. Table A-3 provides a description of LOS at roundabout intersections.

Table A-3: Roundabout Intersection Level of Service Description (Automobile Mode)

Control Delay (Seconds per Vehicle)	***LOS by Volume-to-Capacity Ratio***	
	v/c ≤ 1.0	***v/c > 1.0***
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Note: Source: HCM 7th Edition, Exhibit 22-8.

Segment Levels of Service

Segments are portions of roads without any interruption of flow. These typically include basic freeway segments, multilane highway segments, freeway weaving segments, freeway merge and diverge segments, two-lane highway segments and urban street segments.

Urban Street Segments (Motorized Vehicle Mode)

The term “urban street segments” refers to two elements that are found: points and segments. A point is the boundary between links and is represented by an intersection or ramp terminal. A link is a length of roadway between two points. A link and its boundary are referred to as a segment. A signalized intersection is always used to define a boundary. Only intersections, or ramp terminals, in which the segment through volumes is uncontrolled can exist along the segment. A midsegment traffic control signal provided for the exclusive use of pedestrians should not be used to define a segment boundary. Chapter 18 of the Highway Capacity Manual categorizes each LOS as follows:

LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal. Travel speeds exceed 80 percent of the base free flow speed (FFS) and the volume-to-capacity ratio is no greater than 1.0.

LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 and 80 percent of the base FFS and the volume-to-capacity ratio is no greater than 1.0.

LOS C describes stable operations. The ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 and 67 percent of the base FFS and the volume-to-capacity ratio is no greater than 1.0.

LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volumes or inappropriate signal timing at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS and the volume-to-capacity ratio is no greater than 1.0.

LOS E is characterized as an unstable operation and has significant delay. Such operations may be due to some combination of adverse progression, high volume and inappropriate signal timing at the boundary intersections. The travel speed is between 30 and 40 percent of the base FFS and the volume-to-capacity ratio is no greater than 1.0.

LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base FFS or the volume-to-capacity ratio is greater than 1.0.

Urban Street Segments LOS

Two performance measures are used to characterize vehicular LOS for a given direction of travel along an urban street segment. One measure is travel speed for through vehicles. This speed reflects the factors that influence running time along the link and the delay uncured by through vehicles at the boundary intersections. The second measures Is the volume-to-capacity ratio for the through movements at the downstream boundary intersection. These performance measures indicate the degree of mobility provided by the segment. Table A-4 provides a description of LOS for Urban Street Segments.

Table A-4: Urban Street Segment Levels of Service (Motorized Vehicle Mode)

LOS	*Travel Speed Threshold by Base Free-Flow Speed (miles/hour)*							*Volume-to-Capacity Ratio*
	55	**50**	**45**	**40**	**35**	**30**	**25**	
A	>44	>40	>36	>32	>28	>24	>20	≤ 1.0
B	>37	>34	>30	>27	>23	>20	>17	
C	>28	>25	>23	>20	>18	>15	>13	
D	>22	>20	>18	>16	>14	>12	>10	
E	>17	>15	>14	>12	>11	>9	>8	
F	≤17	≤15	≤14	≤12	≤11	≤9	≤8	
F	Any							> 1.0

Note: a = Volume-to-capacity ratio of through movement at downstream boundary intersection.
Source: Highway Capacity Manual 7th Edition, Exhibit 18-1.

Basic Freeway and Multilane Highway Segments

Segments of multilane highways and basic freeways outside the influence of merging maneuvers, diverging maneuvers, weaving maneuvers, or signalized intersections define LOS by density. Density describes a motorist's proximity to other vehicles and is related to a motorist's freedom to maneuver within the traffic stream. Chapter 12 of the Highway Capacity Manual categorizes each LOS as follows:

LOS A describes free-flow operations. FFS prevails on the freeway or multilane highway, and vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed.

LOS B represents reasonably free-flow operations, and FFS on the freeway or multilane highway is maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents are still easily absorbed.

LOS C provides for flow with speeds near the FFS of the freeway or multilane highway. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service quality will be significant. Queues may be expected to form behind any significant blockages.

LOS D is the level at which speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited, and drivers experience reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.

LOS E describes operation at or near capacity. Operations on the freeway or multilane highway at this level are highly volatile because there are virtually no usable gaps within the traffic stream, leaving little room to maneuver within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or an access point or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic stream. Toward the upper boundary of LOS E, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.

LOS F describes unstable flow. Such conditions exist within queues forming behind bottlenecks. Breakdowns occur for a number of reasons:

- Traffic incidents can temporarily reduce the capacity of a short segment so that the number of vehicles arriving at a point is greater than the number of vehicles that can move through it.
- Points of recurring congestion, such as merge or weaving segments and lane drops, experience very high demand in which the number of vehicles arriving is greater than the number of vehicles that can be discharged.
- In analyses using forecast volumes, the projected flow rate can exceed the estimated capacity of a given location.

Basic Freeway

Basic Freeway segments generally have four to eight lanes (in both directions) and posted speed limits between 50 and 75 mi/hr. The median type depends on right-of-way constraints and other factors. The performance measures include capacity, free flow speed, demand and volume-to-capacity ratio, space mean speed, average density and LOS. The following performance measures are evaluated for each segment: capacity, FFS, demand-to-capacity or volume-to-capacity ratios, space mean average, average density, travel time, vehicle miles traveled, vehicle hours of travel and vehicle hours of delay. Table A-5 provides a description of LOS for Basic Freeway Segments.

Multilane Highway

Multilane Highway segments generally have four to six lanes (in both directions) and posted speed limits between 40 and 55 mi/hr. These highways may be divided, undivided or divided by a two-way left-turn lane. The performance measures include capacity, free flow speed, demand and volume-to-capacity ratio, space mean speed, average density and LOS. The following performance measures are evaluated for each segment: capacity, FFS, demand-to-capacity or volume-to-capacity ratios, space mean average, average density, travel time, vehicle miles traveled, vehicle hours of travel and vehicle hours of delay. Table A-5 provides a description of LOS for Multilane Highway Segments.

Table A-5: Basic Freeway and Multilane Highway Segment Level of Service Description

Level of Service	Density (Passenger Cars per Mile per Lane)	
	Urban	Rural
A	≤11	≤6
B	>11 to 18	>6 to 14
C	>18 to 26	>14 to 22
D	>26 to 35	>22 to 29
E	>35 to 45	>29 to 39
F	>45 or Demand Exceeds Capacity	>39 or Demand Exceeds Capacity

Note: Source: HCM 7th Edition, Exhibit 10-6.

Two-Lane Highway Segments

Two-Lane Highways generally have one lane per direction. The single lane in each direction may be supplemented with passing lanes, truck climbing lanes, turnouts or pullouts. If allowed, passing maneuvers are limited by the availability of gaps in the opposing traffic stream and by the availability of sufficient sight distance for a driver to discern the approach of an opposing vehicle safely. A principal measure of LOS is average speed, percent followers and follower density. Chapter 15 of the Highway Capacity Manual categorizes each LOS as follows:

At **LOS A**, motorists experience operating speeds near the posted speed limit and little difficulty in passing. Platooning is minimal and follower density is very low.

At **LOS B through LOS D,** represent gradations between the conditions for LOS A and LOS E.

At **LOS E**, speeds may still be reasonable, but platooning is significant and follower density is high. Passing, if allowed is essentially impossible.

LOS F exists whenever demand flow in one or both directions exceeds the segment's capacity. When demand exceeds capacity, it is expected that there will be a reduction in the capacity at the bottleneck.

Two-Lane Highway

The performance measures include average speed, FFS and follower density. The LOS output is calculated for an establish segment boundary that includes consistent terrain, lane widths, shoulder widths, facility classification and demand flow rate. Table A-6 provides a description of LOS for Two-Lane Highway Segments.

Table A-6: Two-Lane Highway Segment Level of Service Description

LOS	Follower Density (Followers per Mile per Lane)	
	Higher-Speed Highways Posted Speed Limit ≥ 50 miles per hour	Lower-Speed Highways Posted Speed Limit < 50 miles per hour
A	≤2.0	≤2.5
B	>2.0 to 4.0	>2.5 to 5.0
C	>4.0 to 8.0	>5.0 to 10.0
D	>8.0 to 12.0	>10.0 to 15.0
E	>12.0	>15.0

Note: Source: HCM 7th Edition, Exhibit 15-6.

Appendix E: Existing Traffic Conditions

516 W. Shaw Ave., Ste. 103

Fresno, CA 93704

(559) 570-8991

Intersection	
Intersection Delay, s/veh	39.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	2	150	68	5	198	244	102	222	7	133	225	1
Future Vol, veh/h	2	150	68	5	198	244	102	222	7	133	225	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	155	70	5	204	252	105	229	7	137	232	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	20.5	53.6	33.5	39.2
HCM LOS	C	F	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	1%	1%	37%
Vol Thru, %	67%	68%	44%	63%
Vol Right, %	2%	31%	55%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	331	220	447	359
LT Vol	102	2	5	133
Through Vol	222	150	198	225
RT Vol	7	68	244	1
Lane Flow Rate	341	227	461	370
Geometry Grp	1	1	1	1
Degree of Util (X)	0.77	0.529	0.935	0.826
Departure Headway (Hd)	8.119	8.399	7.436	8.034
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	447	429	493	452
Service Time	6.138	6.45	5.436	6.054
HCM Lane V/C Ratio	0.763	0.529	0.935	0.819
HCM Control Delay, s/veh	33.5	20.5	53.6	39.2
HCM Lane LOS	D	C	F	E
HCM 95th-tile Q	6.6	3	11.2	7.9

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	7	2	0	1	5	364	5	1	321	1
Future Vol, veh/h	1	0	7	2	0	1	5	364	5	1	321	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	0	7	2	0	1	5	387	5	1	341	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	742	747	342	744	745	390	343	0	0	393	0	0
Stage 1	344	344	-	401	401	-	-	-	-	-	-	-
Stage 2	398	403	-	344	345	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	330	340	698	329	341	656	1211	-	-	1161	-	-
Stage 1	669	635	-	624	599	-	-	-	-	-	-	-
Stage 2	626	598	-	670	634	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	328	338	698	324	339	656	1211	-	-	1161	-	-
Mov Cap-2 Maneuver	328	338	-	324	339	-	-	-	-	-	-	-
Stage 1	668	634	-	620	596	-	-	-	-	-	-	-
Stage 2	621	595	-	662	634	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.97	14.32	0.11	0.03
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	24	-	-	612	389	6	-	-
HCM Lane V/C Ratio	0.004	-	-	0.014	0.008	0.001	-	-
HCM Control Delay (s/veh)	8	0	-	11	14.3	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection							
Int Delay, s/veh	2.1						

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	488	98	86	470	26	79
Future Vol, veh/h	0	488	98	86	470	26	79
Conflicting Peds, #/hr	0	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	0	555	111	98	534	30	90

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	667	0	1285	278
Stage 1	-	-	-	-	-	556	-
Stage 2	-	-	-	-	-	730	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	915	-	167	717
Stage 1	-	-	-	-	-	537	-
Stage 2	-	-	-	-	-	474	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	914	-	149	716
Mov Cap-2 Maneuver	-	-	-	-	-	149	-
Stage 1	-	-	-	-	-	536	-
Stage 2	-	-	-	-	-	423	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.46	16.74
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	149	716	-	-	-	914	-
HCM Lane V/C Ratio	0.198	0.125	-	-	-	0.107	-
HCM Control Delay (s/veh)	35	10.7	0	-	-	9.4	-
HCM Lane LOS	D	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.7	0.4	-	-	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	416	111	112	533	161	129	146	39	114	165	19
Future Volume (veh/h)	21	416	111	112	533	161	129	146	39	114	165	19
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	22	443	118	119	567	171	137	155	41	121	176	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	71	1050	468	198	687	582	207	263	223	199	255	216
Arrive On Green	0.04	0.30	0.30	0.11	0.37	0.37	0.12	0.14	0.14	0.11	0.14	0.14
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	22	443	118	119	567	171	137	155	41	121	176	20
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	0.7	6.0	3.4	3.8	16.6	4.6	4.4	4.7	1.4	3.9	5.4	0.7
Cycle Q Clear(g_c), s	0.7	6.0	3.4	3.8	16.6	4.6	4.4	4.7	1.4	3.9	5.4	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	1050	468	198	687	582	207	263	223	199	255	216
V/C Ratio(X)	0.31	0.42	0.25	0.60	0.83	0.29	0.66	0.59	0.18	0.61	0.69	0.09
Avail Cap(c_a), veh/h	230	2078	927	260	1124	953	260	1044	885	230	991	840
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	16.9	16.0	25.3	17.1	13.3	25.3	24.1	22.7	25.3	24.6	22.6
Incr Delay (d2), s/veh	2.5	0.3	0.3	2.9	2.7	0.3	4.3	2.1	0.4	3.5	3.3	0.2
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	2.0	1.0	1.6	6.0	1.3	1.9	2.0	0.5	1.6	2.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.4	17.2	16.2	28.2	19.8	13.6	29.6	26.2	23.1	28.8	27.9	22.7
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		583			857			333			317	
Approach Delay, s/veh		17.5			19.7			27.2			27.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	14.5	10.9	23.5	11.2	14.2	6.6	27.9
Change Period (Y+Rc), s	4.2	* 6	4.2	5.7	4.2	6.0	4.2	5.7
Max Green Setting (Gmax), s	7.8	* 34	8.8	35.3	8.8	32.0	7.8	36.3
Max Q Clear Time (g_c+I1), s	5.9	6.7	5.8	8.0	6.4	7.4	2.7	18.6
Green Ext Time (p_c), s	0.0	0.9	0.1	3.0	0.1	0.8	0.0	3.6

Intersection Summary	
HCM 7th Control Delay, s/veh	21.5
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	367	148	100	580	6	163	38	41	21	38	27
Future Volume (veh/h)	50	367	148	100	580	6	163	38	41	21	38	27
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	56	412	166	112	652	7	183	43	46	24	43	30
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	282	852	380	404	978	436	240	833	371	150	509	226
Arrive On Green	0.08	0.24	0.24	0.12	0.28	0.28	0.14	0.24	0.24	0.04	0.14	0.14
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	3428	3526	1566
Grp Volume(v), veh/h	56	412	166	112	652	7	183	43	46	24	43	30
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1714	1763	1566
Q Serve(g_s), s	0.8	5.4	4.8	1.6	8.8	0.2	5.4	0.5	1.2	0.4	0.6	0.9
Cycle Q Clear(g_c), s	0.8	5.4	4.8	1.6	8.8	0.2	5.4	0.5	1.2	0.4	0.6	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	852	380	404	978	436	240	833	371	150	509	226
V/C Ratio(X)	0.20	0.48	0.44	0.28	0.67	0.02	0.76	0.05	0.12	0.16	0.08	0.13
Avail Cap(c_a), veh/h	497	2424	1081	497	2424	1081	289	2490	1111	497	2424	1077
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	17.5	17.3	21.6	17.2	14.1	22.4	15.9	16.2	24.8	19.9	20.1
Incr Delay (d2), s/veh	0.3	0.4	0.8	0.4	0.8	0.0	9.5	0.0	0.1	0.5	0.1	0.3
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	1.8	1.5	0.6	2.9	0.1	2.5	0.2	0.4	0.1	0.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.4	17.9	18.1	22.0	18.0	14.1	31.9	15.9	16.3	25.3	20.0	20.3
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		634			771			272			97	
Approach Delay, s/veh		18.5			18.6			26.7			21.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	18.0	10.5	18.7	11.5	13.1	8.6	20.6
Change Period (Y+Rc), s	4.2	5.3	4.2	5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	7.8	38.0	7.8	37.0	8.8	37.0	7.8	37.0
Max Q Clear Time (g_c+I1), s	2.4	3.2	3.6	7.4	7.4	2.9	2.8	10.8
Green Ext Time (p_c), s	0.0	0.3	0.1	3.0	0.1	0.3	0.0	4.1

Intersection Summary	
HCM 7th Control Delay, s/veh	19.9
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	55.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	3	184	50	3	173	191	67	214	14	164	193	6
Future Vol, veh/h	3	184	50	3	173	191	67	214	14	164	193	6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	211	57	3	199	220	77	246	16	189	222	7
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	30.1	65.2	43.4	73.5
HCM LOS	D	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	1%	1%	45%
Vol Thru, %	73%	78%	47%	53%
Vol Right, %	5%	21%	52%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	295	237	367	363
LT Vol	67	3	3	164
Through Vol	214	184	173	193
RT Vol	14	50	191	6
Lane Flow Rate	339	272	422	417
Geometry Grp	1	1	1	1
Degree of Util (X)	0.833	0.687	0.97	0.998
Departure Headway (Hd)	8.947	9.193	8.274	8.611
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	407	395	439	421
Service Time	6.947	7.193	6.312	6.651
HCM Lane V/C Ratio	0.833	0.689	0.961	0.99
HCM Control Delay, s/veh	43.4	30.1	65.2	73.5
HCM Lane LOS	E	D	F	F
HCM 95th-tile Q	7.8	5	11.8	12.4

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	9	1	2	2	417	6	1	268	0
Future Vol, veh/h	1	0	1	9	1	2	2	417	6	1	268	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	0	1	10	1	2	2	474	7	1	305	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	786	792	305	789	789	477	305	0	0	481	0	0
Stage 1	307	307	-	482	482	-	-	-	-	-	-	-
Stage 2	479	485	-	307	307	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	309	320	733	307	322	586	1251	-	-	1077	-	-
Stage 1	701	659	-	564	552	-	-	-	-	-	-	-
Stage 2	566	550	-	701	659	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	305	319	733	306	321	586	1251	-	-	1077	-	-
Mov Cap-2 Maneuver	305	319	-	306	321	-	-	-	-	-	-	-
Stage 1	700	658	-	562	550	-	-	-	-	-	-	-
Stage 2	561	548	-	699	658	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.4	16.25	0.04	0.03
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	8	-	-	431	334	7	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.041	0.001	-	-
HCM Control Delay (s/veh)	7.9	0	-	13.4	16.3	8.3	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	2	669	74	43	448	51	56
Future Vol, veh/h	2	669	74	43	448	51	56
Conflicting Peds, #/hr	0	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	2	727	80	47	487	55	61

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	810	0	1314	366
Stage 1	-	-	-	-	-	734	-
Stage 2	-	-	-	-	-	580	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	809	-	160	630
Stage 1	-	-	-	-	-	435	-
Stage 2	-	-	-	-	-	556	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	807	-	151	628
Mov Cap-2 Maneuver	-	-	-	-	-	151	-
Stage 1	-	-	-	-	-	434	-
Stage 2	-	-	-	-	-	524	-

Approach	EB	WB	NB
HCM Control Delay, s/v		0.85	26
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	151	628	-	-	-	807	-
HCM Lane V/C Ratio	0.367	0.097	-	-	-	0.058	-
HCM Control Delay (s/veh)	42.1	11.3	-	-	-	9.7	-
HCM Lane LOS	E	B	-	-	-	A	-
HCM 95th %tile Q(veh)	1.5	0.3	-	-	-	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	484	86	64	447	122	119	161	50	88	166	16
Future Volume (veh/h)	19	484	86	64	447	122	119	161	50	88	166	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	22	550	98	73	508	139	135	183	57	100	189	18
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	71	1007	449	166	629	533	213	296	250	192	273	232
Arrive On Green	0.04	0.29	0.29	0.09	0.34	0.34	0.12	0.16	0.16	0.11	0.15	0.15
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	22	550	98	73	508	139	135	183	57	100	189	18
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	0.7	7.5	2.7	2.2	14.2	3.7	4.1	5.2	1.8	3.0	5.5	0.6
Cycle Q Clear(g_c), s	0.7	7.5	2.7	2.2	14.2	3.7	4.1	5.2	1.8	3.0	5.5	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	1007	449	166	629	533	213	296	250	192	273	232
V/C Ratio(X)	0.31	0.55	0.22	0.44	0.81	0.26	0.63	0.62	0.23	0.52	0.69	0.08
Avail Cap(c_a), veh/h	242	2183	974	242	1149	974	304	1097	930	273	1042	883
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	17.2	15.5	24.4	17.1	13.7	23.9	22.3	20.9	24.0	23.1	21.0
Incr Delay (d2), s/veh	2.4	0.5	0.2	1.8	2.5	0.3	3.1	2.1	0.5	2.2	3.1	0.1
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	0.3	2.5	0.8	0.9	5.1	1.1	1.7	2.2	0.6	1.2	2.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.0	17.7	15.8	26.3	19.7	13.9	26.9	24.5	21.4	26.2	26.2	21.1
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		670			720			375			307	
Approach Delay, s/veh		17.8			19.2			24.9			25.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	15.1	9.5	22.0	11.1	14.4	6.5	25.0
Change Period (Y+Rc), s	4.2	* 6	4.2	5.7	4.2	6.0	4.2	5.7
Max Green Setting (Gmax), s	8.8	* 34	7.8	35.3	9.8	32.0	7.8	35.3
Max Q Clear Time (g_c+I1), s	5.0	7.2	4.2	9.5	6.1	7.5	2.7	16.2
Green Ext Time (p_c), s	0.1	1.1	0.0	3.7	0.1	0.9	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	20.8
HCM 7th LOS	C

Notes
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	423	125	67	423	11	181	51	57	11	22	21
Future Volume (veh/h)	46	423	125	67	423	11	181	51	57	11	22	21
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	486	144	77	486	13	208	59	66	13	25	24
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	276	805	359	346	878	392	258	949	423	88	526	234
Arrive On Green	0.08	0.23	0.23	0.10	0.25	0.25	0.15	0.27	0.27	0.03	0.15	0.15
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1571	3428	3526	1569
Grp Volume(v), veh/h	53	486	144	77	486	13	208	59	66	13	25	24
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1571	1714	1763	1569
Q Serve(g_s), s	0.7	6.4	4.0	1.1	6.2	0.3	5.9	0.6	1.7	0.2	0.3	0.7
Cycle Q Clear(g_c), s	0.7	6.4	4.0	1.1	6.2	0.3	5.9	0.6	1.7	0.2	0.3	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	805	359	346	878	392	258	949	423	88	526	234
V/C Ratio(X)	0.19	0.60	0.40	0.22	0.55	0.03	0.81	0.06	0.16	0.15	0.05	0.10
Avail Cap(c_a), veh/h	518	2526	1126	518	2526	1126	301	2594	1156	518	2526	1124
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	17.8	16.9	21.4	16.9	14.7	21.4	14.0	14.4	24.6	18.8	19.0
Incr Delay (d2), s/veh	0.3	0.7	0.7	0.3	0.5	0.0	13.0	0.0	0.2	0.8	0.0	0.2
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	2.1	1.2	0.4	2.0	0.1	3.0	0.2	0.5	0.1	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.5	18.6	17.6	21.7	17.4	14.7	34.4	14.1	14.6	25.4	18.9	19.2
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		683			576			333			62	
Approach Delay, s/veh		18.7			17.9			26.9			20.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	19.2	9.4	17.5	11.7	13.0	8.4	18.6
Change Period (Y+Rc), s	4.2	5.3	4.2	5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	7.8	38.0	7.8	37.0	8.8	37.0	7.8	37.0
Max Q Clear Time (g_c+I1), s	2.2	3.7	3.1	8.4	7.9	2.7	2.7	8.2
Green Ext Time (p_c), s	0.0	0.5	0.1	3.4	0.1	0.2	0.0	3.0

Intersection Summary	
HCM 7th Control Delay, s/veh	20.1
HCM 7th LOS	C

Intersection	
Intersection Delay, s/veh	24.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	150	68	5	198	244	102	222	7	133	225	1
Future Vol, veh/h	2	150	68	5	198	244	102	222	7	133	225	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	155	70	5	204	252	105	229	7	137	232	1
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	17.2	38.3	17.5	17.4
HCM LOS	C	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	1%	1%	100%	0%
Vol Thru, %	0%	97%	68%	44%	0%	100%
Vol Right, %	0%	3%	31%	55%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	229	220	447	133	226
LT Vol	102	0	2	5	133	0
Through Vol	0	222	150	198	0	225
RT Vol	0	7	68	244	0	1
Lane Flow Rate	105	236	227	461	137	233
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.247	0.52	0.474	0.861	0.321	0.511
Departure Headway (Hd)	8.471	7.931	7.519	6.727	8.418	7.897
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	424	453	479	544	426	457
Service Time	6.235	5.694	5.584	4.727	6.181	5.659
HCM Lane V/C Ratio	0.248	0.521	0.474	0.847	0.322	0.51
HCM Control Delay, s/veh	14	19	17.2	38.3	15.1	18.7
HCM Lane LOS	B	C	C	E	C	C
HCM 95th-tile Q	1	2.9	2.5	9.3	1.4	2.8

Intersection	
Intersection Delay, s/veh	24.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	184	50	3	173	191	67	214	14	164	193	6
Future Vol, veh/h	3	184	50	3	173	191	67	214	14	164	193	6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	211	57	3	199	220	77	246	16	189	222	7
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	21.4	36.5	20.4	18.8
HCM LOS	C	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	1%	1%	100%	0%
Vol Thru, %	0%	94%	78%	47%	0%	97%
Vol Right, %	0%	6%	21%	52%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	228	237	367	164	199
LT Vol	67	0	3	3	164	0
Through Vol	0	214	184	173	0	193
RT Vol	0	14	50	191	0	6
Lane Flow Rate	77	262	272	422	189	229
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.187	0.596	0.587	0.832	0.452	0.514
Departure Headway (Hd)	8.749	8.185	7.758	7.1	8.623	8.083
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	410	440	463	510	417	446
Service Time	6.516	5.952	5.829	5.16	6.391	5.85
HCM Lane V/C Ratio	0.188	0.595	0.587	0.827	0.453	0.513
HCM Control Delay, s/veh	13.5	22.4	21.4	36.5	18.4	19.2
HCM Lane LOS	B	C	C	E	C	C
HCM 95th-tile Q	0.7	3.8	3.7	8.3	2.3	2.9

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	98	174	61	139	74	111
Average Queue (ft)	50	93	34	55	41	50
95th Queue (ft)	84	153	58	94	65	81
Link Distance (ft)	2602	3212		2594		2594
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	28	25
Average Queue (ft)	6	4
95th Queue (ft)	22	19
Link Distance (ft)	4816	1215
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	89	45	43
Average Queue (ft)	32	17	16
95th Queue (ft)	68	36	30
Link Distance (ft)			2538
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250	220	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	51	132	160	93	339	560	250	128	127	40	133	224
Average Queue (ft)	11	68	84	31	83	251	105	70	63	8	76	85
95th Queue (ft)	35	113	134	61	187	499	275	117	115	26	125	154
Link Distance (ft)		2549	2549			1269			2555	2555		2579
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220		190	230			260	
Storage Blk Time (%)			24	1		14						43
Queuing Penalty (veh)			27	2		39						57

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	45
Average Queue (ft)	15
95th Queue (ft)	42
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	15
Storage Blk Time (%)	3
Queuing Penalty (veh)	8

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	L	T	T
Maximum Queue (ft)	46	68	110	123	109	96	110	281	235	301	68	21
Average Queue (ft)	8	29	57	42	30	27	47	118	93	105	10	2
95th Queue (ft)	29	54	99	96	74	67	77	217	195	219	34	12
Link Distance (ft)			1207	1207				2012	2012		2554	2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			230		
Storage Blk Time (%)				4	1			1	0	5		
Queuing Penalty (veh)				6	3			1	0	1		

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	20	41	43	62	22	34
Average Queue (ft)	12	7	4	24	3	10
95th Queue (ft)	25	25	21	51	13	24
Link Distance (ft)				1303	1303	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50	250	250			100
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 144

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	100	93	61	132	55	99
Average Queue (ft)	51	64	31	59	41	51
95th Queue (ft)	82	92	56	101	60	77
Link Distance (ft)	2602	3212		2594		2594
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	23	26
Average Queue (ft)	2	6
95th Queue (ft)	11	23
Link Distance (ft)	4816	1215
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	EB	WB	NB	NB
Directions Served	R	L	L	R
Maximum Queue (ft)	41	74	68	43
Average Queue (ft)	3	21	31	20
95th Queue (ft)	18	52	60	41
Link Distance (ft)				2538
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100	250	220	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	49	165	160	150	109	370	250	152	164	43	200	172
Average Queue (ft)	16	92	104	36	51	185	51	82	66	14	71	73
95th Queue (ft)	39	138	161	100	97	333	181	142	131	35	138	130
Link Distance (ft)		2549	2549			1269			2555	2555		2579
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220		190	230			260	
Storage Blk Time (%)			34	0		10						37
Queuing Penalty (veh)			29	0		18						39

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	11
95th Queue (ft)	37
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	15
Storage Blk Time (%)	3
Queuing Penalty (veh)	8

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	46	67	156	152	110	85	67	181	174	20	306	89
Average Queue (ft)	7	31	87	60	33	19	34	88	57	6	145	16
95th Queue (ft)	27	60	154	126	91	61	60	150	134	19	271	51
Link Distance (ft)			1207	1207				2012	2012			2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			175	230	
Storage Blk Time (%)				9	1				0		8	
Queuing Penalty (veh)				11	3				0		2	

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	67	90	25	23	23	21	39
Average Queue (ft)	10	15	4	1	11	2	8
95th Queue (ft)	33	43	19	10	28	10	25
Link Distance (ft)	2554				1303	1303	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		50	250	250			100
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					

Network Summary

Network wide Queuing Penalty: 110

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	389	Opposing Demand Flow Rate, veh/h	344
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.23

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.51614	Speed Power Coefficient	0.50665
PF Slope Coefficient	-1.24680	PF Power Coefficient	0.79648
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.5

Vehicle Results

Average Speed, mi/h	56.5	Percent Followers, %	44.5
Segment Travel Time, minutes	1.06	Follower Density, followers/mi/ln	3.1
Vehicle LOS	B		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	3.1	B

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	483	Opposing Demand Flow Rate, veh/h	309
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.50626	Speed Power Coefficient	0.51332
PF Slope Coefficient	-1.24102	PF Power Coefficient	0.79847
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.3

Vehicle Results

Average Speed, mi/h	56.3	Percent Followers, %	50.0
Segment Travel Time, minutes	1.07	Follower Density, followers/mi/ln	4.3
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	4.3	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	398	Opposing Demand Flow Rate, veh/h	351
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.23

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.51821	Speed Power Coefficient	0.50528
PF Slope Coefficient	-1.24798	PF Power Coefficient	0.79607
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.5

Vehicle Results

Average Speed, mi/h	56.5	Percent Followers, %	45.1
Segment Travel Time, minutes	1.06	Follower Density, followers/mi/ln	3.2
Vehicle LOS	B		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	3.2	B

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HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	483	Opposing Demand Flow Rate, veh/h	316
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.50823	Speed Power Coefficient	0.51197
PF Slope Coefficient	-1.24219	PF Power Coefficient	0.79808
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.3

Vehicle Results

Average Speed, mi/h	56.3	Percent Followers, %	50.1
Segment Travel Time, minutes	1.07	Follower Density, followers/mi/ln	4.3
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	4.3	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	564	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.72546	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.31046	PF Power Coefficient	0.75667
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.7

Vehicle Results

Average Speed, mi/h	55.7	Percent Followers, %	57.2
Segment Travel Time, minutes	1.08	Follower Density, followers/mi/ln	5.8
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	5.8	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	569	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.72546	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.31046	PF Power Coefficient	0.75667
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.7

Vehicle Results

Average Speed, mi/h	55.7	Percent Followers, %	57.5
Segment Travel Time, minutes	1.08	Follower Density, followers/mi/ln	5.9
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	5.9	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	765	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.72546	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.31046	PF Power Coefficient	0.75667
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.3

Vehicle Results

Average Speed, mi/h	55.3	Percent Followers, %	65.7
Segment Travel Time, minutes	1.09	Follower Density, followers/mi/ln	9.1
Vehicle LOS	D		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	9.1	D

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	669	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.39

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.72546	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.31046	PF Power Coefficient	0.75667
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.5

Vehicle Results

Average Speed, mi/h	55.5	Percent Followers, %	62.0
Segment Travel Time, minutes	1.08	Follower Density, followers/mi/ln	7.5
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	7.5	C

Appendix F: Existing plus Project Traffic Conditions

Intersection	
Intersection Delay, s/veh	45.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	2	150	69	5	198	244	112	231	7	133	226	1
Future Vol, veh/h	2	150	69	5	198	244	112	231	7	133	226	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	155	71	5	204	252	115	238	7	137	233	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	21.8	63.6	40.2	42.8
HCM LOS	C	F	E	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	32%	1%	1%	37%
Vol Thru, %	66%	68%	44%	63%
Vol Right, %	2%	31%	55%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	350	221	447	360
LT Vol	112	2	5	133
Through Vol	231	150	198	226
RT Vol	7	69	244	1
Lane Flow Rate	361	228	461	371
Geometry Grp	1	1	1	1
Degree of Util (X)	0.826	0.547	0.977	0.847
Departure Headway (Hd)	8.238	8.737	7.633	8.217
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	437	415	479	438
Service Time	6.327	6.737	5.633	6.306
HCM Lane V/C Ratio	0.826	0.549	0.962	0.847
HCM Control Delay, s/veh	40.2	21.8	63.6	42.8
HCM Lane LOS	E	C	F	E
HCM 95th-tile Q	7.8	3.2	12.5	8.3

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	7	12	0	92	5	292	10	60	264	1
Future Vol, veh/h	1	0	7	12	0	92	5	292	10	60	264	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	0	7	13	0	98	5	311	11	64	281	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	730	741	281	735	736	316	282	0	0	321	0	0
Stage 1	409	409	-	327	327	-	-	-	-	-	-	-
Stage 2	321	332	-	409	410	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	336	343	755	334	345	722	1275	-	-	1233	-	-
Stage 1	617	594	-	684	646	-	-	-	-	-	-	-
Stage 2	688	643	-	618	594	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	272	320	755	309	322	722	1275	-	-	1233	-	-
Mov Cap-2 Maneuver	272	320	-	309	322	-	-	-	-	-	-	-
Stage 1	579	558	-	680	643	-	-	-	-	-	-	-
Stage 2	592	639	-	574	558	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.91	11.99	0.13	1.49
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	29	-	-	618	626	332	-	-
HCM Lane V/C Ratio	0.004	-	-	0.014	0.177	0.052	-	-
HCM Control Delay (s/veh)	7.8	0	-	10.9	12	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	3	0	38	85	52	0	71
Future Vol, veh/h	3	0	38	85	52	0	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	100	0	140	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	3	0	44	99	60	0	83

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	181	99	-	0	0	159	0
Stage 1	99	-	-	-	-	-	-
Stage 2	83	-	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	-	2.227	-
Pot Cap-1 Maneuver	806	954	-	-	-	1414	-
Stage 1	923	-	-	-	-	-	-
Stage 2	938	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	806	954	-	-	-	1414	-
Mov Cap-2 Maneuver	806	-	-	-	-	-	-
Stage 1	923	-	-	-	-	-	-
Stage 2	938	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.49		0
HCM LOS	A		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	806	-	1414	-
HCM Lane V/C Ratio	-	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	-	-	-	9.5	0	0	-
HCM Lane LOS	-	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	497	98	87	481	26	80
Future Vol, veh/h	0	497	98	87	481	26	80
Conflicting Peds, #/hr	0	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	0	565	111	99	547	30	91

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	677	0	1310	283
Stage 1	-	-	-	-	-	566	-
Stage 2	-	-	-	-	-	744	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	907	-	161	712
Stage 1	-	-	-	-	-	530	-
Stage 2	-	-	-	-	-	466	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	906	-	144	711
Mov Cap-2 Maneuver	-	-	-	-	-	144	-
Stage 1	-	-	-	-	-	530	-
Stage 2	-	-	-	-	-	415	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.45	17.09
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	144	711	-	-	-	906	-
HCM Lane V/C Ratio	0.206	0.128	-	-	-	0.109	-
HCM Control Delay (s/veh)	36.4	10.8	0	-	-	9.5	-
HCM Lane LOS	E	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.7	0.4	-	-	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	31	416	111	112	533	80	129	159	39	58	203	31
Future Volume (veh/h)	31	416	111	112	533	80	129	159	39	58	203	31
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	33	443	118	119	567	85	137	169	41	62	216	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	96	1088	485	189	671	569	197	350	296	144	294	250
Arrive On Green	0.05	0.31	0.31	0.11	0.36	0.36	0.11	0.19	0.19	0.08	0.16	0.16
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	33	443	118	119	567	85	137	169	41	62	216	33
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	1.2	6.4	3.6	4.1	18.0	2.3	4.8	5.2	1.4	2.1	7.1	1.2
Cycle Q Clear(g_c), s	1.2	6.4	3.6	4.1	18.0	2.3	4.8	5.2	1.4	2.1	7.1	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	1088	485	189	671	569	197	350	296	144	294	250
V/C Ratio(X)	0.35	0.41	0.24	0.63	0.84	0.15	0.70	0.48	0.14	0.43	0.73	0.13
Avail Cap(c_a), veh/h	215	1945	868	243	1053	892	243	948	804	243	928	787
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	17.5	16.5	27.3	18.8	13.8	27.4	23.2	21.6	28.0	25.6	23.1
Incr Delay (d2), s/veh	2.1	0.2	0.3	3.4	3.8	0.1	6.4	1.0	0.2	2.0	3.5	0.2
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	2.2	1.1	1.7	6.9	0.7	2.2	2.1	0.5	0.9	3.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.3	17.7	16.8	30.7	22.6	13.9	33.7	24.2	21.8	30.0	29.2	23.4
LnGrp LOS	C	B	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		594			771			347			311	
Approach Delay, s/veh		18.3			22.9			27.7			28.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	18.1	11.1	25.5	11.3	16.2	7.7	28.8
Change Period (Y+Rc), s	4.2	* 6	4.2	5.7	4.2	6.0	4.2	5.7
Max Green Setting (Gmax), s	8.8	* 33	8.8	35.3	8.8	32.0	7.8	36.3
Max Q Clear Time (g_c+I1), s	4.1	7.2	6.1	8.4	6.8	9.1	3.2	20.0
Green Ext Time (p_c), s	0.0	0.9	0.1	3.0	0.1	1.1	0.0	3.2

Intersection Summary	
HCM 7th Control Delay, s/veh	23.3
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	338	121	100	539	49	123	80	41	57	73	27
Future Volume (veh/h)	50	338	121	100	539	49	123	80	41	57	73	27
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	56	380	136	112	606	55	138	90	46	64	82	30
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	284	807	360	409	936	417	227	681	304	309	546	243
Arrive On Green	0.08	0.23	0.23	0.12	0.27	0.27	0.13	0.19	0.19	0.09	0.15	0.15
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	3428	3526	1566
Grp Volume(v), veh/h	56	380	136	112	606	55	138	90	46	64	82	30
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1714	1763	1566
Q Serve(g_s), s	0.8	4.9	3.8	1.6	8.0	1.4	3.9	1.1	1.3	0.9	1.1	0.9
Cycle Q Clear(g_c), s	0.8	4.9	3.8	1.6	8.0	1.4	3.9	1.1	1.3	0.9	1.1	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	807	360	409	936	417	227	681	304	309	546	243
V/C Ratio(X)	0.20	0.47	0.38	0.27	0.65	0.13	0.61	0.13	0.15	0.21	0.15	0.12
Avail Cap(c_a), veh/h	508	2478	1105	508	2478	1105	295	2545	1135	508	2478	1101
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	17.5	17.1	21.1	17.2	14.7	21.7	17.6	17.6	22.2	19.3	19.2
Incr Delay (d2), s/veh	0.3	0.4	0.7	0.4	0.8	0.1	2.6	0.1	0.2	0.3	0.1	0.2
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	1.6	1.2	0.5	2.6	0.4	1.5	0.4	0.4	0.3	0.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.8	18.0	17.8	21.5	17.9	14.9	24.3	17.7	17.9	22.5	19.4	19.4
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		572			773			274			176	
Approach Delay, s/veh		18.4			18.2			21.0			20.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	15.5	10.5	17.7	11.0	13.5	8.6	19.7
Change Period (Y+Rc), s	4.2	5.3	4.2	5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	7.8	38.0	7.8	37.0	8.8	37.0	7.8	37.0
Max Q Clear Time (g_c+I1), s	2.9	3.3	3.6	6.9	5.9	3.1	2.8	10.0
Green Ext Time (p_c), s	0.0	0.6	0.1	2.7	0.1	0.5	0.0	3.9

Intersection Summary	
HCM 7th Control Delay, s/veh	18.9
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	57.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	3	184	54	3	173	191	69	216	14	164	195	6
Future Vol, veh/h	3	184	54	3	173	191	69	216	14	164	195	6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	211	62	3	199	220	79	248	16	189	224	7
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	31.1	65.1	45.4	78
HCM LOS	D	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	1%	1%	45%
Vol Thru, %	72%	76%	47%	53%
Vol Right, %	5%	22%	52%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	299	241	367	365
LT Vol	69	3	3	164
Through Vol	216	184	173	195
RT Vol	14	54	191	6
Lane Flow Rate	344	277	422	420
Geometry Grp	1	1	1	1
Degree of Util (X)	0.846	0.699	0.968	1.014
Departure Headway (Hd)	9.011	9.255	8.406	8.704
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	406	393	434	420
Service Time	7.011	7.255	6.406	6.704
HCM Lane V/C Ratio	0.847	0.705	0.972	1
HCM Control Delay, s/veh	45.4	31.1	65.1	78
HCM Lane LOS	E	D	F	F
HCM 95th-tile Q	8.1	5.2	11.6	12.9

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	17	1	66	2	357	18	48	227	0
Future Vol, veh/h	1	0	1	17	1	66	2	357	18	48	227	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	0	1	19	1	75	2	406	20	55	258	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	778	798	258	788	788	416	258	0	0	426	0	0
Stage 1	367	367	-	420	420	-	-	-	-	-	-	-
Stage 2	411	431	-	367	367	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	313	318	778	308	322	635	1301	-	-	1128	-	-
Stage 1	650	620	-	609	587	-	-	-	-	-	-	-
Stage 2	616	581	-	650	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	259	299	778	289	303	635	1301	-	-	1128	-	-
Mov Cap-2 Maneuver	259	299	-	289	303	-	-	-	-	-	-	-
Stage 1	614	585	-	607	586	-	-	-	-	-	-	-
Stage 2	541	580	-	613	585	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.33	13.76	0.04	1.46
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	9	-	-	388	506	314	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.189	0.048	-	-
HCM Control Delay (s/veh)	7.8	0	-	14.3	13.8	8.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.2	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	24	0	23	88	6	0	52
Future Vol, veh/h	24	0	23	88	6	0	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	100	0	140	-	0	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	29	0	28	107	7	0	63

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	171	107	-	0	0	115	0
Stage 1	107	-	-	-	-	-	-
Stage 2	63	-	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	-	2.227	-
Pot Cap-1 Maneuver	817	944	-	-	-	1468	-
Stage 1	915	-	-	-	-	-	-
Stage 2	957	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	817	944	-	-	-	1468	-
Mov Cap-2 Maneuver	817	-	-	-	-	-	-
Stage 1	915	-	-	-	-	-	-
Stage 2	957	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.57		0
HCM LOS	A		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	817	-	1468	-
HCM Lane V/C Ratio	-	-	-	0.036	-	-	-
HCM Control Delay (s/veh)	-	-	-	9.6	0	0	-
HCM Lane LOS	-	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.1	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	2	693	74	43	458	51	59
Future Vol, veh/h	2	693	74	43	458	51	59
Conflicting Peds, #/hr	0	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	2	753	80	47	498	55	64

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	836	0	1351	379
Stage 1	-	-	-	-	-	760	-
Stage 2	-	-	-	-	-	591	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	791	-	152	617
Stage 1	-	-	-	-	-	421	-
Stage 2	-	-	-	-	-	550	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	789	-	143	616
Mov Cap-2 Maneuver	-	-	-	-	-	143	-
Stage 1	-	-	-	-	-	421	-
Stage 2	-	-	-	-	-	517	-

Approach	EB	WB	NB
HCM Control Delay, s/v		0.85	27.22
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	143	616	-	-	-	789	-
HCM Lane V/C Ratio	0.388	0.104	-	-	-	0.059	-
HCM Control Delay (s/veh)	45.4	11.5	-	-	-	9.8	-
HCM Lane LOS	E	B	-	-	-	A	-
HCM 95th %tile Q(veh)	1.7	0.3	-	-	-	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	484	86	64	447	64	119	194	50	46	198	26
Future Volume (veh/h)	46	484	86	64	447	64	119	194	50	46	198	26
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	52	550	98	73	508	73	135	220	57	52	225	30
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	131	1107	494	158	611	518	198	376	319	131	305	259
Arrive On Green	0.07	0.31	0.31	0.09	0.33	0.33	0.11	0.20	0.20	0.07	0.16	0.16
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	52	550	98	73	508	73	135	220	57	52	225	30
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	1.8	8.0	2.9	2.5	15.9	2.1	4.6	6.7	1.9	1.8	7.2	1.0
Cycle Q Clear(g_c), s	1.8	8.0	2.9	2.5	15.9	2.1	4.6	6.7	1.9	1.8	7.2	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	131	1107	494	158	611	518	198	376	319	131	305	259
V/C Ratio(X)	0.40	0.50	0.20	0.46	0.83	0.14	0.68	0.58	0.18	0.40	0.74	0.12
Avail Cap(c_a), veh/h	219	1979	883	219	1042	883	275	1024	868	219	944	800
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	17.5	15.8	27.2	19.5	14.8	26.8	22.7	20.7	27.8	25.0	22.4
Incr Delay (d2), s/veh	1.9	0.3	0.2	2.1	3.0	0.1	4.1	1.4	0.3	1.9	3.5	0.2
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	0.7	2.7	0.9	1.0	6.1	0.6	2.0	2.7	0.6	0.7	3.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.7	17.9	16.0	29.3	22.5	14.9	30.9	24.1	21.0	29.7	28.4	22.6
LnGrp LOS	C	B	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		700			654			412			307	
Approach Delay, s/veh		18.5			22.4			25.9			28.1	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	18.8	9.8	25.4	11.3	16.3	8.9	26.4
Change Period (Y+Rc), s	4.2	* 6	4.2	5.7	4.2	6.0	4.2	5.7
Max Green Setting (Gmax), s	7.8	* 35	7.8	35.3	9.8	32.0	7.8	35.3
Max Q Clear Time (g_c+I1), s	3.8	8.7	4.5	10.0	6.6	9.2	3.8	17.9
Green Ext Time (p_c), s	0.0	1.3	0.0	3.6	0.1	1.1	0.0	2.8

Intersection Summary	
HCM 7th Control Delay, s/veh	22.6
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	401	105	67	392	56	154	94	57	40	45	21
Future Volume (veh/h)	46	401	105	67	392	56	154	94	57	40	45	21
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	461	121	77	451	64	177	108	66	46	52	24
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	277	772	344	348	845	377	248	797	355	251	560	249
Arrive On Green	0.08	0.22	0.22	0.10	0.24	0.24	0.14	0.23	0.23	0.07	0.16	0.16
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1570	3428	3526	1570
Grp Volume(v), veh/h	53	461	121	77	451	64	177	108	66	46	52	24
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1570	1714	1763	1570
Q Serve(g_s), s	0.7	6.0	3.3	1.1	5.7	1.6	4.9	1.2	1.7	0.6	0.6	0.7
Cycle Q Clear(g_c), s	0.7	6.0	3.3	1.1	5.7	1.6	4.9	1.2	1.7	0.6	0.6	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	772	344	348	845	377	248	797	355	251	560	249
V/C Ratio(X)	0.19	0.60	0.35	0.22	0.53	0.17	0.71	0.14	0.19	0.18	0.09	0.10
Avail Cap(c_a), veh/h	524	2557	1140	524	2557	1140	305	2626	1170	524	2557	1138
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	17.9	16.9	21.1	16.9	15.4	20.9	15.8	16.0	22.2	18.3	18.3
Incr Delay (d2), s/veh	0.3	0.7	0.6	0.3	0.5	0.2	5.9	0.1	0.3	0.3	0.1	0.2
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	2.0	1.0	0.4	1.9	0.5	2.1	0.4	0.5	0.2	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.2	18.6	17.5	21.4	17.4	15.6	26.9	15.8	16.2	22.6	18.4	18.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		635			592			351			122	
Approach Delay, s/veh		18.7			17.7			21.5			20.0	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	16.8	9.4	16.9	11.4	13.4	8.3	17.9
Change Period (Y+Rc), s	4.2	5.3	4.2	5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	7.8	38.0	7.8	37.0	8.8	37.0	7.8	37.0
Max Q Clear Time (g_c+I1), s	2.6	3.7	3.1	8.0	6.9	2.7	2.7	7.7
Green Ext Time (p_c), s	0.0	0.8	0.1	3.2	0.1	0.3	0.0	2.9

Intersection Summary	
HCM 7th Control Delay, s/veh	19.0
HCM 7th LOS	B

Intersection	
Intersection Delay, s/veh	25.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	150	69	5	198	244	112	231	7	133	226	1
Future Vol, veh/h	2	150	69	5	198	244	112	231	7	133	226	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	155	71	5	204	252	115	238	7	137	233	1
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	17.7	40.4	18.2	17.7
HCM LOS	C	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	1%	1%	100%	0%
Vol Thru, %	0%	97%	68%	44%	0%	100%
Vol Right, %	0%	3%	31%	55%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	238	221	447	133	227
LT Vol	112	0	2	5	133	0
Through Vol	0	231	150	198	0	226
RT Vol	0	7	69	244	0	1
Lane Flow Rate	115	245	228	461	137	234
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.273	0.544	0.483	0.873	0.324	0.519
Departure Headway (Hd)	8.524	7.985	7.626	6.818	8.51	7.988
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	420	451	472	535	422	452
Service Time	6.29	5.75	5.694	4.818	6.276	5.754
HCM Lane V/C Ratio	0.274	0.543	0.483	0.862	0.325	0.518
HCM Control Delay, s/veh	14.5	19.9	17.7	40.4	15.3	19.1
HCM Lane LOS	B	C	C	E	C	C
HCM 95th-tile Q	1.1	3.2	2.6	9.6	1.4	2.9

Intersection	
Intersection Delay, s/veh	25.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	184	54	3	173	191	69	216	14	164	195	6
Future Vol, veh/h	3	184	54	3	173	191	69	216	14	164	195	6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	211	62	3	199	220	79	248	16	189	224	7
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	22	37.5	20.8	19.1
HCM LOS	C	E	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	1%	1%	100%	0%
Vol Thru, %	0%	94%	76%	47%	0%	97%
Vol Right, %	0%	6%	22%	52%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	230	241	367	164	201
LT Vol	69	0	3	3	164	0
Through Vol	0	216	184	173	0	195
RT Vol	0	14	54	191	0	6
Lane Flow Rate	79	264	277	422	189	231
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.194	0.605	0.6	0.839	0.454	0.522
Departure Headway (Hd)	8.798	8.234	7.798	7.158	8.678	8.137
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	407	439	463	506	415	441
Service Time	6.566	6.002	5.872	5.219	6.449	5.908
HCM Lane V/C Ratio	0.194	0.601	0.598	0.834	0.455	0.524
HCM Control Delay, s/veh	13.7	22.9	22	37.5	18.5	19.5
HCM Lane LOS	B	C	C	E	C	C
HCM 95th-tile Q	0.7	3.9	3.9	8.5	2.3	2.9

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	110	161	89	118	54	115
Average Queue (ft)	62	88	41	59	32	58
95th Queue (ft)	97	139	69	99	47	98
Link Distance (ft)	2602	3212		2594		2594
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	96	26	158
Average Queue (ft)	5	36	1	28
95th Queue (ft)	21	71	8	91
Link Distance (ft)	4816	1433	2579	2594
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Clovis Avenue & Baron Avenue

Movement	WB	NB
Directions Served	L	U
Maximum Queue (ft)	24	31
Average Queue (ft)	1	3
95th Queue (ft)	8	16
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	EB	WB	NB	NB
Directions Served	R	L	L	R
Maximum Queue (ft)	41	75	47	46
Average Queue (ft)	1	29	16	21
95th Queue (ft)	13	61	41	37
Link Distance (ft)				2538
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100	250	220	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	B17	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	R	T	L	T	R	L
Maximum Queue (ft)	71	114	116	142	340	433	250	56	211	176	59	91
Average Queue (ft)	22	67	78	35	79	200	59	2	85	90	14	50
95th Queue (ft)	55	101	123	76	182	322	199	18	165	155	38	89
Link Distance (ft)		2549	2549			1269		1207		2555	2555	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220		190		230			260
Storage Blk Time (%)			27	1		12			0			
Queuing Penalty (veh)			30	2		23			0			

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	201	44
Average Queue (ft)	98	13
95th Queue (ft)	168	41
Link Distance (ft)	2579	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		15
Storage Blk Time (%)	51	3
Queuing Penalty (veh)	45	8

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	64	116	174	187	107	72	136	234	227	33	126	47
Average Queue (ft)	22	19	86	51	32	18	48	120	93	12	61	27
95th Queue (ft)	51	58	161	119	88	51	83	203	192	28	109	55
Link Distance (ft)			1207	1207				2012	2012			2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			175	230	
Storage Blk Time (%)				4	1			0	0			
Queuing Penalty (veh)				5	2			0	0			

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	63	20	89	46	81	82	62
Average Queue (ft)	13	8	26	15	28	19	16
95th Queue (ft)	38	23	64	37	63	54	42
Link Distance (ft)	2554				1269	1269	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		50	250	250			100
Storage Blk Time (%)	0					0	
Queuing Penalty (veh)	0					0	

Network Summary

Network wide Queuing Penalty: 116

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	76	199	68	78	77	75
Average Queue (ft)	45	67	31	49	41	44
95th Queue (ft)	67	125	55	72	64	68
Link Distance (ft)	2602	3212		2594		2594
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	24	54	21	31
Average Queue (ft)	2	30	1	13
95th Queue (ft)	11	51	7	35
Link Distance (ft)	4816	1429	2579	2594
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Clovis Avenue & Baron Avenue

Movement	WB	NB
Directions Served	L	U
Maximum Queue (ft)	24	27
Average Queue (ft)	13	2
95th Queue (ft)	32	12
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	EB	WB	NB	NB
Directions Served	R	L	L	R
Maximum Queue (ft)	20	72	91	43
Average Queue (ft)	1	17	32	22
95th Queue (ft)	7	50	71	37
Link Distance (ft)				2538
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100	250	220	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	88	158	162	144	339	627	250	134	150	79	70	227
Average Queue (ft)	36	89	103	36	82	208	38	71	68	15	29	87
95th Queue (ft)	68	143	164	100	251	441	156	123	128	40	64	165
Link Distance (ft)		2549	2549			1269			2555	2555		2579
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220		190	230			260	
Storage Blk Time (%)			34	1		11						46
Queuing Penalty (veh)			30	3		14						33

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	14
95th Queue (ft)	41
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	15
Storage Blk Time (%)	3
Queuing Penalty (veh)	8

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	48	46	206	225	110	47	46	200	156	44	197	83
Average Queue (ft)	21	20	95	72	31	11	24	95	63	13	99	34
95th Queue (ft)	45	44	188	174	86	33	51	175	138	32	171	69
Link Distance (ft)			1207	1207				2012	2012			2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			175	230	
Storage Blk Time (%)				14	1				0			
Queuing Penalty (veh)				15	1				0			

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	42	59	67	65	23	42	20
Average Queue (ft)	7	11	20	12	13	6	5
95th Queue (ft)	25	30	48	41	28	23	17
Link Distance (ft)	2554				1268	1268	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		50	250	250			100
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					

Network Summary

Network wide Queuing Penalty: 103

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	410	Opposing Demand Flow Rate, veh/h	346
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.51673	Speed Power Coefficient	0.50625
PF Slope Coefficient	-1.24714	PF Power Coefficient	0.79636
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.5

Vehicle Results

Average Speed, mi/h	56.5	Percent Followers, %	45.8
Segment Travel Time, minutes	1.06	Follower Density, followers/mi/ln	3.3
Vehicle LOS	B		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	3.3	B

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	487	Opposing Demand Flow Rate, veh/h	316
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.50828	Speed Power Coefficient	0.51194
PF Slope Coefficient	-1.24222	PF Power Coefficient	0.79806
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.2

Vehicle Results

Average Speed, mi/h	56.2	Percent Followers, %	50.3
Segment Travel Time, minutes	1.07	Follower Density, followers/mi/ln	4.4
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	4.4	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	327	Opposing Demand Flow Rate, veh/h	301
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.50385	Speed Power Coefficient	0.51498
PF Slope Coefficient	-1.23957	PF Power Coefficient	0.79896
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.8

Vehicle Results

Average Speed, mi/h	56.8	Percent Followers, %	39.8
Segment Travel Time, minutes	1.06	Follower Density, followers/mi/ln	2.3
Vehicle LOS	B		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	2.3	B

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	428	Opposing Demand Flow Rate, veh/h	278
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.49695	Speed Power Coefficient	0.51981
PF Slope Coefficient	-1.23537	PF Power Coefficient	0.80037
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.4

Vehicle Results

Average Speed, mi/h	56.4	Percent Followers, %	46.6
Segment Travel Time, minutes	1.06	Follower Density, followers/mi/ln	3.5
Vehicle LOS	B		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	3.5	B

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	576	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	49.2

Vehicle Results

Average Speed, mi/h	49.2	Percent Followers, %	59.5
Segment Travel Time, minutes	1.22	Follower Density, followers/mi/ln	7.0
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	7.0	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	581	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	49.2

Vehicle Results

Average Speed, mi/h	49.2	Percent Followers, %	59.7
Segment Travel Time, minutes	1.22	Follower Density, followers/mi/ln	7.0
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	7.0	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	779	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.8

Vehicle Results

Average Speed, mi/h	48.8	Percent Followers, %	67.7
Segment Travel Time, minutes	1.23	Follower Density, followers/mi/ln	10.8
Vehicle LOS	D		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	10.8	D

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Existing plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	680	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.40

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	49.0

Vehicle Results

Average Speed, mi/h	49.0	Percent Followers, %	64.0
Segment Travel Time, minutes	1.22	Follower Density, followers/mi/ln	8.9
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	8.9	C

Appendix G: Near Term plus Project Traffic Conditions

Intersection	
Intersection Delay, s/veh	107.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	159	84	6	219	259	147	299	9	147	291	1
Future Vol, veh/h	2	159	84	6	219	259	147	299	9	147	291	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	164	87	6	226	267	152	308	9	152	300	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	32.7	127.9	122.4	110
HCM LOS	D	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	32%	1%	1%	33%
Vol Thru, %	66%	65%	45%	66%
Vol Right, %	2%	34%	54%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	455	245	484	439
LT Vol	147	2	6	147
Through Vol	299	159	219	291
RT Vol	9	84	259	1
Lane Flow Rate	469	253	499	453
Geometry Grp	1	1	1	1
Degree of Util (X)	1.143	0.663	1.165	1.105
Departure Headway (Hd)	9.676	10.793	9.158	9.78
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	380	338	399	376
Service Time	7.676	8.793	7.158	7.78
HCM Lane V/C Ratio	1.234	0.749	1.251	1.205
HCM Control Delay, s/veh	122.4	32.7	127.9	110
HCM Lane LOS	F	D	F	F
HCM 95th-tile Q	16.4	4.5	17.8	15

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	7	12	0	131	5	358	10	82	324	1
Future Vol, veh/h	1	0	7	12	0	131	5	358	10	82	324	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	0	7	13	0	139	5	381	11	87	345	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	911	922	345	916	917	386	346	0	0	391	0	0
Stage 1	520	520	-	397	397	-	-	-	-	-	-	-
Stage 2	391	402	-	519	520	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	254	269	695	252	271	659	1208	-	-	1162	-	-
Stage 1	538	531	-	627	602	-	-	-	-	-	-	-
Stage 2	631	599	-	538	530	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	243	695	225	244	659	1208	-	-	1162	-	-
Mov Cap-2 Maneuver	181	243	-	225	244	-	-	-	-	-	-	-
Stage 1	488	481	-	623	598	-	-	-	-	-	-	-
Stage 2	495	595	-	483	481	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.14	13.65	0.11	1.68
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	24	-	-	513	567	362	-	-
HCM Lane V/C Ratio	0.004	-	-	0.017	0.268	0.075	-	-
HCM Control Delay (s/veh)	8	0	-	12.1	13.7	8.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.1	0.2	-	-

Intersection	
Int Delay, s/veh	12.1

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	428	37	38	117	208	6	175
Future Vol, veh/h	428	37	38	117	208	6	175
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	100	0	140	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	498	43	44	136	242	7	203

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	353	136	-	0	0	378	0
Stage 1	136	-	-	-	-	-	-
Stage 2	217	-	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	-	2.227	-
Pot Cap-1 Maneuver	642	910	-	-	-	1175	-
Stage 1	888	-	-	-	-	-	-
Stage 2	816	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	638	910	-	-	-	1175	-
Mov Cap-2 Maneuver	638	-	-	-	-	-	-
Stage 1	888	-	-	-	-	-	-
Stage 2	811	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	26.24		0.27
HCM LOS	D		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	638	910	60	-
HCM Lane V/C Ratio	-	-	-	0.78	0.047	0.006	-
HCM Control Delay (s/veh)	-	-	-	27.7	9.2	8.1	0
HCM Lane LOS	-	-	-	D	A	A	A
HCM 95th %tile Q(veh)	-	-	-	7.5	0.1	0	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	950	105	99	836	30	86
Future Vol, veh/h	0	950	105	99	836	30	86
Conflicting Peds, #/hr	0	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	0	1080	119	113	950	34	98

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	1200	0	2256	541
Stage 1	-	-	-	-	-	1081	-
Stage 2	-	-	-	-	-	1175	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	575	-	39	484
Stage 1	-	-	-	-	-	286	-
Stage 2	-	-	-	-	-	291	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	574	-	~ 32	484
Mov Cap-2 Maneuver	-	-	-	-	-	~ 32	-
Stage 1	-	-	-	-	-	286	-
Stage 2	-	-	-	-	-	234	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.35	106.66
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	32	484	-	-	-	574	-
HCM Lane V/C Ratio	1.077	0.202	-	-	-	0.196	-
HCM Control Delay (s/veh)	$ 371.4	14.3	0	-	-	12.8	-
HCM Lane LOS	F	B	A	-	-	B	-
HCM 95th %tile Q(veh)	3.7	0.7	-	-	-	0.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	850	125	201	858	117	142	174	70	123	234	55
Future Volume (veh/h)	40	850	125	201	858	117	142	174	70	123	234	55
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	904	133	214	913	124	151	185	74	131	249	59
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	324	1622	724	234	734	622	123	231	195	166	294	249
Arrive On Green	0.18	0.46	0.46	0.13	0.40	0.40	0.07	0.12	0.12	0.09	0.16	0.16
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	43	904	133	214	913	124	151	185	74	131	249	59
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	2.3	20.9	5.6	13.4	44.3	5.8	7.8	10.9	3.6	8.1	14.6	2.4
Cycle Q Clear(g_c), s	2.3	20.9	5.6	13.4	44.3	5.8	7.8	10.9	3.6	8.1	14.6	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	1622	724	234	734	622	123	231	195	166	294	249
V/C Ratio(X)	0.13	0.56	0.18	0.92	1.24	0.20	1.23	0.80	0.38	0.79	0.85	0.24
Avail Cap(c_a), veh/h	324	1622	724	234	734	622	123	542	459	166	530	449
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	22.0	17.8	48.0	33.8	22.2	52.1	47.7	25.5	49.6	45.8	17.8
Incr Delay (d2), s/veh	0.2	1.4	0.6	37.0	121.1	0.7	154.4	6.4	1.2	21.7	6.6	0.5
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	1.0	8.2	2.0	8.0	42.9	2.1	8.6	5.3	1.9	4.4	6.9	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.5	23.3	18.4	85.0	155.0	22.9	206.5	54.1	26.7	71.3	52.4	18.3
LnGrp LOS	D	C	B	F	F	C	F	D	C	E	D	B
Approach Vol, veh/h		1080			1251			410			439	
Approach Delay, s/veh		23.3			129.9			105.3			53.5	
Approach LOS		C			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	19.2	19.0	57.2	12.0	23.8	26.2	50.0
Change Period (Y+Rc), s	6.0	* 5.3	4.2	5.7	4.2	6.0	5.7	* 5.7
Max Green Setting (Gmax), s	7.8	* 33	14.8	37.3	7.8	32.0	7.8	* 44
Max Q Clear Time (g_c+I1), s	10.1	12.9	15.4	22.9	9.8	16.6	4.3	46.3
Green Ext Time (p_c), s	0.0	1.1	0.0	5.2	0.0	1.2	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	80.0
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	763	156	218	813	80	151	174	81	158	354	169
Future Volume (veh/h)	110	763	156	218	813	80	151	174	81	158	354	169
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	124	857	175	245	913	90	170	196	91	178	398	190
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	234	991	442	929	1754	782	170	329	147	542	581	258
Arrive On Green	0.07	0.28	0.28	0.27	0.50	0.50	0.10	0.09	0.09	0.16	0.16	0.16
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	3428	3526	1567
Grp Volume(v), veh/h	124	857	175	245	913	90	170	196	91	178	398	190
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1714	1763	1567
Q Serve(g_s), s	3.9	25.9	7.5	6.3	19.7	1.7	10.8	6.0	6.2	5.2	11.9	12.9
Cycle Q Clear(g_c), s	3.9	25.9	7.5	6.3	19.7	1.7	10.8	6.0	6.2	5.2	11.9	12.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	991	442	929	1754	782	170	329	147	542	581	258
V/C Ratio(X)	0.53	0.86	0.40	0.26	0.52	0.12	1.00	0.60	0.62	0.33	0.69	0.74
Avail Cap(c_a), veh/h	239	1133	505	929	1754	782	170	1165	519	542	1165	518
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	38.2	18.0	32.0	19.1	3.6	50.6	48.7	48.9	41.9	44.0	44.5
Incr Delay (d2), s/veh	2.1	10.0	2.6	0.1	1.1	0.3	68.2	1.7	4.2	0.4	1.4	4.1
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	1.7	11.9	3.9	2.5	7.6	1.1	7.8	2.6	2.5	2.2	5.1	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.6	48.2	20.6	32.2	20.2	3.9	118.8	50.5	53.1	42.2	45.5	48.5
LnGrp LOS	D	D	C	C	C	A	F	D	D	D	D	D
Approach Vol, veh/h		1156			1248			457			766	
Approach Delay, s/veh		44.5			21.4			76.4			45.5	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	15.8	36.1	37.2	15.0	23.8	11.8	61.4
Change Period (Y+Rc), s	5.3	* 5.3	5.7	* 5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	10.8	* 37	8.8	* 36	10.8	37.0	7.8	37.0
Max Q Clear Time (g_c+I1), s	7.2	8.2	8.3	27.9	12.8	14.9	5.9	21.7
Green Ext Time (p_c), s	0.2	1.4	0.0	3.6	0.0	2.9	0.1	5.3

Intersection Summary	
HCM 7th Control Delay, s/veh	40.8
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	146.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	208	75	5	188	210	91	304	16	184	266	6
Future Vol, veh/h	3	208	75	5	188	210	91	304	16	184	266	6
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	239	86	6	216	241	105	349	18	211	306	7
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	57.9	130.5	155.5	209.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	1%	1%	40%
Vol Thru, %	74%	73%	47%	58%
Vol Right, %	4%	26%	52%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	411	286	403	456
LT Vol	91	3	5	184
Through Vol	304	208	188	266
RT Vol	16	75	210	6
Lane Flow Rate	472	329	463	524
Geometry Grp	1	1	1	1
Degree of Util (X)	1.221	0.86	1.155	1.362
Departure Headway (Hd)	10.865	11.804	10.594	10.544
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	340	309	347	351
Service Time	8.865	9.804	8.594	8.544
HCM Lane V/C Ratio	1.388	1.065	1.334	1.493
HCM Control Delay, s/veh	155.5	57.9	130.5	209.4
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	17.7	7.6	15.9	23

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	1	17	1	94	2	441	18	76	293	0
Future Vol, veh/h	1	0	1	17	1	94	2	441	18	76	293	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	0	1	19	1	107	2	501	20	86	333	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1012	1032	333	1022	1022	511	333	0	0	522	0	0
Stage 1	506	506	-	516	516	-	-	-	-	-	-	-
Stage 2	506	526	-	506	506	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	217	232	707	214	235	560	1221	-	-	1040	-	-
Stage 1	547	538	-	540	533	-	-	-	-	-	-	-
Stage 2	547	527	-	547	538	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	156	208	707	191	211	560	1221	-	-	1040	-	-
Mov Cap-2 Maneuver	156	208	-	191	211	-	-	-	-	-	-	-
Stage 1	491	483	-	539	531	-	-	-	-	-	-	-
Stage 2	440	526	-	491	483	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	19.18	16.92	0.03	1.81
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	8	-	-	256	428	371	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.297	0.083	-	-
HCM Control Delay (s/veh)	8	0	-	19.2	16.9	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1.2	0.3	-	-

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	319	14	23	202	482	22	130
Future Vol, veh/h	319	14	23	202	482	22	130
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	100	0	140	-	0	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	389	17	28	246	588	27	159

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	459	246	-	0	0	834	0
Stage 1	246	-	-	-	-	-	-
Stage 2	212	-	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	-	2.227	-
Pot Cap-1 Maneuver	559	790	-	-	-	795	-
Stage 1	792	-	-	-	-	-	-
Stage 2	821	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	538	790	-	-	-	795	-
Mov Cap-2 Maneuver	538	-	-	-	-	-	-
Stage 1	792	-	-	-	-	-	-
Stage 2	790	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	26.5		1.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	538	790	261	-
HCM Lane V/C Ratio	-	-	-	0.723	0.022	0.034	-
HCM Control Delay (s/veh)	-	-	-	27.2	9.7	9.7	0
HCM Lane LOS	-	-	-	D	A	A	A
HCM 95th %tile Q(veh)	-	-	-	5.9	0.1	0.1	-

Intersection	
Int Delay, s/veh	29.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	2	1187	82	52	1036	60	77
Future Vol, veh/h	2	1187	82	52	1036	60	77
Conflicting Peds, #/hr	0	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	250	-	100	250	-	220	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	2	1290	89	57	1126	65	84

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	-	0	0	1381	0	2536	647
Stage 1	-	-	-	-	-	1297	-
Stage 2	-	-	-	-	-	1239	-
Critical Hdwy	-	-	-	4.145	-	6.645	6.945
Critical Hdwy Stg 1	-	-	-	-	-	5.845	-
Critical Hdwy Stg 2	-	-	-	-	-	5.445	-
Follow-up Hdwy	-	-	-	2.2285	-	3.5285	3.3285
Pot Cap-1 Maneuver	-	-	-	490	-	~ 26	412
Stage 1	-	-	-	-	-	220	-
Stage 2	-	-	-	-	-	270	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	-	-	-	489	-	~ 23	412
Mov Cap-2 Maneuver	-	-	-	-	-	~ 23	-
Stage 1	-	-	-	-	-	219	-
Stage 2	-	-	-	-	-	239	-

Approach	EB	WB	NB
HCM Control Delay, s/v		0.64	$ 537.75
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	23	412	-	-	-	489	-
HCM Lane V/C Ratio	2.88	0.203	-	-	-	0.116	-
HCM Control Delay (s/veh)	$ 1207.4	16	-	-	-	13.3	-
HCM Lane LOS	F	C	-	-	-	B	-
HCM 95th %tile Q(veh)	8.3	0.8	-	-	-	0.4	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	944	106	128	985	116	139	233	151	97	225	45
Future Volume (veh/h)	75	944	106	128	985	116	139	233	151	97	225	45
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	85	1073	120	145	1119	132	158	265	172	110	256	51
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	225	1813	809	170	875	741	120	309	262	106	311	263
Arrive On Green	0.13	0.51	0.51	0.10	0.47	0.47	0.07	0.17	0.17	0.06	0.17	0.17
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	85	1073	120	145	1119	132	158	265	172	110	256	51
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	5.7	27.6	5.2	10.5	61.3	6.3	8.8	18.0	10.6	7.8	17.3	2.7
Cycle Q Clear(g_c), s	5.7	27.6	5.2	10.5	61.3	6.3	8.8	18.0	10.6	7.8	17.3	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	1813	809	170	875	741	120	309	262	106	311	263
V/C Ratio(X)	0.38	0.59	0.15	0.85	1.28	0.18	1.32	0.86	0.66	1.04	0.82	0.19
Avail Cap(c_a), veh/h	225	1813	809	188	875	741	120	481	408	106	457	387
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	22.0	16.6	57.9	34.3	19.8	60.6	52.7	32.2	61.1	52.3	25.4
Incr Delay (d2), s/veh	1.0	1.4	0.4	28.1	134.3	0.5	191.1	9.0	2.8	97.8	7.7	0.4
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	2.5	11.0	1.9	5.9	58.0	2.3	10.2	9.0	4.1	6.3	8.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	53.1	23.5	17.0	86.0	168.7	20.3	251.7	61.7	35.0	158.9	59.9	25.8
LnGrp LOS	D	C	B	F	F	C	F	E	C	F	E	C
Approach Vol, veh/h		1278			1396			595			417	
Approach Delay, s/veh		24.8			146.1			104.4			81.9	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	27.0	16.7	72.6	13.0	27.8	22.2	67.0
Change Period (Y+Rc), s	6.0	* 5.3	4.2	5.7	4.2	6.0	5.7	* 5.7
Max Green Setting (Gmax), s	7.8	* 34	13.8	55.3	8.8	32.0	7.8	* 61
Max Q Clear Time (g_c+I1), s	9.8	20.0	12.5	29.6	10.8	19.3	7.7	63.3
Green Ext Time (p_c), s	0.0	1.6	0.0	8.0	0.0	1.1	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	90.1
HCM 7th LOS	F

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	778	137	151	909	159	205	392	182	109	245	118
Future Volume (veh/h)	222	778	137	151	909	159	205	392	182	109	245	118
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	255	894	157	174	1045	183	236	451	209	125	282	136
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	285	1030	459	957	1762	786	260	735	328	203	426	189
Arrive On Green	0.08	0.29	0.29	0.28	0.50	0.50	0.15	0.21	0.21	0.06	0.12	0.12
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1570	3428	3526	1569
Grp Volume(v), veh/h	255	894	157	174	1045	183	236	451	209	125	282	136
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1570	1714	1763	1569
Q Serve(g_s), s	9.6	31.3	7.0	5.0	27.4	8.6	17.1	15.1	8.5	4.6	9.9	10.9
Cycle Q Clear(g_c), s	9.6	31.3	7.0	5.0	27.4	8.6	17.1	15.1	8.5	4.6	9.9	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	1030	459	957	1762	786	260	735	328	203	426	189
V/C Ratio(X)	0.90	0.87	0.34	0.18	0.59	0.23	0.91	0.61	0.64	0.61	0.66	0.72
Avail Cap(c_a), veh/h	285	1220	544	957	1762	786	269	1302	580	232	1003	446
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.0	43.6	17.0	35.6	23.1	18.4	54.6	46.7	13.7	59.7	54.6	55.0
Incr Delay (d2), s/veh	28.2	9.9	2.0	0.1	1.5	0.7	31.2	0.8	2.1	3.8	1.8	5.0
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	5.2	14.5	3.9	2.0	11.0	3.1	9.7	6.5	5.7	2.1	4.4	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	87.3	53.5	19.0	35.7	24.6	19.1	85.8	47.5	15.8	63.5	56.4	60.1
LnGrp LOS	F	D	B	D	C	B	F	D	B	E	E	E
Approach Vol, veh/h		1306			1402			896			543	
Approach Delay, s/veh		56.0			25.3			50.2			58.9	
Approach LOS		E			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	32.4	42.0	43.7	23.3	21.0	15.0	70.7
Change Period (Y+Rc), s	4.2	5.3	5.7	* 5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	8.8	48.0	8.8	* 45	19.8	37.0	10.8	43.0
Max Q Clear Time (g_c+I1), s	11.6	17.1	7.0	33.3	19.1	12.9	11.6	29.4
Green Ext Time (p_c), s	0.1	3.6	0.1	4.7	0.1	2.0	0.0	6.0

Intersection Summary	
HCM 7th Control Delay, s/veh	44.7
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	159	84	6	219	259	147	299	9	147	291	1
Future Volume (veh/h)	2	159	84	6	219	259	147	299	9	147	291	1
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	2	164	87	6	226	267	152	308	9	152	300	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	8	370	196	22	258	304	206	392	11	206	404	1
Arrive On Green	0.00	0.32	0.32	0.01	0.33	0.33	0.12	0.22	0.22	0.12	0.22	0.22
Sat Flow, veh/h	1767	1141	605	1767	775	916	1767	1794	52	1767	1848	6
Grp Volume(v), veh/h	2	0	251	6	0	493	152	0	317	152	0	301
Grp Sat Flow(s),veh/h/ln	1767	0	1747	1767	0	1691	1767	0	1846	1767	0	1854
Q Serve(g_s), s	0.1	0.0	7.0	0.2	0.0	17.1	5.2	0.0	10.1	5.2	0.0	9.4
Cycle Q Clear(g_c), s	0.1	0.0	7.0	0.2	0.0	17.1	5.2	0.0	10.1	5.2	0.0	9.4
Prop In Lane	1.00		0.35	1.00		0.54	1.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	8	0	567	22	0	562	206	0	404	206	0	406
V/C Ratio(X)	0.27	0.00	0.44	0.27	0.00	0.88	0.74	0.00	0.78	0.74	0.00	0.74
Avail Cap(c_a), veh/h	222	0	730	222	0	707	250	0	802	250	0	805
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.9	0.0	16.6	30.4	0.0	19.6	26.6	0.0	22.9	26.6	0.0	22.6
Incr Delay (d2), s/veh	17.7	0.0	0.5	6.6	0.0	10.1	8.9	0.0	3.4	8.9	0.0	2.7
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	2.3	0.1	0.0	6.8	2.4	0.0	4.0	2.4	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.6	0.0	17.1	37.0	0.0	29.7	35.4	0.0	26.3	35.4	0.0	25.3
LnGrp LOS	D		B	D		C	D		C	D		C
Approach Vol, veh/h		253			499			469			453	
Approach Delay, s/veh		17.4			29.8			29.3			28.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	19.6	5.0	26.2	11.4	19.6	4.5	26.7
Change Period (Y+Rc), s	4.2	6.0	4.2	6.0	4.2	6.0	4.2	6.0
Max Green Setting (Gmax), s	8.8	27.0	7.8	26.0	8.8	27.0	7.8	26.0
Max Q Clear Time (g_c+I1), s	7.2	12.1	2.2	9.0	7.2	11.4	2.1	19.1
Green Ext Time (p_c), s	0.1	1.3	0.0	1.1	0.1	1.2	0.0	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	27.5
HCM 7th LOS	C

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	0	950	105	99	836	30	86
Future Volume (veh/h)	0	950	105	99	836	30	86
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		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
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h		1080	119	112	950	34	98
Peak Hour Factor		0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %		3	3	3	3	3	3
Cap, veh/h		1271	566	752	2933	140	125
Arrive On Green		0.36	0.36	0.85	1.00	0.08	0.08
Sat Flow, veh/h		3618	1570	1767	3618	1767	1572
Grp Volume(v), veh/h		1080	119	112	950	34	98
Grp Sat Flow(s),veh/h/ln		1763	1570	1767	1763	1767	1572
Q Serve(g_s), s		35.0	6.5	1.3	0.0	2.2	7.6
Cycle Q Clear(g_c), s		35.0	6.5	1.3	0.0	2.2	7.6
Prop In Lane			1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		1271	566	752	2933	140	125
V/C Ratio(X)		0.85	0.21	0.15	0.32	0.24	0.79
Avail Cap(c_a), veh/h		1686	751	752	2933	466	415
HCM Platoon Ratio		1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.74	0.74	1.00	1.00
Uniform Delay (d), s/veh		36.5	27.4	5.4	0.0	53.6	56.1
Incr Delay (d2), s/veh		7.2	0.8	0.1	0.2	0.9	10.4
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		15.5	2.5	0.5	0.1	1.0	3.3
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		43.8	28.3	5.5	0.2	54.5	66.4
LnGrp LOS		D	C	A	A	D	E
Approach Vol, veh/h		1199			1062	132	
Approach Delay, s/veh		42.2			0.8	63.4	
Approach LOS		D			A	E	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	15.1	58.5	50.4	108.9
Change Period (Y+Rc), s	5.3	5.7	* 5.7	5.7
Max Green Setting (Gmax), s	32.7	16.8	* 59	68.3
Max Q Clear Time (g_c+I1), s	9.6	3.3	37.0	2.0
Green Ext Time (p_c), s	0.3	0.2	7.7	7.3

Intersection Summary	
HCM 7th Control Delay, s/veh	25.0
HCM 7th LOS	C

Notes

User approved ignoring U-Turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	850	125	201	858	117	142	174	70	123	234	55
Future Volume (veh/h)	40	850	125	201	858	117	142	174	70	123	234	55
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	904	133	214	913	124	151	185	74	131	249	59
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	418	1572	701	240	1040	141	177	311	263	156	289	245
Arrive On Green	0.47	0.89	0.89	0.14	0.33	0.33	0.10	0.17	0.17	0.09	0.16	0.16
Sat Flow, veh/h	1767	3526	1572	1767	3119	424	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	43	904	133	214	516	521	151	185	74	131	249	59
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1779	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	1.7	7.1	1.4	14.8	34.2	34.2	10.4	11.4	5.1	9.0	16.2	2.5
Cycle Q Clear(g_c), s	1.7	7.1	1.4	14.8	34.2	34.2	10.4	11.4	5.1	9.0	16.2	2.5
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	1572	701	240	588	593	177	311	263	156	289	245
V/C Ratio(X)	0.10	0.57	0.19	0.89	0.88	0.88	0.85	0.60	0.28	0.84	0.86	0.24
Avail Cap(c_a), veh/h	418	1572	701	268	715	722	197	504	427	182	479	406
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	4.1	3.8	52.7	38.9	39.0	54.9	47.7	45.1	55.6	51.0	17.0
Incr Delay (d2), s/veh	0.1	1.4	0.5	26.9	16.9	16.7	26.9	1.8	0.6	24.7	8.4	0.5
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	0.7	1.7	0.5	8.1	16.8	16.9	5.8	5.3	2.0	5.0	7.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.5	5.4	4.3	79.6	55.8	55.7	81.8	49.6	45.7	80.4	59.4	17.5
LnGrp LOS	C	A	A	E	E	E	F	D	D	F	E	B
Approach Vol, veh/h		1080			1251			410			439	
Approach Delay, s/veh		6.1			59.8			60.7			60.0	
Approach LOS		A			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	26.8	21.1	61.0	16.6	25.3	35.0	47.0
Change Period (Y+Rc), s	4.2	* 6	4.2	5.7	4.2	6.0	5.7	* 5.7
Max Green Setting (Gmax), s	12.8	* 34	18.8	39.3	13.8	32.0	7.8	* 50
Max Q Clear Time (g_c+I1), s	11.0	13.4	16.8	9.1	12.4	18.2	3.7	36.2
Green Ext Time (p_c), s	0.0	1.1	0.1	6.8	0.0	1.1	0.0	5.1

Intersection Summary	
HCM 7th Control Delay, s/veh	41.7
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	208	75	5	188	210	91	304	16	184	266	6
Future Volume (veh/h)	3	208	75	5	188	210	91	304	16	184	266	6
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	3	239	86	6	216	241	105	349	18	211	306	7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	11	392	141	22	246	274	176	420	22	253	512	12
Arrive On Green	0.01	0.30	0.30	0.01	0.31	0.31	0.10	0.24	0.24	0.14	0.28	0.28
Sat Flow, veh/h	1767	1302	469	1767	801	894	1767	1749	90	1767	1807	41
Grp Volume(v), veh/h	3	0	325	6	0	457	105	0	367	211	0	313
Grp Sat Flow(s),veh/h/ln	1767	0	1771	1767	0	1695	1767	0	1839	1767	0	1848
Q Serve(g_s), s	0.1	0.0	10.5	0.2	0.0	17.2	3.8	0.0	12.7	7.8	0.0	9.8
Cycle Q Clear(g_c), s	0.1	0.0	10.5	0.2	0.0	17.2	3.8	0.0	12.7	7.8	0.0	9.8
Prop In Lane	1.00		0.26	1.00		0.53	1.00		0.05	1.00		0.02
Lane Grp Cap(c), veh/h	11	0	533	22	0	520	176	0	441	253	0	523
V/C Ratio(X)	0.27	0.00	0.61	0.28	0.00	0.88	0.60	0.00	0.83	0.83	0.00	0.60
Avail Cap(c_a), veh/h	205	0	686	205	0	656	205	0	712	258	0	771
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	0.0	20.1	32.9	0.0	22.1	28.9	0.0	24.2	28.0	0.0	20.8
Incr Delay (d2), s/veh	12.3	0.0	1.1	6.7	0.0	10.9	3.5	0.0	4.6	20.2	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	3.8	0.1	0.0	7.2	1.6	0.0	5.2	4.3	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.5	0.0	21.2	39.6	0.0	33.0	32.4	0.0	28.8	48.2	0.0	21.9
LnGrp LOS	D		C	D		C	C		C	D		C
Approach Vol, veh/h		328			463			472			524	
Approach Delay, s/veh		21.5			33.1			29.6			32.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	22.1	5.0	26.2	10.9	25.0	4.6	26.6
Change Period (Y+Rc), s	4.2	6.0	4.2	6.0	4.2	6.0	4.2	6.0
Max Green Setting (Gmax), s	9.8	26.0	7.8	26.0	7.8	28.0	7.8	26.0
Max Q Clear Time (g_c+I1), s	9.8	14.7	2.2	12.5	5.8	11.8	2.1	19.2
Green Ext Time (p_c), s	0.0	1.4	0.0	1.3	0.0	1.3	0.0	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	29.9
HCM 7th LOS	C

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	2	1187	82	52	1036	60	77
Future Volume (veh/h)	2	1187	82	52	1036	60	77
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		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
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h		1290	89	57	1126	65	84
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		3	3	3	3	3	3
Cap, veh/h		1502	668	650	2962	126	112
Arrive On Green		0.43	0.43	0.74	1.00	0.07	0.07
Sat Flow, veh/h		3618	1569	1767	3618	1767	1572
Grp Volume(v), veh/h		1290	89	57	1126	65	84
Grp Sat Flow(s),veh/h/ln		1763	1569	1767	1763	1767	1572
Q Serve(g_s), s		41.1	4.3	1.1	0.0	4.4	6.5
Cycle Q Clear(g_c), s		41.1	4.3	1.1	0.0	4.4	6.5
Prop In Lane			1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		1502	668	650	2962	126	112
V/C Ratio(X)		0.86	0.13	0.09	0.38	0.52	0.75
Avail Cap(c_a), veh/h		1913	851	650	2962	466	415
HCM Platoon Ratio		1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.60	0.60	1.00	1.00
Uniform Delay (d), s/veh		32.2	21.6	10.5	0.0	55.5	56.5
Incr Delay (d2), s/veh		6.6	0.4	0.0	0.2	3.2	9.6
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		17.6	1.6	0.4	0.1	2.0	2.8
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		38.8	22.1	10.5	0.2	58.8	66.1
LnGrp LOS		D	C	B	A	E	E
Approach Vol, veh/h		1379			1183	149	
Approach Delay, s/veh		37.7			0.7	62.9	
Approach LOS		D			A	E	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	14.1	51.3	58.5	109.9
Change Period (Y+Rc), s	5.3	5.7	* 5.7	5.7
Max Green Setting (Gmax), s	32.7	8.8	* 67	68.3
Max Q Clear Time (g_c+I1), s	8.5	3.1	43.1	2.0
Green Ext Time (p_c), s	0.4	0.0	9.8	9.4

Intersection Summary	
HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes
User approved ignoring U-Turning movement.
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	944	106	128	985	116	139	233	151	97	225	45
Future Volume (veh/h)	75	944	106	128	985	116	139	233	151	97	225	45
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	85	1073	120	145	1119	132	158	265	172	110	256	51
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	313	1688	753	170	1225	144	182	312	265	151	296	251
Arrive On Green	0.24	0.64	0.64	0.10	0.39	0.39	0.10	0.17	0.17	0.09	0.16	0.16
Sat Flow, veh/h	1767	3526	1572	1767	3177	374	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	85	1073	120	145	620	631	158	265	172	110	256	51
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1788	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	4.9	23.0	3.8	10.0	41.3	41.5	10.9	17.2	10.0	7.5	16.7	2.4
Cycle Q Clear(g_c), s	4.9	23.0	3.8	10.0	41.3	41.5	10.9	17.2	10.0	7.5	16.7	2.4
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	1688	753	170	680	690	182	312	265	151	296	251
V/C Ratio(X)	0.27	0.64	0.16	0.85	0.91	0.91	0.87	0.85	0.65	0.73	0.86	0.20
Avail Cap(c_a), veh/h	313	1688	753	182	729	740	182	519	440	154	479	406
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	15.9	12.4	55.1	36.1	36.1	54.8	50.0	30.2	55.3	50.8	20.7
Incr Delay (d2), s/veh	0.4	1.5	0.4	28.6	18.6	18.8	32.7	6.8	2.7	15.7	9.1	0.4
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	2.1	7.1	1.3	5.7	20.1	20.5	6.4	8.3	3.8	3.9	8.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.2	17.5	12.8	83.8	54.7	54.9	87.5	56.8	32.9	71.0	60.0	21.1
LnGrp LOS	D	B	B	F	D	D	F	E	C	E	E	C
Approach Vol, veh/h		1278			1396			595			417	
Approach Delay, s/veh		18.6			57.8			58.0			58.1	
Approach LOS		B			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	26.2	16.2	65.1	17.0	25.8	27.7	53.5
Change Period (Y+Rc), s	6.0	* 5.3	4.2	5.7	4.2	6.0	5.7	* 5.7
Max Green Setting (Gmax), s	10.8	* 35	12.8	46.3	12.8	32.0	7.8	* 51
Max Q Clear Time (g_c+I1), s	9.5	19.2	12.0	25.0	12.9	18.7	6.9	43.5
Green Ext Time (p_c), s	0.0	1.7	0.0	7.5	0.0	1.1	0.0	4.3

Intersection Summary	
HCM 7th Control Delay, s/veh	44.3
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	23	128	31	374	182	249	181	204
Average Queue (ft)	1	69	8	177	75	113	95	96
95th Queue (ft)	9	109	28	309	130	191	158	163
Link Distance (ft)		2601		3212		2588		2588
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250		250		250		250	
Storage Blk Time (%)				3		0		
Queuing Penalty (veh)				0		0		

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	25	94	85
Average Queue (ft)	5	41	22
95th Queue (ft)	22	70	61
Link Distance (ft)	4816	1433	2588
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Clovis Avenue & Baron Avenue

Movement	WB	WB	NB	SB
Directions Served	L	R	U	LT
Maximum Queue (ft)	200	379	31	50
Average Queue (ft)	107	44	8	3
95th Queue (ft)	193	184	29	19
Link Distance (ft)		1517		1658
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100		140	
Storage Blk Time (%)	15			
Queuing Penalty (veh)	6			

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	323	340	180	159	186	199	109	64
Average Queue (ft)	96	100	29	76	48	60	25	25
95th Queue (ft)	218	228	101	139	148	166	72	53
Link Distance (ft)	2694	2694			2549	2549		2538
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100	250			220	
Storage Blk Time (%)	1	6						
Queuing Penalty (veh)	0	7						

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	113	348	411	150	339	363	368	241	235	84	160	310
Average Queue (ft)	36	176	198	63	147	138	145	102	103	28	93	174
95th Queue (ft)	85	305	340	158	262	303	300	180	186	62	139	266
Link Distance (ft)		2549	2549			1269	1269		2555	2555		2578
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220			230			260	
Storage Blk Time (%)		3	39	2	0	6		0	0			60
Queuing Penalty (veh)		1	49	7	2	12		0	0			107

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	45
Average Queue (ft)	27
95th Queue (ft)	46
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	15
Storage Blk Time (%)	6
Queuing Penalty (veh)	22

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	96	302	405	392	110	185	237	317	296	275	219	139
Average Queue (ft)	41	67	133	96	38	76	100	175	174	32	112	59
95th Queue (ft)	88	155	293	258	101	129	163	286	286	140	179	113
Link Distance (ft)			1207	1207				2012	2012			2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			175	230	
Storage Blk Time (%)		0	2	10	2		0	1	8		0	
Queuing Penalty (veh)		0	2	16	8		0	3	7		0	

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	175	100	182	187	187	192	91
Average Queue (ft)	60	28	56	48	112	117	47
95th Queue (ft)	116	69	111	104	170	172	83
Link Distance (ft)	2554				1269	1269	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		50	250	250			100
Storage Blk Time (%)	16	1				15	0
Queuing Penalty (veh)	13	1				26	1

Network Summary

Network wide Queuing Penalty: 289

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	30	181	53	204	118	310	186	202
Average Queue (ft)	4	88	5	100	53	125	100	82
95th Queue (ft)	20	150	27	172	97	210	171	154
Link Distance (ft)		2601		3212		2588		2588
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250		250		250		250	
Storage Blk Time (%)						0		
Queuing Penalty (veh)						0		

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	23	96	131
Average Queue (ft)	1	43	30
95th Queue (ft)	8	79	89
Link Distance (ft)	4816	1429	2588
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Clovis Avenue & Baron Avenue

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	U	R	LT
Maximum Queue (ft)	172	20	29	22	74
Average Queue (ft)	75	9	4	2	21
95th Queue (ft)	133	24	21	13	65
Link Distance (ft)		1505		1268	1679
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100		140		
Storage Blk Time (%)	4				
Queuing Penalty (veh)	0				

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	U	T	T	R	L	T	T	L	R
Maximum Queue (ft)	28	334	348	180	369	448	441	94	87
Average Queue (ft)	2	143	137	18	52	83	107	44	28
95th Queue (ft)	14	267	270	73	163	253	270	85	57
Link Distance (ft)		2694	2694			2549	2549		2538
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	250			100	250			220	
Storage Blk Time (%)		2	13			1			
Queuing Penalty (veh)		0	10			1			

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	359	420	459	150	159	461	441	213	268	150	199	284
Average Queue (ft)	66	181	185	52	94	162	180	113	130	51	93	143
95th Queue (ft)	179	359	358	143	149	305	325	193	220	110	176	226
Link Distance (ft)		2549	2549			1269	1269		2555	2555		2578
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220			230			260	
Storage Blk Time (%)		3	34	1		4		0	0			25
Queuing Penalty (veh)		3	36	3		5		0	1			36

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB
Directions Served	R
Maximum Queue (ft)	200
Average Queue (ft)	42
95th Queue (ft)	146
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	244	364	601	563	110	110	128	375	319	275	287	348
Average Queue (ft)	134	157	195	170	37	46	68	217	215	86	166	130
95th Queue (ft)	226	279	375	352	103	90	105	315	313	232	263	245
Link Distance (ft)			1207	1207				2012	2012			2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			175	230	
Storage Blk Time (%)	0	0	7	25	1			4	15		3	0
Queuing Penalty (veh)	1	2	15	34	4			6	24		7	1

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	353	100	90	112	147	148	89
Average Queue (ft)	152	73	43	44	69	71	33
95th Queue (ft)	272	130	75	88	122	130	71
Link Distance (ft)	2554				1268	1268	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		50	250	250			100
Storage Blk Time (%)	36	5				3	0
Queuing Penalty (veh)	66	10				4	0

Network Summary

Network wide Queuing Penalty: 268

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	521	Opposing Demand Flow Rate, veh/h	433
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.53968	Speed Power Coefficient	0.49163
PF Slope Coefficient	-1.25964	PF Power Coefficient	0.79182
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.1

Vehicle Results

Average Speed, mi/h	56.1	Percent Followers, %	52.9
Segment Travel Time, minutes	1.07	Follower Density, followers/mi/ln	4.9
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	4.9	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	616	Opposing Demand Flow Rate, veh/h	424
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.36

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.53747	Speed Power Coefficient	0.49299
PF Slope Coefficient	-1.25849	PF Power Coefficient	0.79226
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.8

Vehicle Results

Average Speed, mi/h	55.8	Percent Followers, %	57.6
Segment Travel Time, minutes	1.07	Follower Density, followers/mi/ln	6.4
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	6.4	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	438	Opposing Demand Flow Rate, veh/h	352
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.51850	Speed Power Coefficient	0.50508
PF Slope Coefficient	-1.24815	PF Power Coefficient	0.79601
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.4

Vehicle Results

Average Speed, mi/h	56.4	Percent Followers, %	47.7
Segment Travel Time, minutes	1.06	Follower Density, followers/mi/ln	3.7
Vehicle LOS	B		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	3.7	B

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	482	Opposing Demand Flow Rate, veh/h	417
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.53568	Speed Power Coefficient	0.49409
PF Slope Coefficient	-1.25755	PF Power Coefficient	0.79261
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.2

Vehicle Results

Average Speed, mi/h	56.2	Percent Followers, %	50.6
Segment Travel Time, minutes	1.07	Follower Density, followers/mi/ln	4.3
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	4.3	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	984	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.58

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.5

Vehicle Results

Average Speed, mi/h	48.5	Percent Followers, %	73.9
Segment Travel Time, minutes	1.24	Follower Density, followers/mi/ln	15.0
Vehicle LOS	D		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	15.0	D

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1248	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	20.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.1

Vehicle Results

Average Speed, mi/h	48.1	Percent Followers, %	79.8
Segment Travel Time, minutes	1.25	Follower Density, followers/mi/ln	20.7
Vehicle LOS	E		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	20.7	E

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1185	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.70

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	19.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.2

Vehicle Results

Average Speed, mi/h	48.2	Percent Followers, %	78.5
Segment Travel Time, minutes	1.24	Follower Density, followers/mi/ln	19.3
Vehicle LOS	E		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	19.3	E

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.79

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	22.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.0

Vehicle Results

Average Speed, mi/h	48.0	Percent Followers, %	81.5
Segment Travel Time, minutes	1.25	Follower Density, followers/mi/ln	22.8
Vehicle LOS	E		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	22.8	E

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1055	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	618
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	599	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.15
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 2 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity

Volume(V) veh/h	866	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	506
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.25

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	9.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	599	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.15
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1271	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	744
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.37

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	14.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	722	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.25
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		
Direction 2 Adjustment Factors			
Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		
Direction 2 Demand and Capacity			
Volume(V) veh/h	1098	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	642
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32
Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}),veh/h	722	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.25
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1015	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.89	Flow Rate (V_p), pc/h/ln	588
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	570	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.13
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 2 Adjustment Factors			
Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity			
Volume(V) veh/h	1055	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.89	Flow Rate (V_p), pc/h/ln	610
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}),veh/h	570	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.13
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Near Term plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1125	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	666
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	647	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.19
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 2 Adjustment Factors			
Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity			
Volume(V) veh/h	1169	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	692
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.35

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	13.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}),veh/h	647	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.19
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Appendix H: Cumulative Year 2046 plus Project Traffic Conditions

Intersection	
Intersection Delay, s/veh	181.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	219	111	6	272	298	147	313	13	153	292	5
Future Vol, veh/h	3	219	111	6	272	298	147	313	13	153	292	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	226	114	6	280	307	152	323	13	158	301	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	68.4	265.7	180.2	158.2
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	1%	1%	34%
Vol Thru, %	66%	66%	47%	65%
Vol Right, %	3%	33%	52%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	473	333	576	450
LT Vol	147	3	6	153
Through Vol	313	219	272	292
RT Vol	13	111	298	5
Lane Flow Rate	488	343	594	464
Geometry Grp	1	1	1	1
Degree of Util (X)	1.278	0.901	1.498	1.218
Departure Headway (Hd)	11.633	12.669	10.519	11.84
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	317	288	350	311
Service Time	9.633	10.669	8.519	9.84
HCM Lane V/C Ratio	1.539	1.191	1.697	1.492
HCM Control Delay, s/veh	180.2	68.4	265.7	158.2
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	18.7	8.2	28.1	16.6

Intersection												
Int Delay, s/veh	7.9											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	23	30	159	12	42	49	33	440	10	25	428	26
Future Vol, veh/h	23	30	159	12	42	49	33	440	10	25	428	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	24	32	169	13	45	52	35	468	11	27	455	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1083	1071	469	1068	1080	473	483	0	0	479	0	0
Stage 1	522	522	-	544	544	-	-	-	-	-	-	-
Stage 2	561	549	-	524	536	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	194	220	592	199	217	589	1075	-	-	1078	-	-
Stage 1	536	529	-	522	518	-	-	-	-	-	-	-
Stage 2	511	515	-	534	522	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	129	203	592	112	201	589	1075	-	-	1078	-	-
Mov Cap-2 Maneuver	129	203	-	112	201	-	-	-	-	-	-	-
Stage 1	518	511	-	498	495	-	-	-	-	-	-	-
Stage 2	405	492	-	346	504	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	30.97	28.97	0.58	0.44
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	122	-	-	356	257	93	-	-
HCM Lane V/C Ratio	0.033	-	-	0.633	0.426	0.025	-	-
HCM Control Delay (s/veh)	8.5	0	-	31	29	8.4	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	4.1	2	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	41	42	378	915	16
Future Vol, veh/h	25	41	42	378	915	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	27	45	46	411	995	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1505	1003	1012	0	-	0
Stage 1	1003	-	-	-	-	-
Stage 2	502	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	133	292	681	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	292	681	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	322	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	34.9	1.07	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	180	-	190	-	-
HCM Lane V/C Ratio	0.067	-	0.377	-	-
HCM Control Delay (s/veh)	10.7	0	34.9	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	-	-

Intersection	
Int Delay, s/veh	236.8

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	428	37	38	373	208	6	964
Future Vol, veh/h	428	37	38	373	208	6	964
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	100	0	140	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	465	40	41	405	226	7	1048

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	1466	405	-	0	0	632	0
Stage 1	405	-	-	-	-	-	-
Stage 2	1061	-	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	-	2.227	-
Pot Cap-1 Maneuver	~ 140	643	-	-	-	946	-
Stage 1	671	-	-	-	-	-	-
Stage 2	~ 331	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	~ 138	643	-	-	-	946	-
Mov Cap-2 Maneuver	~ 138	-	-	-	-	-	-
Stage 1	671	-	-	-	-	-	-
Stage 2	~ 326	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 1045.92		0.05
HCM LOS	F		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	138	643	11	-
HCM Lane V/C Ratio	-	-	-	3.374	0.063	0.007	-
HCM Control Delay (s/veh)	-	-	$ 1135.4		11	8.8	0
HCM Lane LOS	-	-	-	F	B	A	A
HCM 95th %tile Q(veh)	-	-	-	44.8	0.2	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	527.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	950	149	224	836	50	30	49	86	117	74	176
Future Vol, veh/h	18	950	149	224	836	50	30	49	86	117	74	176
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	100	250	-	-	220	-	-	220	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	20	1033	162	243	909	54	33	53	93	127	80	191

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	963	0	0	1196	0	0	2509	2523	517	2005	2658	936
Stage 1	-	-	-	-	-	-	1073	1073	-	1423	1423	-
Stage 2	-	-	-	-	-	-	1436	1450	-	582	1235	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.945	7.345	6.545	6.245
Critical Hdwy Stg 1	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	708	-	-	577	-	-	~ 16	~ 27	502	~ 39	~ 22	319
Stage 1	-	-	-	-	-	-	235	294	-	167	200	-
Stage 2	-	-	-	-	-	-	164	194	-	465	246	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	708	-	-	577	-	-	~ 4	~ 15	501	~ 18	~ 13	319
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 4	~ 15	-	~ 18	~ 13	-
Stage 1	-	-	-	-	-	-	228	286	-	~ 96	115	-
Stage 2	-	-	-	-	-	-	~ 11	112	-	299	239	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.16	3.17	$ 2130.04	$ 2997.77
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	4	40	708	-	-	577	-	-	18	39
HCM Lane V/C Ratio	8.85	3.659	0.028	-	-	0.422	-	-	7.134	7.017
HCM Control Delay (s/veh)	$ 5395.8	$ 1404.3	10.2	-	-	15.7	-	-	$ 3184.9	$ 2910.2
HCM Lane LOS	F	F	B	-	-	C	-	-	F	F
HCM 95th %tile Q(veh)	5.7	16.6	0.1	-	-	2.1	-	-	16.6	32.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	850	269	201	910	199	143	190	70	181	432	110
Future Volume (veh/h)	40	850	269	201	910	199	143	190	70	181	432	110
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	904	286	214	968	212	152	202	74	193	460	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	90	1279	570	240	808	685	140	243	206	352	483	409
Arrive On Green	0.05	0.36	0.36	0.14	0.44	0.44	0.08	0.13	0.13	0.20	0.26	0.26
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	43	904	286	214	968	212	152	202	74	193	460	117
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	2.9	27.3	17.6	14.8	54.0	10.9	9.8	13.2	4.0	12.2	30.2	5.9
Cycle Q Clear(g_c), s	2.9	27.3	17.6	14.8	54.0	10.9	9.8	13.2	4.0	12.2	30.2	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	1279	570	240	808	685	140	243	206	352	483	409
V/C Ratio(X)	0.48	0.71	0.50	0.89	1.20	0.31	1.09	0.83	0.36	0.55	0.95	0.29
Avail Cap(c_a), veh/h	111	1279	570	268	808	685	140	479	406	352	483	410
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	33.9	30.8	52.7	35.0	22.8	57.1	52.5	28.0	44.6	45.1	23.7
Incr Delay (d2), s/veh	3.8	3.3	3.1	26.9	101.0	1.2	101.8	7.2	1.1	1.8	29.3	0.4
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	1.4	11.6	6.8	8.1	45.1	4.1	8.2	6.5	2.1	5.3	17.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.1	37.2	33.9	79.6	136.0	24.0	158.9	59.7	29.1	46.4	74.4	24.0
LnGrp LOS	E	D	C	E	F	C	F	E	C	D	E	C
Approach Vol, veh/h		1233			1394			428			770	
Approach Delay, s/veh		37.3			110.3			89.6			59.7	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.7	21.5	21.1	50.7	14.0	38.3	12.0	59.7
Change Period (Y+Rc), s	6.0	* 5.3	4.2	5.7	4.2	6.0	5.7	* 5.7
Max Green Setting (Gmax), s	10.8	* 32	18.8	43.0	9.8	32.3	7.8	* 54
Max Q Clear Time (g_c+I1), s	14.2	15.2	16.8	29.3	11.8	32.2	4.9	56.0
Green Ext Time (p_c), s	0.0	1.1	0.1	5.6	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	74.3
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	792	185	247	854	149	192	347	81	401	820	169
Future Volume (veh/h)	110	792	185	247	854	149	192	347	81	401	820	169
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	120	861	201	268	928	162	209	377	88	436	891	184
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	212	967	431	490	1295	578	236	507	226	897	990	441
Arrive On Green	0.06	0.27	0.27	0.14	0.37	0.37	0.13	0.14	0.14	0.26	0.28	0.28
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1572	3428	3526	1569
Grp Volume(v), veh/h	120	861	201	268	928	162	209	377	88	436	891	184
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1572	1714	1763	1569
Q Serve(g_s), s	4.2	29.1	9.3	9.0	28.0	4.0	14.4	12.7	6.3	13.3	30.2	11.8
Cycle Q Clear(g_c), s	4.2	29.1	9.3	9.0	28.0	4.0	14.4	12.7	6.3	13.3	30.2	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	967	431	490	1295	578	236	507	226	897	990	441
V/C Ratio(X)	0.57	0.89	0.47	0.55	0.72	0.28	0.89	0.74	0.39	0.49	0.90	0.42
Avail Cap(c_a), veh/h	216	1052	469	490	1295	578	268	1052	469	897	1052	468
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.5	43.2	18.7	49.4	33.7	5.5	52.8	50.9	48.2	38.7	42.9	36.3
Incr Delay (d2), s/veh	3.3	12.1	3.6	1.3	3.4	1.2	26.0	2.2	1.1	0.4	10.1	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	1.9	13.7	3.6	3.8	12.0	3.2	7.9	5.6	2.5	5.5	14.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.8	55.3	22.3	50.7	37.1	6.7	78.8	53.1	49.3	39.1	53.0	36.9
LnGrp LOS	E	E	C	D	D	A	E	D	D	D	D	D
Approach Vol, veh/h		1182			1358			674			1511	
Approach Delay, s/veh		50.2			36.2			60.6			47.0	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.8	23.1	23.4	39.7	20.7	40.1	11.9	51.3
Change Period (Y+Rc), s	5.3	* 5.3	5.7	* 5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	18.8	* 37	11.8	* 37	18.8	37.0	7.8	41.0
Max Q Clear Time (g_c+I1), s	15.3	14.7	11.0	31.1	16.4	32.2	6.2	30.0
Green Ext Time (p_c), s	0.6	2.5	0.1	2.9	0.1	2.6	0.0	4.7

Intersection Summary	
HCM 7th Control Delay, s/veh	46.6
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	174.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	97	228	105	5	201	222	97	304	16	184	274	6
Future Vol, veh/h	97	228	105	5	201	222	97	304	16	184	274	6
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
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	105	248	114	5	218	241	105	330	17	200	298	7
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	166.8	154.5	159.9	214.2
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	23%	1%	40%
Vol Thru, %	73%	53%	47%	59%
Vol Right, %	4%	24%	52%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	417	430	428	464
LT Vol	97	97	5	184
Through Vol	304	228	201	274
RT Vol	16	105	222	6
Lane Flow Rate	453	467	465	504
Geometry Grp	1	1	1	1
Degree of Util (X)	1.218	1.239	1.207	1.362
Departure Headway (Hd)	12.275	12.036	11.93	11.846
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	299	304	307	313
Service Time	10.275	10.036	9.93	9.846
HCM Lane V/C Ratio	1.515	1.536	1.515	1.61
HCM Control Delay, s/veh	159.9	166.8	154.5	214.2
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	16.2	17.1	16.2	21.1

Intersection												
Int Delay, s/veh	10.5											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	23	68	47	17	14	32	67	508	39	32	357	62
Future Vol, veh/h	23	68	47	17	14	32	67	508	39	32	357	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	25	74	51	18	15	35	73	552	42	35	388	67

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1197	1232	422	1214	1244	573	455	0	0	595	0	0
Stage 1	491	491	-	719	719	-	-	-	-	-	-	-
Stage 2	705	740	-	495	525	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	162	176	630	158	173	517	1100	-	-	977	-	-
Stage 1	557	546	-	418	431	-	-	-	-	-	-	-
Stage 2	425	422	-	555	528	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	151	630	68	149	517	1100	-	-	977	-	-
Mov Cap-2 Maneuver	118	151	-	68	149	-	-	-	-	-	-	-
Stage 1	530	520	-	376	388	-	-	-	-	-	-	-
Stage 2	343	380	-	416	502	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	69.62	45.22	0.93	0.63
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	194	-	-	192	155	124	-	-
HCM Lane V/C Ratio	0.066	-	-	0.782	0.44	0.036	-	-
HCM Control Delay (s/veh)	8.5	0	-	69.6	45.2	8.8	0	-
HCM Lane LOS	A	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	5.3	2	0.1	-	-

Intersection						
Int Delay, s/veh	3.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	58	54	771	416	13
Future Vol, veh/h	49	58	54	771	416	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	53	63	59	838	452	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1415	459	466	0	-	0
Stage 1	459	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	151	600	1090	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	136	600	1090	-	-	-
Mov Cap-2 Maneuver	136	-	-	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	372	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	34.79	0.56	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	118	-	234	-	-
HCM Lane V/C Ratio	0.054	-	0.498	-	-
HCM Control Delay (s/veh)	8.5	0	34.8	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	2.5	-	-

Intersection	
Int Delay, s/veh	111.6

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	319	14	23	774	482	22	489
Future Vol, veh/h	319	14	23	774	482	22	489
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	100	0	140	-	0	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3
Mvmt Flow	347	15	25	841	524	24	532

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	1421	841	-	0	0	1365	0
Stage 1	841	-	-	-	-	-	-
Stage 2	579	-	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	-	2.227	-
Pot Cap-1 Maneuver	~ 149	363	-	-	-	500	-
Stage 1	421	-	-	-	-	-	-
Stage 2	558	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	~ 139	363	-	-	-	500	-
Mov Cap-2 Maneuver	~ 139	-	-	-	-	-	-
Stage 1	421	-	-	-	-	-	-
Stage 2	520	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	$ 710.75		0.54
HCM LOS	F		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	139	363	77	-
HCM Lane V/C Ratio	-	-	-	2.488	0.042	0.048	-
HCM Control Delay (s/veh)	-	-	-	$ 741.3	15.4	12.6	0
HCM Lane LOS	-	-	-	F	C	B	A
HCM 95th %tile Q(veh)	-	-	-	30.2	0.1	0.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	374.8

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	2	66	1187	85	67	1036	140	66	84	77	12	63	13
Future Vol, veh/h	2	66	1187	85	67	1036	140	66	84	77	12	63	13
Conflicting Peds, #/hr	0	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	250	-	100	250	-	-	220	-	-	220	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	72	1290	92	73	1126	152	72	91	84	13	68	14

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	-	1278	0	0	1385	0	0	2746	2864	647	2186	2880	1202
Stage 1	-	-	-	-	-	-	-	1440	1440	-	1348	1348	-
Stage 2	-	-	-	-	-	-	-	1306	1424	-	839	1532	-
Critical Hdwy	-	4.145	-	-	4.145	-	-	7.345	6.545	6.945	7.345	6.545	6.245
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Follow-up Hdwy	-	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	-	537	-	-	488	-	-	~ 11	~ 16	412	29	~ 16	223
Stage 1	-	-	-	-	-	-	-	139	196	-	184	217	-
Stage 2	-	-	-	-	-	-	-	195	199	-	326	176	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	~ -34	~ -34	-	-	488	-	-	~ 7	~ 12	412	17	~ 12	223
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 7	~ 12	-	17	~ 12	-
Stage 1	-	-	-	-	-	-	-	120	168	-	157	185	-
Stage 2	-	-	-	-	-	-	-	98	170	-	102	152	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v		0.74	$ 3833.38	$ 2442.56
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	7	22	+	-	-	488	-	-	17	14
HCM Lane V/C Ratio	9.634	7.831	-	-	-	0.149	-	-	0.78	5.928
HCM Control Delay (s/veh)	$ 4854	$ 3415	-	-	-	13.7	-	-	$ 450.3	$ 2757.1
HCM Lane LOS	F	F	-	-	-	B	-	-	F	F
HCM 95th %tile Q(veh)	10.6	22.1	-	-	-	0.5	-	-	2	11.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	944	176	128	985	178	301	441	151	141	272	45
Future Volume (veh/h)	75	944	176	128	985	178	301	441	151	141	272	45
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	82	1026	191	139	1071	193	327	479	164	153	296	49
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	871	2925	1304	164	775	657	215	507	430	160	466	395
Arrive On Green	0.49	0.83	0.83	0.09	0.42	0.42	0.12	0.27	0.27	0.09	0.25	0.25
Sat Flow, veh/h	1767	3526	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	82	1026	191	139	1071	193	327	479	164	153	296	49
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	3.2	9.1	3.1	10.1	54.3	10.6	15.8	32.9	15.3	11.2	18.5	2.6
Cycle Q Clear(g_c), s	3.2	9.1	3.1	10.1	54.3	10.6	15.8	32.9	15.3	11.2	18.5	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	871	2925	1304	164	775	657	215	507	430	160	466	395
V/C Ratio(X)	0.09	0.35	0.15	0.85	1.38	0.29	1.52	0.94	0.38	0.95	0.64	0.12
Avail Cap(c_a), veh/h	871	2925	1304	188	775	657	215	524	444	160	466	395
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.5	2.7	2.1	58.1	37.9	25.1	57.1	46.3	74.1	58.8	43.4	25.4
Incr Delay (d2), s/veh	0.0	0.3	0.2	26.5	179.9	1.1	257.4	25.8	0.6	57.3	2.8	0.1
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	1.3	1.8	0.6	5.6	61.7	4.0	22.2	18.3	6.1	7.4	8.5	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.6	3.0	2.4	84.5	217.7	26.3	314.5	72.1	74.6	116.1	46.2	25.5
LnGrp LOS	B	A	A	F	F	C	F	E	E	F	D	C
Approach Vol, veh/h		1299			1403			970			498	
Approach Delay, s/veh		3.8			178.2			154.2			65.7	
Approach LOS		A			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	40.8	16.2	115.3	20.0	38.6	71.5	60.0
Change Period (Y+Rc), s	6.0	* 5.3	4.2	5.7	4.2	6.0	5.7	* 5.7
Max Green Setting (Gmax), s	11.8	* 37	13.8	48.3	15.8	32.0	7.8	* 54
Max Q Clear Time (g_c+I1), s	13.2	34.9	12.1	11.1	17.8	20.5	5.2	56.3
Green Ext Time (p_c), s	0.0	0.6	0.1	8.6	0.0	1.2	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	104.9
HCM 7th LOS	F

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	800	159	151	940	329	236	671	182	268	397	129
Future Volume (veh/h)	222	800	159	151	940	329	236	671	182	268	397	129
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	241	870	173	164	1022	358	257	729	198	291	432	140
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	258	999	446	680	1473	657	281	873	389	348	699	312
Arrive On Green	0.08	0.28	0.28	0.20	0.42	0.42	0.16	0.25	0.25	0.10	0.20	0.20
Sat Flow, veh/h	3428	3526	1572	3428	3526	1572	1767	3526	1571	3428	3526	1570
Grp Volume(v), veh/h	241	870	173	164	1022	358	257	729	198	291	432	140
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1763	1572	1767	1763	1571	1714	1763	1570
Q Serve(g_s), s	9.1	30.5	7.7	5.2	30.9	15.2	18.6	25.5	14.1	10.8	14.6	10.2
Cycle Q Clear(g_c), s	9.1	30.5	7.7	5.2	30.9	15.2	18.6	25.5	14.1	10.8	14.6	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	999	446	680	1473	657	281	873	389	348	699	312
V/C Ratio(X)	0.93	0.87	0.39	0.24	0.69	0.54	0.91	0.84	0.51	0.84	0.62	0.45
Avail Cap(c_a), veh/h	258	1166	520	680	1473	657	296	1139	507	443	1003	447
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	44.3	16.9	43.9	31.0	13.2	53.8	46.4	42.1	57.3	47.6	45.9
Incr Delay (d2), s/veh	38.1	10.3	2.5	0.2	2.7	3.2	30.2	4.3	1.0	10.6	0.9	1.0
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	5.2	14.2	4.4	2.2	13.0	5.5	10.4	11.4	5.4	5.1	6.3	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	97.9	54.6	19.5	44.1	33.7	16.4	83.9	50.7	43.1	68.0	48.5	46.9
LnGrp LOS	F	D	B	D	C	B	F	D	D	E	D	D
Approach Vol, veh/h		1284			1544			1184			863	
Approach Delay, s/veh		58.0			30.8			56.6			54.8	
Approach LOS		E			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	37.5	31.5	42.5	24.9	31.1	14.0	60.0
Change Period (Y+Rc), s	5.3	* 5.3	5.7	* 5.7	4.2	5.3	4.2	5.7
Max Green Setting (Gmax), s	16.8	* 42	8.8	* 43	21.8	37.0	9.8	42.0
Max Q Clear Time (g_c+I1), s	12.8	27.5	7.2	32.5	20.6	16.6	11.1	32.9
Green Ext Time (p_c), s	0.4	4.5	0.1	4.3	0.1	2.9	0.0	5.0

Intersection Summary	
HCM 7th Control Delay, s/veh	48.5
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	219	111	6	272	298	147	313	13	153	292	5
Future Volume (veh/h)	3	219	111	6	272	298	147	313	13	153	292	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	3	226	114	6	280	307	152	323	13	158	301	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	11	423	214	22	299	328	189	395	16	196	412	7
Arrive On Green	0.01	0.36	0.36	0.01	0.37	0.37	0.11	0.22	0.22	0.11	0.23	0.23
Sat Flow, veh/h	1767	1163	587	1767	809	887	1767	1771	71	1767	1820	30
Grp Volume(v), veh/h	3	0	340	6	0	587	152	0	336	158	0	306
Grp Sat Flow(s),veh/h/ln	1767	0	1750	1767	0	1696	1767	0	1843	1767	0	1850
Q Serve(g_s), s	0.1	0.0	10.8	0.2	0.0	23.4	5.9	0.0	12.2	6.1	0.0	10.8
Cycle Q Clear(g_c), s	0.1	0.0	10.8	0.2	0.0	23.4	5.9	0.0	12.2	6.1	0.0	10.8
Prop In Lane	1.00		0.34	1.00		0.52	1.00		0.04	1.00		0.02
Lane Grp Cap(c), veh/h	11	0	637	22	0	627	189	0	410	196	0	419
V/C Ratio(X)	0.27	0.00	0.53	0.28	0.00	0.94	0.80	0.00	0.82	0.81	0.00	0.73
Avail Cap(c_a), veh/h	196	0	672	196	0	651	221	0	681	221	0	684
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	17.6	34.4	0.0	21.3	30.7	0.0	26.0	30.5	0.0	25.2
Incr Delay (d2), s/veh	12.4	0.0	0.7	6.7	0.0	20.6	16.6	0.0	4.1	17.6	0.0	2.5
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	0.1	0.0	3.7	0.1	0.0	11.0	3.1	0.0	5.0	3.3	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.1	0.0	18.4	41.1	0.0	41.9	47.3	0.0	30.0	48.2	0.0	27.7
LnGrp LOS	D		B	D		D	D		C	D		C
Approach Vol, veh/h		343			593			488			464	
Approach Delay, s/veh		18.6			41.9			35.4			34.6	
Approach LOS		B			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	21.7	5.1	31.6	11.7	21.9	4.6	32.0
Change Period (Y+Rc), s	4.2	6.0	4.2	6.0	4.2	6.0	4.2	6.0
Max Green Setting (Gmax), s	8.8	26.0	7.8	27.0	8.8	26.0	7.8	27.0
Max Q Clear Time (g_c+I1), s	8.1	14.2	2.2	12.8	7.9	12.8	2.1	25.4
Green Ext Time (p_c), s	0.0	1.3	0.0	1.5	0.0	1.2	0.0	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	34.2
HCM 7th LOS	C

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	30	159	12	42	49	33	440	10	25	428	26
Future Vol, veh/h	23	30	159	12	42	49	33	440	10	25	428	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	24	32	169	13	45	52	35	468	11	27	455	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1083	1071	469	1068	1080	473	483	0	0	479	0	0
Stage 1	522	522	-	544	544	-	-	-	-	-	-	-
Stage 2	561	549	-	524	536	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	194	220	592	199	217	589	1075	-	-	1078	-	-
Stage 1	536	529	-	522	518	-	-	-	-	-	-	-
Stage 2	511	515	-	534	522	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	132	207	592	114	205	589	1075	-	-	1078	-	-
Mov Cap-2 Maneuver	132	207	-	114	205	-	-	-	-	-	-	-
Stage 1	523	516	-	505	501	-	-	-	-	-	-	-
Stage 2	410	498	-	349	509	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	17.89	23.58	0.58	0.44
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1075	-	-	132	207	592	114	316	1078	-	-
HCM Lane V/C Ratio	0.033	-	-	0.185	0.154	0.286	0.112	0.307	0.025	-	-
HCM Control Delay (s/veh)	8.5	-	-	38.4	25.5	13.5	40.5	21.4	8.4	-	-
HCM Lane LOS	A	-	-	E	D	B	E	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.5	1.2	0.4	1.3	0.1	-	-

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	428	37	38	373	208	6	964
Future Volume (veh/h)	428	37	38	373	208	6	964
Initial Q (Qb), veh	0	0		0	0	0	0
Lane Width Adj.	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	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No
Adj Sat Flow, veh/h/ln	1856	1856		1856	1856	1856	1856
Adj Flow Rate, veh/h	465	40		405	226	7	1048
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3		3	3	3	3
Cap, veh/h	490	436		1097	929	24	1189
Arrive On Green	0.28	0.28		1.00	1.00	0.01	0.64
Sat Flow, veh/h	1767	1572		1856	1572	1767	1856
Grp Volume(v), veh/h	465	40		405	226	7	1048
Grp Sat Flow(s),veh/h/ln	1767	1572		1856	1572	1767	1856
Q Serve(g_s), s	29.9	2.2		0.0	0.0	0.5	54.1
Cycle Q Clear(g_c), s	29.9	2.2		0.0	0.0	0.5	54.1
Prop In Lane	1.00	1.00			1.00	1.00	
Lane Grp Cap(c), veh/h	490	436		1097	929	24	1189
V/C Ratio(X)	0.95	0.09		0.37	0.24	0.29	0.88
Avail Cap(c_a), veh/h	503	447		1097	929	119	1189
HCM Platoon Ratio	1.00	1.00		2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		0.85	0.85	1.00	1.00
Uniform Delay (d), s/veh	41.1	31.1		0.0	0.0	56.7	17.2
Incr Delay (d2), s/veh	27.5	0.1		0.8	0.5	6.5	9.5
Initial Q Delay(d3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.6	0.8		0.2	0.1	0.2	22.5
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	68.6	31.2		0.8	0.5	63.2	26.7
LnGrp LOS	E	C		A	A	E	C
Approach Vol, veh/h	505			631			1055
Approach Delay, s/veh	65.6			0.7			27.0
Approach LOS	E			A			C

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.8	73.9				79.6		36.4
Change Period (Y+Rc), s	4.2	5.3				5.3		4.2
Max Green Setting (Gmax), s	7.8	61.5				61.5		33.0
Max Q Clear Time (g_c+I1), s	2.5	2.0				56.1		31.9
Green Ext Time (p_c), s	0.0	3.2				3.3		0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	28.3
HCM 7th LOS	C

Notes
User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	950	149	224	836	50	30	49	86	117	74	176
Future Volume (veh/h)	18	950	149	224	836	50	30	49	86	117	74	176
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	20	1033	162	243	909	54	33	53	93	127	80	191
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	508	1584	706	268	1059	472	78	66	115	201	91	218
Arrive On Green	0.29	0.45	0.45	0.20	0.40	0.40	0.04	0.11	0.11	0.11	0.19	0.19
Sat Flow, veh/h	1767	3526	1571	1767	3526	1570	1767	604	1060	1767	486	1161
Grp Volume(v), veh/h	20	1033	162	243	909	54	33	0	146	127	0	271
Grp Sat Flow(s),veh/h/ln	1767	1763	1571	1767	1763	1570	1767	0	1665	1767	0	1647
Q Serve(g_s), s	0.9	26.5	7.3	15.6	27.3	2.5	2.1	0.0	9.9	8.0	0.0	18.6
Cycle Q Clear(g_c), s	0.9	26.5	7.3	15.6	27.3	2.5	2.1	0.0	9.9	8.0	0.0	18.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		0.70
Lane Grp Cap(c), veh/h	508	1584	706	268	1059	472	78	0	181	201	0	309
V/C Ratio(X)	0.04	0.65	0.23	0.91	0.86	0.11	0.42	0.00	0.81	0.63	0.00	0.88
Avail Cap(c_a), veh/h	508	1584	706	271	1428	636	119	0	459	201	0	483
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	24.9	19.6	45.5	32.6	25.1	54.0	0.0	50.5	49.1	0.0	45.8
Incr Delay (d2), s/veh	0.0	2.1	0.8	24.7	6.7	0.4	3.6	0.0	8.2	6.3	0.0	10.9
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	0.4	10.6	2.7	8.0	10.9	0.9	1.0	0.0	4.4	3.8	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.8	27.0	20.4	70.2	39.2	25.5	57.6	0.0	58.7	55.4	0.0	56.7
LnGrp LOS	C	C	C	E	D	C	E		E	E		E
Approach Vol, veh/h		1215			1206			179			398	
Approach Delay, s/veh		26.1			44.9			58.5			56.3	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	17.9	21.8	57.8	9.3	27.1	39.1	40.6
Change Period (Y+Rc), s	5.3	* 5.3	4.2	5.7	4.2	5.3	5.7	* 5.7
Max Green Setting (Gmax), s	9.8	* 32	17.8	37.0	7.8	34.0	7.8	* 47
Max Q Clear Time (g_c+I1), s	10.0	11.9	17.6	28.5	4.1	20.6	2.9	29.3
Green Ext Time (p_c), s	0.0	0.7	0.0	4.4	0.0	1.2	0.0	5.5

Intersection Summary	
HCM 7th Control Delay, s/veh	39.6
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	850	269	201	910	199	143	190	70	181	432	110
Future Volume (veh/h)	40	850	269	201	910	199	143	190	70	181	432	110
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	904	286	214	968	212	152	202	74	193	460	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	243	1003	448	300	1116	498	165	471	399	220	500	424
Arrive On Green	0.05	0.09	0.09	0.17	0.32	0.32	0.09	0.25	0.25	0.12	0.27	0.27
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	43	904	286	214	968	212	152	202	74	193	460	117
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	2.7	29.4	20.3	13.3	30.0	8.6	9.9	10.6	2.8	12.5	27.9	6.8
Cycle Q Clear(g_c), s	2.7	29.4	20.3	13.3	30.0	8.6	9.9	10.6	2.8	12.5	27.9	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1003	448	300	1116	498	165	471	399	220	500	424
V/C Ratio(X)	0.18	0.90	0.64	0.71	0.87	0.43	0.92	0.43	0.19	0.88	0.92	0.28
Avail Cap(c_a), veh/h	243	1033	461	300	1276	569	165	512	434	225	565	479
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	50.9	46.8	45.5	37.3	15.0	52.2	36.2	14.9	49.9	41.1	33.4
Incr Delay (d2), s/veh	0.2	9.5	4.9	7.7	9.1	2.7	48.4	0.6	0.2	29.5	19.0	0.3
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	1.2	15.1	9.1	6.2	13.6	4.6	6.5	4.7	1.6	7.0	14.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.3	60.5	51.7	53.2	46.5	17.7	100.6	36.9	15.1	79.4	60.2	33.8
LnGrp LOS	D	E	D	D	D	B	F	D	B	E	E	C
Approach Vol, veh/h		1233			1394			428			770	
Approach Delay, s/veh		58.1			43.1			55.7			61.0	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	34.7	23.9	38.7	16.1	37.3	20.2	42.4
Change Period (Y+Rc), s	4.2	5.3	4.2	5.7	5.3	* 6	4.2	5.7
Max Green Setting (Gmax), s	14.8	32.0	15.8	34.0	10.8	* 35	7.8	42.0
Max Q Clear Time (g_c+I1), s	14.5	12.6	15.3	31.4	11.9	29.9	4.7	32.0
Green Ext Time (p_c), s	0.0	1.1	0.0	1.6	0.0	1.4	0.0	4.7

Intersection Summary	
HCM 7th Control Delay, s/veh	52.9
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	228	105	5	201	222	97	304	16	184	274	6
Future Volume (veh/h)	97	228	105	5	201	222	97	304	16	184	274	6
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	248	114	5	218	241	105	330	17	200	298	7
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	159	455	209	18	240	265	159	389	20	223	467	11
Arrive On Green	0.09	0.38	0.38	0.01	0.30	0.30	0.09	0.22	0.22	0.13	0.26	0.26
Sat Flow, veh/h	1767	1203	553	1767	805	890	1767	1749	90	1767	1805	42
Grp Volume(v), veh/h	105	0	362	5	0	459	105	0	347	200	0	305
Grp Sat Flow(s),veh/h/ln	1767	0	1756	1767	0	1695	1767	0	1839	1767	0	1848
Q Serve(g_s), s	4.5	0.0	12.5	0.2	0.0	20.2	4.5	0.0	14.0	8.6	0.0	11.4
Cycle Q Clear(g_c), s	4.5	0.0	12.5	0.2	0.0	20.2	4.5	0.0	14.0	8.6	0.0	11.4
Prop In Lane	1.00		0.31	1.00		0.53	1.00		0.05	1.00		0.02
Lane Grp Cap(c), veh/h	159	0	664	18	0	506	159	0	409	223	0	478
V/C Ratio(X)	0.66	0.00	0.55	0.28	0.00	0.91	0.66	0.00	0.85	0.90	0.00	0.64
Avail Cap(c_a), veh/h	178	0	664	178	0	568	178	0	617	223	0	667
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	18.9	38.1	0.0	26.2	34.1	0.0	28.9	33.4	0.0	25.5
Incr Delay (d2), s/veh	7.5	0.0	0.9	8.0	0.0	17.3	7.5	0.0	7.1	33.6	0.0	1.4
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	2.1	0.0	4.5	0.1	0.0	9.4	2.1	0.0	6.2	5.4	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.6	0.0	19.8	46.0	0.0	43.5	41.6	0.0	36.0	67.0	0.0	27.0
LnGrp LOS	D		B	D		D	D		D	E		C
Approach Vol, veh/h		467			464			452			505	
Approach Delay, s/veh		24.7			43.5			37.3			42.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	23.2	5.0	35.3	11.2	26.0	11.2	29.1
Change Period (Y+Rc), s	4.2	6.0	4.2	6.0	4.2	6.0	4.2	6.0
Max Green Setting (Gmax), s	9.8	26.0	7.8	26.0	7.8	28.0	7.8	26.0
Max Q Clear Time (g_c+I1), s	10.6	16.0	2.2	14.5	6.5	13.4	6.5	22.2
Green Ext Time (p_c), s	0.0	1.2	0.0	1.4	0.0	1.2	0.0	0.9

Intersection Summary			
HCM 7th Control Delay, s/veh			37.2
HCM 7th LOS			D

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	68	47	17	14	32	67	508	39	32	357	62
Future Vol, veh/h	23	68	47	17	14	32	67	508	39	32	357	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	25	74	51	18	15	35	73	552	42	35	388	67

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1197	1232	422	1214	1244	573	455	0	0	595	0	0
Stage 1	491	491	-	719	719	-	-	-	-	-	-	-
Stage 2	705	740	-	495	525	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	162	176	630	158	173	517	1100	-	-	977	-	-
Stage 1	557	546	-	418	431	-	-	-	-	-	-	-
Stage 2	425	422	-	555	528	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	124	159	630	73	156	517	1100	-	-	977	-	-
Mov Cap-2 Maneuver	124	159	-	73	156	-	-	-	-	-	-	-
Stage 1	537	527	-	390	403	-	-	-	-	-	-	-
Stage 2	356	394	-	423	509	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	33.35	32.92	0.93	0.63
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1100	-	-	124	159	630	73	303	977	-	-
HCM Lane V/C Ratio	0.066	-	-	0.202	0.465	0.081	0.252	0.165	0.036	-	-
HCM Control Delay (s/veh)	8.5	-	-	41.2	46	11.2	70.1	19.2	8.8	-	-
HCM Lane LOS	A	-	-	E	E	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	2.2	0.3	0.9	0.6	0.1	-	-

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	319	14	23	774	482	22	489
Future Volume (veh/h)	319	14	23	774	482	22	489
Initial Q (Qb), veh	0	0		0	0	0	0
Lane Width Adj.	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	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No
Adj Sat Flow, veh/h/ln	1856	1856		1856	1856	1856	1856
Adj Flow Rate, veh/h	347	15		841	524	24	532
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3		3	3	3	3
Cap, veh/h	378	337		1142	968	109	1319
Arrive On Green	0.21	0.21		0.62	0.62	0.06	0.71
Sat Flow, veh/h	1767	1572		1856	1572	1767	1856
Grp Volume(v), veh/h	347	15		841	524	24	532
Grp Sat Flow(s),veh/h/ln	1767	1572		1856	1572	1767	1856
Q Serve(g_s), s	24.2	1.0		40.2	24.2	1.6	14.7
Cycle Q Clear(g_c), s	24.2	1.0		40.2	24.2	1.6	14.7
Prop In Lane	1.00	1.00			1.00	1.00	
Lane Grp Cap(c), veh/h	378	337		1142	968	109	1319
V/C Ratio(X)	0.92	0.04		0.74	0.54	0.22	0.40
Avail Cap(c_a), veh/h	488	434		1142	968	109	1319
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		0.61	0.61	1.00	1.00
Uniform Delay (d), s/veh	48.4	39.3		17.0	14.0	56.2	7.4
Incr Delay (d2), s/veh	19.1	0.1		2.6	1.3	1.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	0.4		16.1	8.1	0.7	5.2
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	67.6	39.4		19.7	15.3	57.2	8.3
LnGrp LOS	E	D		B	B	E	A
Approach Vol, veh/h	362			1365			556
Approach Delay, s/veh	66.4			18.0			10.4
Approach LOS	E			B			B

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	12.0	82.8	94.8	31.2
Change Period (Y+Rc), s	4.2	5.3	5.3	4.2
Max Green Setting (Gmax), s	7.8	69.7	69.7	34.8
Max Q Clear Time (g_c+I1), s	3.6	42.2	16.7	26.2
Green Ext Time (p_c), s	0.0	8.8	3.4	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	23.8
HCM 7th LOS	C

Notes
User approved ignoring U-Turning movement.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	2	66	1187	85	67	1036	140	66	84	77	12	63	13
Future Volume (veh/h)	2	66	1187	85	67	1036	140	66	84	77	12	63	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		1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h		72	1290	92	73	1126	152	72	91	84	13	68	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, %		3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h		101	1427	635	503	2271	1011	129	109	100	40	94	19
Arrive On Green		0.06	0.40	0.40	0.57	1.00	1.00	0.07	0.12	0.12	0.02	0.06	0.06
Sat Flow, veh/h		1767	3526	1569	1767	3526	1570	1767	888	820	1767	1493	307
Grp Volume(v), veh/h		72	1290	92	73	1126	152	72	0	175	13	0	82
Grp Sat Flow(s),veh/h/ln		1767	1763	1569	1767	1763	1570	1767	0	1708	1767	0	1800
Q Serve(g_s), s		5.0	43.3	4.7	2.4	0.0	0.0	5.0	0.0	12.6	0.9	0.0	5.6
Cycle Q Clear(g_c), s		5.0	43.3	4.7	2.4	0.0	0.0	5.0	0.0	12.6	0.9	0.0	5.6
Prop In Lane		1.00		1.00	1.00		1.00	1.00		0.48	1.00		0.17
Lane Grp Cap(c), veh/h		101	1427	635	503	2271	1011	129	0	209	40	0	114
V/C Ratio(X)		0.72	0.90	0.14	0.15	0.50	0.15	0.56	0.00	0.84	0.33	0.00	0.72
Avail Cap(c_a), veh/h		137	1539	685	503	2271	1011	137	0	461	109	0	457
HCM Platoon Ratio		1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	0.46	0.46	0.46	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh		58.4	35.2	23.7	20.0	0.0	0.0	56.4	0.0	54.1	60.6	0.0	57.9
Incr Delay (d2), s/veh		10.5	9.7	0.5	0.1	0.4	0.1	4.3	0.0	8.6	4.6	0.0	8.3
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		2.5	19.3	1.8	1.0	0.1	0.0	2.3	0.0	5.8	0.5	0.0	2.8
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh		69.0	44.9	24.2	20.0	0.4	0.1	60.8	0.0	62.6	65.2	0.0	66.2
LnGrp LOS		E	D	C	C	A	A	E		E	E		E
Approach Vol, veh/h			1454			1351			247			95	
Approach Delay, s/veh			44.8			1.4			62.1			66.1	
Approach LOS			D			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	20.7	41.5	56.7	14.5	13.3	11.4	86.9
Change Period (Y+Rc), s	4.2	5.3	5.7	* 5.7	5.3	* 5.3	4.2	5.7
Max Green Setting (Gmax), s	7.8	34.0	9.8	* 55	9.8	* 32	9.8	55.0
Max Q Clear Time (g_c+I1), s	2.9	14.6	4.4	45.3	7.0	7.6	7.0	2.0
Green Ext Time (p_c), s	0.0	0.8	0.1	5.7	0.0	0.3	0.0	10.1

Intersection Summary	
HCM 7th Control Delay, s/veh	28.2
HCM 7th LOS	C

Notes

User approved ignoring U-Turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	944	176	128	985	178	301	441	151	141	272	45
Future Volume (veh/h)	75	944	176	128	985	178	301	441	151	141	272	45
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	82	1026	191	139	1071	193	327	479	164	153	296	49
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	218	1326	591	151	1151	513	335	526	446	178	335	284
Arrive On Green	0.12	0.38	0.38	0.09	0.33	0.33	0.19	0.28	0.28	0.10	0.18	0.18
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	82	1026	191	139	1071	193	327	479	164	153	296	49
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	5.4	32.3	6.0	9.8	37.0	8.7	23.2	31.4	10.5	10.7	19.6	3.3
Cycle Q Clear(g_c), s	5.4	32.3	6.0	9.8	37.0	8.7	23.2	31.4	10.5	10.7	19.6	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	1326	591	151	1151	513	335	526	446	178	335	284
V/C Ratio(X)	0.38	0.77	0.32	0.92	0.93	0.38	0.98	0.91	0.37	0.86	0.88	0.17
Avail Cap(c_a), veh/h	218	1326	591	151	1184	528	335	629	533	194	471	399
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)	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	34.6	8.6	57.2	41.0	17.5	50.8	43.6	36.1	55.8	50.3	43.7
Incr Delay (d2), s/veh	0.8	3.4	1.1	49.4	14.3	2.1	42.7	15.8	0.5	28.4	13.6	0.3
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	2.4	13.7	3.8	6.3	17.5	0.3	13.9	16.2	4.0	6.0	10.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.6	38.0	9.7	106.6	55.4	19.6	93.4	59.4	36.6	84.1	63.9	44.0
LnGrp LOS	D	D	A	F	E	B	F	E	D	F	E	D
Approach Vol, veh/h		1299			1403			970			498	
Approach Delay, s/veh		34.7			55.5			67.0			68.2	
Approach LOS		C			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	41.0	15.0	53.1	29.2	28.7	21.2	46.8
Change Period (Y+Rc), s	4.2	5.3	4.2	5.7	5.3	* 6	5.7	* 5.7
Max Green Setting (Gmax), s	13.8	42.7	10.8	39.3	23.8	* 32	7.8	* 42
Max Q Clear Time (g_c+I1), s	12.7	33.4	11.8	34.3	25.2	21.6	7.4	39.0
Green Ext Time (p_c), s	0.0	2.3	0.0	3.0	0.0	1.1	0.0	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	53.2
HCM 7th LOS	D

Notes
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	30	183	370	593	139	273	162	182
Average Queue (ft)	2	97	20	279	80	136	85	99
95th Queue (ft)	13	167	129	537	144	233	147	175
Link Distance (ft)		2601		3212		2582		2588
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250		250		250		250	
Storage Blk Time (%)				22		1		
Queuing Penalty (veh)				1		1		

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	R	L	TR	L	L
Maximum Queue (ft)	31	52	118	28	52	25	31
Average Queue (ft)	15	25	48	12	30	6	8
95th Queue (ft)	36	47	83	33	40	21	28
Link Distance (ft)		4816			1426		
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250		250	250		250	250
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Clovis Avenue & Perrin Avenue

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	70	268
Average Queue (ft)	38	70
95th Queue (ft)	65	214
Link Distance (ft)	1426	1658
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Clovis Avenue & Baron Avenue

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	R	U	T	R	L	T
Maximum Queue (ft)	200	699	92	194	122	31	1306
Average Queue (ft)	194	445	34	84	36	4	648
95th Queue (ft)	216	732	77	181	84	20	1114
Link Distance (ft)		1517		1269	1269		1658
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100		140			250	
Storage Blk Time (%)	65			5			35
Queuing Penalty (veh)	24			2			2

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	UL	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	53	359	418	180	370	587	513	370	67	206	199	281
Average Queue (ft)	16	227	238	114	259	203	162	23	26	83	82	131
95th Queue (ft)	49	346	388	232	412	499	407	133	58	175	156	237
Link Distance (ft)		2694	2694			2549	2549			2538		1268
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			100	250			250	220		220	
Storage Blk Time (%)		6	35	1	34	4	6			0		3
Queuing Penalty (veh)		1	52	3	142	10	3			0		3

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	116	528	458	150	243	393	384	370	202	198	64	379
Average Queue (ft)	41	178	200	104	120	170	172	45	125	101	23	156
95th Queue (ft)	93	362	379	190	221	325	325	149	207	179	47	282
Link Distance (ft)		2549	2549			1269	1269			2555	2555	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220			250	230			260
Storage Blk Time (%)		4	47	13	2	10	7					0
Queuing Penalty (veh)		2	127	53	8	19	14					1

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	457	200
Average Queue (ft)	267	94
95th Queue (ft)	423	239
Link Distance (ft)	2548	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)	41	1
Queuing Penalty (veh)	120	4

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	91	362	363	367	110	177	262	335	356	275	200	178
Average Queue (ft)	44	57	276	263	88	94	116	216	209	37	112	112
95th Queue (ft)	84	199	353	354	137	166	195	296	302	114	186	178
Link Distance (ft)			1207	1207				2012	2012			2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			175	230	
Storage Blk Time (%)		0	9	30	8		0	3	18			
Queuing Penalty (veh)		0	10	56	33		0	8	27			

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	237	100	250	388	390	370	190
Average Queue (ft)	93	41	122	141	256	276	142
95th Queue (ft)	176	96	189	260	342	359	250
Link Distance (ft)	2554				1269	1269	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		50	250	250			100
Storage Blk Time (%)	27	2	0	1	6	40	1
Queuing Penalty (veh)	21	4	0	3	25	67	5

Network Summary

Network wide Queuing Penalty: 855

Intersection: 1: Minnewawa Avenue & Behymer Avenue

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	135	200	31	268	182	332	367	538
Average Queue (ft)	66	110	4	177	79	151	154	124
95th Queue (ft)	113	179	19	261	151	273	281	285
Link Distance (ft)		2601		3212		2582		2588
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250		250		250		250	
Storage Blk Time (%)				1		2	7	0
Queuing Penalty (veh)				0		2	19	0

Intersection: 2: Minnewawa Avenue & Perrin Avenue

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	53	114	52	52	53	47	12	31	22
Average Queue (ft)	17	41	22	11	28	15	0	7	1
95th Queue (ft)	42	76	41	35	47	37	4	27	7
Link Distance (ft)		4816			1423		2548		2582
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	250		250	250		250		250	
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: Clovis Avenue & Perrin Avenue

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	118	98
Average Queue (ft)	56	25
95th Queue (ft)	107	77
Link Distance (ft)	1423	1679
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Clovis Avenue & Baron Avenue

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	R	U	T	R	L	T
Maximum Queue (ft)	199	467	96	415	172	74	354
Average Queue (ft)	175	140	27	108	49	25	141
95th Queue (ft)	231	388	64	252	105	60	274
Link Distance (ft)		1505		1268	1268		1679
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100		140			250	
Storage Blk Time (%)	40	0		3			2
Queuing Penalty (veh)	6	0		1			0

Intersection: 5: Peach Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	UL	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	369	518	581	180	114	355	377	78	153	324	68	127
Average Queue (ft)	92	231	247	59	59	211	221	39	59	111	11	49
95th Queue (ft)	188	389	409	161	109	341	359	78	116	233	37	109
Link Distance (ft)		2694	2694			2549	2549			2538		1284
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			100	250			250	220		220	
Storage Blk Time (%)		8	29			6	8			3		
Queuing Penalty (veh)		6	25			4	11			2		

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	276	475	567	150	340	451	476	370	350	624	143	264
Average Queue (ft)	91	249	272	98	172	340	343	175	262	310	42	110
95th Queue (ft)	192	435	467	193	321	432	452	391	382	479	98	199
Link Distance (ft)		2549	2549			1269	1269			2555	2555	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240			50	220			250	230			260
Storage Blk Time (%)		15	50	4	1	31	27		17	19		0
Queuing Penalty (veh)		12	88	20	3	40	49		74	57		1

Intersection: 6: Minnewawa Avenue & Shepherd Avenue

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	330	200
Average Queue (ft)	167	42
95th Queue (ft)	295	148
Link Distance (ft)	2548	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)	29	0
Queuing Penalty (veh)	54	0

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	T
Maximum Queue (ft)	241	365	518	492	110	96	370	409	458	275	330	449
Average Queue (ft)	116	207	352	331	70	45	108	280	298	186	196	255
95th Queue (ft)	197	409	511	484	141	87	271	376	416	351	325	402
Link Distance (ft)			1207	1207				2012	2012			2554
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250			50	250	250			175	230	
Storage Blk Time (%)	0	0	26	37	4		0	13	31	1	5	15
Queuing Penalty (veh)	0	1	57	59	18		0	20	101	4	17	35

Intersection: 7: Clovis Avenue & Shepherd Avenue

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	464	100	268	278	301	299	190
Average Queue (ft)	256	77	112	110	140	140	63
95th Queue (ft)	397	131	186	195	233	230	138
Link Distance (ft)	2554				1268	1268	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		50	250	250			100
Storage Blk Time (%)	49	7	0	0	1	31	3
Queuing Penalty (veh)	89	22	0	0	2	40	7

Network Summary

Network wide Queuing Penalty: 945

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	545	Opposing Demand Flow Rate, veh/h	510
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.55798	Speed Power Coefficient	0.48081
PF Slope Coefficient	-1.26869	PF Power Coefficient	0.78827
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.0

Vehicle Results

Average Speed, mi/h	56.0	Percent Followers, %	54.4
Segment Travel Time, minutes	1.07	Follower Density, followers/mi/ln	5.3
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	5.3	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Behymer Avenue and Perrin Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	647	Opposing Demand Flow Rate, veh/h	530
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.38

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.56260	Speed Power Coefficient	0.47820
PF Slope Coefficient	-1.27085	PF Power Coefficient	0.78738
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.7

Vehicle Results

Average Speed, mi/h	55.7	Percent Followers, %	59.4
Segment Travel Time, minutes	1.08	Follower Density, followers/mi/ln	6.9
Vehicle LOS	C		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	6.9	C

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	769	Opposing Demand Flow Rate, veh/h	456
Peak Hour Factor	0.94	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.54543	Speed Power Coefficient	0.48814
PF Slope Coefficient	-1.26258	PF Power Coefficient	0.79070
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.5

Vehicle Results

Average Speed, mi/h	55.5	Percent Followers, %	64.2
Segment Travel Time, minutes	1.08	Follower Density, followers/mi/ln	8.9
Vehicle LOS	D		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	8.9	D

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Minnewawa Avenue between Perrin Avenue and Shepherd Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	789	Opposing Demand Flow Rate, veh/h	520
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.4
Speed Slope Coefficient	3.56047	Speed Power Coefficient	0.47940
PF Slope Coefficient	-1.26986	PF Power Coefficient	0.78779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.4

Vehicle Results

Average Speed, mi/h	55.4	Percent Followers, %	65.1
Segment Travel Time, minutes	1.08	Follower Density, followers/mi/ln	9.3
Vehicle LOS	D		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	9.3	D

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1184	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.70

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	19.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.2

Vehicle Results

Average Speed, mi/h	48.2	Percent Followers, %	78.5
Segment Travel Time, minutes	1.24	Follower Density, followers/mi/ln	19.3
Vehicle LOS	E		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	19.3	E

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1269	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.75

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	21.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.1

Vehicle Results

Average Speed, mi/h	48.1	Percent Followers, %	80.2
Segment Travel Time, minutes	1.25	Follower Density, followers/mi/ln	21.2
Vehicle LOS	E		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	21.2	E

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1307	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.77

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	22.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	48.1

Vehicle Results

Average Speed, mi/h	48.1	Percent Followers, %	80.9
Segment Travel Time, minutes	1.25	Follower Density, followers/mi/ln	22.0
Vehicle LOS	E		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	22.0	E

HCS7 Two-Lane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/8/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	50	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1530	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.90

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	51.7
Speed Slope Coefficient	3.36232	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.35765	PF Power Coefficient	0.73804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	27.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	47.8

Vehicle Results

Average Speed, mi/h	47.8	Percent Followers, %	84.4
Segment Travel Time, minutes	1.26	Follower Density, followers/mi/ln	27.0
Vehicle LOS	E		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	27.0	E

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1117	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	654
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	635	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.18
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		
Direction 2 Adjustment Factors			
Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		
Direction 2 Demand and Capacity			
Volume(V) veh/h	1042	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	610
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31
Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}),veh/h	635	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.18
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Willow Avenue and Peach Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1340	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	784
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.39

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	14.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	761	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.27
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 2 Adjustment Factors			
Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity			
Volume(V) veh/h	1117	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	654
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}),veh/h	761	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.27
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	AM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1159	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.89	Flow Rate (V_p), pc/h/ln	670
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	651	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.19
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 2 Adjustment Factors			
Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity			
Volume(V) veh/h	1163	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.89	Flow Rate (V_p), pc/h/ln	673
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}),veh/h	651	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.19
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

HCS7 Multilane Highway Report

Project Information

Analyst	JLB Traffic Engineering, Inc.	Date	4/10/2024
Agency	JLB Traffic Engineering, Inc.	Analysis Year	Cumulative Year 2046 plus Project Traffic Conditions
Jurisdiction	City of Clovis	Time Analyzed	PM Peak
Project Description	Shepherd Avenue between Peach Avenue and Minnewawa Avenue	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 1 Adjustment Factors

Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 1 Demand and Capacity

Volume(V) veh/h	1195	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	708
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	13.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	687	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.22
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Access Point Density, pts/mi	4.0
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Divided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	54.0		

Direction 2 Adjustment Factors			
Driver Population	Mostly Familiar	Final Speed Adjustment Factor (SAF)	0.975
Driver Population SAF	0.975	Final Capacity Adjustment Factor (CAF)	0.968
Driver Population CAF	0.968		

Direction 2 Demand and Capacity			
Volume(V) veh/h	1331	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	788
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2052
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1986
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.40

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	15.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	1.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}),veh/h	687	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.22
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Appendix I: Traffic Signal Warrants

Warrant 3: Peak Hour (Rural)

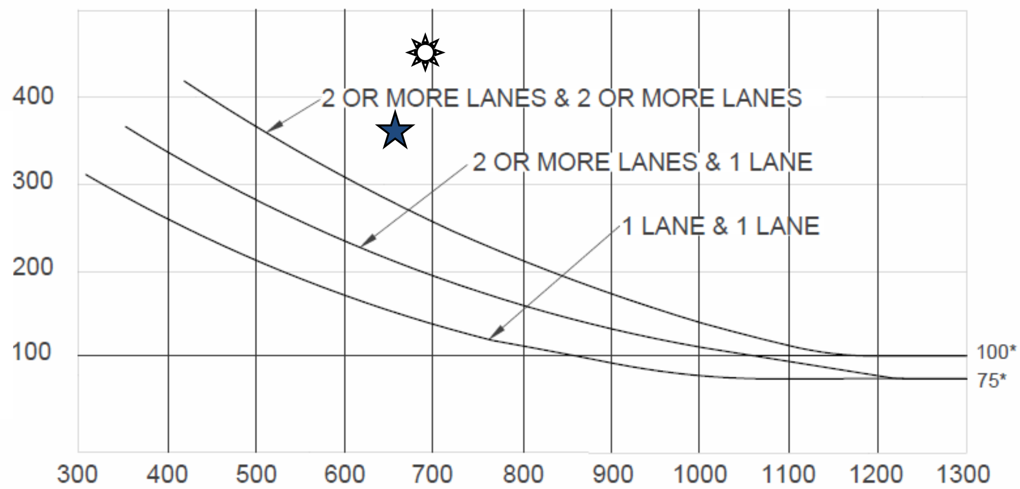
Existing Traffic Conditions

1. Minnewawa Avenue / Behymer Avenue

AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Behymer Avenue Highest Approach Volume = 447 (367) VPH



Minnewawa Avenue Total of Both Approaches = 690 (658) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Met**

★ **PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

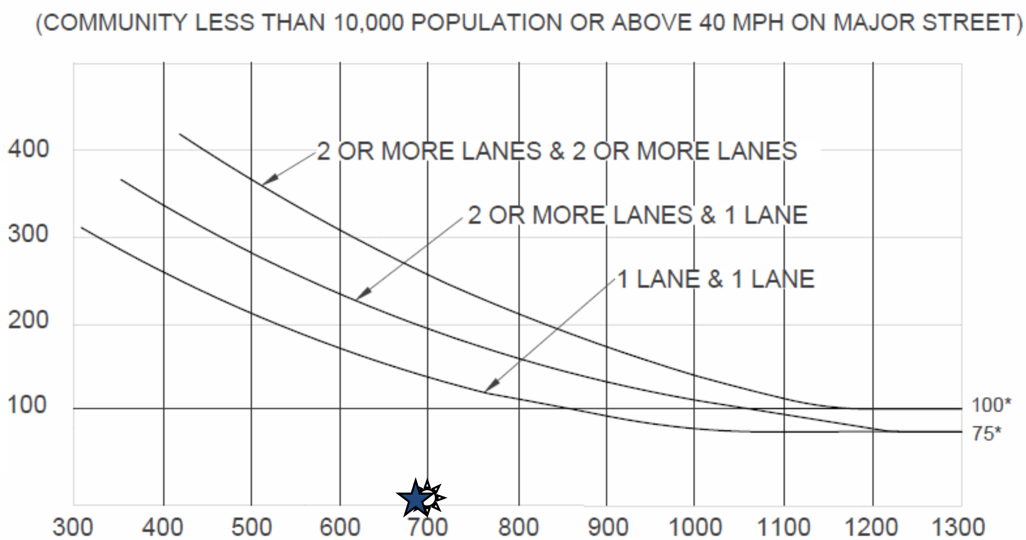
Warrant 3: Peak Hour (Rural)

Existing Traffic Conditions

2. Minnewawa Avenue / Perrin Avenue

AM (PM) Peak Hour

Perrin Avenue Highest Approach Volume = 8 (12) VPH



Minnewawa Avenue Total of Both Approaches = 697 (694) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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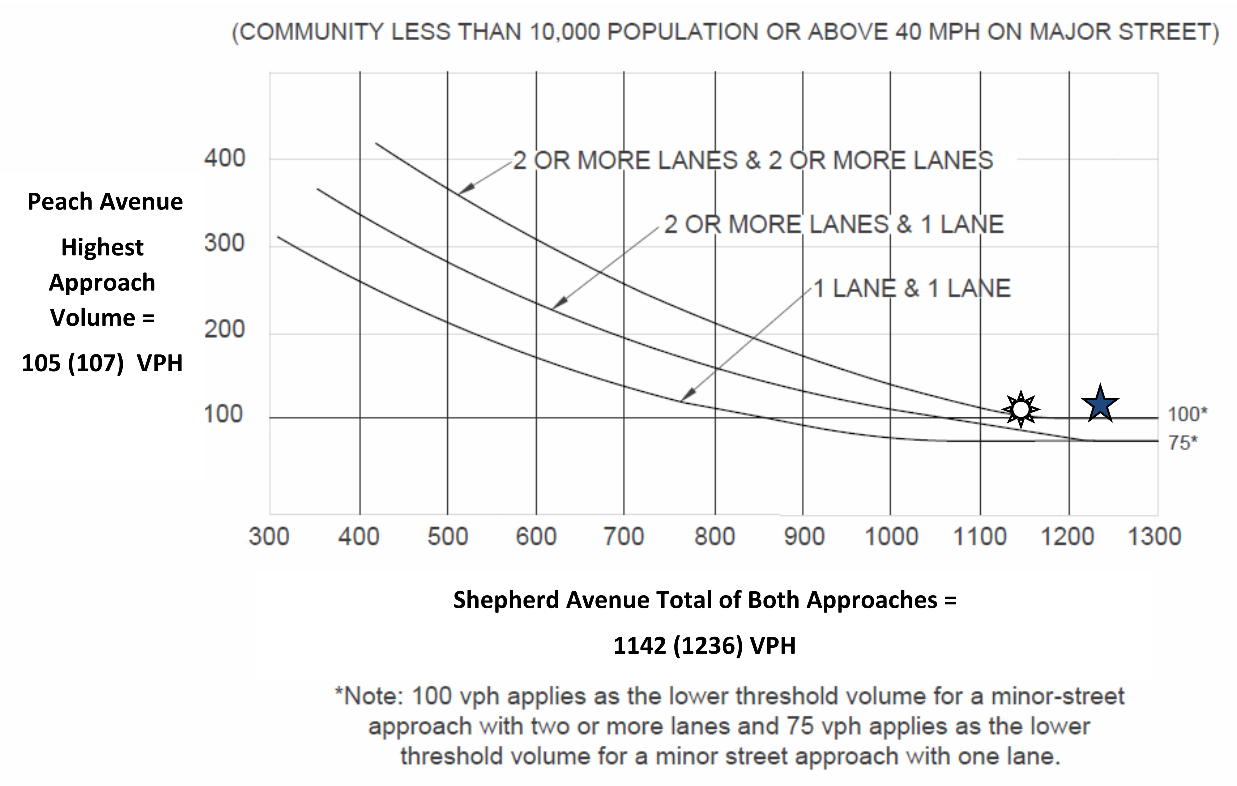
(559) 570-8991

Warrant 3: Peak Hour (Rural)

Existing Traffic Conditions
5. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour



☼ **AM Peak Hour – Signal Warrant is Met**

★ **PM Peak Hour – Signal Warrant is Met**

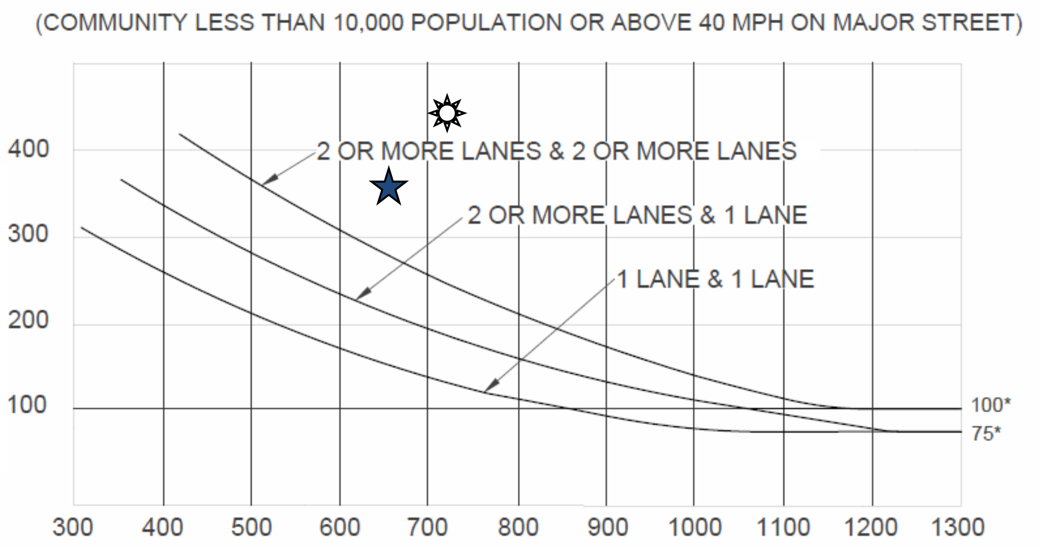
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
1. Minnewawa Avenue / Behymer Avenue
AM (PM) Peak Hour

Behymer Avenue Highest Approach Volume =

447 (367) VPH



Minnewawa Avenue Total of Both Approaches =

710 (664) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Met**

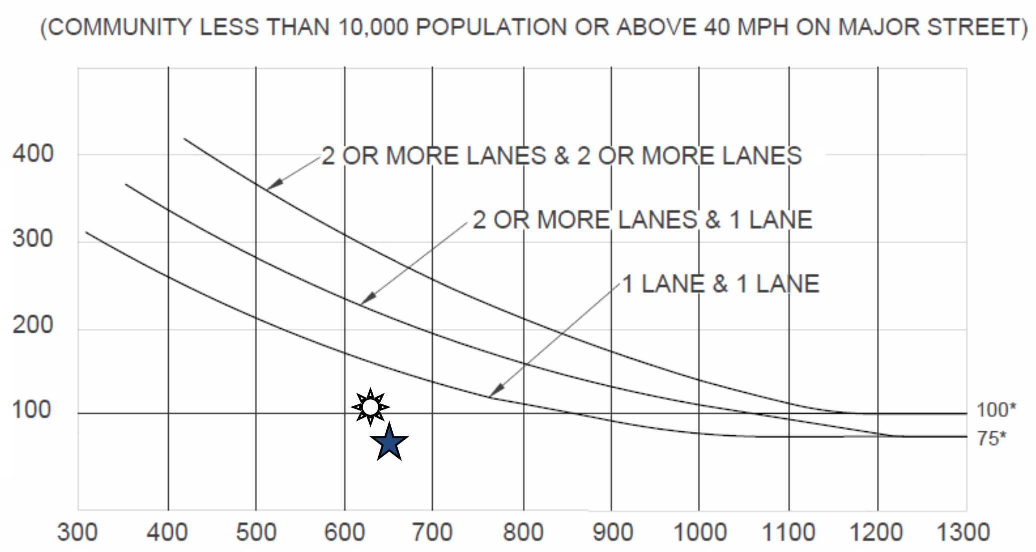
★ **PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
2. Minnewawa Avenue / Perrin Avenue
AM (PM) Peak Hour

Perrin Avenue Highest Approach Volume = 104 (84) VPH



Minnewawa Avenue Total of Both Approaches = 632 (652) VPH

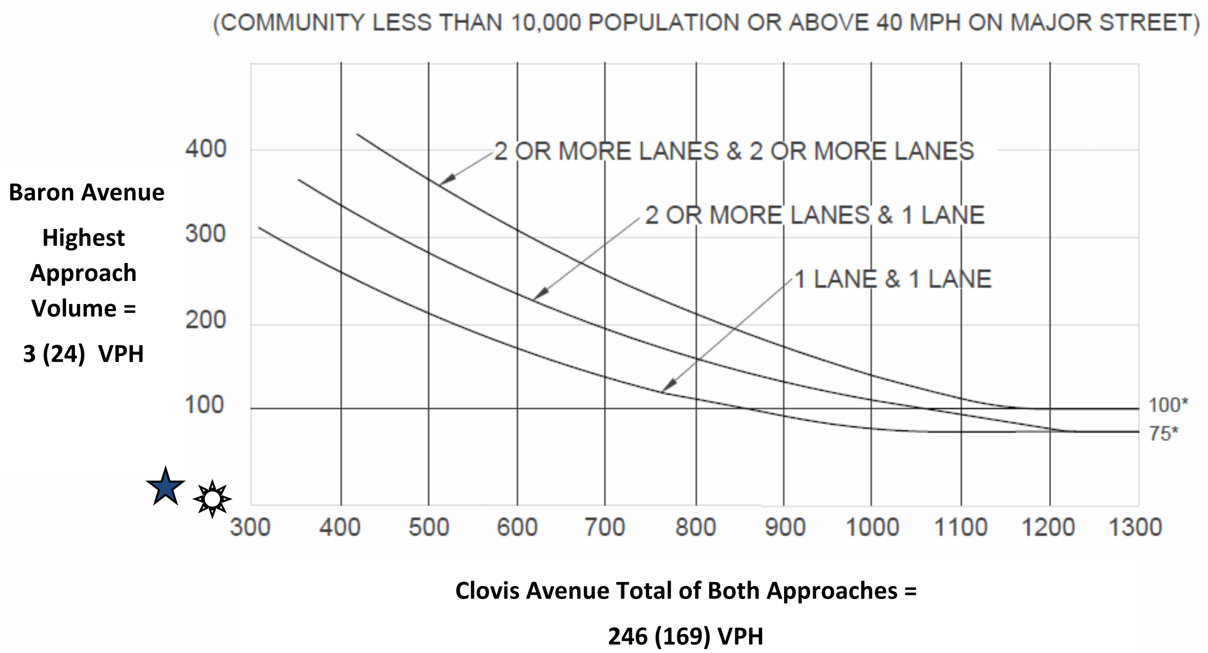
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met
PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
4. Clovis Avenue / Baron Avenue
AM (PM) Peak Hour



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met
PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

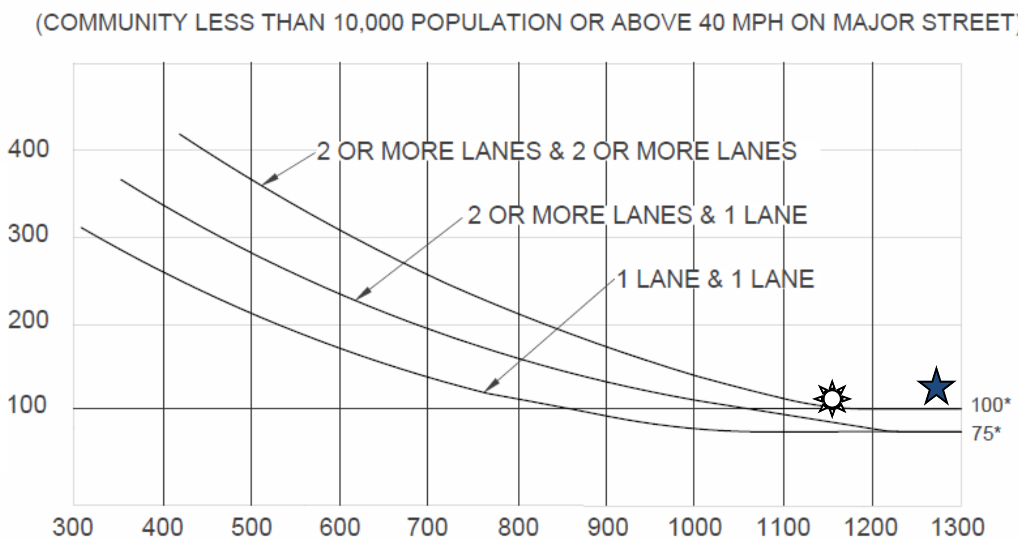
Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
5. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour

Peach Avenue

Highest Approach Volume =

106 (110) VPH



Shepherd Avenue Total of Both Approaches =

1163 (1270) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Met

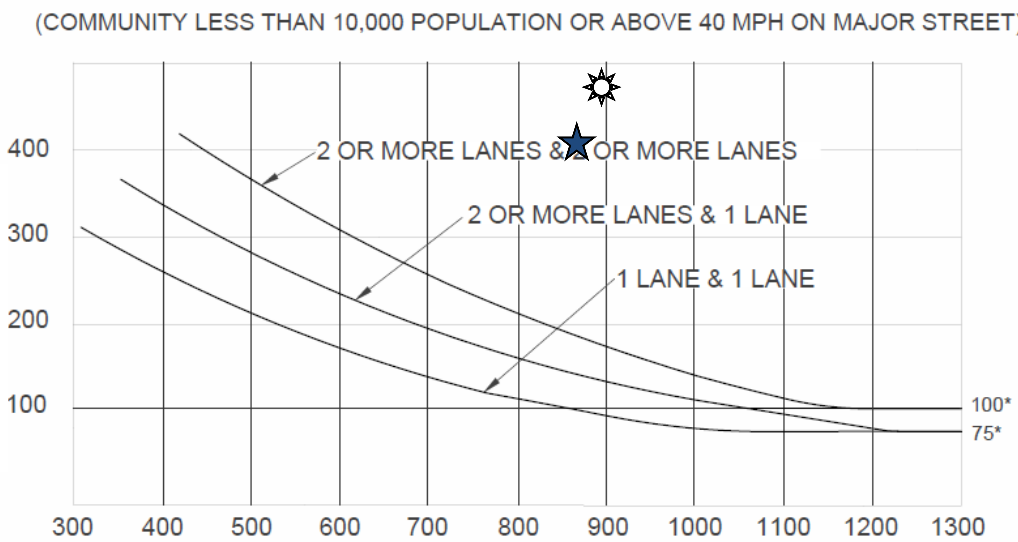
PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
1. Minnewawa Avenue / Behymer Avenue
AM (PM) Peak Hour

Behymer Avenue Highest Approach Volume =
484 (403) VPH



Minnewawa Avenue Total of Both Approaches =
894 (867) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Met**
★ **PM Peak Hour – Signal Warrant is Met**

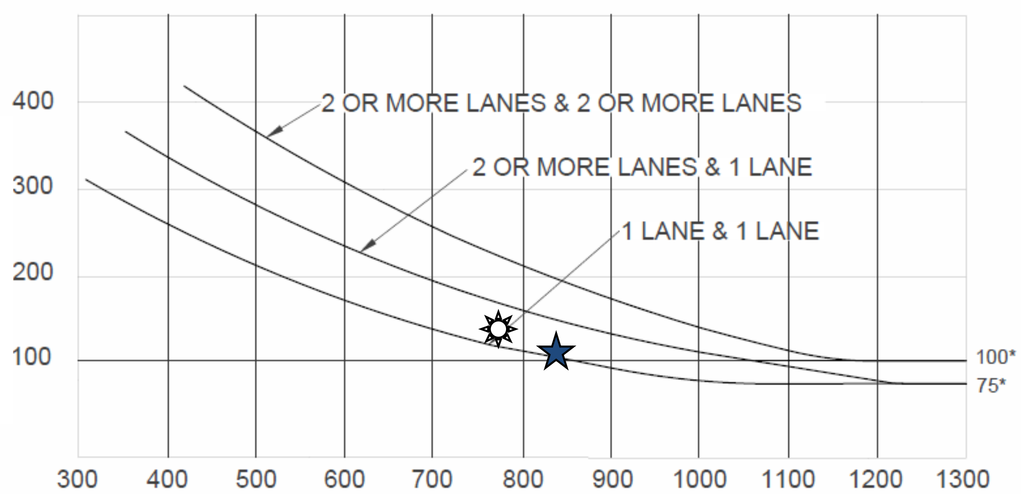
Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
2. Minnewawa Avenue / Perrin Avenue
AM (PM) Peak Hour

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

Perrin Avenue Highest Approach Volume = 143 (112) VPH



Minnewawa Avenue Total of Both Approaches = 780 (830) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Met

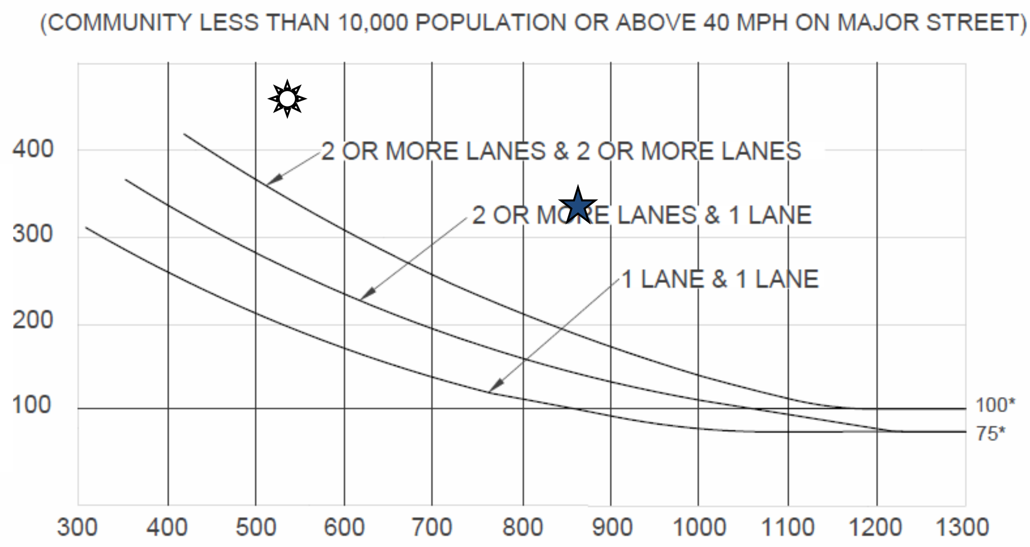
PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
4. Clovis Avenue / Baron Avenue
AM (PM) Peak Hour

Baron Avenue Highest Approach Volume = 465 (333) VPH



Clovis Avenue Total of Both Approaches = 544 (859) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Met**

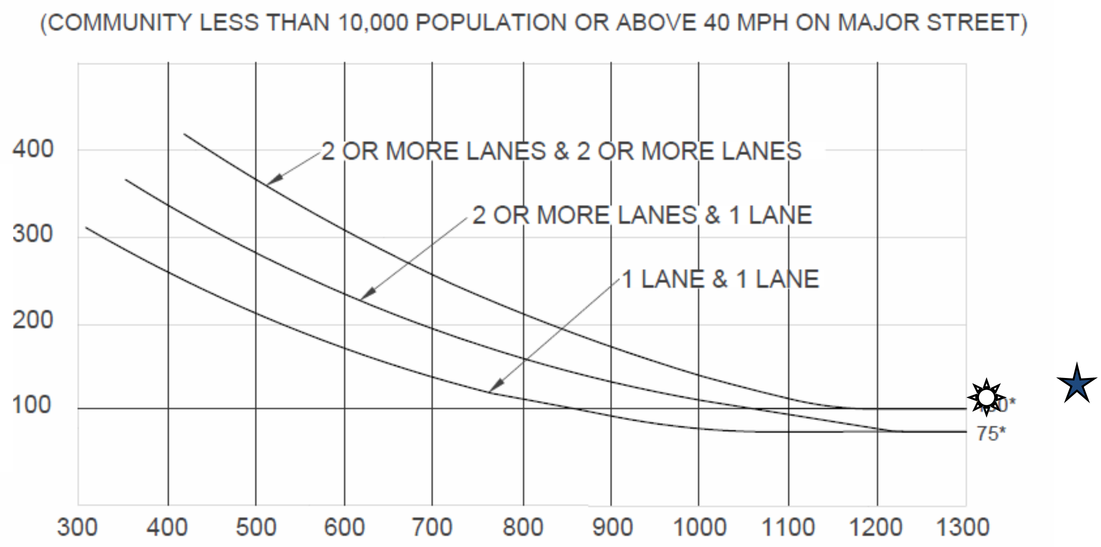
★ **PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
5. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour

Peach Avenue
Highest Approach Volume =
116 (137) VPH



Shepherd Avenue Total of Both Approaches =
1990 (2356) VPH

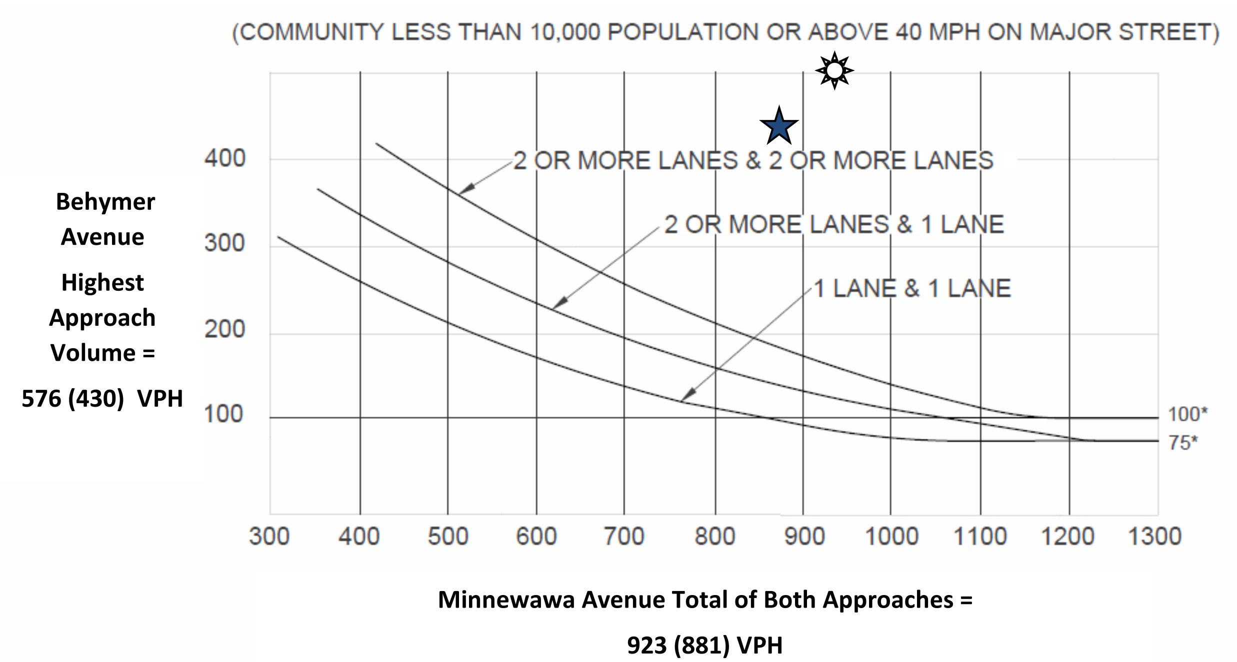
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Met
PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Cumulative Year 2046 plus Project Traffic Conditions
1. Minnewawa Avenue / Behymer Avenue
AM (PM) Peak Hour



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

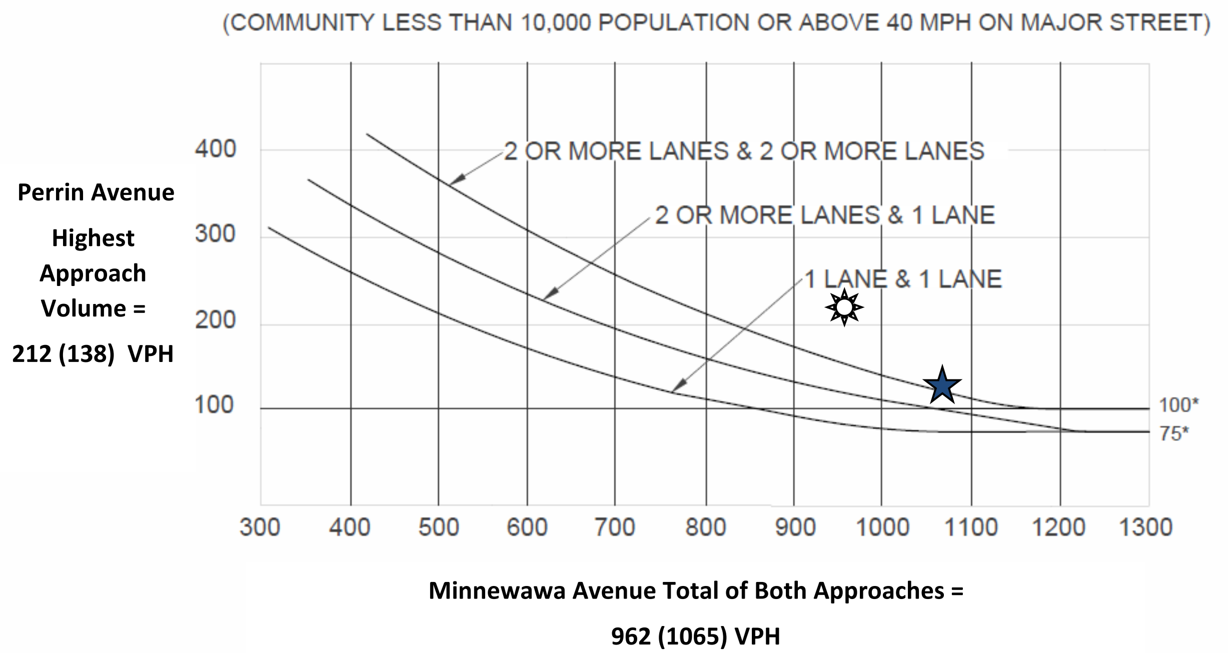
☼ **AM Peak Hour – Signal Warrant is Met**

★ **PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Cumulative Year 2046 plus Project Traffic Conditions
2. Minnewawa Avenue / Perrin Avenue
AM (PM) Peak Hour



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

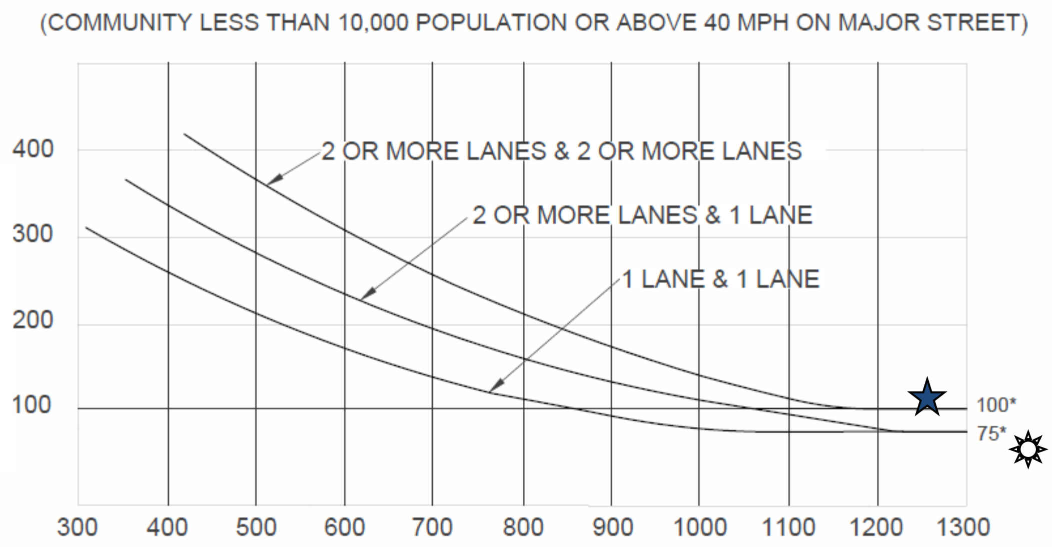
☼ **AM Peak Hour – Signal Warrant is Met**
★ **PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Cumulative Year 2046 plus Project Traffic Conditions
3. Clovis Avenue / Perrin Avenue
AM (PM) Peak Hour

Perrin Avenue Highest Approach Volume = 66 (107) VPH



Clovis Avenue Total of Both Approaches = 1351 (1254) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

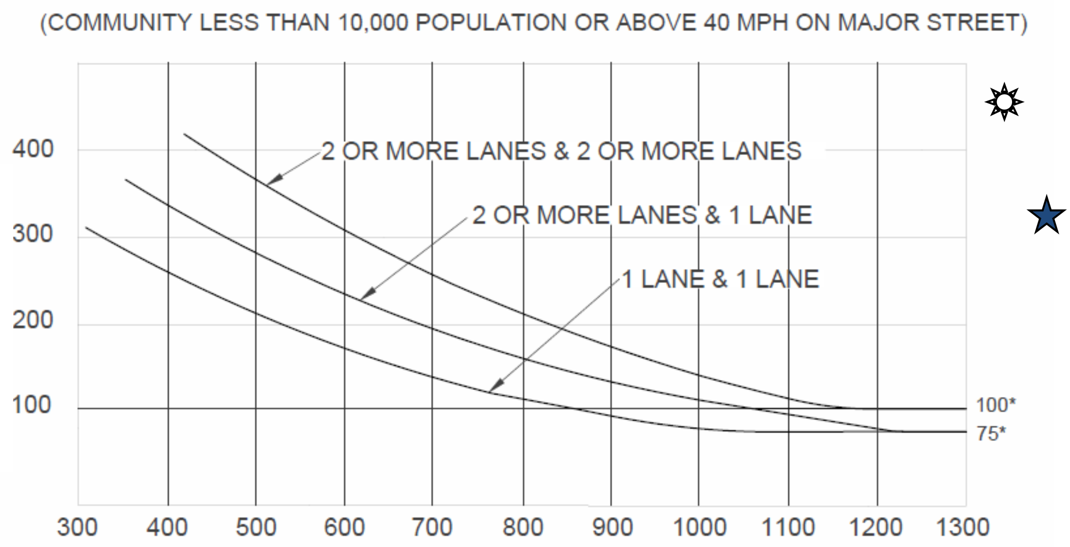
AM Peak Hour – Signal Warrant is Not Met
PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Cumulative Year 2046 plus Project Traffic Conditions
4. Clovis Avenue / Baron Avenue
AM (PM) Peak Hour

Baron Avenue Highest Approach Volume = 465 (333) VPH



Clovis Avenue Total of Both Approaches =

1589 (1790) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Met**

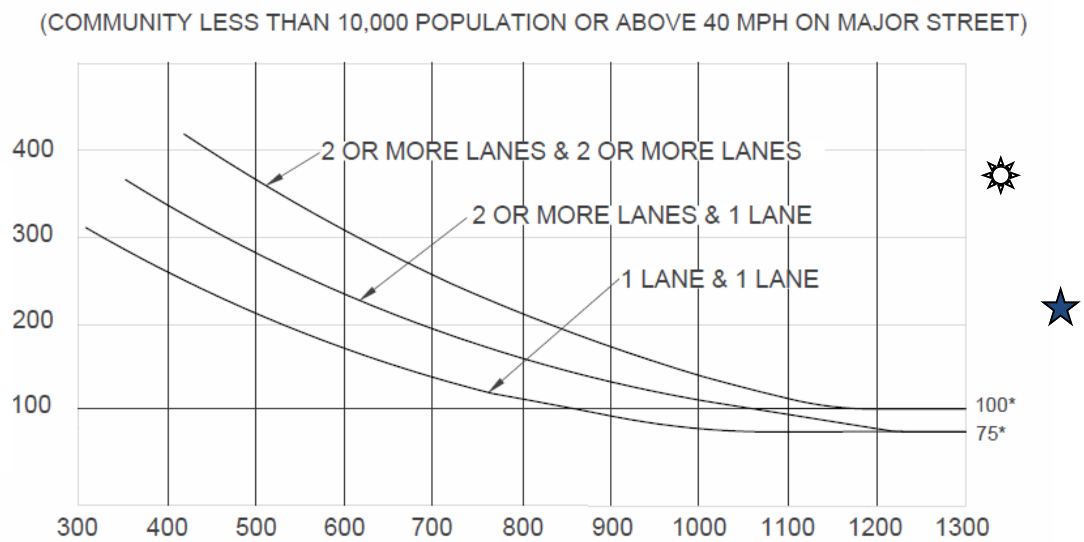
★ **PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Warrant 3: Peak Hour (Rural)

Cumulative Year 2046 plus Project Traffic Conditions
5. Peach Avenue / Shepherd Avenue
AM (PM) Peak Hour

Peach Avenue Highest Approach Volume = 367 (227) VPH



Shepherd Avenue Total of Both Approaches = 2227 (2583) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Met

PM Peak Hour – Signal Warrant is Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

Vehicle Miles Traveled Analysis

Clovis and Perrin Subdivision

Located on the Southwest Corner of Clovis Avenue and Perrin Avenue

In the City of Clovis, California

Prepared for

Bonadelle Neighborhoods
7030 N. Fruit Avenue, Suite 101
Fresno, CA 93711

April 19, 2024

Project No. 006-049

JLB TRAFFIC ENGINEERING, INC.

Traffic Engineering, Transportation Planning, & Parking Solutions
516 W. Shaw Ave., Ste. 103
Fresno, CA 93710
Phone: (559) 570-8991
www.JLBtraffic.com

JLB TRAFFIC
ENGINEERING, INC.

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Vehicle Miles Traveled Analysis

For Clovis and Perrin Development located on the Southwest Corner of Clovis Avenue and Perrin Avenue

In the City of Clovis, California

April 19, 2024

This Vehicle Miles Traveled Analysis Report has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions and decisions are based.

Prepared by:

Jose Luis Benavides, PE, TE
President

REGISTERED PROFESSIONAL ENGINEER
JOSE LUIS BENAVIDES
No.T 2328
Exp:06/30/25
TRAFFIC
STATE OF CALIFORNIA

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ENGINEERING, INC.

Traffic Engineering, Transportation Planning, & Parking Solutions
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Project Description

This report describes a **Vehicle Miles Traveled Analysis (VMT) Analysis** prepared **by JLB Traffic Engineering, Inc. (JLB)** for the **Clovis and Perrin Development (Project)** located on the Southwest Corner of Clovis Avenue and Perrin Avenue in the City of Clovis. The Project proposes to develop the site with 162 single family residential units. Based on information provided to JLB, the Project is consistent with the City of Clovis *General Plan*. A Project Site Plan is shown in Exhibit A.

VMT Analysis

Regulatory Setting

Senate Bill (SB) 743 requires that relevant California Environmental Quality Act (CEQA) analysis of transportation impacts be conducted using a metric known as VMT instead of level of service (LOS). VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto our roads, the project may cause a significant transportation impact.

The State CEQA Guidelines were amended to implement SB 743, by adding Section 15064.3. Among its provisions, Section 15064.3 confirms that, except with respect to transportation projects, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, LOS measures of impacts on traffic facilities are no longer a relevant CEQA criteria for transportation impacts.

CEQA Guidelines Section 15064.3(b)(4) states that "[a] lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revision to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section."

On October 17, 2022, the City of Clovis adopted the *Transportation Impact Analysis Guidelines* for VMT pursuant to Senate Bill 743 which was effective on July 1, 2020. The City of Clovis *Transportation Impact Analysis Guidelines* document was prepared and adopted consistent with the requirements of CEQA Guidelines Sections 15064.3 and 15064.7. The December 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA (TA) published by the Governor's Office of Planning and Research (OPR), was utilized as a reference and guidance document in the preparation of the Clovis VMT thresholds.

The City of Clovis *Transportation Impact Analysis Guidelines* adopted a screening standard and criteria that can be used to screen out qualified development projects that meet the adopted criteria from needing to prepare a detailed VMT Analysis. These criteria may be size, location, proximity to transit, of trip making potential. In general, development projects that are consistent with the City of Clovis' General Plan and Zoning that meet one or more of the following criteria can be screened out from a quantitative VMT analysis.

1. Project Located in a Transit Priority Area/High Quality Transit Corridor (within 0.5 miles of a transit stop).
2. Project is Local-serving Retail of less than 100,000 square feet.
3. Project is a Low Trip Generator (Less than 500 average daily trips)
4. Project is 100% Affordable Housing Units
5. Project is located in a Low VMT Zone

This screening tool is consistent with the OPR December 2018 Guidance referenced above. The screening tool includes an analysis of those portions of the City that satisfy the standard of reducing VMT by 13% from existing per capita and per employee VMT averages within the relevant region. The relevant region adopted by the City of Clovis *Transportation Impact Analysis Guidelines* is Fresno County. The City of Clovis *Transportation Impact Analysis Guidelines* Section 2.1.1.6. regarding project screening states that "… projects that are inconsistent with the RTP/SCS would not qualify for screening out of a detailed VMT analysis".

For projects that are not screened out, a quantitative analysis of VMT impacts must be prepared and compared against the adopted VMT thresholds of significance. The City of Clovis *Transportation Impact Analysis Guidelines* document includes thresholds of significance for development projects, transportation projects, and land use plans. These thresholds of significance were developed using the County of Fresno as the applicable region, and the required reduction of VMT (as adopted in the Clovis VMT Thresholds) corresponds to Fresno County's contribution to the statewide GHG emission reduction target. In order to reach the statewide GHG reduction target of 15%, Fresno County must reduce its GHG emissions by 13%. The method of reducing GHG by 13% is to reduce VMT by 13% as well.

VMT is simply the product of a number of trips and those trips' lengths. The first step in a VMT analysis is to establish the baseline average VMT, which requires the definition of a region. The City of Clovis *Transportation Impact Analysis Guidelines* provide that the Fresno County average VMT per Capita (appropriate for residential land uses) and Employee (appropriate for office/commercial non-retail land uses) are 16.1 and 25.6, respectively. The City's threshold targets a 13% reduction in VMT for residential and office/commercial non-retail land uses and a net zero (0) increase in regional VMT for commercial retail land uses.

The City's adopted thresholds for development projects correspond to the regional averages modeled by Fresno COG's ABM. For residential and office development projects, the adopted threshold of significance is a 13% reduction, which means that projects that generate VMT in excess of a 13% reduction from the existing regional VMT per capita or per employee would have a significant environmental impact. Projects that reduce VMT by 13% or more are less than significant. The adopted threshold for all other land use types that don't require a General Plan Amendment or Zone Change is no net increase in VMT per employee. The adopted threshold for retail projects is any net increase in Regional VMT compared to the existing Regional VMT. Quantitative assessments of the VMT generated by a development project are determined using the COG ABM, which is a tour-based model.

For mixed use projects, the City of Clovis *Transportation Impact Analysis Guidelines* state that the VMT can be estimated based on each component of the project, independently, after taking credit for internal trip capture. It also confirms that mixed use projects must use the Fresno COG's Activity Based Model. The VMT per capita (for the residential component) and the total VMT (for the retail component) is then compared against the relevant threshold.

The target VMT for residential and commercial non-retail land uses are (16.1 X (1-.13) = 14.0) 14.0 VMT per capita and (25.6 X (1-.13) = 22.3) 22.3 VMT per employee, respectively. The target VMT for all other type of land uses that are consistent with the General Plan is 25.6 VMT per employee. The threshold for retail land uses is a net zero (0) increase in Regional VMT for retail land uses (City of Clovis, 2020).

Projects that are consistent with the General Plan and do not meet a VMT Screening Criteria would be required to identify feasible VMT mitigation measures. If it cannot be demonstrated that mitigation would reduce VMT of the proposed Project below the applicable threshold, then a significant and unavoidable impact would be reported. Section 4.2.2.3 of the City of Clovis *Transportation Impact Analysis Guidelines* states that significant and unavoidable VMT impacts associated with City of Clovis *General Plan* development have already been disclosed. Thus, the Project can tier off of the Clovis General Plan SEIR with a Mitigated Negative Declaration (MND) with VMT mitigation.

VMT Results

Table I summarizes the VMT results for the Project derived from the Fresno COG ABM. Per the Fresno COG ABM, the Project results in an output of 51.6 VMT per Capita which is greater than the threshold of 14.0 VMT per Capita. Exhibit B presents the Project VMT output from the Fresno COG ABM.

Table I: VMT Results Prior to Mitigation

Project Components	*Fresno COG Results[1]*	*City of Clovis VMT Threshold[2]*	*Above VMT Threshold?*
Residential	51.6	14.0	Yes

Note: 1 = VMT Results from Fresno COG ABM Output.
2 = VMT Threshold per City of Clovis *Transportation Impact Analysis Guidelines*.

VMT Mitigation

The VMT mitigation measures considered for this Project include those appropriate for the respective land use as noted in the City of Clovis *Transportation Impact Analysis Guidelines*. Exhibit C presents a summary of the VMT reduction associated with each mitigation measure utilized in this Report. The selected VMT reduction rates appropriate for the Project were based on the *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* published by the California Air Pollution Control Officers Association (CAPCOA). The mitigation measure found feasible is Increase Residential Density (T-1). As can be seen in Table II, the mitigation measure results in a reduction of 3.1 VMT per Capita. After the application of the mitigation measure, the Project is projected to have a VMT per Capita of 48.5. In conclusion, despite the reductions from the feasible VMT mitigation measure, the Project is projected to result in a significant but unavoidable VMT impact. Section 4.2.2.3 of the Clovis Transportation Impact Analysis Guidelines states that significant and unavoidable VMT impacts associated with City of Clovis *General Plan* development have already been disclosed. Considering the Project is consistent with the City of Clovis *General Plan*, the significant and unavoidable VMT impacts have been disclosed. Thus, the Project can tier off the Clovis General Plan SEIR with an MND with VMT mitigation.

Table II: VMT Mitigation

Project Components	*Fresno COG Results[1]*	*Reduction from VMT Mitigation[2]*	*VMT After Mitigation*	*City of Clovis VMT Threshold[2]*	*Above VMT Threshold?*
Residential	51.6	3.1	48.5	14.0	Yes

Note: 1 = VMT Results from Kittelson & Associates per Fresno COG ABM.
2 = VMT Thresholds and Mitigations per City of Clovis *Transportation Impact Analysis Guidelines*.

Conclusion

Conclusions regarding the VMT Analysis of the proposed Project are provided below.

- Per the Fresno COG VMT Analysis output, the Project is projected to result in a VMT per Capita of 51.6 prior to mitigation.
- The mitigation measure found feasible is Increase Residential Density (T-1).
- After the implementation of feasible mitigations measure, the Project's VMT per Capita would be reduced by 3.1. Therefore, the Project is projected to yield 48.5 VMT per Capita.
- The City of Clovis threshold for residential projects is 14.0 VMT per Capita.
- Therefore, the Project is projected to result in significant but unavoidable VMT impacts.
- The Project is consistent with the City of Clovis *General Plan*.
- Since significant and unavoidable VMT impacts associated with City of Clovis *General Plan* development have already been disclosed, the Project, which includes the VMT mitigation measure presented within this report, can be processed with an MND.

Study Participants

JLB Traffic Engineering, Inc. Personnel:

Jose Luis Benavides, PE, TE	Project Manager
Matthew Arndt, EIT	Engineer I/II
Christian Sanchez, EIT	Engineer I/II
Adrian Benavides	Engineering Aide
Carlos Topete	Engineering Aide
Dennis Wynn	Sr. Engineering Technician

Persons Consulted:

John Bonadelle	Bonadelle Neighborhoods
Trent Walker	Bonadelle Neighborhoods
Sean Smith, PE	City of Clovis
Mike Aronson, PE	Kittleson & Associates

References

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Health and Equity". Sacramento: State of California.

Caltrans. 2020. "Vehicle Miles Traveled-Focused Transportation Impact Study Guide". Sacramento: State of California.

Caltrans. 2021. "California Manual On Uniform Traffic Control Devices". Sacramento: State of California.

City of Clovis. 2014. "Clovis General Plan". Clovis: City of Clovis.

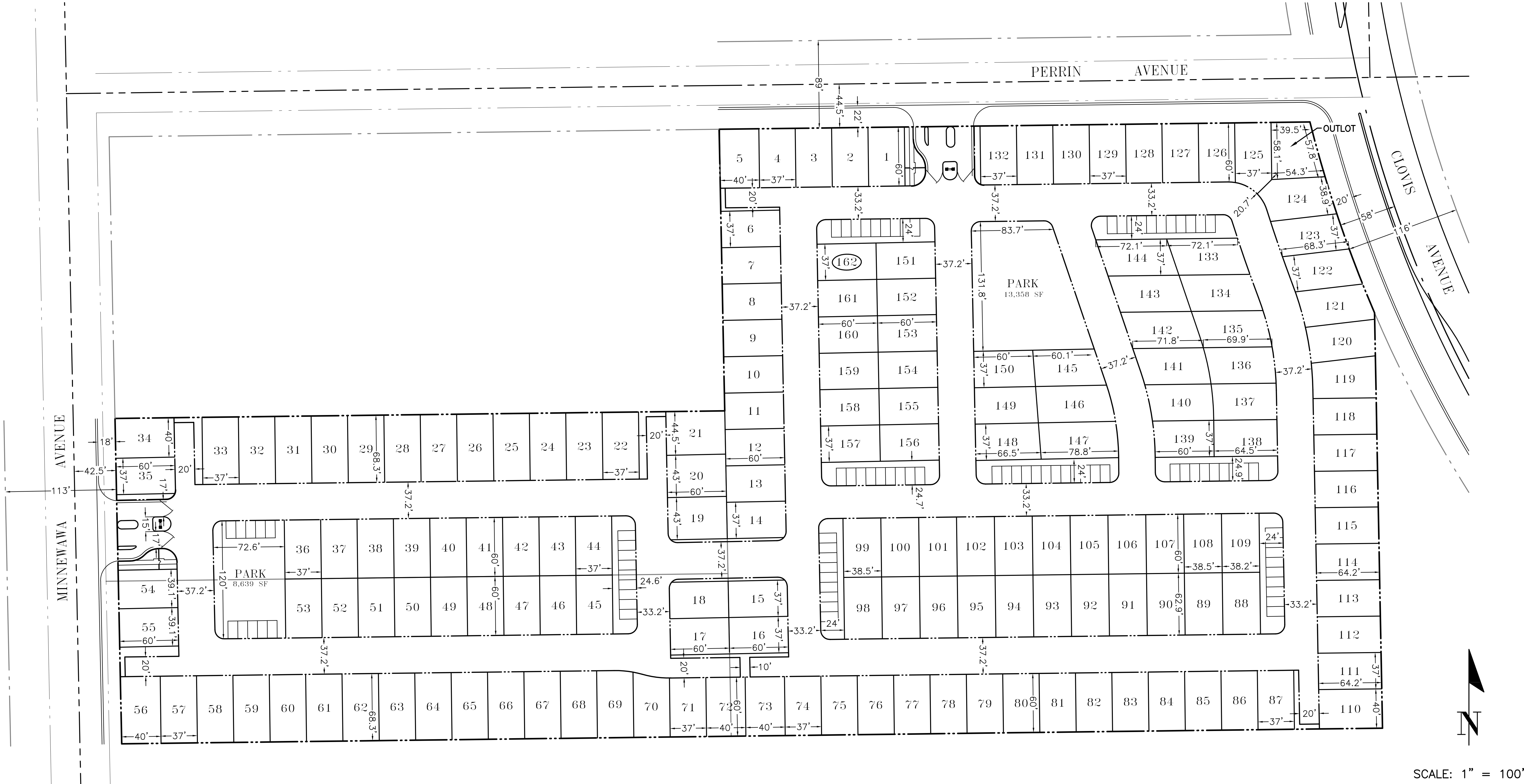
City of Clovis. 2022. "Transportation Impact Analysis Guidelines". Clovis: City of Clovis.

County of Fresno. 2000. "Fresno County General Plan". Fresno: Fresno County.

Governor's Office of Planning and Research. 2018. Technical Advisory On Evaluating Transportation Impacts In CEQA. Ebook. Sacramento: State of California.

Institute of Transportation Engineers. 2021. "Trip Generation Manual: 11th Edition". Washington: Institute of Transportation Engineers. Vol. 1-3.

Exhibit A: Project Site Plan



SITE INFO
37' X 60' LOTS
14.57 GROSS AC
13.95 NET AC
162 LOTS
DENSITY: 11.61 U/AC
87 PARKING STALLS
MAXIMUM LOTS:
MEDIUM – 7.0 DU/AC * 4.71 NET AC = 32.97 DU
MEDIUM-HIGH – 15 DU/AC * 9.24 NET AC = 138.60 DU
TOTAL DU ALLOWED = (32.97+138.6) = 171 LOTS

LAYOUT 5 - 37'x60' LOTS
WITH PASEO CORNER

Harbour & Associates
Civil Engineers
389 Clovis Avenue, Suite 300 • Clovis, California 93612
(559) 325 -7676 • Fax (559) 325 -7699 • e-mail geoffe@harbour-engineering.com

8–14–23

Exhibit B: Fresno COG ABM Output

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742 F 510.839.0871

MEMORANDUM

December 1, 2023 Project #: 29745

To: Mr. Jose Luis Benavides, P.E., President
JLB Traffic Engineering, Inc.
516 W. Shaw Ave., Suite 103
Fresno CA 93704

CC: Matt Arndt, JLB

From: Mike Aronson, P.E.

RE: Clovis Perrin Residential VMT

Kittelson & Associates, Inc. (Kittelson) has applied the Fresno activity-based travel model to evaluate vehicle-miles of travel (VMT) associated with proposed single-family residential project located on the southwest corner of Clovis Avenue and Perrin Avenue in the City of Clovis. The project will include approximately 162 single family residential units. A new TAZ 2856 was created for the 162 single-family units.

Project VMT

The VMT associated with the proposed project is listed in Table 1. The VMT per employee for the project of 51.6 (16.3 internal, 35.3 external) would exceed the impact threshold, based on 13 percent below the regional average, by 268 percent.

Table 1: Clovis Perrin Residential Project VMT

	Per Capita	Per Employee
Project VMT from 2019 Model	47.8	n/a
Adjustment for New/Old Model	1.08	n/a
Project VMT	**51.6**	n/a

Exhibit C: VMT Mitigations

Clovis and Perrin Subdivision VMT Analysis

		TAZ:	**1404**
		Land Use:	Residential
		Fresno COG VMT Output:	51.6
		City of Clovis VMT Threshold:	*14.0*
		% deviation from target threshold:	72.8%
Measure	VMT Mitigation	Maximum Reduction	VMT Reduction (%)
	Project/Site Scale		
	Land Use		
T-1	Increase Residential Density	30.0%	6.1%
T-2	Increase Job Density	30.0%	0.0%
T-3	Provide Transit-Oriented Development	31.0%	0.0%
T-4	Integrate Affordable and Below Market Rate Housing	28.6%	0.0%
	Combined Land Use	65.0%	6.1%
	Trip Reduction Programs		
T-5	Implement CTR Program (Voluntary)	4.0%	0.0%
T-6	Implement CTR Program (Mandatory and Monitoring)	26.0%	0.0%
T-7	Implement CTR Marketing	4.0%	0.0%
T-8	Provide Ridesharing Program	8.0%	0.0%
T-9	Implement Subsidized or Discounted Transit Program	5.5%	0.0%
T-10	Provide End-of-Trip Bicycle Facilities	4.4%	0.0%
T-11	Provide Employer-Sponsored Vanpool	20.4%	0.0%
T-12	Price Workplace Parking	20.0%	0.0%
T-13	Implement Employee Parking Cash-Out	12.0%	0.0%
	Combined Trip Reduction Programs	45.0%	0.0%
	Parking or Road Pricing/Management		
T-14	Provide Electric Vehicle Charging Infrastructure	11.9%	0.0%
T-15	Limit Residential Parking Supply	13.7%	0.0%
T-16	Unbundle Residential Parking Costs from Property Costs	15.7%	0.0%
	Combined Parking or Road Pricing/Management	35.0%	0.0%
	Combined Project/Site Scale Mitigations	***70.0%***	***6.1%***
	Plan/Community Scale		
	Land Use		
T-17	Improve Street Connectivity	30.0%	0.0%
	Neighborhood Design		
T-18	Provide Pedestrian Network Improvement	6.4%	0.0%
T-19-A	Construct or Improve Bike Facility	0.8%	0.0%
T-19-B	Construct or Improve Bike Boulevard	0.2%	0.0%
T-20	Expand Bikeway Network	0.5%	0.0%
T-21-A	Implement Conventional Carshare Program	0.15%	0.0%
T-21-B	Implement Electric Carshare Program	0.18%	0.0%
T-22-A	Implement Pedal (Non-Electric) Bikeshare Program	0.02%	0.0%
T-22-B	Implement Electric Bikeshare Program	0.06%	0.0%

T-22-C	Implement Implement Scootershare Program	0.7%	0.0%
	Combined Neighborhood Design	10.0%	0.0%
Trip Reduction Programs			
T-23	Provide Community-Based Travel Planning	2.3%	0.0%
Parking Or Road Pricing/Management			
T-24	Implement Market Price Public Parking (On-Street)	30.0%	0.0%
Transit			
T-25	Extend Transit Network Coverage or Hours	4.6%	0.0%
T-26	Increase Transit Service Frequency	11.3%	0.0%
T-27	Implement Transit-Supportive Roadway Treatments	0.6%	0.0%
T-28	Provide Bus Rapid Transit	13.8%	0.0%
T-29	Reduce Transit Fares	1.2%	0.0%
	Combined Transit	15.0%	0.0%
	Combined Project/Site Scale Mitigations	***70.0%***	***0.0%***
Clean Vehicles and Fuels			
T-30	Use Cleaner-Fuel Vehicles	N/A	N/A
VMT Mitigation Calculations			
		TAZ:	**1404**
		Land Use:	Residential
		Fresno COG VMT Output:	51.6
		Mitigation VMT Reduction:	-3.1
		Project VMT after Mitigations:	48.5
		City of Clovis VMT Threshold:	14.01
		Target VMT Satisfied?	**FALSE**