RESIDENCE INN
CONDITIONAL USE PERMIT CUP2018-01

INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

PREPARED BY:

CITY OF CLOVIS

Planning Division
1033 Fifth Street
Clovis, CA 93612

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June 2018

ATTACHMENT 1

City of Clovis
Planning and Development Services
1033 Fifth Street
Clovis CA 93612

For County Clerk Stamp

Residence Inn
NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION
NOTICE OF PUBLIC REVIEW OF A PROPOSED MITIGATED NEGATIVE DECLARATION

NOTICE IS HEREBY GIVEN that the City of Clovis intends to adopt a Mitigated Negative Declaration for the Project described below. The Mitigated Negative Declaration will be considered by both the Planning Commission and City Council during public hearings, conducted in the Council Chamber of the Clovis Civic Center, 1033 Fifth Street, Clovis, CA 93612. A separate public notice will be sent and posted prior to each hearing.

The Clovis Planning Commission and City Council will consider the following item:

1. CUP2018-01, a request to a conditional use permit for a 4-story, 110-room hotel with reduced parking to be located at the southeast corner of Santa Ana and Clovis Avenues, in the City of Clovis, County of Fresno.

A Mitigated Negative Declaration has been completed for this project, pursuant to CEQA Guidelines 15070. Recommendation of a proposed Mitigated Negative Declaration does not necessarily mean this project will be approved. Hard copies and electronic copies of the proposed Mitigated Negative Declaration for this project may be reviewed and/or obtained at the City of Clovis Planning Division, 1033 Fifth Street, Clovis, California, Monday through Friday, between 8:00 a.m. and 3:00 p.m.

All interested parties are invited to comment in writing to the Planning Division and/or City Council. Comments will be accepted until 3:00 p.m. on June, 28, 2018. Comments and questions regarding these items should be directed to Lily Cha, Assistant Planner at (559) 324-2335 or email at lilyc@cityofclovis.com.

If you would like to view the Mitigated Negative Declaration and supporting documents, please visit the City of Clovis Website at www.cityofclovis.com. Select “California Environmental Quality Act” on the right hand column of the main page.

If you challenge a project in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City at, or prior to, the public hearing.

Lily Cha, Assistant Planner
PUBLISH: Wednesday, June 6, 2018, *The Business Journal*

City of Clovis
Planning and Development Services
1033 Fifth Street
Clovis CA 93612

For County Clerk Stamp

DRAFT MITIGATED NEGATIVE DECLARATION

Proposed: June 7, 2018

Agency File No: Residence Inn, CUP2018-01

Finding: The City of Clovis has determined that the project described below will not have a significant effect on the environment and therefore the preparation of an Environmental Impact Report is not required.

Lead Agency: City of Clovis is the Lead Agency for this project.

Project Title: Residence Inn, CUP2018-01

Project Location: Located at the southeast corner of Santa Ana and Clovis Avenues, in the City of Clovis, County of Fresno, California.

Project Description:

A. CUP2018-01, a request to a conditional use permit for a 4-story, 110-room hotel with reduced parking to be located at the southeast corner of Santa Ana and Clovis Avenues, in the City of Clovis, County of Fresno.

Environmental Assessment: The Initial Study for this project is available for review at the City of Clovis, Planning and Development Services Department, 1033 Fifth Street, Clovis, CA.

Justification for Mitigated Negative Declaration: The City of Clovis has completed the preparation of an Initial Study for the project described above. The Initial Study did not identify any potentially significant environmental effects that would result from the proposed activity with mitigation measures incorporated. Accordingly, approval of a Mitigated Negative Declaration for the project is recommended. The City finds that the proposed activity can be adequately served by City public services. It will not have a negative aesthetic effect, will not affect any rare or endangered species of plant or animal or the habitat of such species, nor interfere with the movement of any resident or migratory fish or wildlife species. It will not adversely affect water quality, contaminate public water supplies, or cause substantial flooding, erosion, or siltation. It will not have a significant effect on air quality, climate change, transportation or circulation systems, noise, light and glare, and land use. No significant cumulative impacts will occur from this project.

Contact Person: Lily Cha, Assistant Planner Phone: (559) 324-2335

Signature: _____ Date: June 7, 2018

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INITIAL STUDY

1.0 Introduction

This document is an Initial Study and Mitigated Negative Declaration (MND) prepared pursuant to the California Environmental Quality Act (CEQA), for the Project. This MND has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Sections 21000 *et seq*., and the CEQA Guidelines Sections 15070(b), 15071(e).

1.1 Documents Incorporated By Reference

This mitigated negative declaration utilizes information and incorporates information and analysis provided in the following documents pursuant to CEQA Guidelines Section 15150.

- **City of Clovis General Plan**. The 2014 Clovis General Plan provides a description of the project area setting, and sets forth a plan for development of the general plan planning area, of which the current project area is part.
- **Program Environmental Impact Report prepared for the Clovis General Plan.** The General Plan Program EIR describes potential impacts of development of the project area consistent with the general plan land use map. Some of these impacts (e.g. runoff, aesthetics, etc.) are to be expected with any urban development, and are therefore applicable to the current project.
- **Findings and Statement of Overriding Considerations prepared for adoption of the Clovis General Plan.** Adoption of the development plan contained in the General Plan is expected to result in certain unavoidable environmental impacts (Agriculture, Air Quality, Cultural Resources, Greenhouse Gas, Hydrology and Water, Noise and Vibration, Population and Housing, Transportation and Traffic, and Utility and Service Systems) that the City has determined are outweighed by the potential benefits of plan implementation.
- **Clovis Municipal Code Title 5 (Public Welfare, Morals and Conduct) and Title 9 (Development Code)**. This Code consists of the City's regulatory, penal, and administrative laws of general application of the City of Clovis and specifically to development standards, property maintenance and nuisances, necessary for the protection of health, safety and welfare.
- **California Health and Safety Code Section 7050.5.** This section states that in the event that human remains are discovered, there shall be no further disturbance of the site of any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has been notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.
- **Section 15064.5 of the CEQA Guidelines.** This section addresses the discovery of human remains, and the disturbance of potential archaeological, cultural, and historical resources. The requirements of Section 15064.5 with regard to the discovery of human remains are identical to the requirements of Health and Safety Code Section 7050.5.
- **City of Clovis 2017-2018 Budget.** The budget provides information about city services, and objectives, annual spending plan for the 2017-2018 fiscal year, debt obligations, and the five-year Community Investment Program.
- **City of Clovis 2015 Urban Water Management Plan,** July 2016, The Clovis Urban Water Management Plan outlines the City's strategy to manage its water resources through both conservation and source development. The Plan was prepared in compliance with California Water Code Section 10620.
- **Fresno Metropolitan Flood Control District Storm Drainage and Flood Control Master Plan (Adopted December 16, 2015).** The Fresno Metropolitan Flood Control District

(FMFCD) is located in the north-central portion of Fresno County between the San Joaquin and Kings rivers. The FMFCD service area includes most of the Fresno-Clovis metropolitan area (excluding the community of Easton), and unincorporated lands to the east and northeast. The Storm Drainage and Flood Control Master Plan includes program planning, structure, service delivery, and financing, for both flood control and local drainage services. The flood control program relates to the control, containment, and safe disposal of storm waters that flow onto the valley floor from the eastern streams. The local drainage program relates to the collection and safe disposal of storm water runoff generated within the urban and rural watersheds.

- **Fresno Metropolitan Flood Control District Notice of Requirements, April, 18, 2018**, A letter from the District stating that their facilities can accommodate the Project.
- **San Joaquin Valley Air Pollution Control District, Regulation VIII - Fugitive PM10 Prohibitions.** The purpose of Regulation VIII (Fugitive PM10 Prohibitions) is to reduce ambient concentrations of fine particulate matter (PM10) by requiring actions to prevent, reduce or mitigate anthropogenic fugitive dust emissions. Regulation VIII is available for download at http://www.valleyair.org/rules/1ruleslist.htm#reg8. A printed copy may be obtained at the District's Central Region offices at 1990 E. Gettysburg Ave., Fresno, CA 93726.
- **Fresno Irrigation District Letter**, April 2, 2018, An evaluation of project impacts on Fresno Irrigation District facilities.
- **City of Clovis Sewer System Management Plan,** July 2014, An evaluation of impacts to the Master Sewer Collection System.
- **Cultural Archeological Evaluation from Ultra Systems**, April 6, 2018, An evaluation of cultural and archeological resources.
- **Air Quality and Global Climate Change Evaluation from Mitchell Air Quality Consulting,** March 23, 2018, An evaluation of the impacts related to Air Quality and Green House Gas.
- **Clovis Unified School District,** Letter dated March 27, 2018, An evaluation of school enrollment.
- **Traffic Evaluation by JLB Traffic Engineering, Inc.,** May, 2018, an evaluation of traffic related impacts.

Unless otherwise noted, documents incorporated by reference in this Initial Study are available for review at the Clovis Planning and Development Services Department located at 1033 Fifth Street, Clovis, CA 93612 during regular business hours.

1.2 Lead Agency

The lead agency is the public agency with primary responsibility over a proposed project. Where two or more public agencies will be involved with a project, CEQA Guidelines Section 15051 provides criteria for identifying the lead agency. In accordance with CEQA Guidelines Section 15051(b)(1), "the lead agency will normally be the agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." Based on these criteria, the City of Clovis will serve as lead agency for the proposed project.

1.3 Agencies That May Use This Document

This Initial Study and Mitigated Negative Declaration may be used by any responsible or trustee agencies that also have review authority over the project. As stated in the CEQA Guidelines Section 15231:

> *A Final EIR prepared by a lead agency or a Negative Declaration adopted by the lead agency shall be conclusively presumed to comply with CEQA for the purposes of use by responsible agencies which were consulted pursuant to Sections 15072 or 15082 unless one of the following conditions occurs:*

a. The EIR or Negative Declaration is finally adjudged in a legal proceeding not to comply with the requirements of CEQA, or
b. A subsequent EIR is made necessary be Section 15162 of these Guidelines.

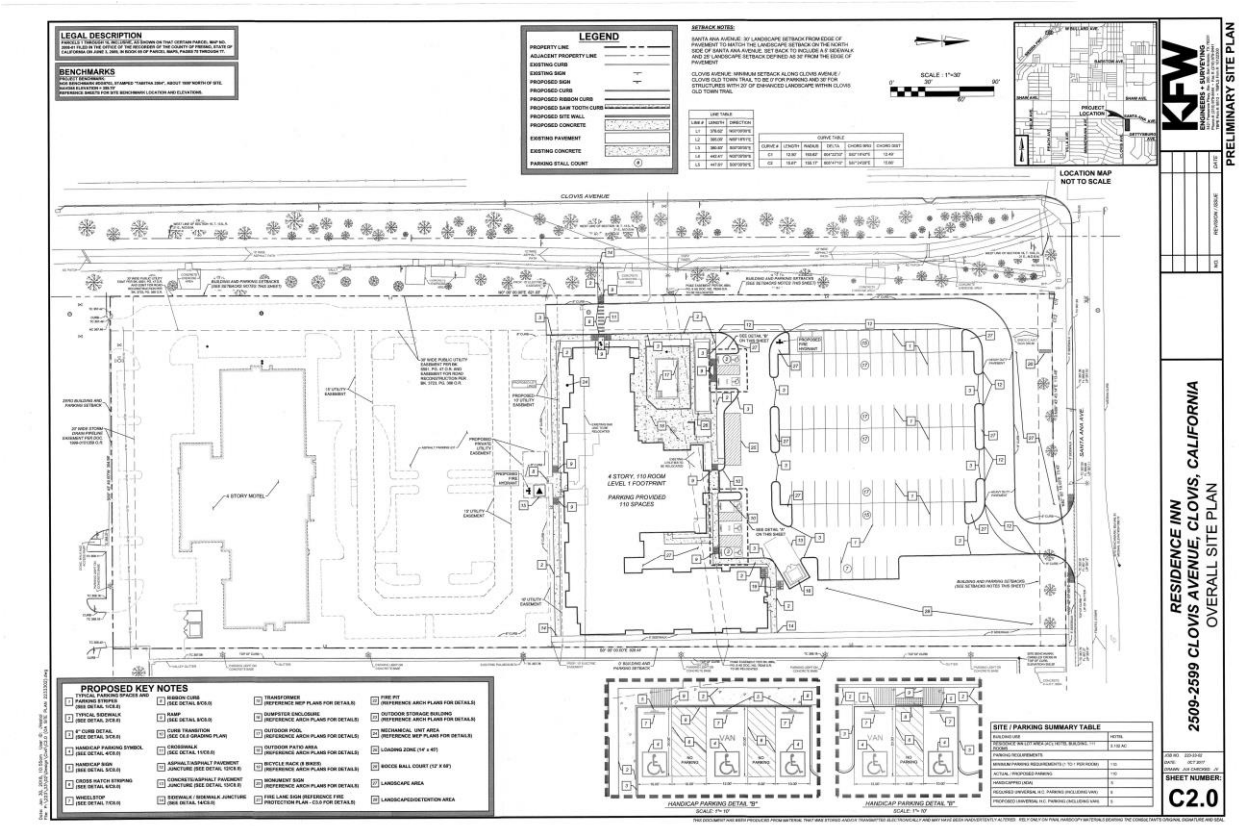
The various local, state, and federal agencies that may use this document are listed in Section 2.0, "Project Description."

2.0 Project Description

The Project is located within the City of Clovis at the southeast corner of Santa Ana and Clovis Avenues. The 3.1 acre site is currently zoned P-C-C (Planned Commercial Center), where the amendment to the P-C-C center use to allow for the hotel use and reduced parking requires approval of a Conditional Use Permit.

The project consists of a 4-story, 110-room hotel building with associated parking on the 3.1 acre site. The hotel building footprint is approximately 27,719 square feet and proposed parking is 110 stalls (see Figure 1).

Figure 1 – Proposed Site Plan



2.1 Project Location

The proposed Project is located at the southeast corner of Santa Ana and Clovis Avenues within the City of Clovis, County of Fresno. Surrounding uses include single-family and multiple-family residential to the west, commercial to the north, commercial to the east, and single-family residential to the south. The site is bordered by Clovis Avenue on the east, Santa Ana Avenue on the south and DeWitt Avenue on the west (see Figure 2).

Figure 2 – Residence Inn Project Location

2.3 Standard Environmental Measures

Standard Environmental measures are methods, measures, standard regulations, or practices that avoid, reduce, or minimize a project's adverse physical impacts on the environment. Based on the underlying authority, they may be applied before, during, or after construction of the Project.

The following standard environmental measures, which are drawn from City ordinances and other applicable regulations and agency practices, will be implemented as part of the Project and incorporated into the City's approval processes for specific individual projects. The City will ensure that these measures are included in any Project construction specifications as appropriate. This has proven to be effective in reducing potential impacts by establishing policies and standard requirements that are applied ministerialy to all applicable projects.

Standard Environmental Measure 1: Measures to Minimize Effects of Construction-Related Noise

The following construction noise control standards per the Clovis Municipal Code (Clovis Municipal Code Section 5.27.604 et seq.) will be required, which are proven effective in reducing and controlling noise generated from construction-related activities.

- Noise-generating construction activities. Unless otherwise expressly provided by permit, construction activities are only permitted between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 5:00 p.m. on Saturday and Sunday. From June 1st through September 15th, permitted construction activity may commence after 6:00 a.m. Monday through Friday. Extended construction work hours must at all times be in strict compliance with the permit.

- Stationary equipment (e.g., generators) will not be located adjacent to any existing residences unless enclosed in a noise attenuating structure, subject to the approval of the Director.

Standard Environmental Measure 2: Erosion Control Measures to Protect Water Quality

To minimize the mobilization of sediment to adjacent water bodies, the following erosion and sediment control measures will be included in the storm water pollution prevention plan (SWPPP), to be included in the construction specifications and Project performance specifications, based on standard City measures and standard dust-reduction measures for each development.

- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways.
- Contain soil and filter runoff from disturbed areas by berms, vegetated filters, silt fencing, straw wattle, plastic sheeting, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area.
- No earth or organic material shall be deposited or placed where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water.
- Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete; solvents and adhesives; thinners; paints; fuels; sawdust; dirt; gasoline; asphalt and concrete saw slurry; heavily chlorinated water.
- Dewatering activities shall be conducted according to the provisions of the SWPPP. No dewatered materials shall be placed in local water bodies or in storm drains leading to such bodies without implementation of proper construction water quality control measures.

Standard Environmental Measure 3: Dust Control Measures to Protect Air Quality

To control dust emissions generated during construction of future parcels, the following San Joaquin Valley Unified Air Pollution Control District (SJVAPCD) Regulation VIII Control Measures for construction emissions of PM10 are required to be implemented (SJVUAPCD Rule 8021). They include the following:

- Watering—for the purpose of dust control, carry-out, and tracking control—shall be conducted during construction in accordance with the City of Clovis' Storm Water Management Plan (SWMP) and the Project Storm Water Pollution Prevention Plan (SWPPP), if applicable.
- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.

- All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
- When materials are transported off site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 2 feet of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

Standard Environmental Measure 4: Measures to Control Construction-Related Emissions

To comply with guidance from the SJVAPCD, the City will incorporate the following measures into the construction specifications and Project performance specifications:

- The construction contractor will ensure that all diesel engines are shut off when not in use on the premises to reduce emissions from idling.
- The construction contractor will review and comply with SJVAPCD Rules 8011 to 8081 (Fugitive Dust), 4102 (Nuisance), 4601 (Architectural Coatings), and 4641 (Paving and Maintenance Activities). Current SJVAPCD rules can be found at http://www.valleyair.org/rules/1ruleslist.htm.
- The construction contractor will use off-road trucks that are equipped with on-road engines, when possible.
- The construction contractor will use light duty cars and trucks that use alternative fuel or are hybrids, if feasible.

Standard Environmental Measure 5: Measures to Minimize Exposure of People and the Environment to Potentially Hazardous Materials

Construction of the Project could create a significant hazard to workers, the public, or the environment though the transport, use or disposal of hazardous materials. Small quantities of potentially toxic substances (such as diesel fuel and hydraulic fluids) would be used and disposed of at the site and transported to and from the site during construction. Accidental releases of small quantities of these substances could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard.

To minimize the exposure of people and the environment to potentially hazardous materials, the following measures will be included in the construction specifications and Project performance specifications for each parcel that includes the use of hazardous materials, based on the City's standard requirements that construction specifications include descriptions of the SWPPP, dust control measures, and traffic mobilization.

- *Develop and Implement Plans to Reduce Exposure of People and the Environment to Hazardous Conditions Caused by Construction Equipment.* The City/contractor shall demonstrate compliance with Cal OSHA as well as federal standards for the storage and

handling of fuels, flammable materials, and common construction-related hazardous materials and for fire prevention. Cal OSHA requirements can be found in the California Labor Code, Division 5, and Chapter 2.5. Federal standards can be found in Occupational Safety and Health Administration Regulations, Standards—29 CFR. These standards are considered to be adequately protective such that significant impacts would not occur. Successful development and implementation of the proper storage and handling of hazardous materials will be measured against the state and federal requirements as verified by the City of Clovis.

- *Develop and Implement a Hazardous Materials Business Plan in Accordance with the Requirements of the County of Fresno Environmental Health System Hazardous Materials Business Plan Program.* The City shall require contractors to develop and implement a Hazardous Materials Business Plan, if required, in accordance with the requirements of the County of Fresno Environmental Health System (EHS) Hazardous Materials Business Plan Program. The Hazardous Materials Business Plan shall be submitted to the County EHS and the City of Clovis Fire Department prior to construction activities and shall address public health and safety issues by providing safety measures, including release prevention measures; employee training, notification, and evacuation procedures; and adequate emergency response protocols and cleanup procedures. A copy of the Hazardous Materials Business Plan shall be maintained on-site, during site construction activities and as determined by the County EHS.
- *Immediately Contain Spills, Excavate Spill-Contaminated Soil, and Dispose at an Approved Facility.* In the event of a spill of hazardous materials in an amount reportable to the Clovis Fire Department (as established by fire department guidelines), the contractor shall immediately control the source of the leak, contain the spill and contact the Clovis Fire Department through the 9-1-1 emergency response number. If required by the fire department or other regulatory agencies, contaminated soils shall be excavated, treated and/or disposed of off-site at a facility approved to accept such soils.
- As applicable, each Project applicant shall demonstrate compliance with Cal-OSHA for the storage and handling of fuels, flammable materials, and common construction-related hazardous materials and for fire prevention. Cal-OSHA requirements can be found in the California Labor Code, Division 5, Chapter 2.5. Federal standards can be found in Occupational Safety and Health Administration Regulations, Standards—29 CFR.

Standard Environmental Measure 6: Measures to Protect Undiscovered Cultural Resources

If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are inadvertently discovered during ground-disturbing activities, the City shall require that work stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the City of Clovis and other appropriate agencies.

If human remains of Native American origin are discovered during Project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Pub. Res. Code Sec. 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- The Fresno County coroner has been informed and has determined that no investigation of the cause of death is required; and if the remains are of Native American origin,
  - The descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or

- □ The Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100) and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission.

Standard Environmental Measure 7: Develop and Implement a Construction Traffic Control Plan

If applicable, the construction contractor, in coordination with the City, will prepare a traffic control plan during the final stage of Project design. The purpose of the plan is to insure public safety, provide noise control and dust control. The plan shall be approved by the City of Clovis City Engineer and comply with City of Clovis local ordinances and standard policies.

- The construction traffic control plan will be provided to the City of Clovis for review and approval prior to the start of construction and implemented by construction contractor during all construction phases, and monitored by the City.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Introduction

This chapter provides an evaluation of the potential environmental impacts of the proposed Project, including the CEQA Mandatory Findings of Significance. There are 18 specific environmental topics evaluated in this chapter including:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities/Service Systems

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**.**

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.1 Aesthetics *Would the Project:*				
a. Have a substantial effect on a scenic vista?	❒	❒	■	❒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	❒	❒	■	❒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	❒	❒	■	❒
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	❒	■	❒	❒

Environmental Setting

The City of Clovis is located within the San Joaquin Valley. As a result, the Project site and surrounding areas are predominantly flat. The flat topography of the valley floor provides a horizontal panorama providing vistas of the valley. On clear days, the Sierra Nevada Mountains are visible to the east. Aside from the Sierra Nevada and nearby foothills, there are no outstanding focal points or views from the City.

The Project is located at the southeast corner of Santa Ana and Clovis Avenues and is surrounded by commercial development to the north, the Center of Advanced and Research and Technology to the east, existing hotels to the south, and single-family residential homes to the west across Clovis Avenue, a major arterial street. The construction of the hotel is consistent with commercial development and is compatible with the surrounding development.

The Clovis Rail Trail boarders the western property line of the subject property. Pedestrian connection from the hotel site to the trail will be provided.

Impacts

The Project may result in significant aesthetic impacts if it substantially affects the view of a scenic corridor, vista, or view open to the public, causes substantial degradation of views from adjacent residences, or results in night lighting that shines into adjacent residences.

a. The proposed Project will not obstruct federal, state or locally classified scenic areas, historic properties, community landmarks, or formally classified scenic resources such as a scenic highway, national scenic area, or state scenic area. The City of Clovis is located in a predominantly agricultural area at the base of the Sierra Nevada Mountain Range, which provides for aesthetically pleasing views and open spaces. The project site is currently vacant of buildings with one advertising structure located at the southeast corner of the site. The project proposes a tire center located within the building and a fuel station along Clovis Avenues, consistent with the Clovis Development Code. As such, the implementation of the Project using current zoning standards, as well as the applicant's proposal to increase landscape setbacks and reduce the use of tall masonry walls would result in a less than significant impact to scenic vistas.

b. The Project is considered infill development and is surrounding by developed properties including commercial and residential. The project is not located near a scenic highway. The development of this parcel would have a less than significant impact on scenic resources.

c. The project area is a mix of residential and commercial. The implementation of the Project, consistent with the existing and proposed zoning would not substantially degrade the visual character or quality of the site and its surroundings.

d. The Project will include on-site lighting, which would introduce a new source of light. The lighting is necessary to provide enough illumination at night for security and traffic purposes. All lighting will be installed per City and PG&E standards. A requirement to reduce up-lighting or shield lighting having direct impact to adjacent development is necessary. With the inclusion of the following Mitigation Measure, impacts in this category will be reduced to a less than significant impact.

Mitigation Measure 3.1-d

The developer shall direct all on-site lighting downward and provide physical shields to prevent direct view of the light source from adjacent residential properties. Street lighting shall be spaced in accordance with City Standards to reduce up-lighting. The applicant shall utilize a PG&E street light which directs light downward.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.2 Agriculture and forest resources *Would the Project:*				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and	❒	❒	❒	■

Monitoring Program of the California Resources Agency, to non-agricultural use.				
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❒	❒	❒	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)) or timberland (as defined in Public Resources Code section 4526)?	❒	❒	❒	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	❒	❒	❒	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	❒	❒	■	❒

Environmental Setting

The Project is located at the southeast corner of Santa Ana and Clovis Avenues on an in-fill property.

Since the early 1950s, Fresno County has led all counties in the United States in the greatest agricultural production by dollar value (Fresno County 2000; Fresno County 2011). Agriculture is the largest industry in the county, producing $5.94 billion in 2010. The top five crops by dollar value in 2010, in descending order, were grapes, almonds, tomatoes, poultry, and milk (Fresno County 2011). In 2010, about 1.6 million acres, or 2,500 square miles, were in agricultural production, that is, about 42 percent of the county's land area (UCCE 2011).

The early agricultural history of Clovis was partly tied to the logging industry in the Sierra Nevada. A 42-mile log flume was built from Shaver Lake to Clovis, and a mill and finishing plant were developed in Clovis. Other agricultural products from the Clovis area included grains and livestock (Clovis 2012). Currently, there is little active agricultural use in the Plan Area because of water supply constraints and soil suitability issues, even though 7 percent of the SOI and 36 percent of the non-SOI Plan Area are designated Agriculture.

There are 10,199 acres in the Plan Area designated for agricultural use under the current General Plan— 9,810 acres in the non-SOI Plan Area and 389 acres in the SOI. No land within the City is designated for agriculture (see Figure 3-4, *Current General Plan Land Use*). The land designated for agriculture is approximately 23 percent of the entire Plan Area.

The General Plan EIR analyzed the impacts of the City's urban growth on agricultural land and includes mitigation measures to reduce those impacts; however, impacts to agricultural land remain significant and unavoidable. A Statement of Overridding Considerations was adopted for the impacts to agriculture lands. The proposed Project does not significantly impact agricultural resources as identified in the General Plan's PEIR.

Impacts

A significant impact may occur if the Project:

- Converts Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.
- Conflicts with existing zoning for agricultural use, or a Williamson Act contract.
- Conflicts with existing zoning for, or cause rezoning of, forest land or timberland.
- Results in the loss of forest land or conversion of forest land to non-forest use.
- Involves other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

a. The Project is not located within lands identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

b. The Project is not within lands which have existing Williamson Act or other contracts.

c. The Project will not conflict with any forest or timberland zoning. The Project site does not contain and is not adjacent to any forest or timberland resources.

d. The Project will not result in the loss of forest land or conversion of forest land to non-forest use.

e. All existing and/or planned services and infrastructure in the area can accommodate the proposed project. Other than the project site, there will be no changes to the existing environment which will result in conversion of Farmland to a non-agricultural use. The Project will not result in the other surrounding properties converting from farmland or forest land.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.3 Air Quality *Will the proposal:*				
a. Conflict with or obstruct implementation of the applicable air quality plan?	❒	❒	■	❒
b. Violate any air quality standards or contribute to an existing or projected air quality violation?	❒	❒	■	❒
c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	❒	❒	■	❒
d. Expose sensitive receptors to substantial pollutant concentrations?	❒	❒	■	❒
e. Create objectionable odors?	❒	❒	■	❒

Environmental Setting

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. Air pollution from significant activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources. These sources, coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air.

The SJVAB is approximately 250 miles long and an average of 35 miles wide. It is bordered by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. There is a slight downward elevation gradient from Bakersfield in the southeast end (elevation 408 feet) to sea level at the northwest end where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the valley (SJVAPCD 2012a).

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 (SJVAPCD 2012a).

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 Clean Air Act 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 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 (CCAA), 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 seven air pollutants. As shown in Table 5.3-1, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants are ozone (O3), nitrogen dioxide (NO2), carbon monoxide (CO), sulfur dioxide (SO2), coarse inhalable particulate matter (PM10), fine inhalable particulate matter (PM2.5), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

TABLE 3.4-1
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	-- 0.075 ppm	0.09 ppm 0.07 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual 1-Hour	0.053 ppm 0.100 ppm	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual 24-Hour 1-Hour	0.03 ppm 0.14 ppm 0.075 ppm	-- 0.04 ppm 0.25 ppm
PM_{10}	Annual 24-Hour	-- 150 ug/m^3	20 ug/m^3 50 ug/m^3
$PM_{2.5}$	Annual 24-Hour	15 ug/m^3 35 ug/m^3	12 ug/m^3 --

Lead	30-Day Avg. 3-Month Avg.	-- 1.5 ug/m^3	1.5 ug/m^3 --

Notes: ppm = parts per million; ug/m^3 = micrograms per cubic meter.
Source: California Air Resources Board, 2008. Ambient Air Quality Standards (4/01/08), http://www.arb.ca.gov.aqs/aaqs2.pdf.

In addition to the criteria pollutants discussed above, 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 on the basis of 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 SIP. Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

At the federal level, the SJVAPCD is designated as extreme nonattainment for the 8-hour ozone standard, attainment for PM10 and CO, and nonattainment for PM2.5. At the state level, the SJVAB is designated nonattainment for the 8-hour ozone, PM10, and PM2.5 standards. The SJVAB has not attained the federal 1-hour ozone, although this standard was revoked in 2005.

Impacts

The SJVUAPCD has established the following standards of significance (SJVUAPCD, 1998). A project is considered to have significant impacts on air quality if:

- A project results in new direct or indirect emissions of ozone precursors (ROG or NOx) in excess of 10 tons per year.
- Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact.
- Any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of toxic air contaminants would be deemed to have a potentially significant impact.
- A project produces a PM10 emission of 15 tons per year (82 pounds per day).

While the SJVUAPCD CEQA guidance recognizes that PM_{10} is a major air quality issue in the basin, it has to date not established numerical thresholds for significance for PM_{10}. However, for the purposes of this analysis, a PM_{10} emission of 15 tons per year (82 pounds per day) was used as a significance threshold. This emission is the SJVUAPCD threshold level at which new stationary sources requiring permits for the SJVUAPCD must provide emissions "offsets". This threshold of significance for PM_{10} is consistent with the SJVUAPCD's ROG and NO_x thresholds of ten tons per year which are also the offset thresholds established in SJVUAPCD Rule 2201 New and Modified Stationary Source Review Rule.

The SJVUAPCD significance threshold for construction dust impacts is based on the appropriateness of construction dust controls, including compliance with its Regulation VIII fugitive PM10 Prohibitions. The SJVUAPCD guidelines provide feasible control measures for construction emission of PM_{10} beyond that required by SJVUAPCD regulations. If the appropriate construction controls are to be

implemented, then air pollutant emissions for construction activities would be considered less than significant.

The Air Quality and Greenhouse Gas Impacts were analyzed by Mitchell Air Quality Consulting. The study prepared on March 23, 2018, stated that the project will have a less than significant impact to air quality or greenhouse gas, with the incorporation of existing measures as well as policies and measures per the San Joaquin Valley Air Pollution Control District.

a. The project's emissions are less than significant for all criteria pollutants and would not result in inconsistency with the Air Quality Plan (AQP) for this criterion. The project's existing land use designation (General Commercial) would provide densities and development patterns consistent with the land use policies of the City of Clovis 2014 General plan. The project complies with all applicable policies, implementation actions, and mitigation measures of the 2014 General Plan; therefore, the project is consistent with the AQP, and the impact would be less than significant.

b. The project would not exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) annual construction emission threshold for any pollutant. Therefore, the project would be less than significant. No mitigation beyond compliance with existing regulations is required.

c. The project site is located within the San Joaquin Valley Air Basin and is a "nonattainment" area for the federal and state ambient air quality standards for ozone and particulate matters. Regional analysis of construction and operational emissions indicates that the project would not exceed the District's significance thresholds and the project is consistent with the applicable Air Quality Attainment Plan. The project would not result in significant cumulative health impacts.

d. The project does not exceed SJVAPCD screening thresholds for localized criteria pollutant impacts on sensitive receptors. The project would not result in significant impacts from operational TAC emissions and Valley fever. Therefore, the project's impact on sensitive receptors would be less than significant.

e. The project may cause temporary localized odors from construction such as diesel-powered vehicles and equipment on-site, however his would not likely be noticeable for extended periods of time beyond the project's site boundaries. The project is not considered a generator of objectionable odors and is not a sensitive receptor, therefore is considered less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.4 Biological Resources *Will the proposal result in impacts to:*				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	❒	■	❒	❒
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	❒	❒	■	❒
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	❒	❒	■	❒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	❒	■	❒	❒
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❒	❒	■	❒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❒	❒	■	❒

Environmental Setting

The Project site is currently vacant of buildings and trees. The site is routinely disked and abated for weeds. The site is bounded by residential and pedestrian paths to the west, and commercial to the north, east, and south.

Impacts

The Project would have a significant effect on the biological resources if it would:

- 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;
- 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;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any resident or migratory fish or wildlife species;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

CEQA Guidelines Section 15380 further provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists if, for example, it is likely to become endangered in the foreseeable future. This includes listed species, rare species (both Federal and California), and species that could reasonably be construed as rare.

a. According to a site assessments performed by Krazan & Assocaites, Inc., Inc, the Project would result in 3.1 ac of permanent impacts to disturbed and ruderal areas in the BSA. With inclusion of mitigation measures to address the nesting season for ground nesting birds, impacts in this category are less than significant.

b. There is no riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service within the project area. Therefore, the proposed project would not have a substantial adverse effect on riparian or other sensitive natural habitat.

c. The project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act, including, but not limited to, marsh, vernal pool, coastal, etc., through direct removal, filling, hydrological interruption, or other means.

d. The project would not interfere 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. To avoid the spread of invasive species from the BSA during Project construction, a mitigation measure has been added.

e. The applicant will be required to provide a tree survey to determine if there are any existing trees on the property that are protected under the City of Clovis tree preservation ordinance.

f. The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

Mitigation Measures

- **Mitigation Measure 3.4-a1:** Should project construction be scheduled to commence between February 1 thru August 31, a pre-construction survey for ground nesting birds shall be conducted by a qualified biologist.
- **Mitigation Measure 3.4-a2:** If an active nest is discovered within the BSA, a 100-ft no disturbance buffer shall be established around the nest (within the BSA) using orange

construction fencing. A qualified biologist shall evaluate the potential for construction activities to disturb normal nesting behavior and adjust the buffer distance, as appropriate. The buffer fencing shall be maintained in good condition until the nest is inactive.

- **Mitigation Measure 3.4-a3:** Disturbance of active nests shall be avoided until it is determined by a qualified biologist that nesting is complete and the young from have fledged or that the nest has failed. If work is allowed to proceed, at a minimum, a qualified biologist shall be on-site during the start of construction activities during the nesting season to monitor nesting activity. The monitor shall have the authority to stop work if it is determined the Project is adversely affecting nesting activities.
- **Mitigation Measure 3.4-c:** All equipment shall be thoroughly cleaned before leaving the site.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.5 Cultural Resources *Will the proposal:*				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	❒	❒	■	❒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	❒	❒	■	❒
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❒	❒	■	❒
d. Disturb any human remains, including those interred outside of formal cemeteries?	❒	❒	■	❒

Environmental Setting

Mitigation Measures in the Clovis General Plan Program Environmental Impact Report, require evaluation of the site for archaeological, paleontological, and historical structure sensitivity. These mitigation measures, which identify archaeological and paleontological levels of sensitivity, list historically important sites identified by the Fresno County Library. The Project is not anticipated to impact any cultural resources; however, the Project could lead to the disturbance of undiscovered archaeological and paleontological resources. General Plan Conservation Element Goal 2, acts to preserve historical resources, and mitigation measures adopted in association with the General Plan PEIR help to reduce potential impacts to a less than significant level. The project was evaluated by Ultra Systems who concluded that there are no previously recorded prehistoric or historic sites identified within the project site.

Pursuant to requirements of SB18 and AB52, a notification was sent to the Native American Heritage Commission for review with local tribes for cultural significance. Staff did not receive any request for consultation within the 90-day review period.

Impacts

The Project may have a significant impact on cultural resources if it causes substantial adverse changes in the significance of a historical or archaeological resource as set forth by the California Register of Historic Places and Section 106 of the National Historic Preservation Act; directly or indirectly destroys a unique paleontological resource or site or unique geologic feature; or disturbs any human remains, including those interred in formal cemeteries. A cultural study was performed by Ultra Systems and concluded that there are no previously recorded prehistoric or historic sites identified within the project site.

a. A cultural Resource Assessment was conducted by Ultra Systems. The assessment concluded that the proposed site would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 of the CEQA Guidelines. Therefore impacts in this category are less than significant.

b&c. The proposed Project is not anticipated cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the CEQA Guidelines or directly or indirectly destroy a unique paleontological resource or site or unique geological features. There are no known archaeological or paleontological resources located in the areas of construction. These areas have been previously disturbed with previous agriculture activity; however with ground disturbance there is chance that previously undiscovered archaeological and/or paleontological resources could be uncovered. The Project is subject to Standard Environmental Measure 6: Measures to Protect Undiscovered Cultural Resources. Therefore, impacts will be less than significant.

d. The site has not been identified as containing areas where human remains may be located. However, California Public Resources Code Section 5097.98, provides procedures in case of accidental finds. Should any human remains be discovered at any time, all work is to stop and the County Coroner must also be immediately notified pursuant to California Health and Safety Code, Section 7050.5 and California Public Resources Code, Section 5097.98. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains. Compliance with this regulatory compliance measure would ensure that potential impacts due to discovery of human remains would be less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.6 Geology and Soils *Will the Project:*				
a. Expose people or structures to 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?	❒	❒	❒	■
b Result in substantial soil erosion or the loss of topsoil?	❒	❒	■	❒
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	❒	❒	❒	■
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	❒	❒	❒	■
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?	❒	❒	❒	■

Environmental Setting

The General Plan EIR identified no geologic hazards or unstable soil conditions known to exist on the Project site. There are several known faults that exist close enough to the Project to cause potential damage to structures or individuals. The City of Clovis has adopted the California Building Code to govern all construction within the City, further reducing potential impacts in this category by ensuring that development is designed to withstand seismic or other geologic hazards.

Impacts

The Project may result in significant earth impacts if it causes substantial erosion or siltation; exposes people and structures to geologic hazards or risk from faults, landslides, unstable soil conditions, etc.; or substantially alters the natural topography or a unique geological or physical feature. Grading that disturbs large amounts of land or sensitive grading areas (e.g. slopes in excess of 20 percent, intermittent drainages) may cause substantial erosion or siltation.

a. No known faults with evidence of historic activity cut through the valley soils in the Project vicinity. The major active faults and fault zones occur at some distance to the east, west, and south of the Project site, the closest fault being approximately 62 miles to the southwest. Due to the geology of the Project area and its distance from active faults, the potential for loss of life, property damage, ground settlement, or liquefaction to occur in the Project vicinity is considered minimal.

Ground shaking generally decreases with distance and increases with the depth of unconsolidated alluvial deposits. The most likely source of potential ground shaking is attributed to the San Andreas, Owens Valley, and the White Wolf faults. Based on this premise, and taking into account the distance to the causative faults, the potential for ground motion in the vicinity of the Project site is such that a minimal risk can be assigned.

Liquefaction describes a phenomenon in which a saturated soil loses strength during an earthquake as a result of induced shearing strains. Lateral and vertical movement of the soil mass, combined with loss of bearing usually results. Loose sand, high groundwater conditions (where the water table is less than 30 feet below the surface), higher intensity earthquakes, and particularly long duration of ground shaking are the requisite conditions for liquefaction. Studies indicate that the soil types are not conducive to liquefaction (General Plan, Page 7-6 and General Plan EIR, Page 4-5).

Landslides and mudflows are more likely in foothill and mountain areas where fractured and steep slopes are present (as in the Sierra Nevada Mountains). The Project is located on relatively flat topography, therefore the Project will not result in or expose people to potential impacts from landslides or mudflows.

b. The sandy loam soil on the project site has a moderate potential for erosion. Project construction activities would loosen the soil, leaving it exposed to potential water and wind erosion. The eroded soils, in turn, could be transported off the project site. Compliance with the provisions of the Clovis-Fresno Storm Water Quality Management Program (CFSWQMP), which incorporates the Construction General Permit, issued by the State Water Resources Control Board (SWRCB). The Construction General Permit is required for all projects that disturb one acre of land or more. The permit requirements include preparation of a Storm Water Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer to address potential water quality issues. The SWPPP includes implementation of Best Management Practices to avoid or minimize adverse water quality impacts. Best Management Practices fall within the categories of Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control. Only Best Management Practices applicable to the project would become part of the SWPPP. In short, the project has potentially significant impacts related to erosion, but compliance with SJVAPCD Regulation VIII and SWPPP, would result in a less than significant impact.

c. The soils underlying the sites where the facilities would be constructed have not been identified as inherently unstable or prone to failure. The soils are not conducive to liquefaction and landslides are unlikely on this topographically flat project site. The project would not change existing stability conditions. Appropriate engineering design would avoid potential adverse effects. The project would have no impact on the stability of soils.

d. Potential hazards from liquefaction, lateral spreading, seismically induced settlement, and subsidence are considered unlikely given the stiff soil conditions of the project site. Because the topography of the project site is flat, it is not at risk for landslides or geologic hazards resulting from steep slopes. Additionally, all new structures will be required to conform to

current seismic protection standards in the California Building Code (California Code of Regulations Title 24).

It is possible that grading and construction activities related to development of the Project could contribute to soil erosion. However, with implementation of erosion control measures as required by state and local regulation, erosion will be less than significant.

Based on these factors, impacts pertaining to geology and soil factors resulting from the Project are less than significant

e. The City of Clovis provides necessary sewer and water systems for development within the City. The Project will not utilize septic tanks or alternate waste disposal.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.7 Greenhouse Gas Emissions *Will the proposal:*				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	❒	❒	■	❒
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	❒	❒	■	❒

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 back into the atmosphere, much like a greenhouse does. 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 snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.[1] 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, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gases (GHG) 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 (AB 32), which requires the California Air Resources Board (CARB) 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 (representing a 25 percent reduction in emissions).

In April 2009, the California Office of Planning and Research published proposed revisions to the California Environmental Quality Act to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

On December 30, 2009, the Natural Resources Agency adopted the proposed amendments to the CEQA Guidelines in the California Code of Regulations.

In December 2009, the San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted guidance for addressing GHG impacts in its *Guidance for Valley Land Use Agencies in Addressing GHG Impacts for New Projects Under CEQA*. The guidance relies on performance-based standards, otherwise known

[1] California Air Resources Board (ARB), 2006, Climate Change website. (http://www.arb.ca.gov/cc/120106workshop/intropres12106.pdf).

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.

It is important to note the threshold of evidence required when relying on quantification of project-generated GHG emissions in comparison to BAU conditions to determine consistency with AB 32's reduction goals. Based on the California Supreme Court's decision in Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming (2015) 224 Cal.App.4th 1105 (CBD vs. CDFW; also known as the "Newhall Ranch case"), substantial evidence would need to be provided to document that project-level reductions in comparison to a BAU approach would be consistent with achieving AB 32's overall statewide reduction goal. Given that AB 32's statewide goal includes reductions that are not necessarily related to an individual development project, the use of this approach may be difficult to support given the lack of substantial evidence to adequately demonstrate a link between the data contained in the AB 32 Scoping Plan and individual development projects.

Alternatively, the Court identified potential options for evaluating GHG impacts for individual development projects, which included the use of GHG numeric thresholds, such as a numeric, mass-emissions threshold.

The SJVAPCD has adopted a Climate Change Action Plan (CCAP), which includes suggested BPS for proposed commercial development projects. Appendix J of the SJVAPCD Final Staff Report for the CCAP 13 contains GHG reduction measures that would be applicable to the proposed Project. The proposed Project's consistency with many of the CCAP measures would be determined by design decisions that are currently not evident from the conceptual plans evaluated for the environmental analysis in this report. Implementation of the SJVAPCD recommended on-site emission reduction mitigation measures would ensure the proposed Project incorporates design features consistent with the applicable measures, as identified in Appendix J of the SJVAPCD Final Staff Report for the CCAP.

Significance Criteria

The SJVAPCD's *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 AB 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? If no, then
- Does the project achieve 29% GHG reductions by using approved Best Performance Standards? If no, then
- Does the project achieve AB 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.

Because BPS have not yet been adopted and identified for specific development projects, and because neither the ARB nor the City of Clovis has not yet adopted a plan for reduction of GHG with which the Project can demonstrate compliance, the goal of 29% below BAU for emissions of GHG has been used as a threshold of significance for this analysis.

A global climate change evaluation was performed by Ultra Systems, dated March 23, 2018. The evaluation concluded that the project is consistent with the goals of the ARB and impact is less than significant.

Impacts

a. A significance threshold of 29% below "business as usual" levels is considered to demonstrate that a project would be consistent with the goals of AB 32. A global climate change evaluation was performed by Ultra Systems. The project would achieve reductions 8.3 percent beyond the ARB 2020 21.7 percent target and 1.0 percent beyond the SJVAPCD and City of Clovis PEIR 29 percent reduction from BAU requirements from adopted regulations. The study concludes that impacts related to conflicts with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases is less than significant.

b. A Global Climate Change Evaluation was prepared for the Project by Ultra Systems. The evaluation addresses the potential for greenhouse gas emissions during construction and after full build out of the proposed Project. Taking into account the 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 GEG emissions to 19990 levels by 2020, 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.8 Hazards and Hazardous Materials *Will the Project:*				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	❒	❒	■	❒
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❒	❒	■	❒
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	❒	❒	■	❒

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	❒	❒	❒	■
e. For a project located 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 for people residing or working in the project area?	❒	❒	❒	■
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	❒	❒	■	❒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❒	❒	■	❒
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❒	❒	❒	■

Environmental Setting

Definitions

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 “a 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 follows:

“Hazardous material” means 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.

Hazardous Materials History

Existing and past land use activities are potential indicators of hazardous materials use or contamination. Some examples include sites where industrial or agricultural activities have occurred, which may contain soil or groundwater contaminated by hazardous substances. Other hazardous material sources include leaking underground tanks in commercial and industrial areas, surface runoff from contaminated sites, and migration of contaminated groundwater into areas that may be excavated

as part of the project. The General Plan Environmental Safety Element Policies were adopted to reduce the potential safety risks associated with hazardous materials and urban development.

The project site is currently undeveloped. Field review by City staff did not identify any obvious signs of contamination. Further, the Project site is not listed as part of the State of California's Hazardous Waste and Substances Site List.

Schools

Tarpey Elementary School is located approximately .86 miles southwest of the Project site. Clovis' Center for Advanced Research and Technology is located directly to the east of the project site. No other existing schools or future school sites are located within one-quarter of the project site

Impacts

a. The types and amounts of hazardous materials that would be used in connection with the Project would be typical of those used during construction of commercial developments, including vehicle fuels, paints, oils, and transmission fluids. Similarly, the types and amounts of hazardous materials used during operation of the Project would be typical of such developments and would include cleaning solvents, pesticides for landscaping, painting supplies, and petroleum products. However, all potentially hazardous materials to be used during construction and operation of the Project would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable federal, State, and local regulations. The project does not involve the use, transport or disposal of hazardous materials and would not result in such an impact. No hazard issues are expected with this development of this site, and no impacts anticipated in the category. Based on field review, no signs of potential contamination or hazardous materials were identified. As noted above, the use and handling of hazardous materials during construction and operation would occur in accordance with applicable federal, state, and local laws. Therefore, these impacts are considered less than significant

b. Based on field review, there are no signs of potential contamination or hazardous materials on the project site. Construction activities that could involve the release of hazardous materials associated with Project would include maintenance of on-site construction equipment, which could lead to minor fuel and oil spills. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws. Therefore, these impacts are considered less than significant.

c. Tarpey Elementary School is located approximately .86 miles southwest of the Project site. Clovis' Center for Advanced Research and Technology is located directly to the east of the project site. Based on field review, there are no signs of potential contamination or hazardous materials on the project site. All materials used during both the construction and operation of the Project would be used in accordance with manufacturers' instructions and handled in compliance with applicable federal, State, and local regulations. The Project would not involve the use or handling of acutely hazardous materials, substances, or waste. As such, the use of such materials would not create a significant hazard to nearby schools. Therefore, impacts in this category are considered less than significant.

d. The land within the Project site is not included on a list of hazardous materials sites. The Department of Toxic Substances Control's Hazardous Waste and Substances Site List (Cortese List) does not list any hazardous waste and substances sites within the City of Clovis (www.dtsc.ca.gov/database/Calsites/Cortese_List.cfm).

e. The Project site is not located within the Fresno-Yosemite International Airport land use plan or, within two miles of a public airport or public use airport. The proposed Project would not bring about a safety hazard related to an airport or aviation activities for people residing or working in the Project area. There are no impacts in this category.

f. The Project site is not located within the vicinity of a private airstrip, and would not result in a safety hazard for people residing or working in the Project vicinity related to an airstrip or aviation activities. Impacts are considered less than significant.

g. There may be temporary detouring of traffic during construction periods. Those periods will be monitored by traffic personnel. However, the proposed Project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

h. The Project site is located in an area surrounded by urban uses. As such, the site is not adjacent to or in close proximity to wildland areas. No impacts are anticipated.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.9 Hydrology and Water Quality *Will the proposal result in:*				
a. Violate any water quality standards or waste discharge requirements?	❒	❒	■	❒
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	❒	❒	■	❒
c. 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 result in substantial erosion or siltation on- or off-site?	❒	❒	■	❒
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	❒	❒	■	❒
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	❒	❒	■	❒
f. Otherwise substantially degrade water quality?	❒	❒	■	❒
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	❒	❒	■	❒
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	❒	❒	■	❒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❒	❒	■	❒
j. Inundation by seiche, tsunami, or mudflow?	❒	❒	❒	■

Environmental Setting

The General Plan Area 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 and the Plan Area discharges 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. Those areas drain to streams that discharge into reservoirs, including Big Dry Creek Reservoir in the north-central part of the Plan Area and Redbank Creek Dam and Reservoir in the southeast part of the Plan Area. Fancher Creek Dam and Reservoir are near the east Plan Area boundary.

Detention and retention basins in the FMFCD's flood control system are sized to accommodate stormwater from each basin's drainage area in buildout condition. The current capacity standard for FMFCD basins is to contain runoff from six inches of rainfall during a ten-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 don't 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 Fresno Irrigation District (FID) and the cities of Fresno and Clovis; such recharge totaled 29,575 acre feet during calendar year 2012 (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 2012 ranged from 160 feet along the west City boundary to 70 feet at the east City boundary, 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 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). 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). However, groundwater levels in the San Joaquin Valley are forecast to hit an all-time low in 2014 (UCCHM 2014).

Groundwater Recharge

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 2010 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. The process of expansion of the FMFCD urban storm drainage system is explained above under the analysis of the 2035 Scenario under Impact 5.9-1.

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.

Impacts

The proposed Project may result in significant impacts if it would violate any water quality standards or waste discharge requirements; substantially deplete groundwater supplies or interfere substantially with ground water recharge; substantially alter the existing drainage pattern if the site; substantially increase the rate or amount of surface runoff; exceed the existing or planed storm water drainage system; provide substantial additional sources of polluted runoff; degrade water quality; place housing or structures within a 100-year flood hazard area; expose people or structures to risks of flooding; and inundation from seiche, tsunami, or mudflow.

The General Plan Program Environmental Impact Report identified significant and unavoidable impacts for both the 2035 scenario and full build-out of the General Plan Area and statement of overriding considerations was adopted.

a. The project could potentially degrade water quality by causing erosion and siltation during construction activities and by generating pollutants during both construction and operation that would be carried away in storm runoff to drainage facilities. Construction activities would potentially generate dust, litter, chemicals, paint fragments and stucco flakes, as well as pollutants from construction vehicles and processes. These materials have the potential to be carried away by stormwater runoff into the drainage system. Operation of the project would increase the potential for stormwater runoff to transport contaminants from parking areas and other impervious surfaces into the drainage system. Potential contaminants include fuel, oil, transmission fluids, petroleum hydrocarbons and heavy metals. Runoff from landscaped areas may contain pesticides and nutrients. Since stormwater will be directed into ponding basins rather than surface water bodies, sediments and urban pollutants may eventually collect and settle to the bottom of stormwater drainage basins.

   Construction activities of the project are subject to several regulations that address erosion and sediment control, and minimize the resulting effects of erosion on water quality. These requirements include adherence to the existing General Construction Permit requirements (pursuant to the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity), which are specifically aimed at reducing impacts on surface waters that may occur due to construction activities. Specifically, the Permit requires preparation of a stormwater pollution prevention plan (SWPPP) that would incorporate best management practices (BMPs) to improve water retention and vegetation on project sites. Given the extent of existing regulations and mandated compliance that the project would be required to comply with that address reducing or avoiding the erosion of disturbed soils during construction activities, the impact would be less than significant.

b. The project is served by the City of Clovis' public water system and will not directly utilize groundwater in its construction or operation. As the City of Clovis relies in part on groundwater for its municipal water supply, the project may have an indirect impact on groundwater supplies. However, based on the 2015 Urban Water Management Plan, the City is forecast to have adequate water supplies to meet estimated water demands generated by build out of the General Plan Update under the 2035 Scenario, which included development of the project area with new hospital facilities and other business and commercial uses consistent with the subject proposal. Further, the City has diversified its water supply over time to utilize surface water and recycled water while proportionally decreasing groundwater usage (additional information regarding the City's water supply is included in Chapter 20, Utilities and Service Systems).

   Regarding groundwater recharge, the project will increase impervious surfaces in the project area. However, the increase in the amount of impervious surfaces in the area was previously addressed in the Clovis General Plan EIR. As discussed in the Clovis General Plan EIR, most of the areas where development is anticipated are already served by the FMFCD urban drainage system, and new development would be required to pay Local Drainage Fees to fund drainage improvements pursuant to the FMFCD Master Plan serving the affected drainage areas before the beginning of any work on such developments. Additionally, onsite infrastructure needed such as additional curbs and gutters, storm drain inlets, and underground storm water pipelines will be constructed as part of the project. Given that the project would be adequately served by water supplies already designated for use by the City of Clovis and would not require additional groundwater supply entitlements, and given that the design and operational characteristics of the project would not substantially deplete groundwater resources or interfere with groundwater recharge, impacts to groundwater supplies and recharge would be less than significant

c. The Project would not alter the existing drainage pattern of the site or area through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site. Therefore, impacts are less than significant.

d-f. The Project would not alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off-site. Therefore, impacts are less than significant.

The Project site is presently vacant which typically does not result in notable stormwater runoff except when soils are saturated during periods of extended above-normal rainfall. The generation of stormwater runoff from the project site will increase when developed.

Stormwater collection and drainage service needs are provided by the Fresno Metropolitan Flood Control District. The existing off-site stormwater infrastructure from the project site to Basin S was installed with preious development. According to comments received from FMFCD, much of the Master Plan storm drainage system for the area is complete. These facilities are adequate to serve Project's stormwater drainage needs. The project will also be subject to the required drainage fees. Onsite infrastructure such as additional curbs and gutters, storm drain inlets, and underground stormwater pipelines will be constructed as part of the proposed project. The stormwater management needs of the project area and other areas within the City of Clovis were considered in the adoption of the Clovis General Plan and the Fresno Metropolitan Flood Control District's Storm Drainage and Flood Control Master Plan. Compliance with existing plans and regulations will assure than any impacts associated with the project related to drainage and runoff will be less than significant.

g. The Project is a hotel and would not include any housing. Development within the Project area would not place housing within a 100-year flood hazard area as mapped on the latest federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The Fresno Metropolitan Flood Control District has policies in place to address projects within a 100-year flood hazard area. Impacts will be less than significant

h. The Fresno Metropolitan Flood Control District identified the project to be located within the 100-year flood hazard area. The Fresno Metropolitan Flood Control District has policies in place to address projects within a 100-year flood hazard area. The FMFCD has noted that this project may be located in a 100-year flood area, and would be subject to the District policies to reduce impacts to a less than significant level.

i. The Project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. Impacts will be less than significant.

j. The Project is not located near any ocean, coast, or seiche hazard areas and would not involve the development of residential or other sensitive land uses. Therefore, the Project would not expose people to potential impacts involving seiche or tsunami. No potential for mudflows is anticipated. There is no impact associated with the proposed Project.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.10 Land Use and Planning *Will the proposal:*				
a. Physically divide an established community?	❒	❒	❒	■
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but no limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❒	❒	❒	■
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	❒	❒	❒	■

Environmental Setting

The project site is located at the southeast corner of Santa Ana and Clovis Avenues in the City of Clovis, Fresno County. The 1993 General Plan confirmed the current designation of Commercial. The designation was again confirmed during the 2014 General Plan Update. The site is bounded by the Sierra Vista Mall across Santa Ana Avenue to the north, The Center for Advanced Research and Technology (CART) school to the east, approved and existing hotels to the south, the Clovis Old Town Trail to the west, and single-family residential subdivision to the west across Clovis Avenue. The Project site is currently vacant.

Impacts

The proposed Project may result in significant impacts if it physically divides an established community, conflicts with existing off-site land uses, causes substantial adverse change in the types or intensity of existing or planned land use patterns, or conflicts with any applicable City land use plan, policy or regulation.

a. The Project will expand upon commercial retail uses that front Shaw Avenue, as envisioned in the 2014 General Plan. The Project will not physically divide an established community; therefore, there would be no impact.

b. The proposed Project is consistent with the land use policies of the City, including the Clovis General Plan and Zoning Ordinance; therefore, there would be no impact.

c. There is no habitat conservation plan or natural community conservation plan applicable to the project site; therefore, there would be no impact.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.11 Mineral Resources *Will the proposal:*				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❒	❒	❒	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	❒	❒	❒	■

Environmental Setting

The Clovis General Plan states, "The Clovis Project area does not contain those mineral resources that require managed production, according to the State Mining and Geology Board"

Impacts

The Project would create significant impacts if it results in the loss of availability of a known mineral resource with future value**.**

a-b. The proposed Project would not use or extract any mineral or energy resources and would not restrict access to known mineral resource areas.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.12 Noise *Will the proposal result in:*				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	❒	❒	■	❒
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	❒	❒	■	❒
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❒	❒	■	❒
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	❒	❒	■	❒
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 expose people residing or working in the project area to excessive noise levels?				
f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	❒	❒	❒	■

Environmental Setting

Noise is often described as unwanted sound. Noise levels are defined in terms of decibels (dB), which are typically adjusted for perception of loudness by the A-weighting network (dBA). Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state, dBA sound level containing the same total energy as a time-varying signal over a given time period (usually one hour).

The Leq shows very good correlation with community response to noise, and it is the basis for other noise descriptors such as the Day-Night Average Sound Level (Ldn). The Ldn represents an average sound exposure over a 24-hour period, with noise occurring during the nighttime (10:00 p.m.-7:00 a.m.) weighted more heavily to account for the greater sensitivity of people to noise during this time period. Another noise descriptor is Lmax, which gives the highest sound level value measured by the sound level meter over a given period of time.

Existing Noise Conditions

The ambient noise environment in the immediate Project vicinity is defined primarily by local traffic, animals, residents and natural noise associated with an urban residential and commercial environment. The Clovis Development Code (Section 9.22.080) sets forth land use compatibility criteria for various community noise levels.

Impacts

a. The construction of the proposed Project may result in temporary construction-related noise impacts. Construction noise would be short-term in nature and only occur for a limited duration. The Clovis Municipal Code includes standards to limit noise exposure from commercial uses to residential properties. With these existing measures, Impacts will be less than significant.

b. Potential groundborne vibration or groundborne noise levels would most likely occur as part of construction activities associated with the Project. The construction activities would be temporary in nature, and no persons would be exposed for extended periods of time. The Clovis Municipal Code includes standards to limit noise exposure from commercial uses to residential properties. With these existing measures, Impacts will be less than significant.

c. The proposed Project could result in a permanent increase in the ambient noise levels due to increased traffic and equipment related to a commercial development. The Clovis Municipal Code includes standards to limit noise exposure from commercial uses to residential properties. With these existing measures, Impacts will be less than significant.

d. A temporary increase in ambient noise levels would occur in association with construction activities. The Clovis Municipal Code includes standards to limit noise exposure from

commercial uses to residential properties. Additionally, the Code limits hours of construction. With these existing measures, Impacts will be less than significant.

e. The proposed Project site is not located within an airport land use plan area. The proposed Project site is approximately 1.5 miles north of the Fresno Yosemite International Airport. The Noise Element specifies that commercial land uses are considered normally acceptable in exterior noise levels of up to 70-75 CNEL without the need for noise mitigation. Therefore, the Project would not expose people to excessive airport or airstrip noise. Impacts will be less than significant.

f. The Project is not located within the vicinity of a private airstrip. There are no impacts.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.13 Population and Housing *Would the Project:*				
a. Induce substantial 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)?	❒	❒	■	❒
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	■
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	■

Environmental Setting

Regional Setting

The Clovis General Plan EIR discusses population and housing trends in the City of Clovis and Fresno County. Between the 2000 and 2010 Census, Fresno County experienced a population increase of 16.4 percent and the City of Clovis grew by 39.7 percent, to 930,450 and 95,631, respectively. Since the 2010 Census, the California Department of Finance estimates the County's population, as of January 1, 2017, to be 995,975 and the City's population to be 110,762, an increase of 7.0 and 15.8 percent, respectively.

The rate of housing growth in the City of Clovis and Fresno County gradually grew through the first half of the 2000s and peaked in the middle of the decade. Clovis grew at a slightly higher rate than the rest of Fresno County. During the recession and resulting housing market downturn (2008-2012), the housing growth rate dropped in both jurisdictions. Nevertheless, Clovis gained 11,324 dwelling units and Fresno County gained 49,876 dwelling units between 2000 and 2013, an increase of approximately 44.8 and 18.4 percent, respectively. Since 2013, the number of housing starts in Fresno County and the City of Clovis has grown substantially.

The Clovis General Plan EIR also discusses the jobs-housing ratio in the City of Clovis and Fresno County. The jobs-housing ratio is a general measure of the total number of jobs and housing units in

a defined geographic area, without regard to economic constraints or individual preferences, and can serve as an indicator of a project's effect on growth and quality of life in the project area. The California Department of Finance defines a healthy jobs-housing balance as one new home built for every 1.5 jobs created. Using numbers from 2013, the jobs-housing ratio for the Clovis General Plan Area was calculated as 0.74, while the jobs-housing ratio for all of Fresno County was 1.32. Both measures are considered "housing rich" because its ratio is less than 1.50. Projections for 2035 are provided by Fresno Council of Governments (Fresno COG) and show that both Clovis and Fresno County's jobs-housing ratio are anticipated to decrease from 2013 ratios to 0.60 and 1.06, respectively. However, development in accordance with the Clovis General Plan is projected to increase the jobs-housing ratio to 0.93 for the 2035 scenario and 1.00 for full build out.

Impacts

The Project may result in significant impacts if it induces substantial growth, displaces a large number of people, or contributes to a job-housing imbalance.

a. The Project would not add new homes within the City limits. However, it is anticipated that this development could introduce new residents to the City of Clovis as employees who move to the area for employment. The development of this site as a commercial use, will not create an imbalance of the jobs-housing balance. Impacts are considered to be less than significant.

b-c. The project site is currently undeveloped. Therefore, the Project will not displace existing housing, necessitating the construction of replacement housing elsewhere. Furthermore, the Project will not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. There will be no impacts.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.14 Public Services *Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*				
a. Fire protection?	❒	❒	■	❒
b. Police protection?	❒	❒	■	❒
c. Schools?	❒	❒	■	❒
d. Parks?	❒	❒	■	❒
e. Other public facilities?	❒	❒	■	❒

Environmental Setting

Fire Protection and Emergency Services

Fire protection services for the City of Clovis are provided by the Clovis Fire Department (CFD). CFD serves an area of 24.36 square miles and a population of approximately 108,000 residents from five fire stations. Current staffing levels consist of 61 sworn personnel, five non-sworn full-time personnel, and three non-sworn part-time personnel. In addition to fire suppression duties, CFD also provides technical rescue, hazardous materials spill/release mitigation, emergency medical services (EMS), life safety and enforcement services, and emergency preparedness for the citizens of Clovis. The closest CFD fire station to the project site is Station 2, which is located approximately one-quarter mile to the west.

The Fresno County Fire Protection District (FCFPD) provides fire services on the City's fringe and unincorporated areas in the City's Sphere of Influence, including the County neighborhoods to the south of the Project. CFD and FCFPD have an automatic aid agreement which defines dispatch parameters for the closest available resource to the scene of a fire or medical emergency within the defined automatic aid response area.

Law Enforcement

The Clovis Police Department (CPD) provides police service within the existing City boundaries. Currently, CPD has 140 full-time employees, including 92 sworn officers. CPD also has an 18-person volunteer reserve program. CPD headquarters, where all personnel are stationed and respond from, is located at 1233 Fifth Street, approximately 1.5 miles north of the project site. The city is divided into seven service areas; the CCMC expansion area is located within Area 7.

The Fresno County Sheriff's Department and the California Highway Patrol provide police protection to the unincorporated areas outside the city limits. The City has a mutual aid assistance agreement with both agencies.

Schools

The project site is located within the boundaries of the Clovis Unified School District (CUSD). CUSD serves more than 40,000 students and includes 33 elementary schools, five middle schools, five high schools, four alternative education schools, an adult school, and two specialty schools (Center for Advanced Research and Technology and the Sierra Outdoor School).

Impacts

a. The Project may result in significant public service impacts if it substantially and adversely alters the delivery or provision of fire protection, police protection, schools, facilities maintenance, and other governmental services.

   Development of the proposed project would involve a minor addition to the responsibilities to the CFD. It would not degrade the existing service ratio, response time, or other performance objectives. The proposed project would comply with standard mitigation measures, and would not require the construction of new facilities or physically alter existing governmental facilities. The proposed project would have less than significant environmental impact associated with its demand on fire services.

b. The proposed project would be served by existing police protection resources and would not require the construction of new facilities or physically alter existing facilities. Therefore, the Proposed Project would have a less than significant impact associated with

c. The Project site is located within the Clovis Unified School District. The Clovis Unified School District levies a per square foot school facilities fee to help defray the impact of commercial development. The project is subject to the fees in place at the time fee certificates are obtained. The school facility fee paid by the developer to the school district are conclusively deemed to reduce any potential impact to a less than significant level.

d. Development of this site may introduce new residents to the community. The Parks and Recreation Element of the General Plan requires a specific ratio of park area to residents. A park impact fee is required for commercial projects and is then used to construct community parks to meet these goals. With payment of these fees, the impacts in this category are less than significant since this Project will contribute to the park funds.

e. The Project could introduce new residents and employees to Clovis. However, the limited numbers would have a less than significant impact on other public facilities such as recreation, trails, Civic Center services, Senior Services, and County Library.

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

Environmental Setting

Regional Setting The City of Clovis maintains approximately 285 acres of parks and open space (including a series of recreational trails), as well as a variety of public recreational facilities such as the City of Clovis Batting Cages, the Clovis Rotary Skatepark, and the Clovis Recreation Center. These parks, trails, and recreational facilities are dispersed throughout the City.

Project Site and Surrounding Area

There are no existing or planned public parks or recreation facilities located on the project site. Adjacent to the project is the Old Town Trail which connects the Clovis Recreation Center (approximately 1.2 miles south), Shaw Avenue commercial district, Old Town Clovis, and several parks

along the way to the Trailhead and Shepherd and Clovis Avenues. The Old Town Trail also splits north of Herndon Avenue and connects to the Regional Fresno Trail which connects Woodward Park.

Public parks and trails are operated and maintained by the City of Clovis. Each development pays an impact fee to help cover cost of new facilities and their maintenance.

Impacts

The Project may create significant impacts if it creates demand for new expanded parks and recreation facilities, or substantially affects existing recreational opportunities.

a-b. The project will provide the opportunity for transient residents of the hotel to utilize the Old Town Trail. The project is likely to introduce new residents and employees to the area which are anticipated to use Clovis recreation and parks facilities. The limited number of new residents and employees would not create new demand for any type of recreational facilities that were not already identified in the parks and recreation Element of the General Plan. The General Plan requires that all development contribute a proportionate share toward the development of parks by paying a development impact fee. The Project would have a less than significant impact to recreation.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.16 Transportation/Circulation *Will the proposal result in:*				
a. Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designed in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	❒	❒	■	❒
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	❒	❒	■	❒
c. Result in a change in traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❒	❒	■	❒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❒	❒	■	❒
e. Result in inadequate emergency access?	❒	❒	■	❒
f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	❒	❒	■	❒

Environmental Setting

Existing Roadway System

Clovis Avenue is an existing north-south six-lane (four-lane north of Shaw Avenue) major arterial street that connects Highway 99 in Fresno to Shepherd Avenue in Clovis to the north. Clovis Avenue is divided with a raised median which provides left turn movements at major and local streets as well as some commercial centers. Clovis Avenue runs along the west boundary of the site and will serve as the primary arterial street access route to Santa Ana Avenue where vehicular traffic will be entering and leaving the site.

Shaw Avenue is an existing east-west six-lane major arterial street that runs through Fresno County and the City of Fresno to Clovis and beyond to just past Academy Avenue. Shaw Avenue carries a high volume of traffic for commuters travelling to and from Fresno from Clovis. Shaw Avenue is divided with a raised median which provides left turn movements at major and local streets as well as some commercial centers. .

Santa Ana Avenue is an existing east-west two-lane local street along the north boundary of the Project site that runs from Minnewawa Avenue to Sierra Vista Parkway. Santa Ana Avenue will serve as the main entry for vehicular traffic entering and leaving the site.

Sierra Vista Mall Driveway is an existing north-south two-lane access roadway in the vicinity of the proposed project. Sierra Vista Mall Driveway provides a direct access to Sierra Vista Mall.

Ashlan Avenue is an existing east-west two-to four-lane arterial in the vicinity of the proposed project. Ashlan Avenue is a four-lane divided arterial east of the City of Fresno SOI between Winery Avenue and Minnewawa Avenue, a two-lane collector between Minnewawa Avenue and Sunnyside Avenue, a four-lane divided arterial between Sunnyside Avenue and McCall Avenue, and a two-lane rural county collector between McCall Avenue and Academy Avenue. The City of Clovis 2035 General Plan Circulation Element designates Ashlan Avenue as a four-lane arterial between State Route 168 and Minnewawa Avenue and Sunnyside Avenue and McCall Avenue and a two-lane collector between Minnewawa Avenue and Sunnyside Avenue and McCall Avenue and Academy Avenue. Furthermore, the City of Clovis 2035 General Plan Circulation Element acknowledged that Ashlan Avenue would exceed LOS D as a two-lane facility between Minnewawa Avenue and Clovis Avenue. However, City Council made the appropriate findings to designate LOS F as the criteria of significance for Ashlan Avenue as a two-lane facility between Minnewawa Avenue and Clovis Avenue.

Gettysburg Avenue is an east-west two lane collector street south of the Project. Gettysburg is divided with a continuous left turn lane and runs from Clovis Avenue to Leonard Avenue.

State Route 168 is an existing east-west State highway near the vicinity of the proposed project. West of Clovis, State Route 168 is a six-lane freeway that connects Clovis to Fresno Yosemite International Airport, Downtown Fresno, and the greater freeway system via State Route 180, State Route 41, and State Route 99. Within Clovis, State Route 168 is primarily a four-to-six-lane freeway with interchanges at Shaw Avenue, Bullard Avenue, Herndon Avenue, Fowler Avenue, and Temperance Avenue. East of Temperance Avenue, State Route 168 becomes a four-lane expressway with signalized points of access at Owens Mountain Parkway and Shepherd Avenue. East of Shepherd Avenue, State Route 168 leaves the City of Clovis as a two-lane conventional state highway heading towards Shaver Lake and Huntington Lake in the Sierra Nevada.

Public and Alternative Transportation

Bus Service

Clovis Transit Service is the operator of the Clovis Stageline transit system that serves the City of Clovis. Currently, the nearest transit stop to the project site is the Clovis Stageline Transit Route 50. Route 50 runs in the vicinity of the proposed project via Shaw Avenue. This route provides a direct connection to Cal Skate, Kaiser Medical Center, Sierra Vista Mall, Clovis High School, CART (Center for Applied Research and Technology), Mickey Cox Elementary School, Clovis Community Medical Center, Clovis Civic Center, and Clark Junior High School. Route 50 operates at one-hour intervals Monday through Saturday. The bus stop nearest to the project site is located on Shaw Avenue west of Clovis Avenue.

Bicycle and Pedestrian Transportation

Within the project area, there are sidewalks generally present along properties where there is existing development. The Clovis Old Town trail runs adjacent to the project on the west side. Clovis Old Town Trail extends from the Clovis Recreation Center about 1.2 miles south of the Project north to the Dry Creek Trail north of Herndon Avenue, splitting off where the trails continue to the Trial Head at Sunnyside and Shepherd Avenues to the east and Fresno's trail to the west.

With exception to the Old Town Trail, there are no existing bike lanes in the vicinity of the Project. The Active Transportation Plan proposes a Class III bike lane along Santa Ana Avenue.

Impacts

The Project may result in significant transportation/circulation impacts if it:

- Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designed in a general plan policy)
- Conflict with an applicable congestion management program
- Result in a change in traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Substantially increase hazards due to a design feature
- Result in inadequate emergency access
- Conflict with adopted policies, plans, or programs supporting alternative transportation

a. The Project site is currently vacant and planned for commercial use. The Project proposal includes a Conditional Use Permit request for the approval of a hotel. New traffic will be introduced to the area as a result of the Project. The City Engineer has analyzed the Project and concluded that the current and proposed improvements can accommodate the additional traffic, and that impacts are considered less than significant. As a result, traffic patterns will be changed, however, service levels remain within established standards.

b. The City Engineer analyzed the Project and Traffic Study prepared by JLB Traffic Engineering, Inc., and concluded that the current and proposed improvements with the project can accommodate the additional traffic and impacts are considered less than significant.

c. The proposed Project may result in a temporary change in traffic patterns during to construction; however, the Project will be required to comply with Section 7.15 Traffic Control, Public Convenience, and Safety of the Clovis Standard Specification and Standard Drawings. These standards are designed to minimize public inconvenience and provide for safe and efficient passage of traffic at all times with minimal delays. While there will be increased delay during construction, the impact will be relatively short lived and is considered to be less than significant.

d. The City Engineer states that the location of drive access points are adequate in addressing the City Standards and has determined that impacts in this category are less than significant. The access points and site configuration provide for safe and efficient movement of the general public.

e. The Project will not result in inadequate emergency access. The Project will be required to comply with Section 7.15 Traffic Control, Public Convenience, and Safety of the Clovis Standard Specification and Standard Drawings, which requires contractors to keep emergency services informed of the location and progress of work. Completion of the site will provide adequate access and circulation for emergency services.

f. The Project will not conflict with adopted policies, plans, or programs supporting alternative transportation. The project will comply with the applicable portions of the Bicycle and Trails System and the Transit System components of the City of Clovis General Plan, as well as the applicable portions of the City of Clovis Active Transportation Plan.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.17 Tribal Cultural Resources *Would the project cause a substantial adverse change in the significance of a Tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is:*				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	❒	❒	■	❒
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources 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?	❒	❒	■	❒

Environmental Setting

On September 25, 2014, Governor Jerry Brown signed Assembly Bill AB52, which intends to protect a new class of resource under CEQA. This new class is Tribal Cultural Resources and provides an avenue to identify Tribal Cultural resources through a consultation process, similar to SB18. However, unlike SB18, where consultation is required for all General Plan and Specific Plan Amendments, AB52, applies to all projects for which a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. Furthermore, the consultation process is required to be complete prior to filing a Notice of Intent to adopt a negative declaration or mitigated negative.

The Project was mailed to each interested Tribe listed on the latest Tribal Consultation list provided by the Native American Heritage Commission using registered US Mail. The Tribes were provided a 30-day period (from receiving the City letter) in which to request consultation. Once the consultation period ran its course, the CEQA Initial Study was prepared and a Notice of Intent filed with the County Clerk and/or Office of Planning and Research.

Impacts

The Project may result in significant impacts if:

- The project causes a substantial adverse change in the significance of a Tribal cultural resource, as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources.

- The project causes a substantial adverse change in the significance of a Tribal cultural resource, as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant.

a. A cultural resources study was prepared by Ultra Systems (submitted April 2018) for the project area. The analysis concluded that the Project site does not include any resources listed 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). With incorporation of existing measures from the 2014 General Plan, impacts are less than significant.

b. Per AB52, the Project was mailed to all Tribes listed on the Native American Heritage contact list, dated April 18, 2018. Tribes were provided an opportunity to request consultation. The General Plan EIR includes existing standard measures which provide procedures in the case where resources are discovered. Therefore, impacts in this category are considered less than significant.

3.18 Utilities and Service Systems *Will the proposal:*	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❒	❒	■	❒
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❒	❒	■	❒
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❒	❒	■	❒
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❒	❒	■	❒
e. 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?	❒	❒	■	❒
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❒	❒	■	❒
g. Comply with federal, state, and local statutes and regulations related to solid waste?	❒	❒	■	❒

Environmental Setting

Pacific Gas & Electric (PG&E) provides electricity and natural gas services in the City of Clovis. 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 treated surface water from the Fresno Irrigation District (MID). 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 of Clovis has completed a 2.8 mgd wastewater treatment/water reuse facility, which will service the City's new growth areas including the Project site.

The City of Clovis provides and/or manages waste and recycle collection for the residents and businesses in the City of Clovis as well as operates its own landfill for disposal of waste.

The Fresno Metropolitan Flood Control District (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.

Impacts

The Project may result in a significant impact if:

- It exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- It requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- It requires or results in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- If it does not have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
- It results 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.
- If the landfill does not have sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Does not comply with federal, state, and local statutes and regulations related to solid waste.

a. The wastewater impacts were evaluated in accordance with the Waste Water Master Plan. The City Engineer analyzed the Project and found that use consistent with the 2014 General Plan and the Development Code. Therefore, concludes that the Project will not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. Impacts are considered less than significant.

b. The City Engineer analyzed the Project and found that use consistent with the 2014 General Plan and the Development Code. The Project will not directly result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Impacts are considered less than significant.

c. The Project may result in the construction of new stormwater drainage facilities. The Fresno Metropolitan Flood Control District has policies for this type of project. According to a letter from the FMFCD dated April 18, 2017, the district can accommodate stormwater flows from the proposed Project. Impacts are considered less than significant.

d. The Project will not require new or expanded water entitlements and resources. The site lies within the Fresno Irrigation District which provides water allocation upon development. Impacts in this category are less than significant.

e. The Project will not require a determination by a wastewater treatment provider (see item b above).

f. According to the Solid Waste Division, the Project will contribute to the landfill, however, the impacts are less than significant.

g. The Project will comply with federal, state, and local statutes as well as regulations related to solid waste by the City of Clovis. The City Engineer has analyzed this Project in regards to City standards and policies and has concluded that impacts in this category are less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
3.19 Mandatory Findings of Significance				
a. Does the project have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	❒	❒	■	❒
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	❒	❒	■	❒
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	❒	❒	■	❒

Environmental Setting

The CEQA Guidelines define "significant effect" as "… a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant" (CEQA Guidelines, 15382).

"An ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area" (CEQA Guidelines 15064).

Impacts

As stated in the initial study for each category, the Project does not have the potential for a significant impact on the environment nor a cumulative impact causing substantial adverse effects on human beings, either directly nor indirectly.

4.0 CUMULATIVE IMPACTS

This section addresses the Project's potential to contribute to cumulative impacts in the region. CEQA Guidelines Section 15355 defines cumulative impacts as "two or more individual affects that, when considered together, are considerable or which compound or increase other environmental impacts." The individual effects may be changes resulting from a single project or separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor yet collectively significant projects taking place over a period of time.

The cumulative setting for the proposed Project is the year 2035 build-out of the City of Clovis General Plan which was adopted in 2014. The City has processed several General Plan Amendments since 2014, all of which were included Project's EIR's, Mitigated Negative Declarations or other analysis per CEQA guidelines, related to aesthetics, water, sewer, traffic, air quality, and greenhouse gas impacts.

Aesthetics

The environmental impact report for the City of 2014 Clovis General Plan concluded that the cumulative adverse impacts upon the community's aesthetic conditions anticipated to occur due to the projected urban growth and development would not be considerable. This determination was based upon the provisions of numerous General Plan goals and policies and implementing requirements of the City's Development Code which promote the visual quality and compatibility of new development. The project would have no impacts that would be inconsistent with the analysis and findings of the EIR for the general plan.

Agriculture and Forest Resources

The Clovis 2014 General Plan EIR identified the loss of agricultural land resulting from General Plan implementation as a significant and unavoidable impact. Since the cumulative effect of the project site development was taken into account in the General Plan EIR, the analysis and conclusions of the General Plan EIR would not change as a result of the project. The project is also consistent with the goals and policies of the Fresno County General Plan directing growth toward existing urban areas in order to preserve agricultural areas. Based on the above, plus the conclusion of this MND that this project will not convert agricultural land to a non-agriculture use, there are no cumulative impacts.

Air Quality

The proposed Project would not result in a cumulatively considerable contribution to regional air quality impacts. The proposed Project is not expected to produce significant emissions that would affect nearby sensitive receptors. The proposed Project would also not result in objectionable odors affecting a substantial number of people. The Project would result in less than significant cumulative air quality impacts.

Biological Resources

The Project could result in significant impacts to nesting migratory and nongame birds without mitigation. There are other projects in the area that incorporate the same mitigation measures. The Project could contribute to the cumulative impacts, however, would have a less than significant impact with mitigation measures incorporated.

Cultural Resources

The proposed Project is not anticipated to contribute to any potential impacts related to archeological, cultural and/or paleontological impacts. Any impacts would be site specific and would not contribute to cumulative impacts. Therefore, the Project would have a less than significant impact to cumulative cultural resources.

Geology and Soils

Project impacts associated with geology and soils would be site-specific, and implementation of the Project would not contribute to cumulative seismic hazards. Therefore, the Project would create no impact to cumulative geophysical conditions.

Greenhouse Gas Emissions

Based on discussion above and the Greenhouse Gas analysis by Mitchell Air Quality Consulting, the proposed Project would also not result in objectionable odors affecting a substantial number of people. GHG emissions released during construction and operation of the Project are estimated to be lower than significance thresholds, and would not be cumulatively considerable. The proposed Project would be consistent with the goals of AB 32 and the City's General Plan.

Hazards & Hazardous Materials

The proposed Project is not expected to have significant impacts as the result of hazards or hazardous materials. Therefore, because there are no Project specific impacts, and all related projects would comply with applicable regulations, there a less than significant impact to cumulative hazards and hazardous materials impacts.

Hydrology/Water Quality

As described in Section 3.3 Hydrology/Water Quality, The proposed Project would be served by FID water processed through the surface water treatment facility. The Project would not rely on ground water, therefore would not substantially alter the direction of groundwater flows, or result in a substantial change in the quantity of groundwater. The Project would have a less than significant impact to cumulative water conditions.

Land Use Planning & Population/Housing

The Project will not have significant impacts to housing or population. The proposed Project is not expected to result in substantial cumulative impacts to land use planning, population or housing.

Mineral Resources

The Clovis General Plan states, "The Clovis Project area does not contain those mineral resources that require managed production, according to the State Mining and Geology Board." The proposed Project is expected to have no impact to any site-specific mineral resources; therefore, the Project is expected to have no impact to cumulative mineral resources.

Noise

As described in Section 3.9 Noise, the Project could result in increased construction noise as well as long-term traffic noise impacts. These Project specific impacts are less than significant and combined with other projects, would not contribute to any cumulative impacts creating a level of significance.

Public Services

The proposed Project could create the need for additional homes for new employees of the Project. The new residents would utilize public services. The number of new residents as a result of the Projects is less than significant and would not result in significant impacts to public services. The Project would have less than significant to cumulative public services conditions.

Recreation

The proposed Project could create the need for additional homes for new employees of the Project. The new residents would utilize public services. The number of new residents as a result of the Projects is less than significant and would not result in significant impacts to recreation. The proposed Project would not result in significant impacts to recreation uses and/or resources. Thus, a less than significant impact to recreation is anticipated.

Transportation/Circulation

The proposed Project would have a less than significant impact to short-term or long-term traffic congestion. The current improvements and the proposed improvements by the Project are expected to have a less than significant impact on the cumulative transportation/circulation conditions. Therefore, the Project would have a less than significant impact on cumulative transportation and circulation conditions.

Tribal Cultural

Tribal Cultural resources are site specific. The proposed Project would not cause a substantial adverse change in the significance on a cumulative Tribal cultural resource.

Utilities and Service Systems

The Clovis General Plan and other plans and reports have designated the project area for urban development which is planned to be served by municipal public utility systems. Development of the site as well as urban development of other vacant properties in the immediate vicinity, will increase demand for public services and necessitate construction of public utility infrastructure improvements.

The Clovis General Plan and other related long-range planning documents – such as the UMWP, the Water Master Plan Phase III, and Sewer System Management Plan – include analysis showing that adequate services for water, sewer, and solid waste disposal can be provided to accommodate the build out of the general plan. Since the project is consistent with general plan policies and its demand on public utilities is within the growth parameters considered in the City's long-range planning documents, the project would not have a cumulatively considerable impact with respect to utilities and service systems.

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.

The environmental factors checked below would be potentially affected by this Project. None of these factors represents a "Potentially Significant Impact" as indicated by this Initial Study.

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

5.0 Determination Findings

The potential impacts identified in this Initial Study are considered to be less than significant since they will cease upon completion of construction, or do not exceed a threshold of significance with mitigation. Therefore, a Mitigated Negative Declaration is the appropriate level of documentation for this project.

According to the analysis in this Initial Study, based on substantial evidence in the public record, the City of Clovis finds:

- This Initial Study, prepared pursuant to CEQA Section 15063, has identified potentially significant environmental effects that would result from the project.
- The City has reviewed the proposed project impacts and has determined the following mitigation measures will address the identified impacts and reduce impacts to the level required by applicable standards:

    - **Mitigation Measure 3.1-d:** The developer shall direct all on-site lighting downward and provide physical shields to prevent direct view of the light source from adjacent residential properties. Street lighting shall be spaced in accordance with City Standards to reduce up-lighting. The applicant shall utilize a PG&E street light which directs light downward.
    - **Mitigation Measure 3.4-a1:** Should project construction be scheduled to commence between February 1 thru August 31, a pre-construction survey for ground nesting birds shall be conducted by a qualified biologist.
    - **Mitigation Measure 3.4-a2:** If an active nest is discovered within the BSA, a 100-ft no disturbance buffer shall be established around the nest (within the BSA) using orange construction fencing. A qualified biologist shall evaluate the potential for construction activities to disturb normal nesting behavior and adjust the buffer distance, as appropriate. The buffer fencing shall be maintained in good condition until the nest is inactive.
    - **Mitigation Measure 3.4-a3:** Disturbance of active nests shall be avoided until it is determined by a qualified biologist that nesting is complete and the young from have fledged or that the nest has failed. If work is allowed to proceed, at a minimum, a qualified biologist shall be on-site during the start of construction activities during the

nesting season to monitor nesting activity. The monitor shall have the authority to stop work if it is determined the Project is adversely affecting nesting activities.

- **Mitigation Measure 3.4-dc** All equipment shall be thoroughly cleaned before leaving the site.

Signature _____ Date: June 6, 2018
Lily Cha, Assistant Planner

Applicant's Concurrence

In accordance with Section 15070 (b) (1) of the CEQA Guidelines, we hereby consent to the incorporation of the identified mitigation measures which are also contained in Exhibit B, Attached to this document.

Signature _____ Date: _____

6.0 MITIGATION MONITORING
EXHIBIT B

City of Clovis Mitigation Monitoring and Reporting Program
Conditional Use Permit CUP2018-01
Dated June 7, 2018

6.1 Introduction

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared pursuant to Section 21081.6 of the California Public Resources Code, which requires public agencies to "adopt a reporting and monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." A MMRP is required for the proposed project because the Mitigated Negative Declaration has identified significant adverse impacts, and measures have been identified to mitigate those impacts.

The MMRP, as outlined in the following table, describes mitigation timing, monitoring responsibilities, and compliance verification responsibility for all mitigation measures identified in this Mitigated Negative Declaration.

The City of Clovis will be the primary agency, but not the only agency responsible for implementing the mitigation measures. The MMRP is presented in tabular form on the following pages. The components of the MMRP are described briefly below:

- **Mitigation Measures:** The mitigation measures are taken from the Mitigated Negative Declaration, in the same order that they appear in the Mitigated Negative Declaration.
- **Mitigation Timing:** Identifies at which stage of the project mitigation must be completed.
- **Monitoring Responsibility:** Identifies the department within the City responsible for mitigation monitoring.
- **Compliance Verification Responsibility:** Identifies the department of the City or other State agency responsible for verifying compliance with the mitigation. In some cases, verification will include contact with responsible state and federal agencies.

6.2 Mitigation Monitoring Program

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
3.1 Aesthetics				
3.1-d	The developer shall direct all on-site lighting downward and provide physical shields to prevent direct view of the light source from adjacent residential properties. Street lighting shall be spaced in accordance with City Standards to reduce up-lighting. The applicant shall utilize a PG&E street light which directs light downward.	City of Clovis Planning	*Prior to Permits and During Construction*	
3.4 Biological				
3.4-a1	Should project construction be scheduled to commence between February 1 thru August 31, a pre-construction survey for ground nesting birds shall be conducted by a qualified biologist.	City of Clovis Planning	*Prior to Permits and During Construction*	
3.4.a2	If an active nest is discovered within the BSA, a 100-ft no disturbance buffer shall be established around the nest (within the BSA) using orange construction fencing. A qualified biologist shall evaluate the potential for construction activities to disturb normal nesting behavior and adjust the buffer distance, as appropriate. The buffer fencing shall be maintained in good condition until the nest is inactive.	City of Clovis Planning	*Prior to Permits and During Construction*	
3.4-a3	Disturbance of active nests shall be avoided until it is determined by a qualified biologist that nesting is complete and the young from have fledged or that the nest has failed. If work is allowed to proceed, at a minimum, a qualified biologist shall be on-site during the start of construction activities during the nesting season to monitor nesting	City of Clovis Planning	*Prior to Permits and During Construction*	

Proposed Mitigation	Summary of Measure	Monitoring Responsibility	Timing	Verification (Date and Initials)
	activity. The monitor shall have the authority to stop work if it is determined the Project is adversely affecting nesting activities.			
3.4-c	All equipment shall be thoroughly cleaned before leaving the site.	City of Clovis Planning	*During Construction*	

7.1 **Report Preparers**

CITY OF CLOVIS- LEAD AGENCY
PLANNING DIVISION
Lily Cha, Environmental Coordinator
1033 Fifth Street
Clovis, CA 93612
(559) 324-2335
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Appendix A

Environmental Studies

UltraSystems
environmental•management•planning

April 6, 2018
UEI Project: **6070**

Mr. Keyur Naik, Vice President
CA Clovis St LLD
2260 S. Xanadu Way, Suite 280
Aurora, Colorado 80014
Telephone: (720) 798-5251, ext. 103
Email: Keyur.naik@baywoodhotels.com

Subject: Negative Phase I Cultural Resources Inventory for the CA Clovis St LLC Hotel Project, in the City of Clovis, Fresno County, California; UltraSystems Project 6070

Dear Mr. Naik**:**

UltraSystems Environmental Inc. (UltraSystems) conducted a Phase I cultural resources inventory on behalf of the CA Clovis St LLC for their Clovis Hotel Project (Conditional Use Permit Request CUP2018-01), located in Clovis, California. The Project consists of a proposed hotel construction with 130 rooms on a 136,000-square-foot plot of land. There will be no sub-surface parking or other excavations deeper than five to eight feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present. The project is located on the southeast corner of the intersection of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California (see **Appendix A**, **Figure 5**).

The proposed project is bounded by Clovis Avenue to the west and Santa Ana Avenue to the north. The study area includes a 0.5-mile buffer surrounding the project boundary. The project is situated in a fully developed urban landscape (see **Appendix A**, **Figure 6**). There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. The project is specifically located on the *Clovis, Calif*., USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16 (see **Appendix A**, **Figure 7**).

A cultural resources record search, Native American consultation, and an intensive pedestrian cultural resources survey were undertaken by Stephen O'Neil, M.A., RPA, who qualifies as a Principal Prehistoric Archaeologist and Historic Archaeologist per Secretary of the Interior Standards, and by Ryan Gerstner, B.S., under the supervision of Mr. O'Neil (**Appendix B**). The purpose of the records search was to identify previously recorded cultural resources (prehistoric and historic archaeological sites, historic buildings, structures, objects, or districts) within the project area and includes a 0.5-mile radius buffer area. The records search included a review of previously recorded prehistoric and historic archaeological sites within the proposed project area, and a review of previously completed cultural resource surveys and/or excavation reports filed with the Southern San Joaquin Valley Information Center (SAJVIC) at the California State University, Bakersfield, which is the local California Historic Resources Information System (CHRIS) Information Center.

Contact took place between Mr. O'Neil and the Native American Heritage Commission (NAHC) and local tribal organizations and individuals. This outreach supports the requirements of the oversight agency regarding consultations with Native American tribal organizations.

In addition to the records search and Native American consultation, an intensive pedestrian survey was conducted on the entire study area in accordance with the guidelines developed by the Office of Historic Preservation (OHP) and in compliance with the requirements of the California Environmental Quality Act (CEQA).

SETTING

Natural Setting

The project area is located in Fresno County in the southern San Joaquin Valley. The region has cool winters with moderate precipitation, and hot, dry summers. Average January temperature is 36°F. Average July temperature is 98°F. Rainfall occurs mostly during the winter and averages 7.6 inches (19.4 cm) annually.

Elevation of the project area is 355 feet above mean sea level (amsl). The Project location is situated on flat, open, grass field, which may have been previously graded during development of the area. Introduced grasses are present throughout the field.

Large portions of Fresno County sit upon deep alluvial deposits dating from the Quaternary Period. Fresno County encompasses approximately 6,011 square miles (15,570 sq. kilometers). The Project area is located in the central portion of the county and in that area the terrain is very flat.

The major watercourses of the county are the San Joaquin River, Kings River, the Delta-Mendota Canal and Big Creek. The San Joaquin River is located approximately four miles east of the Project Area and is fed by Dry Creek which goes through Clovis. Fresno County is bordered on the west (across the Central Valley) by the Coast Range, and contains, to the east, the Sierra Nevada.

At the time of Euro-American contact, most of what is now lower Fresno County was mostly treeless. Flanking the Kings River were narrow gallery forests of willow, cottonwood and oak. Near the project area, the pre-contact vegetation was primarily riparian and scrub. Major drainages likely had some scattered oaks in what was otherwise open countryside. 50 miles south of the Project area, Tulare Lake (named *Laguna de Tachi* by the Spanish for the Yokuts tribe who lived there) seasonally overflowed from Sierra Nevada snowmelt; large tule marshes ("tulares") attracted Native American occupants who based their lifeways around the gathering of key economic plants and hunting large and small game animals. These Native Californians moved about the land as part of their seasonal rounds. Waterfowl as well as certain large land mammals (elk, pronghorn, and deer) were important food resources.

Cultural Setting

A detailed recounting of the prehistoric environment of California and the San Joaquin Valley is presented in Michael J. Moratto's "California Archaeology" (1984). The following is largely excerpted from this source.

The pre-contact Native Americans of California were almost exclusively hunter-gatherers and were largely reliant upon the land's natural resources for their subsistence. They had extensive knowledge about the habits and habitats of key economic animals and plants. These Native Californian foragers also possessed a deep and abiding knowledge of their local climate, topography and minerals. They located their villages in optimal locations to maximize access to economic resources for food and water. Native California cultures were strongly influenced by natural environmental conditions, and it is necessary to understand California's environmental setting to better understand its prehistoric Native inhabitants and to help us appreciate and interpret the archaeological record.

The floor of the Central Valley is 750 km long and 30-80 km wide and is enclosed by the Siskiyou, Sierra Nevada, Tehachapi, and Coast Mountain ranges. It is underlain, mainly, by Sierra stream sediments ranging from 1,050 to 1,950 feet deep. Elevations in the Central Valley range from sea level to 100 meters, broken only by the 600-meter-high Sutter Buttes. The Sacramento and San Joaquin River systems drain the valley and merge into the channels and marshes of the Sacramento-San Joaquin Delta. The waters later pass through a northern gap in the Coast Range and empty into San Pablo Bay.

In ancient times, lakes, marshes, and sloughs covered more than 5,000 square kilometers in the San Joaquin Valley. The largest lake, Tulare, occupied a structural basin created by down-warping. Additionally, Tulare and Buena Vista Lakes were partially contained by alluvial fans reaching into the valley from the King's River and Los Gatos Creek. These coalesced into a ridge and lands to the south were so arid that runoff was often not able to maintain a discharge through the alluvium. This natural dam thus contributed to the impoundment of Tulare Lake and its swampy basin.

A similar projection from the Kern River fan westward to the McKittrick Hills formed a second dam behind which lie Kern and Buena Vista Lakes. At flood levels, the Buena Vista and Tulare Lakes spilled into a single basin and merged with the waters of the Kern, Kaweah, and King's Rivers, flowing into the San Joaquin River system. The lakes are now mostly dry due to historic drainage projects.

The Central Valley was attractive to early aboriginal inhabitants. The climate was locally varied, but generally pleasant. Precipitation was also variable and in the southern San Joaquin Valley, where it was scant, the water was supplemented by snow melt from the mountains. The Central Valley's plains and wetlands had abundant game and plant foods. The bottomlands produced lush swamp vegetation valued for food, fiber, and building materials. Riparian woodlands grew along the watercourses. The waterways provided habitat for river mussels and many species of fish. Steatite (soapstone) and asphaltum occurred in the southern part of the valley and salt deposits were found in the north. However, while so many resources were in abundance, some resources were lacking, notably volcanic glass (obsidian) and other naturally-occurring toolstone was absent. However, these toolstone materials were easily obtainable through trade with outside areas. With such an

abundance of resources and comfortable living conditions, the pre-contact aboriginal population was rather large, with approximately 105,000 persons - 53,000 people in the Sacramento Valley and 52,000 in the San Joaquin. California is known to have had some of the largest Native population concentrations north of Mexico.

Prehistoric Context

During the long prehistory of the Central Valley there have been diverse and changing environments, along with many population movements, with waves of cultural influences from neighboring groups, and a complex interplay between local and regional cultural forces. The oldest evidence for occupation of the valley comes from Tracy, Tulare, and Buena Vista Lakes and dates to about 13,000 years ago. Since the floor of the valley is covered with a thick layer of alluvium, it is likely that most of the earliest habitation evidence lies buried beneath it. This would account for the modest antiquity of most surface artifacts, especially in the valley lowlands of the San Joaquin and Sacramento River drainages.

The archaeological sites and materials identified over the years in the San Joaquin Valley have yet to be integrated into a single cultural-historical framework (cf. Rosenthal et al. 2007). The exact timing and the nature of cultural succession are poorly defined. Local cultural sequences have been developed but these lack adequate chronometric precision as they are based on early studies completed before the advent of radiocarbon dating (cf. Lillard et al. 1939).

The earliest of these cultural sequences were largely based on seriation of burial lots, differences in burial positions, and the pattern of grave offerings (Bennyhoff and Hughes 1987). Although thorough for their time, the researchers also relied heavily on the cross-dating of artifacts from outside their immediate regions and recognized the notable changes in burial posture. With the development of more respectful and sensitive interaction with Native Californians and the enactment of new and more stringent laws protecting Native American graves (e.g., the Native American Graves and Protection Act), excavation of individual graves and cemeteries no longer routinely occurs for research purposes. When graves are inadvertently discovered, the remains are often quickly re-interred without extensive scientific study. Hence, we have little contemporary data to compare with early burial studies.

Few researchers have attempted to update the early chronologies for the San Joaquin Valley. Significantly, the age determinations for many temporally diagnostic artifacts have been considerably revised (e.g., shell beads and ornaments and chronologically sensitive projectile point series) (cf. Bennyhoff and Hughes 1987; Groza 2002). Moratto's (1984) landmark synthesis of California archaeology based this integrative work on the then largely unpublished taxonomic frameworks developed by James Bennyhoff and David Fredrickson (Elsasser 1978; Fredrickson 1973, 1974). Hughes (1994) later assembled these materials and made them more widely available for scientific researchers.

Following the Rosenthal et al. 2007 synthesis, we present a simple classification of the cultural sequence here, largely based on Fredrickson's (1973, 1974) adaptation of the Willey and Phillips' (1958) period and stage integrative theme. This framework has been revised slightly in light of more recently available radiocarbon determinations and the calibration of these radiocarbon dates into calendar ages (cf. Groza 2002; Meyer and Rosenthal 1997).

Paleoindian Period (11,550-8,550 cal B.C.) [cal = calibrated radiocarbon ages]

Uranium-thorium dates obtained on human skeletal remains from the Witt locality at Tulare Lake provide some of the earliest directly-dated human skeletal materials in North America and exhibit uncalibrated dates of 11,379, 11,380, and 15,802 years before present (b.p.) (West et al. 1991). Uranium dates on extinct fauna have also been reported that span the same general chronological period and date to 10,788, 15,696, and 17,745 years b.p. Hopkins (2008) has recently attempted to characterize the Tulare Lake early Paleoindian cultural materials giving greater attention to the full expression of this important early archaeological assemblage.

Hartzell (1992) and others have suggested that initial occupation in the southern San Joaquin Valley is represented by fluted projectile points, associated stone tools, and crescents that may represent a subsistence focus on the hunting of now-extinct megafauna and the procurement of lacustrine resources. However, Jackson et al. (1998) and Siefkin (1999) disagree and question many elements of Hartzell's reconstructions. Her early and tentative studies do provide a set of working hypotheses and testable models for further evaluation and consideration.

Nonetheless, there is ample evidence of very early human use of the San Joaquin Valley dating to the latest Pleistocene and earliest Holocene eras. Ancient archaeological materials are found around the shores of Tulare Lake near the town of Hanford at the Witt Site (CA-KIN-32) (Fenenga 1994; Moratto 1984; West et al. 1991). This material includes fluted (Western Fluted) and un-fluted concave base end-thinned points (Great Basin Concave Base or Black Rock Concave Base), crescents, leaf-shaped knives, ovate-domed and elongate-keeled scrapers (limaces), and engraving implements (burins), with only a minimal compliment of milling tools.

Recent research (Jones et al. 2003) suggests that during this period, Paleoindian hunters and gatherers traversed large subsistence areas with extensive foraging ranges. Obsidian tracing and dating on unfluted, end-thinned (Concave Base) and Western Fluted obsidian points from the Witt Site support that reconstruction (Garfinkel et al. 2009). Researchers have discovered that obsidian toolstone was gathered from a diverse array of geologic sources. This may indicate that wide ranging forays took place to distant areas for trade or direct acquisition of volcanic glass as represented by the distant obsidian sources including those from northern California in Napa Valley and those nearer toolstone sources, east of the Sierra Nevada in the western Great Basin at Casa Diablo, Coso, Mount Hicks, and Mono Glass Mountain. All those volcanic glass sources, in both northern and eastern California, are located at distances of over a hundred miles from Tulare Lake.

Aboriginal foragers, at this time, appear to have operated in small groups with low population densities. These groups had little competition for resources and made only brief residential stays. They migrated, on their annual rounds, between resource-rich patches that were rapidly depleted. Aboriginal societies may have had a largely meat-based subsistence economy at this time. Since their preferred prey animals were available in sufficient quantities to meet or exceed caloric needs, the density of human populations and the abundance of large game apparently allowed early populations to acquire ample amounts of food. Alternatively, at this early date, a diversified subsistence base may have been represented with a wide variety of animal and plant resources having been exploited.

Early Archaic (8,550-5,550 cal B.C.)

Climate change at the end of the Pleistocene created a significantly different environment from that previously characterizing the area and facilitated the production of alluvial fans and flood plains. Geomorphologic processes buried many Late Pleistocene landforms and most of the ancient archaeological manifestations dating to the prior period. At the end of the Early Archaic and the beginning of the Middle Archaic a second cycle of widespread deposition buried even more archaeological deposits dating to the former period.

Early Archaic occupation sites are rarely represented in the archaeological record of the Southern San Joaquin Valley and most cultural remains dating to this time are isolated finds. Western Stemmed Series points (cf. Lake Mojave and Silver Lake forms), flaked stone crescents, and distinctive, formalized, flaked stone implements form some of the key elements of the typical archaeological assemblages dating to this era. Such materials are represented from the deeply buried stratum (275 to 350 cm below ground level) at the Buena Vista Lake Site (Fredrickson and Grossman 1977; Hartzell 1992) and on the ancient shorelines of Tulare Lake at the Witt Site (CA-KIN-32).

Radiocarbon dates on freshwater shell from the Buena Vista Lake site (CA-KER-116) provide ages ranging from 7175 to 6450 cal B.C. (Fredrickson and Grossman 1977). Recovered from salvage excavations were a meager assemblage that included three (3) chipped stone crescent fragments, a stemmed projectile point fragment, a carved stone atlatl spur, a few small chipped stone artifacts, and a human skull fragment. Additionally, the deposit contained a limited, yet diverse, archaeofaunal assemblage that included freshwater fish, waterfowl, freshwater mussels, and artiodactyl bones.

At the Witt Site on Tulare Lake, numerous stemmed points, crescents, and formalized stone tools have been identified. Thick obsidian hydration bands identified on artifacts of Coso and Casa Diablo obsidian - specifically Western Stemmed points (Lake Mojave and Silver Lake-like forms) attest to subsistence activities associated with the bountiful lacustrine resources represented there. Coso obsidian hydration rims, and associated radiocarbon dates of 6360 and 5650 cal B.C. on Pismo clam (*Tivela stultorum*) shell beads from CA-KER-3168 indicate that aboriginal occupation also occurred during this time in the Elk Hills, just west of Buena Vista Lake (Jackson et al. 1998).

Middle Archaic (5,550 – 550 cal B.C.)

Hartzell (1992) asserts that there was a hiatus in cultural activity in the Buena Vista Lake region between 5000 and 2000 cal B.C. Other studies indicate that mortar and pestle use began by 4050 cal B.C. The beginning of the Middle Archaic saw a substantial shift in climate with the advent of warmer and drier conditions. Tulare Lake diminished in size and a period of desiccation ensued where many Central Valley lakes dramatically reduced in size and ultimately vanished. Contemporaneous with the onset of more xeric conditions, rising sea level changes created new wetland environments throughout the region.

Sites dating to this time period are routinely found on buried land surfaces. During the early part of the Middle Archaic (5550 – 2050 cal B.C.), the classic Windmiller Pattern burial mounds occur. These are the deepest occupation sites that have been recognized. One such site, CA-SJO-68 in the

northern San Joaquin Valley, provides a minimum age of 3050 cal B.C. (Lillard et al. 1939; Ragir 1972). Windmiller settlements represent a riverine adaptation with what were apparently permanent, year-round, habitation sites and a complex, sophisticated material culture. Associated cemeteries featured a unique expression of westerly-oriented, extended burials. Paleobotanical studies document the early use of acorn and pine nuts. Archaeofaunal assemblages reflect intense exploitation of marshes, grasslands, and riverine forests including the representation of elk, deer, pronghorn, cottontail rabbit, hare, waterfowl, small and large fish, and small rodents as subsistence resources.

Baked clay impressions of basketry and cordage, bone awls, stone plummets, bone tubes, *Olivella biplicata* and abalone (*Haliotis* spp.) shell beads and ornaments, charmstones, gorge hooks, bone hooks, and heavy-stemmed dart points have all been recognized in the archaeological assemblages dating to this time period. Extensive trade in volcanic glass (obsidian) begins in earnest during this time and obsidian from the eastern side of the Sierra – most importantly the Coso and Casa Diablo sources – is well represented

Late Archaic (550 cal B.C. – cal A.D. 1000)

With the onset of the late Holocene period, environmental conditions became cooler and a more mesic climate reigned. Little is known concerning the cultures of the San Joaquin Valley during this period (Siefkin 1999). Hartzell (1992) reports year-round villages at Buena Vista Lake at CA-KER-116 and -39. These sites incorporate a diverse array of architectural features including house floors and significant deposits of refuse materials representing both land and water related subsistence. Cultural materials include temporally diagnostic beads and ornaments manufactured from *Haliotis (abalone)* and *Olivella (olive)* shells. Spindle-shaped charmstones, cobble mortars, chisel-ended pestles, and heavy dart points are also identified. An extensive inventory of bone tools including awls, fish spears, saws, and flakers are also diagnostic. Preferred burial positions during this time shift to supine semiflexed and mortuary artifacts are present including bifacial obsidian knives (possibly luxury blades known as the beautifully crafted parallel oblique flaked Sierra Concave Base points) of Coso and Casa Diablo volcanic glass.

Late Prehistoric (cal A.D. 1000 – Historic)

The archaeological record for this period is the most complete and diverse. Intensification of plant procurement and a decrease in hunting marks this period. The bow and arrow is introduced and replaces the dart and atlatl. Cottonwood arrow points, similar to those found in the Great Basin, are recognized by about 700 years ago (ca. AD 1300) and cultural traditions ancestral to those recorded ethnographically are readily identifiable.

Stone beads and cylinders, clamshell disks, tubular smoking pipes, arrow-shaft straighteners, flat-bottomed mortars, cylindrical pestles, and small, side-notched, arrow points mark the cultural inventory from this era. Burial posture is tightly flexed on the side or supine with a moderate amount of associated mortuary-related offerings. Protohistoric and historic era sites contain Euroamerican trade items, such as glass beads, brass buttons, and other introduced non-native artifacts.

Specialized sites of local shell bead manufacturing are now recognized in the Southern San Joaquin Valley Region as indicated by bead blanks and manufacturing debris (Hartzell 1992). This pattern of bead production has been interpreted as part of the introduction of monetized systems of exchange (King 1981).

Ethnographic Context

The project area was occupied by Native peoples identified as Southern Valley Yokuts and Western Mono. "Yokuts" in their native language is the word for people or person (Kroeber 1925). The aboriginal inhabitants specific to the Clovis area were one of 15 related Yokuts social groups that were linguistic kin yet spoke their own distinct dialect. The project area was occupied by the *Wechibit* Yokuts tribe (Wallace 1978: Figures 1a and 1b, 448). Yokuts villages in the Project region were *Wechibit* and *Musahau*, both to the east of Clovis and Fresno (ibid.).

Near the Project Site, Big Dry Creek ran west into the Valley from the Sierra to the east. This area was an overlap of Northern Yokuts and Western Mono divisions. The Gashowu tribe of Yokuts inhabited the most immediate area surrounding the Project Area, while the Posgisa or Poshgisha of the Western Mono were located at the headwaters of Little and Big Dry Creeks (Kroeber 1925). Another nearby Northern Yokuts group of the Valley Division were the Pitkachi, located along the south side of the San Juaquin River (Kroeber 1925).

Kroeber (1925) estimated that with the dialectic separateness of this group that there could have been upwards of 50 different tribes. The Southern Valley Yokuts aboriginal population has been variously estimated as between 25,000 and 30,000 persons (Baumhoff 1963:22; Cook 1955:49-68), although Wallace provides an estimate of 15,700 (Wallace 1978). The territory of the Southern Valley Yokuts included Tulare, Buena Vista, and Kern Lakes, their connecting sloughs, and the lower portion of the Kings, Kaweah, Tule, and Kern Rivers (Wallace 1978). Yokuts adapted to this natural abundance of subsistence resources and developed a culture of comparatively great material wealth living in mostly large and more permanent settlements.

The abundant waterways provided a varied diet of fish, turtle, freshwater mussels and waterfowl. Terrestrial animals included pronghorn antelope, tule elk, mule deer and other smaller animals (Wallace 1978). The Tulare Lake area had three Yokuts bands - the *Tachi* to the north, *Chunut* on the east and *Wowol* on the south, with an estimated combined population of 6,500 (Wallace 1978:453).

In the contemporary setting, the Southern Valley Yokuts are now represented mainly by populations of the Santa Rosa Rancheria and the Tule River Indian Reservation. Santa Rosa Rancheria is located about 45 miles to the south of Clovis and the Project, while the Tule River Indian Reservation is about 70 miles to the southeast of Clovis. The Rancheria belongs to the federally recognized Tachi Yokuts Tribe. It was established in 1934 on about 40 acres of land. The Santa Rosa Rancheria expanded in size over the years. In the early 1970s it encompassed 170 acres with about 100 people, an impoverished community in part due to the land being unsuitable for agriculture, which caused most of the people to work as farm laborers (Wallace 1978:461). Now the Rancheria has grown to 1,806 acres and the tribe's resort/casino operations are providing economic growth benefiting its members. The population of Yokuts Natives associated with the Rancheria was 652 based on the 2010 US Census.

The Tule River Indian Reservation is located in the southern Sierra Nevada between Porterville and Springville, California. It covers approximately 55,356 acres. In 2009, 566 tribal members lived on the Reservation. Many more lived off the Reservation in the nearby towns. Today there are nearly 2,000 enrolled Yokuts in the federally recognized tribes, and 600 more Yokuts belonging to unrecognized tribes.

Historic Context

Between 1772 and 1824, Spanish and Mexican military expeditions entered the Fresno County region for minor exploration and to capture Indian neophytes who had escaped from coastal Franciscan missions. In the early American Period following the Mexican-American War of 1846 the western and central portion of the county, situated in the wet Central Valley, was largely unsettled due to fears of disease from swamps and other stagnant bodies of water. The marshes started to be drained in the 1860's and by the 1870's agriculture was the dominant element of the local economy. Common produce from this area includes cotton; almonds, citrus and other fruits; grains, dominated by wheat, corn and rice; and vegetables including melons, pumpkin and squash.

The Project is located in the central area of Fresno County which stretches from the west deep in the southern San Joaquin Valley, with its central portion in the foothills of the Sierra Nevada Mountains, and on eastward across the Sierra Nevada themselves. The western and central portions of the county constitute a rich agricultural and ranching area, while the foothills and mountains to the east are heavily used for vacationers.

The Project is located on the south-central side of Clovis, a town founded in in 1891 just northeast of the county seat at Fresno. The history of the Fresno-Clovis area follows economic trends beginning on the 1850s when the initial American setters arrived in the Dry Creek area. Early homesteaders primarily farmed grains, raised sheep and cattle and combinations of all three. The town of Clovis started in 1891 as a stop along the San Joaquin Valley Railroad that was built to serve the local farm communities. By 1894 a lumber company established its mill in Clovis, the end point of a 45-mile wooden flume from higher in the mountains; the mill is now the site for the Clovis Rodeo Grounds. Also, about this time and into the early twentieth century an intensive irrigation system was put in place that eventually shifted farming from grains to premium crops, a reduction in the size of farms, and encouraged population growth. Also, while the subject property was used for agricultural purposes before 1955, it is part of the ongoing historical/modern period (1950 to present) marked by greater urbanization. While agriculture remains the region's dominant industry, the growth of population and therefore the demand for housing has resulted in the conversion of rural properties into residential development. The situation of the greater Fresno airport at the south end of Clovis, the growth of the county seat and surrounding towns as a commercial center, and the local tourist economy with Clovis as a gateway to the Sierra Nevada, has spurred the growing construction of hotels in this part of the city.

Clovis was incorporated in 1912 while a growing, but still rural, community supported by agriculture. By 2000 the census placed the population at 68,469 people. The town has seen an even quicker population growth recently, with a 2010 population of 95,631, and a currently estimated (2016) population of 106,583.

Project Site Land Use History

Historic aerial photos are available for Clovis (NETROnline 2018) - the earliest dating to 1962. This photo indicates that much of Clovis continued to be used for farming to that date, though residential development was starting to encroach on agricultural lands. In 1962 Santa Ana and Clovis Avenues already bounded the project site to the north and west, but lands to the north, east and south were still in agricultural use. This remained the situation through 1972. The next aerial photo was in 1998, by which time all of the surrounding lands had been developed for commercial use excepting a small parcel immediately to the south. By 1998 the rows of ornamental trees bordering Santa Ana and Clovis Avenues were in place, which remain there to the present time. Ten years later, in 2009, the hotel to the immediate south was under construction (currently the Homewood Suites by Hilton Fresno, and the Hampton Inn and Suites – Clovis Airport-North). It appears that the southeast corner of the project parcel was being used as a construction headquarters with several trailers in place and equipment laydown area, and it was probably at this time that the shallow trenching still visible in this portion of the site occurred (see Pedestrian Survey Results and **Figure 4** below). Subsequent aerial photos take in 2010, 2012 and 2014 show no further changes to the project site.

Topographic maps are also available for the project (NETROnline 2018) - the earliest dating to 1923 (USGS 1923). This map shows Clovis Avenue running north/south on the west edge of the project site, with a railroad track for the Southern Pacific line along the road's east edge (this is now the Fresno-Clovis Rail Trail). All surrounding land was open and presumably under the plow at this time, and there is a canal or ditch running east-west across the property south of the eventual path of Santa Ana Avenue. No structures are shown for the project parcel, and there is a single building, possibly a farm house, across Clovis Avenue to the west. The topo maps of 1947, 1955 and 1956 are unchanged from what was shown in 1923. Ten years later, however, the 1965 topo map shows the lands west of the project site across Clovis Avenue were under development for residences. On the other hand, more rural types of land use were intensifying nearby, with crop land a quarter mile to the east and east-northeast now being used for orchards, a gravel pit operation appears just a few hundred feet to the northeast; and the east-west canal was still in place. The 1974 topo map for this area is unchanged. However, by 1982, it can be seen that urbanization largely surrounded the site. Santa Ana Avenue now bounded it to the north and there was another east/west road to the south, residential development replaced the eastern orchard, a shopping mall/commercial center filled the northwest corner of the intersection and the technology center (currently The Center for Advanced Research and Technology) had been built along the eastern edge of the property. Interestingly there was now shown a spur of the railroad line cutting across the southern portion of the property leading to the south end of the technology center; this railroad spur may have been only temporary to either bring in material for construction of the technology center and/or hotels to the south or brought materials for use at the technology center, as the spur is not to be seen in the subsequent 2012 topo map nor is it noticeable in the period's aerial photos. The most recent available topo map dates to 2012, which shows all the current roads in place. However, it does not indicate land use or show structures.

RESEARCH METHODS

This cultural resources inventory included a background archaeological records check (archival research) at the Southern San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield, a Sacred Lands File search request to the Native American Heritage

Commission (NAHC), and a list of local Native American entities from the NAHC to contact for cultural resources background. Finally, a pedestrian cultural resource survey of the entire project area was conducted. This report presents the results of all of these cultural resource studies including cultural resource management recommendations.

Records Search

A cultural resource records search was conducted by Ryan Gerstner at the SSJVIC on March 22, 2018 to identify historic properties on or near the proposed project sites. The California State Historic Resources Inventory for Fresno County was reviewed to identify local cultural resources that have been previously evaluated for historic significance, as well as survey reports.

Also searched and reviewed were the records and maps for archaeological sites and surveys in the City of Clovis, National Register of Historic Places, Listed Properties and Determined Eligible Properties (2012), California Register of Historical Resources (2012), California Points of Historical Interest (2012), California Inventory of Historic Resources (1976), California Historical Landmarks (2012), Handbook of North American Indians, Vol. 8, *California* (1978), and Historic Spots in California (2002). For the current study, the scope of the records search included the standard 0.5-mile buffer of the project's area.

Field Survey

On March 22, 2018, Ryan Gerstner, UltraSystems' Archaeological Technician, personally visited the project area and conducted a pedestrian survey. During the survey, the 5.6-acre tract within the APE was carefully inspected for any indication of human activities dating to the prehistoric or historic periods (i.e., 50 years or older). With no structures on the parcel, standard transects could be walked for direct observation of the entire ground surface.

Native American Outreach Process and Results

On March 13, 2018, Mr. O'Neil sent a request to the NAHC via email and fax notifying them of the proposed project activities and describing its location, requesting a search of its Sacred Lands File (SLF) and to provide a list of the potential Native American tribal groups and individuals that would have an active interest in the project area and vicinity. The Commission's SLF results were received by email on March 20, 2018.

RESULTS AND FINDINGS

Records Search

Based on the cultural resources records search conducted at the SSJVIC on March 22, 2018, no prehistoric cultural resource sites or isolates have been recorded within the project APE boundary. Also, there are no known prehistoric cultural resource sites or isolates recorded within the 0.5-mile buffer of the project boundary. There two historic-era resources that have been recorded, two vernacular residential dwellings within the 0.5-mile buffer (Morlet and Baloian 2013a and 2013b); neither structures are listed as eligible for the National Register of Historic Places (**Table 1**).

Table 1
KNOWN CULTURAL RESOURCES WITHIN A 0.5-MILE RADIUS OF THE APE

Site Number	Author(s)	Date	Description
P-10-006251	Aubric Morlet and Randy Baloian	2013a	544 San Gabriel Avenue, Clovis; Vernacular residential dwelling with an L-plan footprint, built 1956.
P-10-006253	Aubric Morlet and Randy Baloian	2013b	2544 Harvard Avenue, Clovis; Vernacular residential dwelling with an L-plan footprint, built 1957; garage converted to living area at unknown time.

Previous Archaeological Investigations

According to records at the SSJVIC, there have been no previous cultural resource surveys that touch on the Project APE. There have been two prior cultural resource surveys within the 0.5-mile buffer (**Table 2**) (see **Appendix D**).

Table 2
KNOWN CULTURAL RESOURCE STUDIES WITHIN A 0.5-MILE RADIUS OF THE PROJECT BOUNDARY

Report Number	Author(s)	Date	Title	Resources
FR-02030	St. Clair, Michelle	2004	Cultural Resource Assessment for the Sierra Vista Mall Cellular Tower, Project #CC-532-05	NA
FR-02790	Tibbet, Josh and Baloian, Randy	2015	Cultural Resources Inventory for a Proposed Multi-Family Development in the City of Clovis, Fresno County, California	NA

Native American Outreach Process and Results

On March 13, 2018, Mr. O'Neil submitted a request to the NAHC via email and fax for a SLF search and a list of Native American tribal contacts within the Project area and vicinity. The results of the search were received in a letter dated March 20, 2018 (received March 21, 2018) from Ms. Sharaya Souza, Staff Services Analyst. The NAHC letter indicated that "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results."

On March 21, 2018 Mr. O'Neil mailed, emailed, and faxed (where those addressed were available), each of the 11 tribal entities listed by the NAHC as potential contacts. Each was communicated with a letter and map describing the project and showing the project's location. The letter asked if they have knowledge of cultural resources in the area and if they wished to share that information, as well as if they had any questions or concerns regarding the project. (See **Appendix C**.)

There has been no response by any of the tribes to the emails or letters to date of preparation of this interim report (April 5, 2018). If following thirty days from submitting our letter to them a tribe has not responded, telephone calls will be conducted asking if they have any comments or information. This information will be used to prepare the final technical report.

Pedestrian Survey Results

On March 22, 2018, Mr. Gerstner conducted a Phase I pedestrian cultural resources survey using standard archaeological procedures and techniques that meet the Secretary of Interior's standards and guidelines for cultural resources inventory (see area surveyed identified as "Project Boundary" in **Figure 8**). Survey transects were conducted in a north/south direction throughout the APE. The Project site consisted of a flat grass field (**Figure 1** and **Figure 2**), which appears to have been lightly graded along with the development of the surrounding area. There are two areas along the eastern half of the APE where previous activities have excavated approximately four feet below ground surface (**Figure 3**), exposing a layer of loamy sand (**Figure 4**). There were several patches of gopher tunnel tailings that were observed for potential subsurface cultural resources material. Surface visibility was approximately 40% due to the presence of volunteer grass and weeds. The soil consists of loamy sand with poorly sorted gravels.

The result of the pedestrian survey was negative for both prehistoric and historic sites and isolates.

Figure 1 – Overview of Project Area, View to the Northwest

Figure 2 – Overview of Project Area, View to the Southwest

Figure 3 – View of Prior Grading in Southeast Area, Looking North

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Figure 4 – Cut Bank from Ground Disturbance, View to the West

MANAGEMENT CONSIDERATIONS

Site Evaluation Criteria

Evaluation of significance under the California Environmental Quality Act (CEQA) uses criteria found in eligibility statements for the California Register of Historical Resources (CRHR). Generally, a resource is to be considered historically significant if it meets the criteria for listing in the CRHR in the state historic preservation law (Public Resources Code § 5024.1; California Code of Regulations § 15064.5(a)(3)). These criteria provide that a resource may be listed as a potentially significant historical resource if it:

- Is associated with the events that have made a significant contribution to the broad patterns of California history and cultural heritage;
- Is associated with the lives of persons important in our past;
- 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 value; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

No cultural resources were identified during the investigation; therefore, evaluation was not required for this study.

Potential Effects

No known, potentially significant cultural resources will be adversely impacted by the proposed project. However, the presence of buried archaeological (prehistoric and/or historic) resources cannot be ruled out.

CONCLUSIONS AND RECOMMENDATIONS

No cultural resources were observed during the field survey. The previous cultural resources surveys within the half-mile buffer zone resulted in no archaeological sites or isolates being recorded. Two historic property were identified within the 0.5-mile buffer zone. However, the results of the pedestrian assessment indicate it is unlikely that historic properties will be adversely affected by construction of the project. A ground cover of grass covered much of the surface during the pedestrian survey. The immediate area would have provided a suitable environment for resources desired by the local Native American peoples. The potential for subsurface cultural and or historical deposits is considered to be moderate.

Because of low ground surface visibility during the survey and the suitability of the project area in the past for Native American use, it is recommended that cultural resource monitoring by both a qualified archaeologist and a local tribal monitor be required for grading and excavation. If prehistoric and/or historic items are observed during subsurface activities, work should be stopped in that area and a qualified archaeologist should be called to assess the findings and retrieve the material.

If human remains are encountered during excavations associated with this project, work will halt and the Fresno County Coroner will be notified (§ 5097.98 of the Public Resources Code). The Coroner will determine whether the remains are recent human origin or to be Native American; if Native American, the Coroner will contact the NAHC within the period specified by law. The NAHC will be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by § 7050.5 of the California Health and Safety Code. The MLD will make these recommendations within 48 hours of his or her having access to the project site. These recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials (§ 7050.5 of the Health and Safety Code).

UltraSystems appreciates the opportunity to assist you on this project. If we can be of any further assistance, or if you have any questions concerning this letter, please do not hesitate to contact us.

Sincerely,

ULTRASYSTEMS ENVIRONMENTAL INC.

Stephen O'Neil M.A./RPA
Cultural Resources Manager

Appendices:

Appendix A: Maps
Appendix B: Personnel Background
Appendix C: Native American Heritage Commission Records Search and Native American Contacts
Appendix D: CHRIS Records Search

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APPENDIX A

PROJECT MAPS

Figure 5
Project Regional Location Map

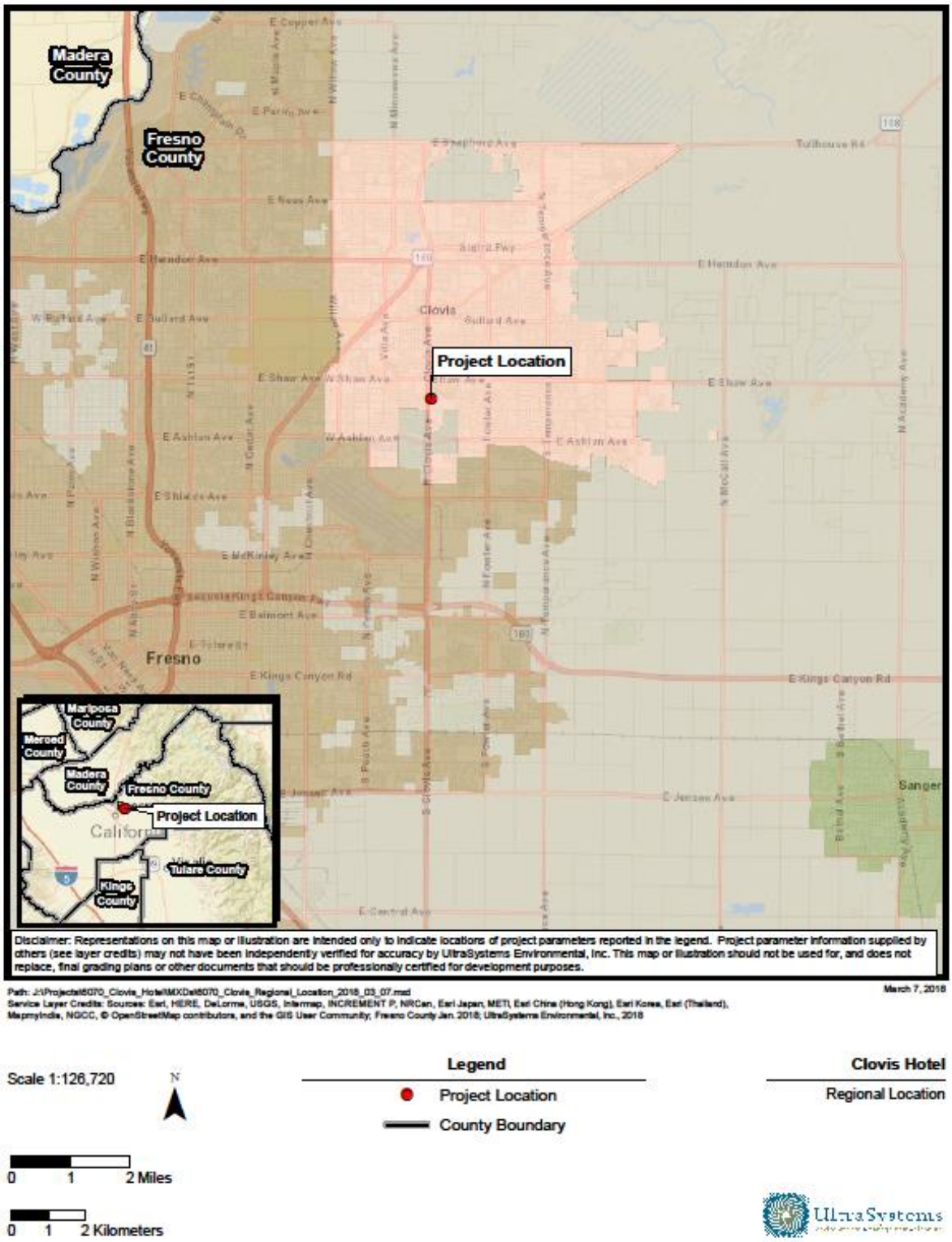
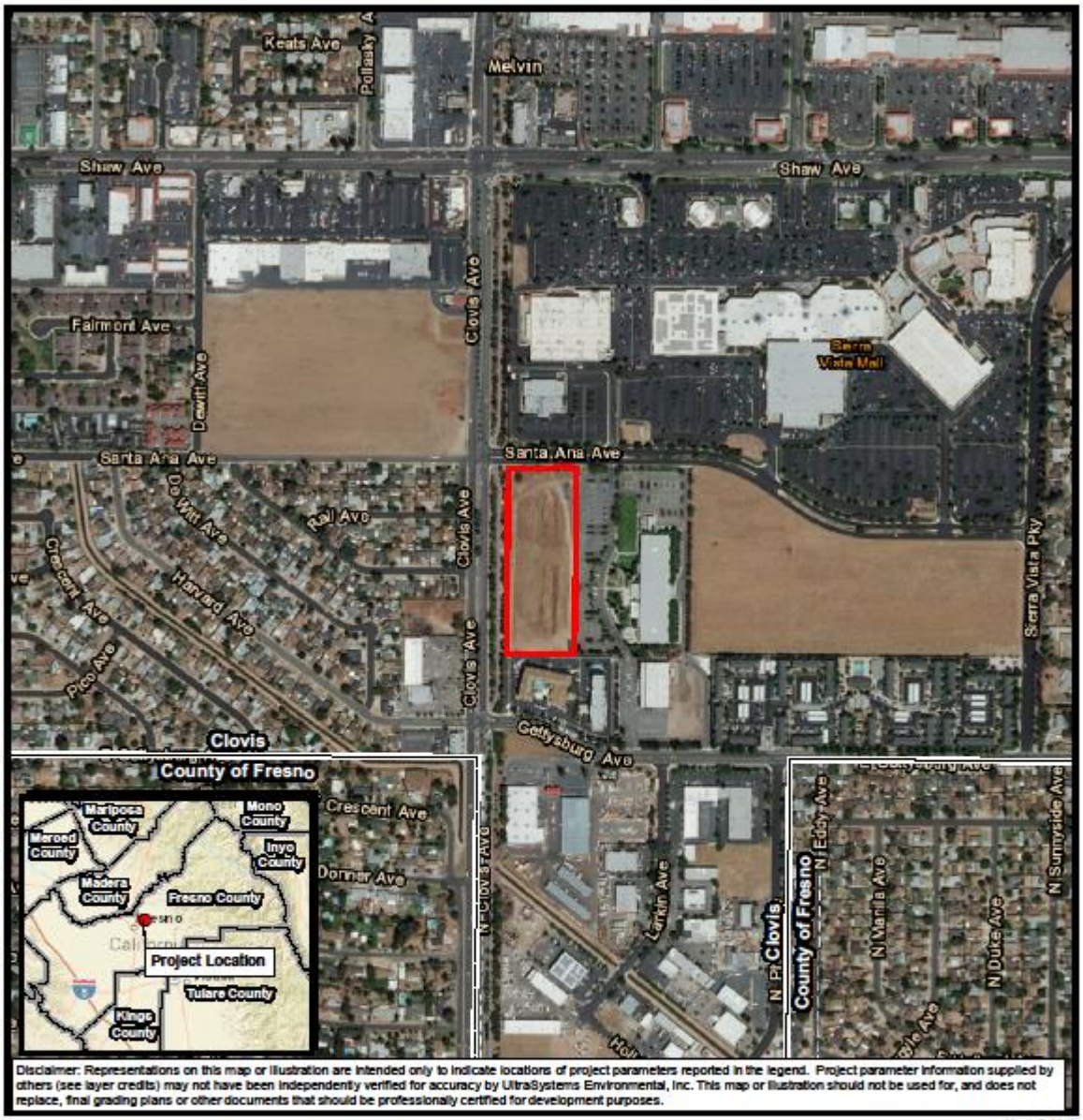


Figure 6
Project Location Area



Disclaimer: Representations on this map or illustration are intended only to indicate locations of project parameters reported in the legend. Project parameter information supplied by others (see layer credits) may not have been independently verified for accuracy by UltraSystems Environmental, Inc. This map or illustration should not be used for, and does not replace, final grading plans or other documents that should be professionally certified for development purposes.

Path: J:\Projects\6070_Clovis_Hotel\MXD\6070_Clovis_Project_Location_2018_03_07.mxd
March 7, 2018

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community; Fresno County Jan. 2018; UltraSystems Environmental, Inc., 2018

Scale 1:7,200

N

0 300 600 Feet

0 100 200 Meters

Legend

Project Boundary

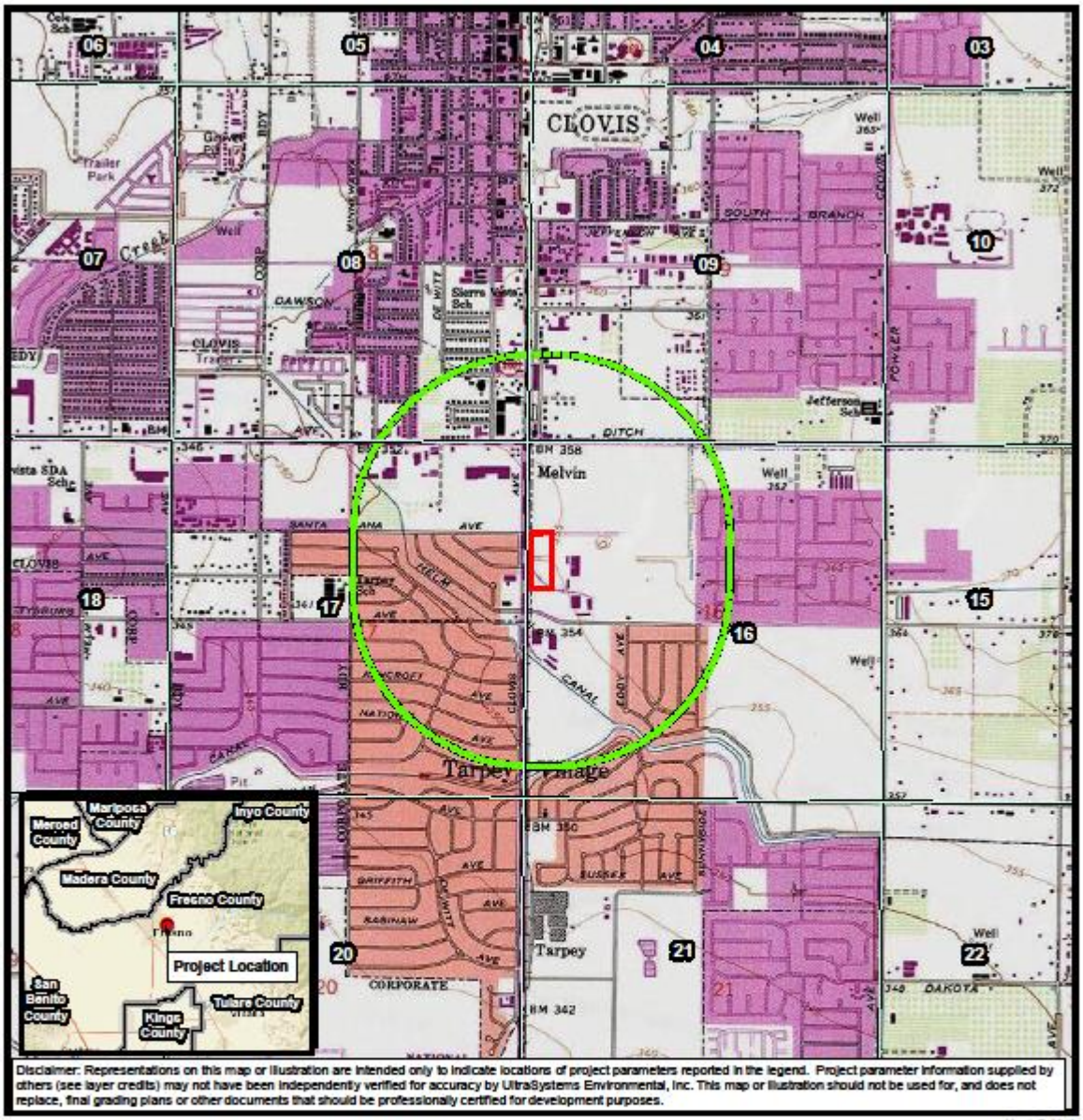
Jurisdiction Boundary

Clovis Hotel

Project Location

UltraSystems

Figure 7
Project Study Area



APPENDIX B

PERSONNEL BACKGROUND

Stephen O'Neil, M.A., RPA

Cultural Resources Manager, Cultural Anthropology/Archaeology

Education

- M.A., Anthropology (Ethnography emphasis), California State University, Fullerton, CA, 2002
- B.A., Anthropology, California State University, Long Beach, CA, 1979

Professional and Institutional Affiliations

- California Mission Studies Association
- City of Laguna Beach Environmental Sustainability Committee, appointed 2012
- Orange County Natural History Museum; Board Member
- Pacific Coast Archaeological Society; Board Member and Past President
- Society of California Archaeology

Professional Registrations and Licenses

- Register of Professional Archaeologists (No. 16104) (current)
- Riverside County, CA, Cultural Resource Consultant (No. 259) (current)
- Cultural Resource Field Director, BLM Permit (CA-13-19) – California, 2013
- NEPA and CEQ Consultation for Environmental Professionals; course by the National Association of Environmental Professionals, 2013

Professional Experience

Mr. O'Neil has 30 years of experience as a cultural anthropologist in California. He has researched and written on archaeology, ethnography, and history. Mr. O'Neil has archaeological experience in excavation, survey, monitoring, and lab work. Most of this has been on Native American prehistoric sites, but also includes Spanish, Mexican, and American period adobe sites. His supervisory experience includes excavation and survey crew chief and project director of an adobe house excavation. He has a wide range of expertise in Phase I & II Environmental Site Assessments, archaeological resource assessment surveys, salvage operations, and cultural background studies for various EIR projects. Mr. O'Neil has worked for cultural resource management firms as well as government agencies and Native American entities. He has prepared technical reports as well as published journal articles.

SELECT PROJECT EXPERIENCE

Inglewood Avenue Corridor Widening Project, City of Lawndale, Los Angeles County, CA: 2013-2014

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. The City of Lawndale is widening Inglewood Avenue from Marine Avenue north. The project uses Caltrans funds and the cultural resources report was prepared in Caltrans format. A separate historic properties report was prepared as well. Prepared for Huitt-Zollars Engineering.

Via Ballena Storm Drain Relocation, City of San Clemente, Orange County, CA: 2013

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. This residential area has a damaged storm drain under Via Ballena that was causing earth movement and erosion and therefor needed replacing. A cultural resources inventory report was among the requirements placed on the City for state funding. Prepared for the City of San Clemente

Pine Canyon Road – Three Points Road to Lake Hughes Road, Los Angeles County, CA: 2013

Mr. O'Neil directed and conducted archaeological field survey, cultural resource records search, Native American contacts and report writing for this project. This nine-mile portion of Pine Canyon Road lies partially within the Angeles National Forest. A series of widening and culvert repairs is planned by the Los Angeles County Department of Public Works (LACDPW). An assessment was made of possible cultural resources, historic and prehistoric that may be affected by the construction, and four historic sites were recorded. Prepared for LACDPW.

Alton Parkway Extension Project, Cities of Irvine and Lake Forest, Orange County, CA: 2012

Mr. O'Neil directed and conducted archaeological and paleontological monitoring, archaeological excavation, cultural resource records search, Native American contacts and report writing for this project. Alton Parkway was extended 2.1 miles between the cities of Irvine and Lake Forest. For the portion within the City of Irvine, UltraSystems conducted monitoring and excavation services. One prehistoric site was excavated and reported on; a series of living features were discovered and also reported. The final monitoring report described the paleontological and archaeological findings. A separate technical report on the archaeological excavations was also prepared. Mr. O'Neil directed research into historic and prehistoric background and prepared the final assessment of potential impacts. Prepared for the Orange County Department of Public Works.

NEPA and CEQA Documentation, Los Angeles Regional Interoperable Communications System (LA-RICS), Los Angeles County, CA: 2011-2014

Mr. O'Neil is part of UltraSystems team currently preparing technical studies and NEPA and CEQA documentation toward the construction of LA-RICS, an $800-million emergency communications system due to be operational in 2016. LA-RICS will provide a highly coordinated emergency communications system to all first-responders to natural and man-made disasters throughout Los Angeles County. Mr. O'Neil is the cultural and historical resources studies team leader, directing five researchers. These studies include coordination of field visits to all 260-plus locations for an archaeologist and/or an architectural historian with agency escorts to observe and record any on-site prehistoric and historic features, performing records and literature searches at archaeology information centers and local archives, contacting local agencies for historically listed structures and districts, coordinate public notices of the project throughout Los Angeles County, consultation with the Native American Heritage Commission and all local tribal organizations, and direct consultation with the California State Historic Preservation Officer (SHPO). This information was compiled by Mr. O'Neil and is used to prepare FCC historical resource forms which were submitted to the SHPO for review.

Ryan S. Gerstner, B.S.
Archaeological Technician

Education

- B.S., Anthropology, Summa Cum Laude, Utah State University, Logan, UT, 2015

Professional and Institutional Affiliations

- Society for California Archaeology Membership 2012-2015
- International Association for Obsidian Studies
- California Rock Art Foundation: Board Member, Newsletter Editor

Professional Experience

Mr. Gerstner has five years of experience as a cultural resource specialist in the western United States. He has conducted fieldwork throughout Southern California, and has cultural resource experience in survey, excavation, monitoring, and laboratory work. He has a diverse range of expertise including Geographic Information Science applications for archaeological research, and archaeological inventory and curation of collections for state museums. Mr. Gerstner also has paleontological expertise conducting faunal identification and analysis on large-scale university excavations. His fieldwork experience includes private, municipal, county, state and federal survey, excavation and monitoring projects. Mr. Gerstner has worked for both cultural resource management firms and public universities.

Select project experience

8 Integrated Cultural Resources Management Plans, NAVFAC SW - Technical Report Writing
Mr. Gerstner is the technical report writer of eight (8) Integrated Cultural Resources Management Plan (ICRMP) documents for Navy Region Southwest (NRSW) installations. The project involves re-formatting and editing past completed ICRMPs to be consistent with one another and updating the ICRMP format to meet the new Navy command outline. Also update appropriate sections within each document to accurately reflect the current status of cultural resources at each of the following Naval Installations: Point Loma, Ventura, San Nicolas, Seal Beach, Norco, Fallbrook, Monterey, and Coronado. These are prepared in user-friendly, internet-ready, digital documents including GIS data and related cultural resource management materials provided in electronic and physical copies of advanced draft, draft and final versions. In addition to updating these documents with the most current information regarding historic properties, regulatory requirements, including NAGPRA, and Navy policies, this task order is part of the effort to standardize ICRMPs across the region. Each ICRMP includes descriptions of archaeological sites on the base, noting the presence of human remains and NAGPRA consultation, including the depository of archaeological collections.

Crow Irrigation Project, Survey and Site Recording, Bighorn County, MT
Mr. Gerstner was a Cultural Resource Technician on a survey project of early 20th-century historic irrigation features throughout the Crow Indian Reservation in southeast Montana. Working with the Crow Nation and the Bureau of Reclamation, in cooperation with the Bureau of Indian Affairs, the project goals were to evaluate potential environmental issues associated with the rehabilitation and improvement of an existing irrigation system on the reservation. Fieldwork involved assessing the condition of historic irrigation features and recording prehistoric/historic sites.

Hazardous Tree Removal Project – Drought Resolution Initiative, Kern and Tulare County, CA

Mr. Gerstner was the District Cultural Resource Lead on a large-scale fuel reduction project for a major energy client in southern California. The extended drought in California has increased tree mortality within utility right-of-ways, putting critical infrastructure at risk on private and public lands. The Hazardous Tree Removal Project focuses on the removal of dead, dying, and hazardous trees from the transmission corridors throughout Angeles, Inyo, Los Padres, San Bernardino, Sequoia, and Sierra National Forests. In accordance with the National Historic Preservation Act of 1966 (NHPA) Section 106, Mr. Gerstner conducted linear transect pre-construction survey and site recordation of archaeological resources along the utility corridor prior to tree felling operations. Mr. Gerstner coordinated with various consulting and management personal to ensure that construction activities were monitored in compliance with project mitigation measures.

Panoche Valley Solar Project Monitoring – San Benito County, CA

Mr. Gerstner was the Archaeological Monitor for a bridge construction project over Little Panoche Creek. Mr. Gerstner coordinated with construction personnel and Native American monitors to facilitate bridge construction related to right-of-way access for the Panoche Valley Solar Field. Ground disturbance activities were monitored during excavation for concrete support platforms in order to avoid and mitigate impact to archaeological and culturally sensitive resources.

Washakie 3D Seismic Project – Sweetwater County, WY

Mr. Gerstner was a Cultural Resource Technician on a Class III inventory for an oil and gas development project within the Washakie Basin of southwest Wyoming. Fieldwork included linear transect survey, historic and prehistoric site recording, and shovel testing for Section 106 National Registrar of Historic Places eligibility and effect.

Dugway Proving Grounds, U.S. Army Installation, Tooele, UT

Under Section 110 of the National Historic Preservation Act, Mr. Gerstner was involved in a Class III, Intensive 6,000-acre survey of the Dugway military installation in Utah's west desert. Within areas of recent wildfire burn, Mr. Gerstner led a pedestrian block survey, recorded archaeological sites, and conducted Geographic Information Systems support. Mr. Gerstner also was engaged in the project data management and analysis involving production of site sketch and location maps for cultural resources record searches and the final report.

Bear River Massacre Site, Survey and Excavation, Preston, ID

In conjunction with the Western Bands of Northern Shoshone and the Idaho National Guard, Mr. Gerstner conducted archaeological survey and excavation of the historic 1863 Bear River Massacre Site in southern Idaho. Survey techniques included the use of metal detecting, ground-penetrating radar, and magnetometry. Provenience data was collected with Real Time Kinematic GPS. Mr. Gerstner performed shovel testing and unit excavation at areas of high potential for discovery of buried cultural material.

Denbury Resources, Riley Ridge Carbon Dioxide Pipeline Project, Central WY

Mr. Gerstner was an Archaeological Technician on a Class III inventory of the 246-mile-long (over 9,500-acre) proposed oil and gas pipeline in Natrona, Fremont, Sweetwater, and Sublette Counties, Wyoming. Duties included GPS data collection, site recording, evaluative shovel testing, field NRHP-eligibility recommendations, testing for effect, site and feature mapping, historic research, and Class III report and forms preparations.

APPENDIX C

Native American Heritage Commission Sacred Lands File Records Search and Native American Contacts

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March 13, 2018

Ms. Katy Sanchez, Associate Government Program Analyst
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, California 95691

Subject: Historic Resources Study, for a Hotel on Clovis and Santa Ana Avenues, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Ms. Sanchez,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary. I am requesting a Native American Contact List of interested tribes, organizations and individuals in the general Project area, and a search of the Sacred Lands File for potential traditional cultural sites.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

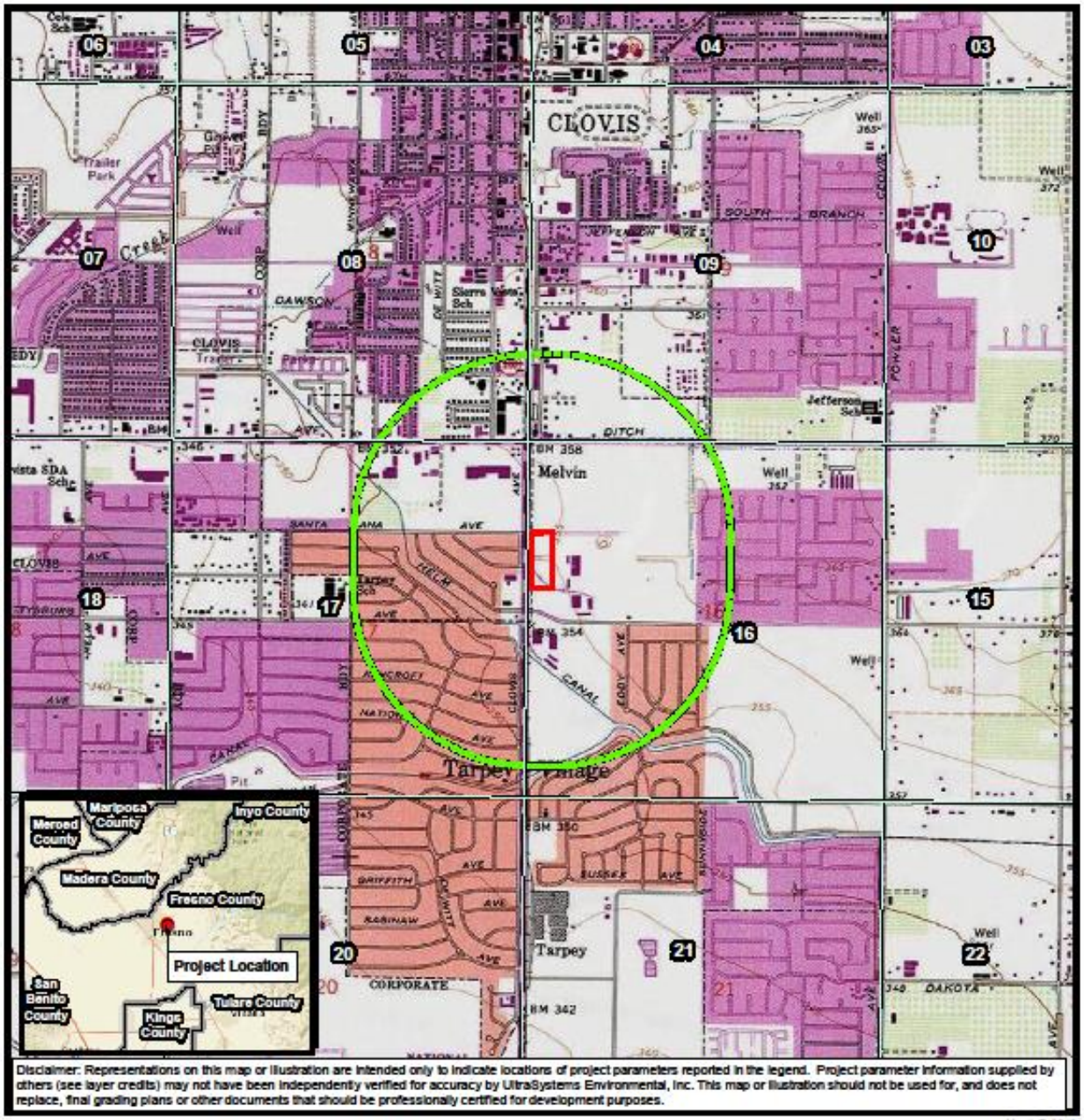
If you require additional information or have any questions, please contact me.

Thank you for your help.

Sincerely,

Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-7443
Telephone: 949.788.4900, ext. 276
Facsimile: 949.788.4901
Website: www.ultrasystems.com



Path: J:\Projects\6070_Clovis_Hotel\MXD\6070_Clovis_Topo_Portrait_2018_03_07.mxd
March 7, 2018
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed; Teale Data Center GIS Solutions Group, 2003; CA Dept. of Conservation, March 2013; Fresno County, Jan. 2018; UltraSystems Environmental, Inc., 2018

Scale 1:24,000

N

0 1,000 2,000 Feet

0 250 500 Meters

Legend

- Project Boundary
- Half-Mile Radius
- Section Boundary

Clovis Hotel

Topographic Map
USGS Quadrange: CLOVIS
Township: 13S Range: 21E

UltraSystems

STATE OF CALIFORNIA — Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

March 20, 2018

Stephen O'Neil
Ultra Systems

Sent by Email: soneil@ultrasystems.com
Number of Pages: 2

RE: Hotel Project, Clovis, Fresno County

Dear Mr. O'Neil:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult.** If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst
(916) 573-0168

Native American Heritage Commission
Native American Contacts
3/20/2018

Big Sandy Rancheria of Western Mono Indians
Elizabeth D. Kipp, Chairperson
PO. Box 337 37387 Auberry Mission Rd.
Auberry , CA 93602
lkipp@bsrnation.com
(559) 374-0066
(559) 374-0055
Western Mono

Cold Springs Rancheria
Carol Bill, Chairperson
P.O. Box 209
Tollhouse , CA 93667
(559) 855-5043
(559) 855-4445 Fax
Mono

Dumna Wo-Wah Tribal Goverment
Robert Ledger SR., Chairperson
2191 West Pico Ave.
Fresno , CA 93705
ledgerrobert@ymail.com
(559) 540-6346
Dumna/Foothill Yokuts
Mono

Dunlap Band of Mono Indians
Chairperson
Box 44
Dunlap , CA 93621
(559) 338-2545
Mono

Kings River Choinumni Farm Tribe
Stan Alec
3515 East Fedora Avenue
Fresno , CA 93726
(559) 647-3227 Cell
Foothill Yokuts
Choinumni

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road
Clovis , CA 93619
rwgoode911@hotmail.com
(559) 299-3729 Home
(559) 355-1774 - cell
Mono

Santa Rosa Indian Community of the Santa Rosa Rancheria
Rueben Barrios Sr., Chairperson
P.O. Box 8
Lemoore , CA 93245
(559) 924-1278
(559) 924-3583 Fax
Tache
Tachi
Yokut

Table Mountain Rancheria of California
Leanne Walker-Grant, Chairperson
P.O. Box 410
Friant , CA 93626
(559) 822-2587
(559) 822-2693 Fax
Yokuts

Table Mountain Rancheria of California
Bob Pennell, Cultural Resources Director
P.O. Box 410
Friant , CA 93626
rpennell@tmr.org
(559) 325-0351
(559) 325-0394 Fax
Yokuts

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue
Fresno , CA 93720
davealvarez@sbcglobal.net
(559) 323-6231
(559) 292-5057 Fax
Choinumni

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed: Hotel Project, Clovis, Fresno County.

Native American Heritage Commission
Native American Contacts
3/20/2018

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas , CA 93906
kwood8934@aol.com
(831) 443-9702

Foothill Yokuts
Mono
Wuksache

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
Hotel Project, Clovis, Fresno County.

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March 21, 2018

Stan Alec, Chairperson
Kings River Choinumni Farm Tribe
3515 East Fedora Avenue
Fresno, California 93726

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Mr. Alec,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Kings River Choinumni Farm Tribe's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
Irvine, CA 92618-7443
Telephone: 949.788.4900, ext. 276
Facsimile: 949.788.4901
Website: www.ultrasystems.com

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March 21, 2018

David Alvarez, Chairperson
Traditional Choinumni Tribe
2415 E. Houston Avenue
Fresno, California 93720

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Mr. Alvarez,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Traditional Choinumni Tribe's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

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Website: www.ultrasystems.com

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March 21, 2018

Rueben Barrios, Sr., Chairperson
Santa Rosa Indian Community of the Santa Rosa Reservation
P.O. Box 8
Lemoore, California 93245

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Mr. Barrios,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Santa Rosa Indian Community's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

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March 21, 2018

Carol Bill, Chairperson
Cold Springs Rancheria
P.O. Box 209
Tollhouse, California 93667

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Ms Bill,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Cold Springs Rancheria's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

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Website: www.ultrasystems.com

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March 21, 2018

Chairperson
Dunlap Band of Mono Indians
P.O. Box 44
Dunlap, California 93667

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Sir or Madam Chairperson,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

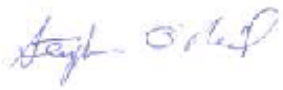
As part of the cultural resources study for the project I am writing to request the Dunlap Band of Mono Indians' input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,



Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

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Facsimile: 949.788.4901
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UltraSystems
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March 21, 2018

Ron Goode, Chairperson
North Fork Mono Tribe
13396 Tollhouse Road
Clovis, California 93619

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Mr. Goode,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

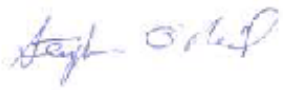
As part of the cultural resources study for the project I am writing to request the North Fork Mono Tribe's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,



Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

Corporate Office – Orange County
16431 Scientific Way
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March 21, 2018

Elizabeth D. Kipp, Chairperson
Big Sandy Rancheria of Western Mono Indians
P.O. Box 337
37387 Auberry Mission Road,
Auberry, California 93602

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Ms Kipp,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Big Sandy Rancheria of Western Mono Indians' input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

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16431 Scientific Way
Irvine, CA 92618-7443
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March 21, 2018

Robert Ledger, Sr., Chairperson
Dumna Wo-Wah Tribal Government
2191 West Pico Avenue
Fresno, California 93667

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Mr. Ledger,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Dumna Wo-Wah Tribal Government's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
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soneil@ultrasystems.com

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March 21, 2018

Robert Pennell, Cultural Resources Director
Table Mountain Rancheria of California
P.O. Box 410
Friant, California 93626

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Mr. Pennell,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Table Mountain Rancheria of California's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
Cultural Resources Manger
soneil@ultrasystems.com

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March 21, 2018

Leanne Walker-Grant, Chairperson
Table Mountain Rancheria of California
P.O. Box 410
Friant, California 93626

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Ms Walker-Grant,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Table Mountain Rancheria of California's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
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March 21, 2018

Kenneth Woodrow, Chairperson
Wuksache Indians Tribe / Eshorn Valley Band
1179 Rock Haven Ct.
Salinas, California 93906

Subject: Historic Resources Study, Clovis Hotel Project, City of Clovis, Fresno County, California. UltraSystems Environmental Project No. 6070.

Dear Mr. Woodrow,

UltraSystems Environmental, Inc. (UEI) has been contracted Clovis St LLC to conduct a cultural resources inventory in support of the client's proposed project to construct a hotel. UltraSystems will be conducting a cultural resources study to evaluation the potential presence of prehistoric and historic resources within the project boundary.

The proposed project consists of a hotel with 130 rooms on a 136,000 square foot area of land. There will be no sub-surface parking or other excavations deeper than 5-8 feet. The land currently consists of 10 separate lots, but these lots will be combined as a single parcel of approximately 5.8 acres. The lots are currently open land with no prior development present.

As part of the cultural resources study for the project I am writing to request the Wuksache Indians Tribe / Eshorn Valley Band's input on potential Native American resources in or near the Area of Potential effect (APE). In a letter dated March 20, 2018, the Native American Heritage Commission stated: "A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential effect (APE) referenced above with negative results."

The project is specifically located on the *Clovis, Calif.*, USGS topographical quadrangle, Range 21 East, Township 13 South, in the SW ¼ of the NW ¼ of Section 16. The proposed hotel would be located on the southeast corner of Clovis and Santa Ana Avenues in the south-central portion of the City of Clovis, Fresno County, California. There is a residential neighborhood to the west across Clovis Avenue, a shopping center to the north across Santa Ana Avenue, a research institution to the east and two hotels to the south of the proposed parcel. This is shown on the enclosed map and the Project area is depicted with a one-half mile buffer zone.

If you require additional information or have any questions, please contact me.

Thank you for your help.

Respectfully yours,

Stephen O'Neil, M.A., RPA
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Native American Contact Log

CA Clovis St LLC Hotel Project, Phase I Cultural Resources Inventory; City of Clovis, Fresno County, California. Project # 6070

Name	Tribe/Affiliation	Letter and Fax Contacts	E-mail Contacts	Telephone Contacts	Comments
Sharaya Souza, Staff Services Analyst	Native American Heritage Commission	March 13, 2018 (Fax)	March 13, 2018	N/A	Request for Sacred Lands File search and local Native American representatives contact information. Reply received March 21, 2018 from Sharaya Souza.
Elizabeth D. Kipp, Chairperson	Big Sandy Rancheria of Western Mono Indians	March 21, 2018 (letter, no fax available)	March 21, 2018	To Be Conducted (TBC) April 19, 2018	Letter and email describing project and requesting input on concerns sent March 21, 2018. No email or fax number available. No response to date.
Carol Bill, Chairperson	Cold Springs Rancheria	March 21, 2018 (letter & fax)	No email available.	TBC April 19, 2018	Letter and fax describing project and requesting input on concerns sent March 21, 2018. No email address available. No response to date.
Robert Ledger, Sr., Chairperson	Dumna Wo-Wah Tribal Government	March 21, 2018 (letter, no fax available)	March 21, 2018	TBC April 19, 2018	Letter and email describing project and requesting input on concerns sent March 21, 2018. No fax number available. No response to date.
Chairperson	Dunlap Band of Mono Indians	March 21, 2018 (letter, no fax available)	No email available.	TBC April 19, 2018	Letter describing project and requesting input on concerns sent March 21, 2018. No email or fax number available. No response to date.
Stan Alec	Kings River Choinumni Farm Tribe	March 21, 2018 (letter, no fax available)	No email available.	TBC April 19, 2018	Letter describing project and requesting input on concerns sent March 21, 2018. No email or fax number available. No response to date.

Name	Tribe/Affiliation	Letter and Fax Contacts	E-mail Contacts	Telephone Contacts	Comments
Ron Goode, Chairperson	North Fork Mono Tribe	March 21, 2018 (letter, no fax available)	March 21, 2018	TBC April 19, 2018	Letter and email describing project and requesting input on concerns sent March 21, 2018. No fax number available. No response to date.
Rueben Barrios, Sr., Chairperson	Santa Rosa Indian Community of the Santa Rosa Rancheria	March 21, 2018 (letter, no fax available)	No email available.	TBC April 19, 2018	Letter describing project and requesting input on concerns sent March 21, 2018. No email or fax number available. No response to date.
Leanne Walker-Grant, Chairperson	Table Mountain Rancheria of California	March 21, 2018 (letter and fax)	No email available.	TBC April 19, 2018	Letter and fax describing project and requesting input on concerns sent March 21, 2018. No email address available. No response to date.
Bob Pennell, Cultural Resources Director	Table Mountain Rancheria of California	March 21, 2018 (letter and fax)	March 21, 2018	TBC April 19, 2018	Letter, email and fax describing project and requesting input on concerns sent March 21, 2018. No response to date.
David Alvarez, Chairperson	Traditional Choinumni Tribe	March 21, 2018 (letter & fax)	March 21, 2018	TBC April 19, 2018	Letter, email and fax describing project and requesting input on concerns sent March 21, 2018. No response to date.
Kenneth Woodrow, Chairperson	Wuksache Indian Tribe / Eshorn Valley Band	March 21, 2018 (letter, no fax available)	March 21, 2018	TBC April 19, 2018	Letter and email describing project and requesting input on concerns sent March 21, 2018. No fax number available. No response to date.

APPENDIX D

CHRIS Records Search Bibliography

Report List

6070

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-02030		2004	St. Clair, Michelle	Cultural Resource Assessment for the Sierra Vista Mall Cellular Tower, Project #CC-532-05	Pacific Legacy, Inc.	
FR-02790		2015	Tibbet, Josh and Baloian, Randy	Cultural Resources Inventory for a Proposed Multi-Family Development in the City of Clovis, Fresno County, California	Applied EarthWorks, Inc.	

Mitchell Air Quality Consulting

Air Quality and Greenhouse Gas Analysis Report
CA Clovis St, LLC, Clovis Hotel Project
City of Clovis, California

Prepared for:
CA Clovis St, LLC
2260 S. Xanadu Way
Aurora, CO 80014

Contact: Keyur Naik

Prepared by:
Mitchell Air Quality Consulting
1164 E. Decatur Avenue
Fresno, CA 93720
559.246.3732
Contact: Dave Mitchell,
Owner/Senior Air Quality Scientist

March 23, 2018

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BAU	Business as Usual
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO_2	carbon dioxide
District	San Joaquin Valley Air Pollution Control District
DOF	California Department of Finance
DPM	diesel particulate matter
EMFAC	EMission FACtors Model
EPA	United States Environmental Protection Agency
Fresno COG	Fresno Council of Governments
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG Rx	Greenhouse Gas Reduction Exchange
GHG(s)	greenhouse gas(es)
HAP	hazardous air pollutant
HRA	health risk assessment
IPCC	United Nations Intergovernmental Panel on Climate Change
MAQC	Mitchell Air Quality Consulting
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	metric tons of carbon dioxide equivalent
NO_X	nitrogen oxides
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_X	sulfur oxides
VOC	volatile organic compounds

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SECTION 1: EXECUTIVE SUMMARY

1.1—Purpose and Methods of Analysis

The following air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria air pollutant, toxic air contaminant (TAC), and GHG emissions generated from the development of the Clovis Hotel Project (project) would cause significant impacts to air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 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 or District) for quantification of emissions and evaluation of potential impacts to air resources (SJVAPCD 2015a) and the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009).

1.2—Project Description

The project consists the project consists of the construction and development of a 130-unit hotel project (Residence Inn). The project would be constructed on 3.14 acres. The project requires a conditional use permit (CUP 2018-01). The site is zoned PCC (Planned Commercial Center). The project would be located at the southeast corner of Clovis Avenue and Santa Ana Avenue in Clovis, California. The Assessor's Parcel Numbers are 499-540-01 through 499-540-10. The site is currently vacant. There is an approved hotel project adjacent to the south of the current hotel project.

The project's regional vicinity location is shown in Figure 1; an aerial view of the local vicinity is provided in Figure 2; and the site plan is provided in Figure 3.

1.3—Summary of Analysis Results

The following is a summary of the analysis results. As shown below, the project would result in less than significant impacts for all air quality and GHG impact criteria analyzed.

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

Impact AIR-2: The project would not violate air quality standards or contribute substantially to an existing or projected air quality violation. **Less than significant impact.**

Impact AIR-3: The 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-4: The project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact with the application of Mitigation Measure AIR-1.**

Impact AIR-5: The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact.**

Impact GHG-1: The 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 project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less than significant impact**.

1.4—Standard Conditions and Mitigation Measures Applied to the Project

No mitigation measures beyond compliance with mandatory regulations were required to demonstrate that the project would have less than significant for air quality, health risk, and GHG impacts.

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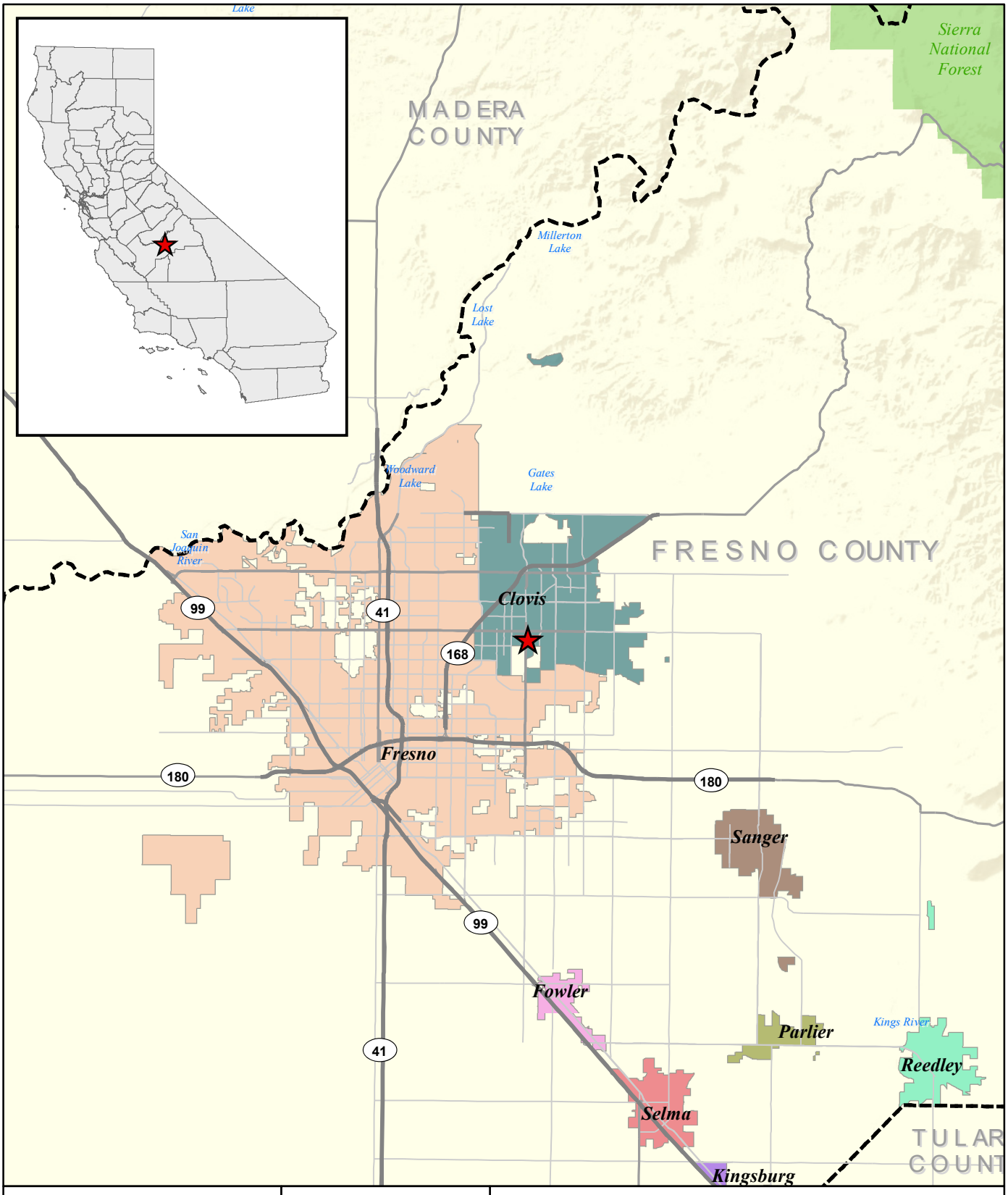

Legend

Project Location

County Boundary

Sources: Fresno County GIS; Open StreetMap; CalAtlas. USFS. Map date: March 21, 2018.

NORTH

0 2 4

Miles

1:300,000

CA CLOVIS ST, LLC
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
CLOVIS HOTEL PROJECT (RESIDENCE INN)

Figure 1. Regional Location Map

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Legend

Project Boundary

Clovis City Limits

Sources: ArcGIS Online World Imagery Map Service; Fresno County GIS. Map date: March 21, 2018.

NORTH

0 250 500

Feet

1:6,000

CA CLOVIS ST, LLC
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
CLOVIS HOTEL PROJECT (RESIDENCE INN)

Figure 2. Local Vicinity Map

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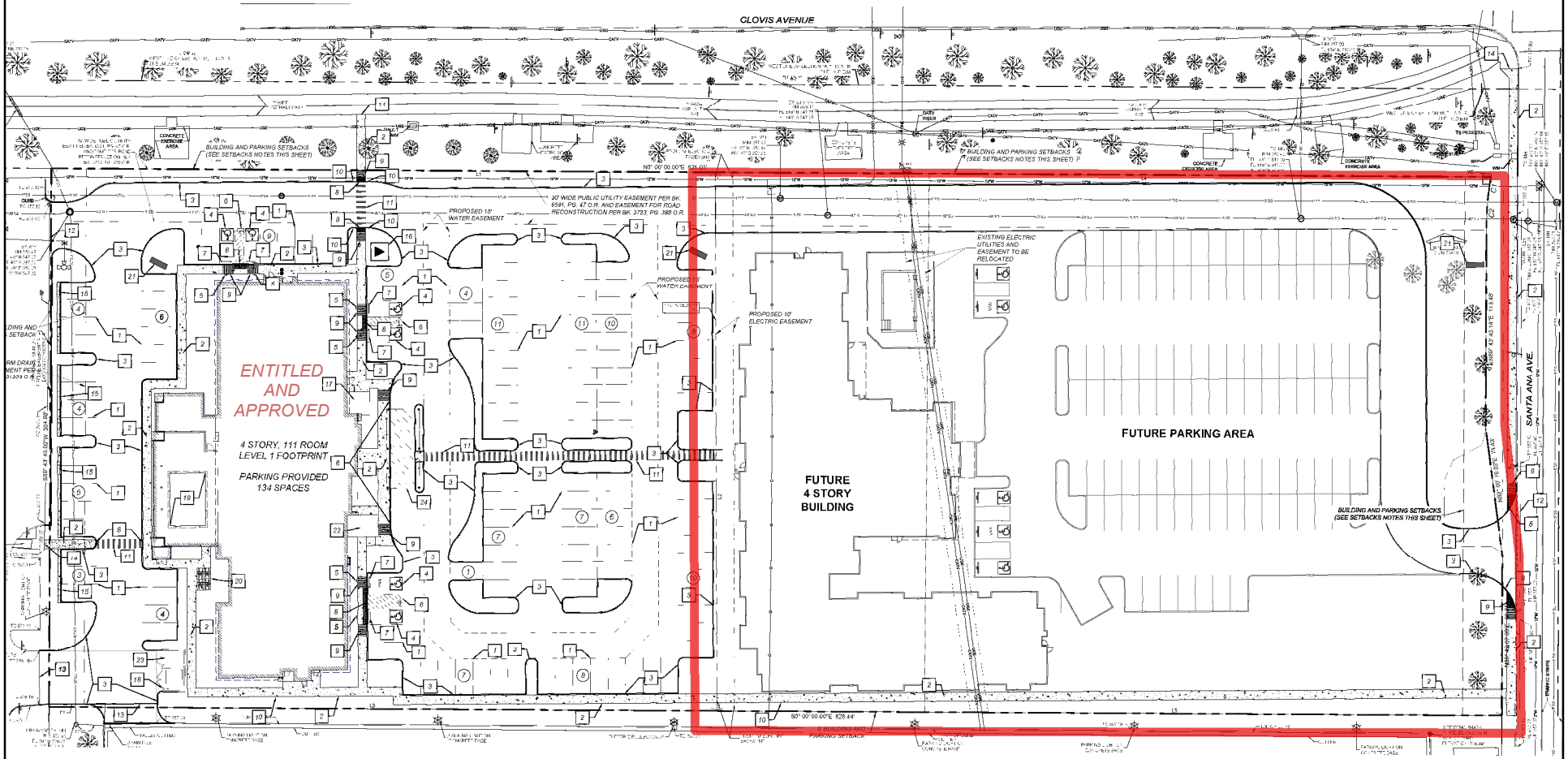

Legend

Project Boundary

NORTH

0 50 100

Feet

1:1,050

Sources: KFW Engineers and Surveying, Preliminary Site Plan, June 2017 Map date: March 21, 2018.

CA CLOVIS ST, LLC
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
CLOVIS HOTEL PROJECT (RESIDENCE INN)

Figure 3. Site Plan

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SECTION 2: AIR QUALITY SETTING

2.1—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 San Joaquin Valley Air Basin (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 (SJVAPCD 2015a).

2.1.1 - San Joaquin Valley Air Basin

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 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 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 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 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 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 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}.

2.2—Regulatory Setting

Air pollutants are regulated to protect human health and for secondary effects such as visibility and building soiling. The Clean Air Act of 1970 tasks the United States Environmental Protection Agency (EPA) with setting air quality standards. The State of California also sets air quality standards, which are in some cases more stringent than federal standards, in addition to addressing additional pollutants. The following section describes these federal and state standards and the health effects of the regulated pollutants.

2.2.1 - Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards (EPA 2014). The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide (NO_2)
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2016).

2.2.2 - California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are less

stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

2.2.3 - Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

2.2.4 - Air Pollutant Description and Health Effects

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 1.

Table 1: Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_X, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.070 ppm[f]			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and result in PM-related health effects.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide (NO_2) forms quickly from NO_X emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human-caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12.0 µg/m^3			
Visibility-reducing particles	8 Hour	See note below[d]				

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQ.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide.

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.		Anthropogenic sources include the combustion of sulfur-containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no state or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROG), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources

Notes:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour NO_2 national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb) (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB 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.

[e] The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007; California Environmental Protection Agency 2002; California Air Resources Board 2009a; U.S. Environmental Protection Agency 2003, 2009a, 2009b, 2010, 2011, 2012a and 2012b; National Toxicology Program 2011 and 2016.
Source of standards: California Air Resources Board 2013a.

Several pollutants listed in Table 1 are not addressed in this analysis. Analysis of lead, hydrogen sulfide, sulfates, and vinyl chloride are not included in this report because no new sources of these pollutant emissions are anticipated with the project. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed as PM_{10} and $PM_{2.5}$.

Toxic Air Contaminants Health Effects

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants. Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and hazardous air pollutants in California.

Exposures to TACs emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur very soon after a person inhales a TAC. These immediate effects may be minor, such as watery eyes, or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality—2009 Edition (ARB 2009b) presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (ARB 1998) 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. In addition to increased risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause a cough, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on: engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of DPM.

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality. As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provides emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the San Joaquin Valley Air Basin from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to 6 tons per day by 2015, a 62 percent reduction from year 2000 levels. ARB predicts a reduction to three tons per day by 2035, which would be an 81 percent reduction from year 2000 levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source (ARB 2013b).

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present. No naturally occurring asbestos is located near the project site.

2.3—Existing Air Quality Conditions

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. Table 2 summarizes 2014 through 2016 published monitoring data, which is the most recent 3-year period available. The table displays data from the Clovis-N Villa Avenue monitoring station (located approximately 1.2 miles northwest of the project site), which is the closest monitoring station to the project site. The data shows that during the past few years, the project

area has exceeded the standards for ozone (state and national), PM_{10} (state), and $PM_{2.5}$ (national). The data in the table reflects the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. No recent monitoring data for Fresno County or the San Joaquin Valley Air Basin was available for CO or SO_2. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 2: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2014	2015	2016
Ozone[1]	1 Hour	Max 1 Hour (ppm)	**0.118**	**0.116**	**0.113**
		Days > State Standard (0.09 ppm)	26	18	26
Ozone	8 Hour	Max 8 Hour (ppm)	**0.103**	**0.098**	**0.095**
		Days > State Standard (0.07 ppm)	84	51	63
		Days > National Standard (0.070 ppm)	82	50	62
Carbon monoxide (CO)2	8 Hour	Max 8 Hour (ppm)	ND	ND	ND
		Days > State Standard (9.0 ppm)	ND	ND	ND
		Days > National Standard (9 ppm)	ND	ND	ND
Nitrogen dioxide (NO_2)[1]	Annual	Annual Average (ppm)	ID	0.010	ID
	1 Hour	Max 1 Hour (ppm)	0.0590	0.0590	0.0498
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide (SO_2)	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM_{10})[1]	Annual	Annual Average (µg/m^3)	ID	**33.7**	**32.7**
	24 hour	24 Hour (µg/m^3)	**84.3**	**101.3**	**74.9**
		Days > State Standard (50 µg/m^3)	ID	50.3	61.3
		Days > National Standard (150 µg/m^3)	0	0	0
Fine particulate matter ($PM_{2.5}$)[1]	Annual	Annual Average (µg/m^3)	ID	**13.0**	11.6
	24 Hour	24 Hour (µg/m^3)	**72.8**	**80.7**	**50.4**
		Days > National Standard (35 µg/m^3)	40.4	15.4	8.2

Notes:
> = exceed ppm = parts per million µg/m^3 = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
Bold = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Clovis-N Villa Avenue monitoring station
Source: California Air Resources Board 2017a: Clovis-908 N. Villa Avenue Station.

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3 provides a description of the health impacts of ozone at different concentrations.

Table 3: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI 51–100—Moderate	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 55–70 ppb	**Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI 101–150—Unhealthy for Sensitive Groups	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 71–85 ppb	**Health Effects Statements**: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI 151–200—Unhealthy	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 86–105 ppb	**Health Effects Statements**: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI 201–300—Very Unhealthy	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
Concentration 106–200 ppb	**Health Effects Statements**: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
Source: Air Now 2015.	

The AQI for the 8-hour ozone standard was changed to reflect the current NAAQS of 70 parts per billion (ppb). Based on the AQI scale for the 8-hour ozone standard, the project area experienced no days in the last three years that would be categorized as very unhealthy (AQI 201–250), and as many as 194 days that were unhealthy (AQI 151–200) or unhealthy for sensitive groups (AQI 101–150), violating the 70-ppb standard as measured at the Clovis-N Villa Avenue monitoring station. The highest reading was 103 parts per billion (ppb) in 2014 (AQI 195), compared with the 105-ppb cutoff point for unhealthy (AQI 200).

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 µg/m^3. An AQI of 101 to 105 or 35.5-55.4 µg/m^3 is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal $PM_{2.5}$ standard. The monitoring station nearest the project exceeded the standard on approximately 64 days in the 3-year period spanning from 2014 to 2016. People with respiratory or heart disease, the elderly, and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 151 to 200 is classified as unhealthy for everyone. This AQI classification is triggered when $PM_{2.5}$ concentration ranges from 55.4 to 150.4 µg/m^3. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. Everyone else should reduce prolonged or heavy exertion. The highest concentration recorded at the Clovis-N Villa Avenue monitoring station in the last three years was 80.7 µg/m^3 (AQI 164) in 2015. At this concentration, increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly, and increased respiratory effects in general population would occur. People with respiratory or heart disease, children, and the elderly should avoid prolonged exertion; everyone else should limit prolonged exertion when the AQI exceeds this level. The relationship of the AQI to health effects in shown Table 4.

Table 4: Air Quality Index and Health Effects of Particulate Pollution

Air Quality Index/ $PM_{2.5}$ Concentration	Health Effects Description
AQI 51–100—Moderate Concentration 12.1–35.4 µg/m^3	**Sensitive Groups**: Some people who may be unusually sensitive to particle.
	Health Effects Statements: Unusually sensitive people should consider reducing prolonged or heavy exertion.
	Cautionary Statements: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.
AQI 101–150—Unhealthy for Sensitive Groups Concentration 35.5–55.4 µg/m^2	**Sensitive Groups**: Sensitive groups include people with heart or lung disease, older adults, children, and teenagers.
	Health Effects Statements: Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly.
	If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.

Table 4 (cont.): Air Quality Index and Health Effects of Particulate Pollution

Air Quality Index/ $PM_{2.5}$ Concentration	Health Effects Description
AQI 151–200—Unhealthy	**Sensitive Groups**: Everyone
Concentration 55.5–150.4 µg/m^3	**Health Effects Statements**: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.
AQI 201–300—Very Unhealthy	**Sensitive Groups**: Everyone
Concentration 150.5–250.4 µg/m^3	**Health Effects Statements**: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.

2.3.1 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 5. The Air Basin is designated nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

Table 5: San Joaquin Valley Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone—One Hour	Nonattainment/Severe	No Standard
Ozone—Eight Hour	Nonattainment	Nonattainment/Extreme
Carbon monoxide	Attainment/Unclassified	Merced, Madera, and Kings Counties are unclassified; others are in Attainment
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Lead	Attainment	No Designation/Classification
Source of State status: California Air Resources Board (ARB 2013c). Source of National status: U.S. Environmental Protection Agency (EPA 2016a). Source of additional status information (SJVAPCD 2017a).		

2.4—Air Quality Plans and Regulations

Air pollutants are regulated at the national, state, and air basin or county level, and each agency has a different level of regulatory responsibility: the EPA regulates at the national level, the ARB at the state level, and the SJVAPCD at the air basin level.

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards—also known as the federal standards described earlier.

A State Implementation Plan (SIP) is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts; specifically, an air district prepares its federal attainment plan, which is sent to ARB to be approved and incorporated into the California State Implementation Plan. 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 ARB then submits the SIP to the EPA for approval. After reviewing submitted SIPs, the EPA proposes to approve or disapprove all or part of each plan. The public has an opportunity to comment on the EPA's proposed action. The EPA considers public input before taking final action on a state's plan. If EPA approves all or part of a SIP, those control measures are enforceable in federal court. If a state fails to submit an approvable plan or if the EPA disapproves a plan, the EPA is required to develop a federal implementation plan. The SIP approval process often takes several years.

The most recent federally approved attainment plans for the SJVAPCD are the 2007 8-Hour Ozone Attainment Plan and the 2012 $PM_{2.5}$ Plan for the 2006 $PM_{2.5}$ standard. The EPA Administrator signed

the Final Rule revising the 8-hour ozone standard to 70 parts per million (ppm) on October 1, 2015. The Air Basin is designated an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The plan to address this standard was adopted by the SJVAPCD on June 16, 2016. The ARB approved the attainment demonstration plan for the San Joaquin Valley on July 21, 2016 and transmitted the plan to the EPA on August 24, 2016. The plan for areas designated extreme nonattainment must demonstrate attainment of the new ozone standard by December 31, 2031. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031. The 2016 $PM_{2.5}$ Plan is currently under ARB review. This plan provides the SJVAPCD strategy to achieve the 2012 $PM_{2.5}$ standard.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional state and local regulation is required to achieve the standards. Regulations adopted by California are described below.

2.4.1 - California Regulations

Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's Low-Emission Vehicle (LEV) regulations. These amendments, also known as the Advanced Clean Car Program include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and GHGs for new passenger vehicles (ARB 2012a).

On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013b).

ARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxides (NO_X) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_X

emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

ARB Truck and Bus Regulation

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015a).

ARB Regulation for Consumer Products

The ARB Consumer Products Regulation was last amended in January 2015. The ARB regulates the VOC content of a wide variety of consumer products sold and manufactured in California. The purpose of the regulation is to reduce the emission of ozone precursors, TACs, and GHG emissions in products that are used by homes and businesses. The regulated products include but are not limited to solvents, adhesives, air fresheners, soaps, aromatic compounds, windshield cleaners, charcoal lighter, dry cleaning fluids, floor polishes, and general cleaners and degreasers (ARB 2015b)

ARB Airborne Toxic Control Measure for Asbestos

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a “Dust Mitigation Plan” and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos. No demolition is required at the project site. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains

chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near Clovis.

Diesel Risk Reduction Plan

The ARB's Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020 (ARB 2000).

2.4.2 - San Joaquin Valley Air Pollution Control District

The District is responsible for controlling emissions primarily from stationary sources. The District, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the Air Basin. The District also has roles under CEQA.

Ozone Plans

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29 million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards. On July 18, 2016, the EPA published in the

Federal Register a final action determining that the San Joaquin Valley has attained the 1-hour ozone national ambient air quality standard. This determination is based on the most recent three-year period (2012-2014) of sufficient, quality-assured, and certified data. The penalty fees remain in place pending submittal of a demonstration that the San Joaquin Valley will maintain the 1-hour standard for 10 years (EPA 2016b).

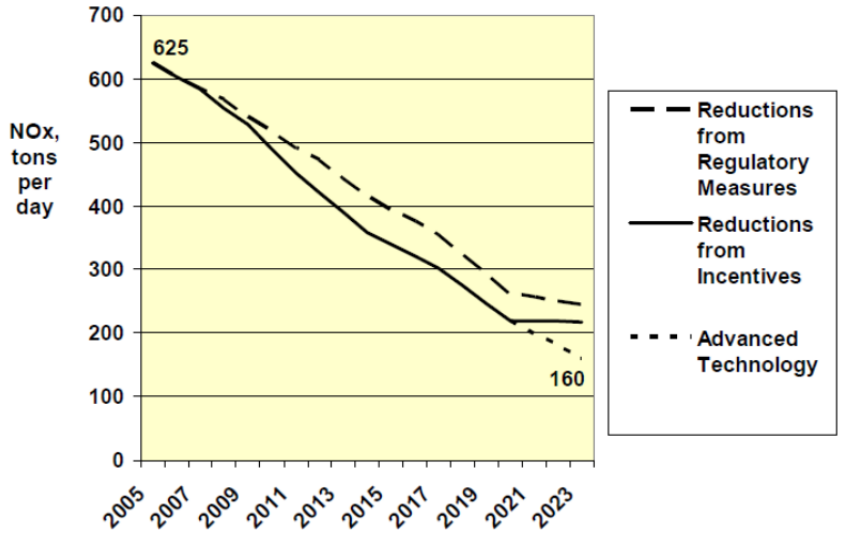
The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of NO_X and a 25 percent reduction of reactive organic gases (ROG). Figure 4 displays the anticipated NO_X reductions attributed in the 2007 Ozone Plan (Source: 2007 Ozone Plan). The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to attain the standard at all monitoring stations in the Air Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act.

The Air Basin is designated an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The District's Governing Board approved the 2016 Plan for the 2008 8-Hour Ozone Standard on June 16, 2016. The comprehensive strategy in this plan will reduce NO_X emissions by over 60 percent between 2012 and 2031, and will bring the San Joaquin Valley into attainment of the EPA's 2008 8-hour ozone standard as expeditiously as practicable, no later than December 31, 2031. To ensure that the plan is approvable with the necessary contingencies, the plan includes a "Black Box" that will require implementation of new advanced technologies and controls prior to the 2031 deadline.

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal deadlines and control measure requirements.

Figure 4: San Joaquin Valley NO_X Emissions Forecast



Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM_{10}. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the PM_{10} standard, the District adopted a PM_{10} Attainment Demonstration Plan (Amended 2003 PM_{10} Plan and 2006 PM_{10} Plan), which has an attainment date of 2010. The District adopted the 2007 PM_{10} Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's PM_{10} standard. The EPA designated the valley as an attainment/maintenance area for PM_{10} on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified NO_X and SO_2as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB. Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the District's 2012 $PM_{2.5}$ Plan for the 2006 standard at a public hearing on January 24, 2013 (SJVAPCD 2012a). This

plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015 will bring the Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020 (SJVAPCD 2015b).

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted on September 15, 2016. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment (SJVAPCD 2017b).

SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include, but are not limited to the following:

Rule 4102—Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4601—Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.

Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

Regulation VIII—Fugitive PM_{10} Prohibitions. Rules 8011–8081 are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

Rule 9510—Indirect Source Review. This rule reduces the impact of NO_X and PM_{10} emissions from growth within the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through on-site mitigation, off-site District-administered projects, or a combination of the two. This project must comply with Rule 9510 because it would develop more than 2,000 square feet of commercial space.

CEQA

The District has three roles under CEQA:

1. **Lead Agency:** Responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.

2. **Responsible Agency:** The discretionary authority of a responsible agency is more limited than a lead agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the lead agency for preparation of environmental documents for land use projects that also have discretionary air quality permits, unless no document is prepared by the lead agency and potentially significant impacts related to the permit are possible. The District regularly submits comments on documents prepared by lead agencies to ensure that District concerns are addressed.
3. **Commenting Agency:** The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The District also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance, as well as state regulations to control air pollution, is an overall improvement in the Air Basin. In particular, the District's 2015 GAMAQI states the following:

1. The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.
2. The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

2.4.3 - Local

The City of Clovis adopted its 2014 General Plan in August 2014. The City's applicable air quality goals and policies from the Air Quality Element and Circulation Element are listed below.

City of Clovis Air Quality Goals and Policies

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
  - **Policy 1.1: Land use and transportation.** Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.

  - **Policy 1.2: Sensitive land uses.** Prohibit the future siting of sensitive land uses within the distances of emission sources as defined by the California Air Resources Board, without sufficient mitigation.
  - **Policy 1.3: Construction activities.** Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).
  - **Policy 1.6: Alternative fuel infrastructure.** Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.
  - **Policy 1.8: Trees.** Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.
  - **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
  - **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.
  - **Policy 2.6: Innovative mitigation.** Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Circulation Element

- **Goal 1:** A context-sensitive and "complete streets" transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.
  - **Policy 1.1: Multimodal network.** The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
  - **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.
  - **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
  - **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
  - **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
  - **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).

- **Development-funded facilities.** Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.
- **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in Urban Centers and new development 10 acres or larger.
- **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.

Land Use Element

- **Goal 3:** Orderly and sustainable outward growth into three urban centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small-town character.
  - **Policy 3.9: Connected development.** New development in Urban Centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.

Open Space and Conservation Element

- **Goal 3:** A built environment that conserves and protects the use and quality of water and energy resources.
  - **Policy 3.5: Energy and water conservation.** Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.

City of Clovis General Plan Program EIR

The General Plan Program Environmental Impact Report (PEIR) includes the following mitigation measures and standard condition to reduce significant air quality impacts:

SC-1: Prior to project approval, each applicant for individual, site-specific developments under the General Plan shall comply with the San Joaquin Valley Air Pollution Control District rules and regulations, including, without limitation, Indirect Source Rule 9510. The applicant shall document, to the City's reasonable satisfaction, its compliance with this standard condition.

Mitigation Measures

3-1: Prior to issuance of any construction permits, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into all appropriate

construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning Division.

3-2: Prior to discretionary approval, applicants for phased development projects (i.e., construction would overlap operation/opening of the project) involving residential land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD in preparation of a health risk assessment (HRA) for construction activities. If the HRA identifies risk impacts that exceed the standards as determined by the SVJAPCD at the time the project is considered, it shall identify measures to reduce these impacts to below these standards. Recommended measures may include those identified in Mitigation Measure 3-1. The recommendations of the HRA shall be incorporated into all construction management plans which shall be submitted to the City and verified by the City's Planning Division.

3-3: Prior to project approval, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance—as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI)—the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval.

3-4: Prior to project approval, the City of Clovis Planning Division shall require applicants for individual, site-specific developments to consider establishing a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District. Under this agreement, project proponents may enter into an agreement where funds are used to develop and implement emission reduction projects.

3-5: Prior to discretionary project approval, the City of Clovis shall evaluate new development proposals for sensitive land uses (e.g., residential, schools, day care centers) within the City for potential incompatibilities with regard to the California Air Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005). Applicants for sensitive land uses that are within the recommended buffer distances shall submit a health risk assessment (HRA) to the City of Clovis prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution Control District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), the appropriate noncancer hazard index exceeds 1.0, or if the PM_{10} or $PM_{2.5}$ ambient air quality standard increment exceeds 2.5 $\mu g/m^3$, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-

cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms.

3-6: Prior to discretionary project approval, applicants for industrial or warehousing land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. All HRAs shall be submitted to the City of Clovis.

2.4.4 - Existing Sources of Toxic Emissions

No existing sources were identified that exceed ARB recommendations in its Air Quality Land Use Handbook for siting sensitive land uses impact the project.

2.4.5 - ARB Air Quality Land Use Handbook

Table 6 lists the following ARB advisory recommendations that address the issue of siting "sensitive land uses" near specific sources of air pollution (ARB 2005):

- High traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities

The analysis examines the area around the site to determine if potential sources of TAC emissions may impact the project, based on the ARB recommended screening distances.

Table 6: Recommendations on Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.

Table 6 (cont.): Recommendations on Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.
Note: These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.	

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SECTION 3: CLIMATE CHANGE SETTING

3.1—Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a). The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

An individual project cannot generate enough GHG emissions to cause a discernible change in global climate. However, the project participates in the potential for global climate change by its incremental contribution of GHGs—and when combined with the cumulative increase of all other sources of GHGs—constitute potential influences on global climate change.

3.1.1 - Consequences of Climate Change in California

In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009):

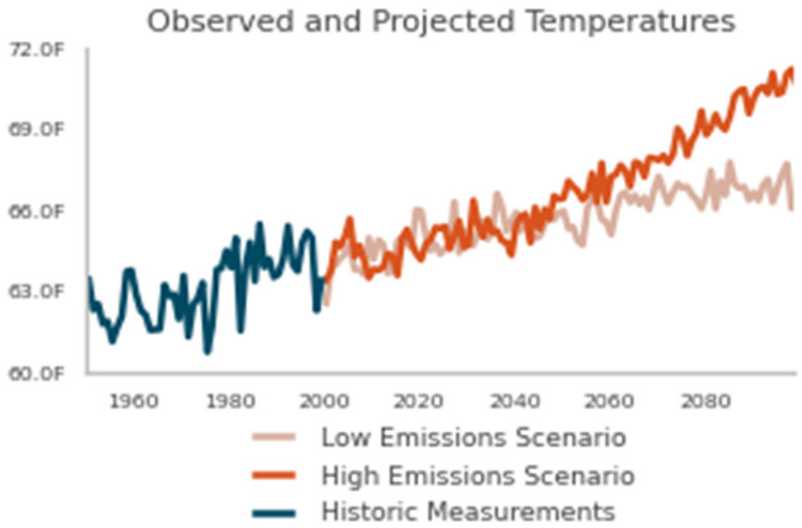
- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Consequences of Climate Change in the Clovis Area

Figure 5 displays a chart of measured historical and projected annual average temperatures in the City of Clovis area. As shown in the figure, temperatures are expected to rise in the low and high GHG emissions scenarios. The results indicate that temperatures are predicted to increase by 3.7 degrees Fahrenheit (°F) under the low emission scenario and 6.5°F under the high emissions scenario (CalAdapt 2017).

Figure 5: Observed and Projected Temperatures for Climate Change in the City of Clovis Area



Source: CalAdapt 2017

Water Supply

The City of Clovis Public Utilities Department would provide water for the project. The City relies on groundwater and treated surface water for potable water supplies. The availability of surface water and the rate of groundwater recharge could decline if climate change were to result in reduced snowpack in the Sierra Nevada.

Wildfires

The project site is within an urbanizing area with limited fuels that would be subject to a wildfire. Foothill and mountain areas located to the north and east of the Clovis area subject to wildfire. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in those areas.

Human Health Effects of GHG Emissions

GHG emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

In its report, Global Climate Change Impacts in the U.S. (2009), the U.S. Global Change Research Program has analyzed the degree to which impacts on human health are expected to impact the United States.

Potential effects of climate change on public health include:

- Direct Temperature Effects: Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- Extreme Events: Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- Climate-Sensitive Diseases: Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- Air Quality: Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution (EPA 2009a).

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (CDC 2010 and OSHA 2003).

3.2—Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, NO_X, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. CO_2, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, CO_2. For example, CH_4's warming potential of 21 indicates that CH_4 has 21 times greater warming effect than CO_2 on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by Assembly Bill (AB) 32 (see the Climate Change Regulatory Environment section for a description) include CO_2, CH_4, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 7. A seventh GHG, nitrogen trifluoride (NF_3), was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. The global warming potential amounts are from IPCC Second Assessment Report (SAR). IPCC Fourth Assessment Report (AR4) introduced updated global warming potentials. The new amounts have not been used in order to remain consistent with the amounts used to develop the ARB Scoping Plan and SJVAPCD thresholds.

Table 7: Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.

Table 7 (cont.): Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.
Perfluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 6,500 to 9,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 23,900.	This gas is man-made and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Nitrogen trifluoride	Nitrogen trifluoride (NF_3) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200.	This gas is used in electronics manufacture for semiconductors and liquid crystal displays.
Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b.		

The State has begun the process of addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the governor on September 14, 2014 required the ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. ARB was required to complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinated with other state agencies and districts to develop measures. The Short-Lived Climate Pollutant Strategy was approved by the ARB on March 24, 2017. The strategy calls for reductions of 50 percent from black carbon, 40 percent from methane, and 40 percent from HFCs from the 2030 Business as Usual (BAU) inventory for these pollutants (ARB 2017b).

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 7 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy (ARB 2015c).

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen (NO_X) on a regional scale and CH_4 on a hemispheric scale will be subject of the strategy (ARB 2015c).

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

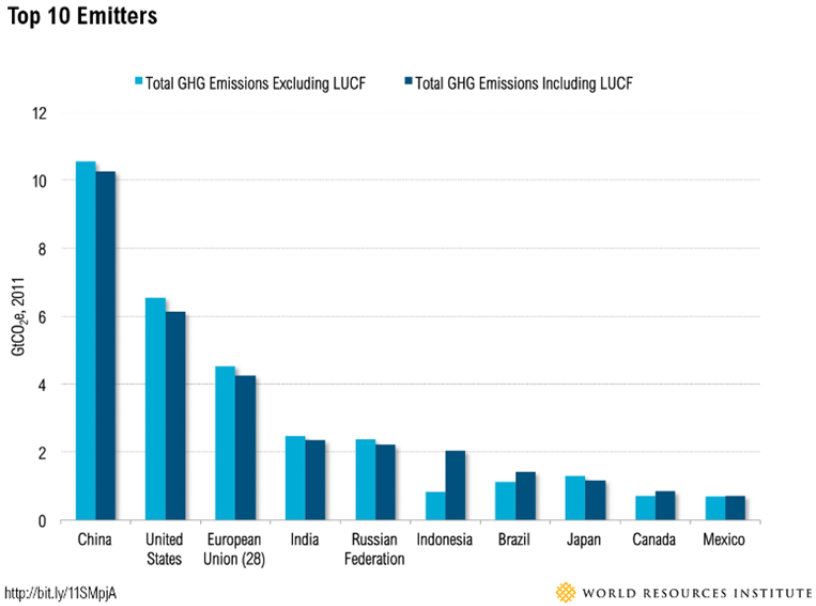
Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources (ARB 2015d). Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other GHGs, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere (NASA 2015b).

3.2.1 - Emissions Inventories

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 6, China was the largest GHG emitter with over 10 billion metric tons of CO_2e, and the United States was the second-largest GHG emitter with over 6 billion metric tons of CO_2e (WRI 2014).

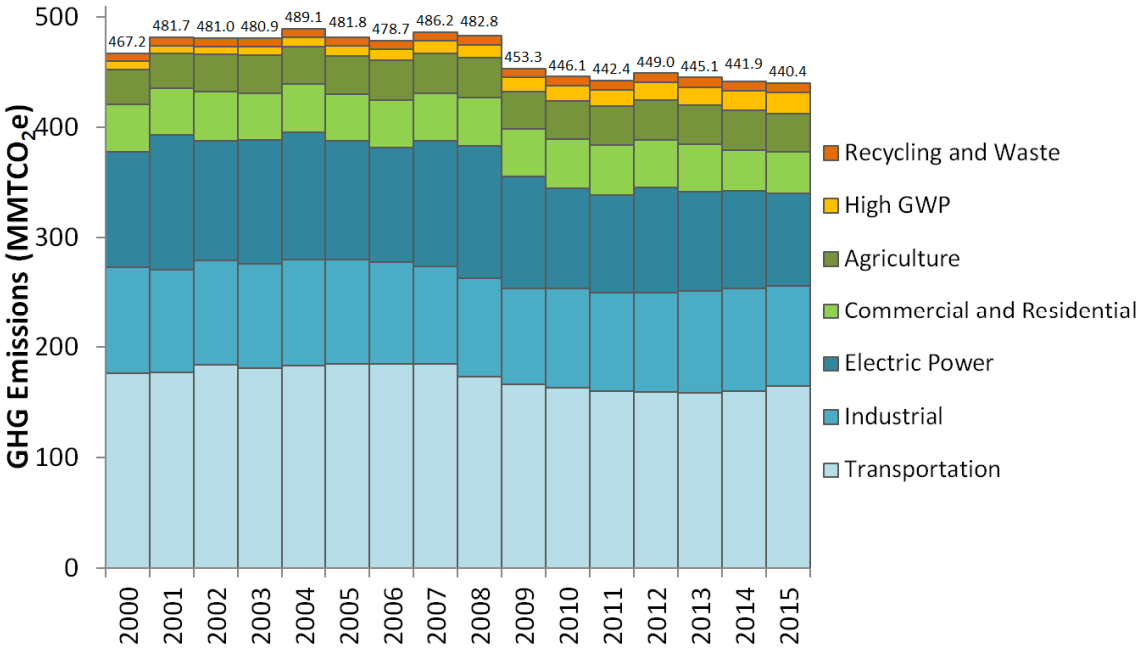
Figure 6: Greenhouse Gas Emissions by Geographic Area



Source: WRI 2014.

Figure 7 shows the contributors of GHG emissions in California between years 2000 and 2015 by Scoping Plan category. The main contributor was transportation. The second highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 440.4 $MMTCO_2e$ in 2015 (ARB 2016b).

Figure 7: Greenhouse Gas Emission Trends by Scoping Plan Category in California



Source: ARB 2016b.

3.3—Regulatory Environment

3.3.1 - International

International organizations, such as the ones discussed below, have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change. The panel was tasked with assessing the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention). On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of five percent against 1990 levels over the 5-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, along with leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business, and civil society announced actions in areas that would have the greatest impact on reducing emissions, including: climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

Paris Agreement. Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating in a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen those efforts in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or COP 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC (C2ES 2015a).

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord (White House 2017). California remains committed to combating climate change through programs designed to reduce GHGs.

3.3.2 - Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

Greenhouse Gas Endangerment. *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling upholding the EPA Administrator findings (EPA 2009c).

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon; that is, if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012b). The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 miles per gallon if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

Mandatory Reporting of Greenhouse Gases. The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

New Source Review. The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units. As required by a settlement agreement, the EPA proposed new

performance standards for emissions of carbon dioxide for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology. President Trump signed the Executive Order on Energy Independence (E.O. 13783), which calls for a review of the Clean Power Plan. On October 16, 2017, the EPA issued the proposed rule Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units an Energy Independence (EPA 2017).

Cap and Trade. Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG cap-and-trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap and trade.

The Regional Greenhouse Gas Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the cap and trade program (C2ES 2015).

3.3.3 - California

Legislative Actions to Reduce GHGs

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and

residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (ARB 2008a). At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (ARB 2010a).

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is shown in updated emission inventories prepared by ARB for 2000 through 2012 to show progress achieved to date (ARB 2014a). The State has also achieved the Executive Order S-3-05 target for 2010 of reducing GHG emissions to 2000 levels. The 2017 Scoping Plan Update includes projections indicating that the State will meet or exceed the 2020 target with adopted regulations (ARB 2017c).

ARB Scoping Plan. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions (ARB 2008).

Cap and Trade Program. The Cap and Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's cap and trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015 (ARB 2015d).

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative (ARB 2014b).

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel

> Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (ARB 2014b).

AB 398. The Governor signed AB 398 on July 25, 2017 to extend the Cap and Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap and Trade Program (CAR 2017).

SB 32. The Governor signed SB 32 on September 8, 2016. SB 32 giving ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. 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.
4. 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.

5. 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.
6. SB 375 Sustainable Communities Strategies
   - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
   - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
   - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB 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.
8. 20 percent reduction in greenhouse gas emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink (ARB 2017c).

SB 375—The Sustainable Communities and Climate Protection Act of 2008. SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375—as codified in Public Resources Code Section 21159.28—states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth-inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved Sustainable Communities Strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

The ARB has prepared the Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. The update includes an increase in the 2035 target for Fresno County from 10 percent to 13 percent.

AB 1493 Pavley Regulations and Fuel Efficiency Standards. California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011 (ARB 2013d).

The standards were phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards resulted in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant (ARB 2013e).

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California (ARB 2011a).

SB 1368—Emission Performance Standards. In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh).

SB 1078—Renewable Electricity Standards. On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with

renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020 The ARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

SB 350—Clean Energy and Pollution Reduction Act of 2015. The legislature recently approved and the governor signed SB 350, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

SBX 7-7—The Water Conservation Act of 2009. The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

Executive Order S-3-05. On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order B-30-15. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to provide post-2020 targets was signed by the Governor in 2016. SB 32 includes a 2030 mandate matching the requirements of the Executive Order.

Executive Order S-01-07—Low Carbon Fuel Standard. The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law (OAL) approved the regulation on November 16, 2015 (ARB 2015e).

Executive Order S-13-08. Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2012).

Title 24 Energy Efficiency Standards. California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The most current 2016 Building Energy Efficiency Standards went into effect on January 1, 2017 (CEC 2016).

Title 24 California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2013 California Green Building Code Standards that became effective January 1, 2014. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).

- **Designated parking**. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste**. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  1. The installation of water-conserving fixtures or
  2. Using nonpotable water systems (5.303.4).
- **Water use savings**. Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters**. Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency**. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control**. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning**. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

Model Water Efficient Landscape Ordinance. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (E.O. B-29-15) directed DWR to update the ordinance through expedited regulation. The California Water Commission approved the revised ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

SB 97 and the CEQA Guidelines Update. Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states: "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code. This provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006—in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010.

The 2010 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- 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 greenhouse gas 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 greenhouse gas 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 EIR must be prepared for the project.

The CEQA Guidelines amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, they call for a "good-faith effort, based on available information, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project." The amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts, respectively. GHG mitigation measures are referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (Section 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable; however, it does not answer the question of when emissions are cumulatively considerable.

Section 15183.5 permits programmatic GHG analysis and later project-specific tiering, as well as the preparation of Greenhouse Gas Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to Section 15183.5(b).

In addition, the amendments revised Appendix F of the CEQA Guidelines, which focuses on energy conservation. The sample environmental checklist in Appendix G was amended to include GHG questions.

CEQA emphasizes that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines Section 15130(f)).

California Supreme Court GHG Ruling

A November 30, 2015 ruling, the *California Supreme Court in Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project, concluded that whether the project was consistent with meeting statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25 to 27 of the ruling to address this issue summarized below.

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU**. A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).
- **Compliance with Regulatory Programs or Performance Based Standards**. "A lead agency might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].) To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions.' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively

considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions'].)" (p. 26).

- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs)**. A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (p. 27).

Therefore, consistent with CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the SJVAPCD GHG Reduction Threshold; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.

3.3.4 - San Joaquin Valley Air Pollution Control District

Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.
- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.
- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support

quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources, and must have a certified final CEQA document.

For non-exempt projects, those projects for which there is no applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency must evaluate the project against performance-based standards and would require the adoption of design elements, known as a Best Performance Standard, to reduce GHG emissions. The Best Performance Standards (BPS) have not yet fully been established, though they must be designed to achieve a 29 percent reduction when compared with the BAU projections identified in ARB's AB 32 Scoping Plan.

BAU represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating BPS would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For stationary source permitting projects, BPS means, "The most stringent of the identified alternatives for control of GHG emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." The SJVAPCD has identified BPS for the following sources: boilers; dryers and dehydrators; oil and gas extraction; storage, transportation, and refining operations; cogeneration; gasoline dispensing facilities; volatile organic compound control technology; and steam generators.

For development projects, BPS means, "Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual."

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB's adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required,

regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required.

San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The GHG Rx is operated cooperatively by air districts that have elected to participate. Participating districts have signed a Memorandum of Understanding (MOU) with CAPCOA and agree to post only those credits that meet the Rx standards for quality. The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The GHG Rx is intended to help fulfill compliance obligations or mitigation needs of local projects subject to environmental review, reducing the uncertainty of using credits generated in distant locations. The SJVAPCD currently has no credits posted to the GHG Rx website as of this writing (CAPCOA 2018).

Rule 2301

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.
- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

Fresno Council of Governments

2014 Regional Transportation Plan

The Fresno Council of Governments (Fresno COG) is the Regional Transportation Planning Agency (RTPA) for the Fresno County region. The Fresno COG is in the process of preparing the 2014 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS). The 2014 RTP is a planning document in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. SB 375 includes the following four primary findings related to the RTP/SCS development process:

- That the ARB develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including Fresno COG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Fresno is a per capita reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. However, the 2014 RTP/SCS includes a target of nine percent per capita reduction by 2020 and an 11 percent reduction by 2035 relative to 2005 levels (ARB 2015f).
- During the next RTP update, the Fresno COG is required to prepare an SCS that specifies how the GHG emission reduction target set by ARB will be achieved. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by Fresno COG. Chapter 4 of the 2014 RTP includes the SCS for Fresno COG.
- Streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Fresno County SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target.

The 2018 RTP/SCS is currently under development. Fresno COG proposed a 13 percent per capita reduction of GHG emissions by 2035 as the new target for the region.

3.3.5 - Local

The City of Clovis does not currently have formal GHG emissions reduction plans or recommended emissions thresholds for determining significance associated with GHG emissions from development projects. However, the General Plan includes goals and policies to reduce GHG emissions, which are listed below.

General Plan

The City of Clovis adopted its 2014 General Plan in August 2014. The 2014 General Plan includes the following applicable goals and policies related to improving air quality that may also co-benefit climate change impacts:

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
  - **Policy 1.1: Land use and transportation**. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.
  - **Policy 1.6: Alternative fuel infrastructure.** Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.
  - **Policy 1.8: Trees.** Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.
  - **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
  - **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.

- **Policy 2.6**: **Innovative mitigation.** Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Circulation Element

- **Goal 1:** A context-sensitive and "complete streets" transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.
  - **Policy 1.1: Multimodal network.** The City shall plan, design, operate, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
  - **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrians, bicyclists, and motorists.
  - **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
  - **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
  - **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
  - **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
  - **Policy 5.2: Development-funded facilities.** Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.
  - **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.
  - **Policy 5.4: Homeowner associations.** The city may require homeowner associations to maintain pathways and other bicycle and pedestrian facilities within the homeowner association area.
  - **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers and to provide general pedestrian connectivity throughout the city.

Land Use Element

- **Goal 3:** Orderly and sustainable outward growth into three urban centers with neighborhoods that provide a balanced mix of land uses and development types to support a community lifestyle and small town character.

- **Policy 3.9: Connected development**. New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.

Open Space and Conservation Element

- **Goal 3:** A built environment that conserves and protects the use and quality of water and energy resources.
  - **Policy 3.4: Drought-tolerant landscaping**. Promote water conservation through use of drought-tolerant landscaping on existing and new residential properties. Require drought-tolerant landscaping for all new commercial and industrial development and city-maintained landscaping, unless used for recreation purposes.
  - **Policy 3.5: Energy and water conservation**. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.
  - **Policy 3.6: Renewable Energy**. Promote the use of renewable and sustainable energy sources to serve public and private sector development.
  - **Policy 3.7: Construction and design**. Encourage new construction to incorporate energy efficient building and site design strategies.

City of Clovis General Plan Program EIR

The General Plan PEIR includes the following discussion regarding reducing GHG emissions associated with the General Plan Update:

> Prior to issuance of construction permits, the City of Clovis Planning Division shall require that applicants for new development projects submit documentation showing that greenhouse gas (GHG) emissions meet a 29 percent reduction from BAU in accordance with the methodology identified by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The documentation shall identify measures to be incorporated into the considered project that would reduce GHG emissions from BAU. Such measures include but are not limited to the following:
>
> - Provide a pedestrian access network that internally links all uses and connects to existing external streets and pedestrian facilities.
> - Provide the minimum number of parking spaces required.
> - Create a shared parking program, as feasible.
> - Provide bicycle end-of-trip facilities (e.g., bike parking, showers, and lockers).
> - Develop rideshare and ride-matching assistance programs.
> - For planned residential development, design and incorporate a neighborhood electric vehicle system.
> - Design buildings to be electric vehicle charging-station-ready.
> - Coordinate with the City of Clovis and/or the Fresno Area Express to install bus stops at or near the project site.

- Design buildings to be energy efficient beyond the requirements of Title 24.
- Design and orient structures to maximize shade in the summer and sun exposure in the winter.
- Install vegetative roofs that cover at least 50 percent of the roof area.
- Design buildings to incorporate passive solar design and solar heaters.
- Install solar panels on carports and parking areas.
- Limit nonessential idling of commercial vehicles beyond Air Toxic Control Measures idling restrictions.

Waste Diversion

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. For 2015, the target rate was 4.1 pounds per person. The City's disposal rates were well below the target rate of 4.7 pounds per person per day in 2015. The rate reported was 3.5 pounds per person per day in 2015. The City has met the per capita target on a per-resident basis for each year of the last 3 reporting years (CalRecycle 2016a).

SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

4.1—Model Selection and Guidance

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors represent the emission rate of a pollutant given the activity over time; for example, grams of NO_X per horsepower-hour or grams of NO_X per vehicle mile traveled. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed by the South Coast Air Quality Management District in cooperation with other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with construction and operation from a variety of land uses.

The modeling follows District guidance where applicable from its GAMAQI. The models used in this analysis are summarized as follows:

- Construction emissions: CalEEMod, version 2016.3.2
- Operational emissions: CalEEMod, version 2016.3.2
- Criteria pollutant and TAC air dispersion modeling: AERMOD 21616r

4.2—Air Pollutants and GHGs Assessed

4.2.1 - Criteria Pollutants Assessed

The following air pollutants are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides (NO_X)
- Carbon monoxide (CO)
- Sulfur dioxide (SO_2)
- Particulate matter less than 10 microns in diameter (PM_{10})
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the project would emit ozone precursors ROG and NO_X. However, the project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reaction of ozone precursors. Other criteria pollutants such as vinyl chloride, hydrogen sulfide, lead, and sulfates were not included because of their low levels of emissions from the project.

As noted previously, the project would emit ultrafine particles. However, there is currently no standard separate from the $PM_{2.5}$ standards for ultrafine particles and there is no accepted methodology to quantify or assess the significance of such particles.

4.2.2 - Greenhouse Gases Assessed

This analysis is restricted to GHGs identified by AB 32, which include: carbon dioxide, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of GHGs, including several defined by AB 32 such as carbon dioxide, methane, and NO_X.

The project may emit GHGs that are not defined by AB 32. For example, the project may generate aerosols through emissions of DPM from the vehicles and trucks that would access the project site. Aerosols are short-lived particles, as they remain in the atmosphere for about one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty (IPCC 2007a).

Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

4.3—Construction Modeling Assumptions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

4.3.1 - Project Schedule

The project was assumed to begin construction in April 2019 with operations beginning in June 2020. The analysis uses the CalEEMod default construction schedule and equipment list. This results in a highly conservative estimate of construction emissions because the model assumes that all equipment is operated continuously for every day of each construction phase when in reality some equipment is used for a portion of a phase or only periodically during each day. The detailed

construction schedule and other modeling assumptions can be reviewed in the modeling results included in Appendix A of this report.

4.3.2 - Construction Equipment Emission Factors

CalEEMod contains an inventory of construction equipment that incorporates estimates of the number of equipment, age, horsepower, and equipment emission control level or tier from which rates of emissions are developed. The CalEEMod default equipment assumptions were used in this analysis for the estimation of emissions from on-site construction equipment. CalEEMod's off-road emission factors and load factors are from the ARB OFFROAD model.

4.3.3 - Demolition

No demolition is required.

4.3.4 - Site Preparation

Site preparation involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading. During site preparation, emissions are generated from the use of diesel construction equipment. Fugitive dust is generated during soil-disturbing activities and truck loading and unloading.

4.3.5 - Grading

During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

Only some pieces of equipment generate fugitive dust in CalEEMod. The CalEEMod manual identifies various equipment and the acreage disturbed in an 8-hour day:

- Crawler tractors, graders, and rubber tired dozers: 0.5 acre per 8-hour day
- Scrapers: 1 acre per 8-hour day

Therefore, the following acres are the total quantities disturbed per day, according to the acreage disturbed quantities listed above:

- Site preparation = 3.5 acres per day
- Grading = 2.5 acres per day

The developer indicates that 15,000 cubic yards of soil would be imported to the project site. The import and export emissions from trucking are reflected in off-site trips.

4.3.6 - Building Construction, Paving, and Architectural Coatings

The analysis uses the default modeling assumptions from CalEEMod for construction equipment during building construction, paving, and application of architectural coatings. The emission factors

for architectural coatings were revised to reflect compliance with SJVAPCD Rule 4601 Architectural Coatings.

4.3.7 - Construction Off-site Trips

Worker trips are accounted for during the construction phases, based on 1.25 trips per piece of equipment (the CalEEMod default). The CalEEMod default worker trip length of 10.8 miles was retained. The CalEEMod default vehicle fleet (LD Mix) was used for employee trips.

Vendor trips for the building construction phase are calculated from a study performed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) based on land use and size. The CalEEMod defaults for vendor trips, trip length, and vehicle fleet (Heavy Duty Truck Vehicle Fleet Mix) were used.

4.4—Operation

Operational emissions are those emissions that occur when the project is occupied by the future residents. The major sources are summarized below.

4.4.1 - Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site.

CalEEMod default trip generation which is based on the *Institute of Transportation Engineers Trip Generation Manual, 9th Edition* was used in the modeling.

A pass-by trip accounts for vehicles already on the roadway network that stop at the project site as they pass-by; the pass-by trips are existing vehicle trips in the community. CalEEMod default rates of four percent pass-by trips were used in this analysis.

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the 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 CalEEMod default vehicle fleet mix overstates the percentage of heavy-duty trucks for hotel projects; however, the default fleet mix was retained for the analysis. One study of hotel truck trip generation was located for Boston, Massachusetts showed very low truck trip generation; however, no details regarding the hotels studied was included in the data.

4.4.2 - Architectural Coatings (Painting)

Paints release VOC emissions during application and drying. The buildings in the project would be repainted on occasion. The project is required to comply with the SJVAPCD Rule 4601—Architectural Coatings. The rule requires flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints 100 g/l by 2012. Most of the coatings used for residential and hotel projects are flat paints.

4.4.3 - 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 (ARB 2011b). The default emission factor developed for CalEEMod was used.

4.4.4 - Landscape Equipment

CalEEMod estimated the landscaping equipment using the default assumptions in the model.

4.4.5 - Electricity

Electricity used by the project (for lighting, etc.) would result in emissions from the power plants that would generate electricity distributed on the electrical power grid. Electricity emissions estimates are only used in the GHG analysis. CalEEMod was used to estimate these emissions from the project.

Electricity Emission Factor

The default CalEEMod emission factors for Pacific Gas & Electric (from the CEC's year 2006 data) are as follows:

- Carbon dioxide: 641.35 pounds per megawatt hour (lbs/MWh)
- Methane: 0.029 lb/MWh
- Nitrous oxide: 0.006 lb/MWh

It is assumed that the Renewable Electricity Standards would have taken effect by 2020. The Renewable Electricity Standard requires that electricity providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. Pacific Gas & Electric provides estimates of its emission factor per megawatt hour of electricity delivered to its customers. The Pacific Gas and Electric Company (PG&E) emissions factor for 2020 for CO_2 is provided below. No projections have been made by PG&E for later years, so the 2020 rate is used for 2030 modeling. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard.

- Carbon dioxide: 290 lbs/MWh
- Methane: 0.022 lb/MWh
- Nitrous oxide: 0.005 lb/MWh

4.4.6 - Electricity Consumption

CalEEMod has three categories for electricity consumption: electricity that is impacted by Title 24 regulations, non-Title 24 electricity, and lighting. The Title 24 uses are defined as the major building envelope systems covered by California's Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Lighting is separate since it can be both part and not part of Title 24. Since lighting is not considered as part of the building envelope energy budget, CalEEMod

does not consider lighting to have any further association with Title 24 references in the program. Non-Title 24 includes everything else such as appliances and electronics. Total electricity consumption in CalEEMod is divided into the three categories. The percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity factors. The percentages are then applied to the electricity consumption to result in the values used in the analysis.

4.4.7 - Natural Gas

The project would generate emissions from the combustion of natural gas for water heaters, heat, etc. CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. CalEEMod defaults were used.

4.4.8 - Water and Wastewater

GHG emissions are emitted from the use of electricity to pump water to the project and to treat wastewater. CalEEMod defaults were used.

4.4.9 - Refrigerants

During operation, there may be leakage of refrigerants (hydrofluorocarbons) from air conditioners and the refrigeration system. Hydrofluorocarbons are typically used for refrigerants, which are long-lived GHGs. Hotel uses of refrigerants are minor; therefore, they were not estimated.

4.4.10 - Solid Waste

GHG emissions would be generated from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the GHG emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture: 6%
- Landfill capture gas flare: 94%
- Landfill capture gas energy recovery: 0%

4.4.11 - Vegetation

There is currently some carbon sequestration occurring on-site from existing orchard agricultural uses. The project would plant trees and integrate landscaping into the project design, which would provide carbon sequestration. However, the number of trees to be planted is unknown and data are insufficient to accurately determine the impact that existing plants have on carbon sequestration. For this analysis, it was assumed that the loss and addition of carbon sequestration that are due to the project would be balanced; therefore, emissions due to carbon sequestration were not included.

SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional and localized level.

5.1—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 have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

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

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

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 District recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable District thresholds and methodologies are contained under each impact statement below.

5.2—Impact Analysis

5.2.1 - Consistency with Air Quality Plan

Impact AIR-1: The project would not 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 does not provide specific

guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, 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 and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project conform to the assumptions in the AQPs?
3. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the District's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- AQP emissions inventories and attainment modeling are based on growth assumptions for the area within the air district's jurisdiction.
- AQPs rely on a set of air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

AQPs are plans for reaching attainment of air quality standards. The growth assumptions, emission inventory, and control measures to reduce emissions are analyzed to determine if the Air Basin can reach attainment for the ambient air quality standards by the schedule required by the federal Clean Air Act. In order to show attainment of the standards, the District analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The District then formulates a control strategy to reach attainment that includes both State and District regulations and other local programs and measures.

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 District's significance thresholds—then the project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact AIR-2 below, emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the construction and operation of the project would not exceed the District's significance thresholds. As shown in Impact AIR-2, the project would not result in CO hotspots that would violate CO standards. Therefore, the project would not contribute to air quality violations.

Consistency with Assumptions in AQPs

The primary way of determining whether a project is consistent with the AQP's assumptions is to determine if the General Plan is consistent with the growth assumptions used in the AQPs for the Air Basin, and if the project is consistent with the applicable General Plan. As required by California law, city and county general plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and designates locations for land uses to regulate growth. Fresno COG uses the growth projections and land use information in adopted general plans, among other sources, to estimate future average daily trips and then vehicle miles traveled (VMT), which are then provided to the District to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs provide the amount of emission reductions required to reach attainment of the air standards based on the projected growth in emissions, and include control measures required to achieve those reductions by the deadlines mandated by the Clean Air Act.

The applicable General Plan for the project is the City of Clovis General Plan, which was adopted in 2014 prior to adoption of the SJVAPCD's latest AQPs. The 2016 Plan for the 2008 8-Hour Ozone Standard was adopted in June 2016. The 2015 Plan for the 1997 PM2.5 Standard was adopted in April 2015 and the 2016 Moderate Area Plan for the 2012 PM2.5 Standard was adopted in September 2016. The site's land use designation in the City of Clovis General Plan is General Commercial (GC). The hotel land use is consistent with the GC designation. Therefore, the project is consistent with the planning assumptions used in the most recent AQPs.

The General Plan PEIR found that the growth allowed by the plan was inconsistent with the SJVAPCD AQP because the emissions at buildout exceeded the criteria pollutant emission thresholds (see Impact AIR-2), and, thus, the City of Clovis found the impact to be significant and unavoidable and adopted a Statement of Overriding Considerations (SOC). Projects that are consistent with the General Plan policies and comply with the mitigation measures included in the General Plan and Development Code Update Draft PEIR mitigation measures are able to rely upon the SOC finding to address their cumulative air quality impacts. The General Plan PEIR indicates that application of SJVAPCD Rule 9510—Indirect Source Review and implementation of the General Plan policies and implementation actions would reduce impacts to the extent feasible. The project is required to comply with Rule 9510 and is consistent with General Plan policies and implementation actions as described in Table 8.

Table 8: Consistency with General Plan Policies

General Plan Policy	Project Consistency
Air Quality Policy 1.1: Land use and transportation. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.	**Consistent.** Hotel guests would have easy access to the existing bike lane on Clovis Avenue that connects to destinations throughout the area. Enhancements to encourage walking and bicycling will reduce driving and related pollutant emissions. In addition, the project is approximately 0.25 mile from Sierra Vista Mall and multiple retail and service uses.
Air Quality Policy 1.2: Sensitive land uses. Prohibit the future siting of sensitive land uses within the distances of emission sources as defined by the California Air Resources Board, without sufficient mitigation.	**Consistent.** As discussed in Section 5.2.4—Sensitive Receptors, the project does not locate sensitive receptors within the distances of emission sources as defined by the California Air Resources Board.
Air Quality Policy 1.3: Construction activities. Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).	**Consistent.** The project will be required to comply with Regulation VIII –Fugitive PM_{10} Prohibitions.
Air Quality Policy 1.6: Alternative fuel infrastructure. Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.	**Consistent.** The project will comply with electrical vehicle charging requirements of the CalGreen Code.
Air Quality Policy 1.8: Trees. Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.	**Consistent.** The project would incorporate landscaping throughout the project site. The incorporated landscaping would provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
Air Quality Policy 2.1: Regional coordination. Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.	**Not applicable.** This measure applies to local government agencies and not individual projects.
Air Quality Policy 2.2: Cross-jurisdictional issues. Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.	**Not applicable.** This measure applies to government agencies and not individual development projects.
Air Quality Policy 2.6: Innovative mitigation. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.	**Consistent.** The project would comply with Rule 9510, which may include payment of mitigation fees that can be used for innovative mitigation measures that reduce criteria pollutants and GHG emissions.
Circulation Policy 1.1: Multimodal network. The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.	**Consistent.** The project area includes a variety of features designed to provide safe and convenient travel for users of all modes of transportation. Hotel guests will have easy access to an existing bike path that runs along Clovis Avenue.

Table 8 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Circulation Policy 1.2: Transportation decisions. Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.	**Consistent.** The project will have easy access to bike paths and lanes that will provide convenience and safety for pedestrians and bicyclists.
Circulation Policy 1.4: Jobs and housing. Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.	**Consistent.** The project will be constructed in an infill site and will provide additional local jobs and hotel services near downtown Clovis and existing major retail development.
Circulation Policy 1.5: Neighborhood connectivity. The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).	**Consistent.** The project is within 2 miles of multiple existing educational, commercial, and businesses uses.
Circulation Policy 3.11: Right-of-way design. Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.	**Consistent.** The project will comply with City of Clovis design standards and landscaping requirements.
Circulation Policy 5.1: Complete street amenities. Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).	**Consistent.** The project would be required to upgrade existing streets fronting the property in accordance with City standards.
Circulation Policy 5.2: Development-funded facilities. Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.	**Not applicable.** The project is adjacent to an existing regional trail. No additional trails are needed in the vicinity of the project.
Circulation Policy 5.3: Pathways. Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.	**Consistent.** Future hotel guests and employees will be able to utilize existing and planned sidewalks, bike lanes, and paths constructed in compliance with City requirements in this area.
Circulation Policy 5.5: Pedestrian access. Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.	**Consistent.** Future hotel guests and employees will be able to utilize sidewalks and paths constructed in compliance with City requirements in this area.
Land Use Policy 3.9: Connected development. New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.	**Consistent.** The project will provide required street improvements and connections to pedestrian and bicycle systems.

Table 8 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Open Space and Conservation Policy 3.5: Energy and water conservation. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.	**Consistent.** The project will meet or exceed energy and water conservation and reduction standards set in the California Building Code.
Source: City of Clovis General Plan 2014.	

The air quality mitigation measures and standard conditions from the General Plan PEIR and a discussion of project compliance with each measure are provided in Table 9.

Table 9: Compliance with General Plan PEIR Mitigation Measures

Mitigation Measure	Project Compliance
SC-1: Prior to project approval, each applicant for individual, site-specific developments under the General Plan shall comply with the San Joaquin Valley Air Pollution Control District rules and regulations, including, without limitation, Indirect Source Rule 9510. The applicant shall document, to the City's reasonable satisfaction, its compliance with this standard condition.	The project is required to submit an Air Impact Assessment Application to the SJVAPCD to comply with Rule 9510.
3-1: Prior to issuance of any construction permits, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Planning Division.	The analysis of construction emissions is included herein. No criteria pollutant construction emissions exceed SJVAPCD thresholds. The air quality impact analysis prepared for this project utilizes SJVAPCD guidance and thresholds from the GAMAQI.

Table 9 (cont.): Compliance with General Plan PEIR Mitigation Measures

Mitigation Measure	Project Compliance
3-2: Prior to discretionary approval, applicants for phased development projects (i.e., construction would overlap operation/opening of the project) involving residential land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD in preparation of a health risk assessment (HRA) for construction activities. If the construction HRA identifies risk impacts that exceed the standards as determined by the SVJAPCD at the time the project is considered, it shall identify measures to reduce these impacts to below these standards. Recommended measures may include those identified in Mitigation Measure 3-1. The recommendations of the construction HRA shall be incorporated into all construction management plans which shall be submitted to the City and verified by the City's Planning Division.	The project is a single phased development so no health risk assessment is required.
3-3: Prior to project approval, development project applicants shall prepare and submit to the City of Clovis Planning Division a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) methodology in assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the SJVAPCD adopted thresholds of significance, as identified in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), the City of Clovis Planning Division shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval.	The analysis of project operational emissions is included herein. No criteria pollutant operational emissions exceed SJVAPCD thresholds.
3-4: Prior to project approval, the City of Clovis Planning Division shall require applicants for individual, site-specific developments to consider establishing a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District. Under this agreement, project proponents may enter into an agreement where funds are used to develop and implement emission reduction projects.	The project does not exceed SJVAPCD significance thresholds; therefore, no VERA would be required to reduce project impacts.
3-5: Prior to discretionary project approval, the City of Clovis shall evaluate new development proposals for sensitive land uses (e.g., residential, schools, day care centers) within the City for potential incompatibilities with regard to the California Air	The impacts to sensitive receptors were evaluated herein. No sources of toxic emissions identified by the ARB Air Quality and Land Use Handbook were identified within the recommended buffer distances.

Table 9 (cont.): Compliance with General Plan PEIR Mitigation Measures

Mitigation Measure	Project Compliance
Resources Board's Air Quality and Land Use Handbook: A Community Health Perspective (April 2005). Applicants for sensitive land uses that are within the recommended buffer distances shall submit a health risk assessment (HRA) to the City of Clovis prior to future discretionary project approval. The HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution Control District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), the appropriate non-cancer hazard index exceeds 1.0, or if the PM_{10} or $PM_{2.5}$ ambient air quality standard increment exceeds 2.5 $\mu g/m^3$, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms.	
3-6: Prior to discretionary project approval, applicants for industrial or warehousing land uses shall coordinate with the San Joaquin Valley Air Pollution Control District (SJVAPCD) or the City of Clovis in conjunction with the SJVAPCD to determine the appropriate level of health risk assessment (HRA) required. All HRAs shall be submitted to the City of Clovis.	The project is a hotel development. This mitigation measure is not applicable.

Air Quality Plan Control Measures

The AQP contains a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A detailed description of rules and regulations that apply to this project is provided in Section 2.2, Regulatory Setting. The project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

Conclusion

The project's emissions are less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The project's existing land use designation (General Commercial) would provide densities and development patterns consistent with the land use policies of the City of Clovis 2014 General Plan. The project complies with all applicable policies,

implementation actions, and mitigation measures of the 2014 General Plan; therefore, the project is consistent with the AQP, and the impact would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.2 - Potential for Air Quality Standard Violation

Impact AIR-2: The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis

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 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 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 District'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
- 10 tons per year NO_X
- 10 tons per year ROG
- 27 tons per year SO_X
- 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 show that SO_2 emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix A. No further analysis of SO_2 is required.

Construction Emissions

Construction emissions associated with the project are shown for the years 2019 and 2020 in Table 10. The emissions from all phases of construction that would occur within one calendar year were added for comparison with the significance threshold. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. As shown in Table 10, the emissions are below the significance thresholds in each construction year. Therefore, the emissions would be less than significant on a project basis.

Table 10: Construction Air Pollutant Emissions Summary (Unmitigated)

Year	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction 2019	0.32	3.04	2.17	0.07	0.20
Construction 2020	0.67	0.70	0.62	0.06	0.04
Grand Total for All Years of Construction	0.98	3.74	2.78	0.14	0.24
Highest Construction Emissions in Any Year	***0.67***	***3.04***	***2.17***	0.07	0.20
Significance threshold (tons/year)	10	10	100	15	15
Exceed threshold—significant impact?	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.
ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Calculations use unrounded numbers.
Source: CalEEMod output (Appendix A).

The project would not exceed the SJVAPCD annual construction emission thresholds for any pollutant. Therefore, the project would be less than significant. No mitigation beyond compliance with existing regulations is required.

Operational Emissions

Operational emissions occur over the lifetime of the project and are from two main sources: area sources and motor vehicles, or mobile sources. Construction of the project is expected to begin in 2019 with project completion in 2020. Occupancy is expected as early as June 2020. The SJVAPCD considers construction and operational emissions separately when making significance determinations.

For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. The emissions modeling results for project operation are summarized in Table 11.

As shown in Table 11, the emissions are below the SJVAPCD significance thresholds prior to application of mitigation measures or taking credit for project design features that would reduce project emissions and, therefore, would result in a less than significant impact.

Table 11: Operational Air Pollutant Emissions (Unmitigated)

Source	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	0.88	0.00	0.22	0.00	0.00
Energy	0.03	0.23	0.20	0.02	0.02
Mobile	0.36	1.14	3.28	0.01	0.20
Total Project Emissions	**1.26**	**1.38**	**3.70**	**0.03**	**0.22**
Significance threshold	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No

Notes:
ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Area source emissions include emissions from natural gas, landscape, and painting.
Source: CalEEMod output (Appendix A).

Localized Pollutant Analysis

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. The impact from localized pollutants is based on the impact to the nearest sensitive receptor; therefore, the analysis of localized pollutants is included under Impact AIR-4: Sensitive Receptors.

Carbon Monoxide Hot Spot Analysis

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the project vicinity.

Construction of the project would result in minor increases in traffic for the surrounding road network during the duration of construction. Motor vehicles accessing the site when it becomes operational would result in a minor increase in daily trips that would not substantially reduce the LOS. Furthermore, local roadways are not identified as operating at unacceptable conditions under existing and future buildout conditions, according the City of Clovis General Plan. In addition, the highest background 8-hour average CO concentration during the latest year it was monitored is 2.06 ppm, which is 78 percent lower than the CAAQS of 9.0 ppm or the NAAQS of 9 ppm. Therefore, the project would not significantly contribute to an exceedance of state or federal CO standards.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.3 - Cumulative Impacts

Impact AIR-3: The 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).

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 District'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.

Step 1: Regional Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The Air Basin is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if the project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the project exceeds the regional threshold for NO_X or ROG, then it follows that the project would contribute to a cumulatively considerable impact for ozone.

Regional emissions include those generated from all on-site and off-site activities. Regional significance thresholds have been established by the District because emissions from projects in the Air Basin can potentially contribute to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards. Projects within the Air Basin region with regional emissions in excess of any of the thresholds presented previously are considered to have a significant regional air quality impact.

The criteria pollutant emissions analysis assessed whether the project would exceed the District's thresholds of significance. As shown in Table 10 and Table 11, criteria pollutant emissions would not exceed any threshold of significance during project construction or operation. Therefore, the

combination of unmitigated project emissions with the criteria pollutants from other sources within the Air Basin would not cumulatively contribute to a significant impact according to this criterion.

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The District attainment plans are based on a summary of projections that accounts for projected growth throughout the Air Basin, and the controls needed to achieve ambient air quality standards. This analysis considers the current CEQA Guidelines, which includes the amendments approved by the Natural Resources Agency, effective on March 18, 2010. The Air Basin is in nonattainment or maintenance status for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants, or that the standards have recently been attained in the case of pollutants with maintenance status. When concentrations of ozone, PM_{10}, or $PM_{2.5}$ exceed the ambient air quality standard, then those sensitive to air pollution (such as children, the elderly, and the infirm) could experience health effects such as: decrease of pulmonary function and localized lung edema in humans and animals; increased mortality risk; and risk to public health, implied by altered connective tissue metabolism, altered pulmonary morphology in animals after long-term exposures, and pulmonary function decrements in chronically exposed humans. See Section 2.3—Existing Air Quality Conditions for additional correlation of the health impacts with the existing pollutant concentrations experienced in the Clovis area.

Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the Air Basin, because that is the area in which the air pollutants generated by the sources within the Air Basin circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have authority over land use decisions, it is recognized that changes in land use and circulation planning would help the Air Basin achieve clean air mandates. The District evaluated emissions from land uses and transportation in the entire Air Basin when it developed its attainment plans. Emission inventories used to predict attainment of NAAQS must be based on the latest planning assumptions for mobile sources.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously approved plan or mitigation program.

The history and development of the SJVAPCD's current Ozone Attainment Plan is described in Section 2.4, Air Quality Plans. The 2007 8-Hour Ozone Plan contains measures to achieve reductions in emissions of ozone precursors, and sets plans towards attainment of ambient ozone standards by 2023. The 2012 $PM_{2.5}$ Plan and the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard require fewer NO_X reductions to attain the $PM_{2.5}$ standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors NO_X and ROG. The 2012 $PM_{2.5}$ Plan requires reductions in directly emitted $PM_{2.5}$ from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for $PM_{2.5}$ emissions. $PM_{2.5}$ is also formed in secondary reactions in the atmosphere involving NO_X and ammonia to form nitrate particles. Reductions in NO_X required for ozone attainment are also sufficient for $PM_{2.5}$ attainment. As discussed in Impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with applicable rules and regulations.

The City Clovis General Plan EIR found cumulative impacts to be significant because the projected emissions from the buildout of the plan exceed the SJVAPCD quantitative thresholds of significance and application of SJVAPCD Rule 9510, and implementation of the General Plan policies and implementation actions would reduce impacts to the extent feasible. For example, Policy 1.1 of the Air Quality Element focuses on reducing mobile-source emissions through land use planning that would reduce overall VMT. However, future development projects could exceed the SJVAPCD regional emissions thresholds. Therefore, operational-related air quality impacts associated with future development under the General Plan Update are considered significant and unavoidable. The PEIR examines the impact of development through buildout of the entire plan area, which includes the project site. Therefore, even though the project requires annexation, the cumulative effects of developing the project site were considered in the EIR. This project does not exceed SJVAPCD thresholds and will reduce its cumulative impact through compliance with Rule 9510; therefore, the project is considered less than significant for this criterion.

Step 3: Cumulative Health Impacts

The Air Basin is in nonattainment for ozone, PM_{10} (State only), and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 1. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects. Table 2, Table 3, and Table 4 relate the pollutant concentration experienced by residents using air quality data for the nearest air monitoring station to the health impacts ascribed to those concentrations by the EPA Air Quality Index. This provides a more detailed look at the actual impacts currently experienced by area residents.

Since the Basin is nonattainment for ozone, PM_{10}, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the project. When this occurs, the analysis considers whether the project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NO_X, VOC, PM_{10}, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 10 and Table 11, the regional analysis of construction and operational emissions indicates that the project would not exceed the District's significance thresholds and the project is consistent with the applicable Air Quality Attainment Plan. Therefore, the project would not result in significant cumulative health impacts.

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the project's emission contribution.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.4 - Sensitive Receptors

Impact AIR-4: The project would not expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. The District considers a sensitive receptor 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 sensitive receptors are Center for Advanced Research and Technology (CART) High School adjacent to the eastern portion of the project site; and residential housing, located across Clovis Avenue west of the site and southeast of the site on the north side of Gettysburg Avenue.

Impacts to On-site Workers

The project is a commercial business with employees providing services to hotel guests; however, there are no significant sources of toxic emissions on-site that would impact employees or guests. Therefore, a health risk assessment for on-site workers is not required or recommended.

Off-site Sensitive Receptors

The project is not a significant source of TAC emissions. Construction activities produce short term emissions that would not contribute substantially to cancer risk, which is estimated based on a 70-year exposure period. For criteria pollutants, impacts to receptors located outside the project focused on emissions during construction for comparison to SJVAPCD daily screening thresholds.

On-site Sensitive Receptors

The project is not considered a sensitive receptor location. No further analysis is required.

Construction: ROG

ROG is emitted during the application of architectural coatings (painting). The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an indoor rather than an outdoor air quality health hazard concern. Therefore, exposure to ROG during architectural coatings would be a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction would be less than significant.

Localized Pollutant Screening Analysis

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all enforceable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern for localized impact in the San Joaquin Valley Air Basin are PM_{10}, $PM_{2.5}$, NO_X, and CO. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard; however, ROG was included for informational purposes only.

The highest daily emissions during construction for ROG would occur during application of architectural coatings. Highest NO_X, PM_{10}, and $PM_{2.5}$ emissions occur during site grading activities. The results of the construction screening analysis are presented in Table 12.

Table 12: Maximum Daily Air Pollutant Emissions during Construction (Winter Unmitigated)

Maximum Daily Emissions	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
2019	4.72	99.28	26.88	20.61	12.17
2020	65.51	20.98	20.98	2.40	1.42
Total	**70.24**	**120.25**	**47.86**	**23.01**	**13.59**
Highest Emissions in Any Year	**65.51**	**99.28**	**26.88**	**20.61**	**12.71**
Screening Thresholds (pounds/day)	100	100	100	100	100
Exceeds Threshold (Yes or No)	No	No	No	No	No

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Winter emissions were higher for NO_X, PM_{10}, and $PM_{2.5}$. and differ minimally from summer emissions. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

Maximum Daily Operational Emissions

An analysis of maximum daily emissions during operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily operational emissions would occur at project completion, which was assumed to occur in 2020. Operational emissions include emissions generated on-site by area sources such as natural gas combustion and landscape maintenance, and off-site by motor vehicles accessing the project. Most motor vehicle emissions would occur distant from the site and would not contribute to a violation of ambient air quality standards; therefore, operational emissions only reflect the emissions within one half mile of the project site. The results of the screening analysis are presented in Table 13.

Table 13: Maximum Daily Air Pollutant Emissions during Operations (Mitigated)

Maximum Daily Emissions per Source Category and Phase	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	4.39	0.00	0.02	0.00	0.00
Energy	0.14	1.28	1.07	0.10	0.10
Mobile	1.95	1.62	1.24	0.29	0.08
Total	**6.48**	**2.90**	**2.33**	**0.38**	**0.18**
Screening threshold	100	100	100	100	100
Exceed screening threshold?	No	No	No	No	No

Table 13 (cont.): Maximum Daily Air Pollutant Emissions during Operations (Mitigated)

Maximum Daily Emissions per Source Category and Phase	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Winter emissions were higher for NO_X, PM_{10}, and $PM_{2.5}$. and differ minimally from summer emissions. There is no ambient air quality standard for ROG.
Mobile emissions reduced to count only localized emissions at the site using a 0.5-mile trip length
Source: CalEEMod output (Appendix A).

The project would not exceed SJVAPCD screening thresholds for localized operational criteria pollutant impacts; therefore, the project's localized criteria pollutant impacts would be less than significant.

Operation: ROG

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from project motor vehicles would not result in health effects, because the ROG would be distributed across miles and miles of roadway and in the air. The concentrations would not be great enough to result in direct health effects.

Operation: PM_{10}, $PM_{2.5}$, CO, NO_2

As shown in Table 13, localized concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2 would not exceed the SJVAPCD screening thresholds at full project build-out. Hotel development is an insignificant source of these pollutants, except for projects that allow woodburning devices that emit PM_{10}, $PM_{2.5}$ in wood smoke. The project does not include woodburning devices. Therefore, the project would not expose sensitive receptors to substantial criteria air pollutant concentrations during operation.

Operation: Toxic Air Contaminants

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (ARB 2005), including recommendations for distances between sensitive receptors and certain land uses. In the *California Building Industry Association v. Bay Area Air Quality Management District* [*CBIA v. BAAQMD*], 62 Cal.4th 369 (2015) (Case No. S213478) the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." Although the Court ruled that impacts from the existing environment on projects are not required to be addressed under CEQA, land uses such as gasoline stations, dry cleaners, distribution centers, and auto body shops can expose residents to high levels of TAC

emissions if they are in proximity of the project site. Information regarding the location of existing TAC sources is provided for disclosure purposes only and not as a measure of the project's significance under CEQA.

Consistency with these recommendations is assessed as follows:

- Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. The project is located on the east side of Clovis Avenue, south of East Shaw Avenue. The traffic volume on Clovis Avenue south of East Gettysburg Avenue was 24,145 trips per day in 2005. No roads serving the project would exceed this criterion (Fresno COG 2013).
- Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The project is not located within 1,000 feet of a distribution center.
- Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). ARB recommends a 50-foot separation is recommended for typical gas dispensing facilities. The nearest gas station is approximately 2 miles south of the project site at the corner of Herndon and Clovis Avenues.
- Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry-cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The nearest dry-cleaning operation is approximately 2 miles south of the project site near the corner of Herndon and Sunnyside Avenues.
- Auto body shops. Auto body shops have the potential to emit TACs related to painting. The nearest auto body shop is approximately 2 miles south of the project site on Park Creek Avenue, which is beyond the distance that would result in a measurable impact.

The project is not among those uses considered potential sources of TAC emissions. Therefore, no additional analysis is required to determine that this impact would be less than significant.

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. By geographic region, hospitalizations for Valley fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County

reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009). A total of 158 Valley fever cases reported in Fresno County in 2014 (Fresno County 2014).

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 (USGS 2000).

The project site is situated in a city growth area. The project includes urbanization of a site that is currently vacant and has been previously graded. Therefore, implementation of the project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with the District'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 negligible, because most of the project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude 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

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011), there are no such areas in the project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

In summary, the project does not exceed SJVAPCD screening thresholds for localized criteria pollutant impacts on sensitive receptors. The project would not result in significant impacts from operational TAC emissions and Valley fever. Therefore, the project's impact on sensitive receptors would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.5 - Objectionable Odors

Impact AIR-5: The project would not create objectionable odors affecting a substantial number of people.

Impact Analysis

Thresholds of Significance

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.

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 following analysis is provided for information only. The District has determined the common land use types that are known to produce odors in the Air Basin. These types are shown in Table 14.

Table 14: 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
Source: SJVAPCD 2015a.	

According to the SJVAPCD GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators:** projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers:** residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

As stated earlier, with the *CBIA v. BAAQMD* ruling, analysis of odor impacts on receivers is not required for CEQA compliance. Therefore, the following analysis is provided for information only.

Project Analysis

Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The project would not engage in any of these activities. Therefore, the project would not be considered a generator of objectionable odors during operations.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts would therefore be less than significant.

As a hotel development, the project is not considered a sensitive receptor. Therefore, the uses such as auto body shops in the vicinity of the project would not cause substantial odor impacts to the project.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

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SECTION 6: GREENHOUSE GAS IMPACT ANALYSIS

6.1—CEQA Guidelines

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 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:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

6.2—Impact Analysis

6.2.1 - Greenhouse Gas Inventory

Impact GHG-1: The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.

Impact Analysis

Threshold of Significance

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 greenhouse gas 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 greenhouse gas 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 greenhouse gas 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 EIR must be prepared for the project.

The City of Clovis has not adopted its own GHG thresholds or prepared a Climate Action Plan that can be used as a basis for determining project significance; however, General Plan PEIR Mitigation Measure 7-1 requires applicants to meet a 29 percent reduction from BAU in accordance with SJVAPCD methodologies. The SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels by 2020 (SJVAPCD 2009b). This level of GHG reduction is based on the target established by ARB's AB 32 Scoping Plan, approved in 2008. First occupancy at the project site is expected to occur in 2020. This date is within the AB 32 2020 milestone year; however, a new approach based on continued progress toward later goals was also included in this analysis.

The General Plan PEIR GHG analysis based significance on achieving a reduction from BAU of 29 percent at project buildout in 2035. Mitigation Measure 7-1 does not differentiate between analysis of projects pre-2020 and post-2020 with its 29 percent reduction from BAU. Therefore, an analysis of the project's reduction from BAU based on emissions in 2020 and 2030 compared with the 29 percent reduction as one measure of significance was prepared. This approach provides estimates of project emissions in the new milestone year with the existing threshold to address considerations 1 and 2 above.

The State is on track to achieve the 2020 target with adopted regulations and has adopted the 2030 Scoping Plan Update on December 14, 2017 that provides the State's strategy to achieve the SB 32 2030 target of a 40 percent reduction in emissions compared to 1990 levels. The plan includes existing and new measures that when implemented are expected to achieve the SB 32 2030 target. The 2030 Scoping Plan achieves substantial reductions beyond 2020 through continued implementation of existing regulations. Other regulations will be adopted to implement recently enacted legislation including SB 350, which requires an increase in renewable energy from 33 percent to 50 percent and doubling the efficiency of existing buildings by 2030. The Legislature extended the Cap and Trade Program through 2030. Cap and Trade provides a mechanism to make up shortfalls in other strategies if they occur (ARB 2017c). In addition, the strategy relies on reductions achieved in implementing the ARB Short-Lived Climate Pollutant (SLCP) Reduction Strategy to reduce pollutants not previously controlled for climate change such as black carbon, methane, and hydrofluorocarbons (HFCs) (ARB 2017b).

The First Update to the Climate Change Scoping Plan adopted in May 2014 provided revised inventory projections to reflect slower growth in emissions during the recession and lower future year projections. The State's 2020 BAU inventory was reduced from 596 $MMTCO_2e$ to 545 $MMTCO_2e$ (ARB 2014b). The current GHG reduction level for the State to reach 1990 emission levels by 2020 is 21.7 percent from BAU in 2020. The First Update to the Climate Change Scoping Plan also confirmed that the State is on track to achieve the 2020 target and to maintain and continue reductions beyond 2020 as required by AB 32 (ARB 2014b).

Although a lower percentage reduction (21.7 percent) would demonstrate consistency with AB 32, this analysis uses the 29 percent reduction from BAU as the basis of the threshold to demonstrate compliance with the Newhall Ranch decision described below which indicated that new development may need to provide more reductions than existing development to show consistency with state

targets. The analysis prepared for the project also includes a qualitative assessment of compliance with Scoping Plan and General Plan measures to support GHG significance findings under Impact GHG-2.

Newhall Ranch

On November 30, 2015, the California Supreme Court issued its decision in *Newhall Ranch,* invalidating the GHG analysis for a large master planned residential development in Los Angeles County consisting of over 20,000 residential dwelling units and other uses. In particular, the Court upheld: (1) use of the statewide emissions reduction goal in AB 32 as a significance criterion (pp. 15–19), (2) use of the Scoping Plan's BAU model "as a comparative tool for evaluating efficiency and conservation efforts" of the Project (pp. 18–19), and (3) a comparison of the project's expected emissions to a BAU model rather than a baseline of pre-project conditions (pp. 15–19). The Court invalidated the GHG analysis on the grounds that the "administrative record discloses no substantial evidence that the Newhall Ranch's project-level reduction of 31 percent in comparison to [BAU] is consistent with achieving AB 32's statewide goal of a 29 percent reduction from [BAU]." The Court indicated that a lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25). A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities."

The substantial evidence needed to support a project BAU threshold can be derived from data used to develop the Scoping Plan inventory and control strategy, and from analysis conducted by the ARB to track progress in achieving the AB 32 2020 target. The critical factor in determining the appropriate project threshold is whether the State requires additional reductions beyond those achieved by existing regulations in order to achieve its target. If no additional reductions are required from individual projects, no nexus exists to require a project to mitigate its emissions. In that case, the percentage reductions achieved by projects through compliance with regulations is the amount needed to reach the AB 32 target.

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 combined effect of this successful effort is that the State now projects that it will meet the 2020 target and achieve continued progress toward meeting post-2020 targets. 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 Supreme Court was concerned that new development may need to do more than existing development to reduce GHGs to demonstrate that it is doing its fair share of reductions. As will be shown below, new development does do more than existing development and, because of the nature of the sources of GHG emissions related to development, existing development is equally

responsible for reducing emissions from the most important sources of emissions. It is important to note that most of the State's regulatory program applies to both new and existing development.

The Scoping Plan reduction from BAU accounts for growth projected in the State and assumes that existing development would continue to emit GHGs at the same rate that occurred in the base year (2002-2004 average). The California Department of Finance (DOF) Report E-5 predicts that population growth in California from 2005 to 2020 will be 13.2 percent. This means that development that existed in 2005 will produce nearly 87 percent of the State's emissions in 2020. Conversely, new development is only responsible for about 13 percent of the emissions generated during this timeframe. If measures to reduce emissions from existing development were not available, new development could not provide sufficient reductions to reach the 2020 target even if their emissions were reduced to net zero. This continues to apply to the 2030 target. The DOF forecasts California's population will grow by 8.1 percent between 2020 and 2030, so existing development will be responsible for 92 percent of the emissions that occur in 2030.

The State's regulatory program is able to target both new and existing development because the two most important strategies—motor vehicle fuel efficiency and emissions from electricity generation—obtain reductions equally from existing and new sources. This is because all vehicle operators use cleaner low carbon fuels and buy vehicles subject to the fuel efficiency regulations, and all building owners or operators purchase cleaner energy from the grid that is produced by increasing percentages of renewable fuels. This includes regulations on mobile sources such as: The Pavley standards that apply to all vehicles purchased in California, the Low Carbon Fuel Standard (LCFS) that applies to all fuel used in California, and the Renewable Portfolio Standard and Renewable Energy Standard that apply to utilities providing electricity to all California homes and businesses. The reduction strategy where new development is required to do more than existing development is building energy efficiency and energy use related to water conservation regulations. For example, new projects are subject to Title 24 Energy Efficiency standards and CALGreen Code and Model Water Efficient Landscape Ordinance (MWELO) water conservation requirements. Commercial buildings constructed to the 2013 Title 24 standards use 30 percent less energy than buildings complying with the 2008 standards. The newest version of Title 24 effective January 1, 2017 improves energy efficiency in non-residential buildings by 5 percent compared to the 2013 Title 24 standards and 35 percent compared with 2008 Title 24 standards. New buildings and landscapes are much more energy efficient and water efficient than the development that has been built over the past decades and will require much less energy. Title 24 is updated about every 3 years with the goal of reaching zero net energy from new residential buildings by 2020 and new commercial buildings by 2030. The project's buildings would be constructed in 2019 and would be required to comply with the regulations in effect at the time building permits are issued.

As described above, the State requires an average reduction from all sources of the emission inventory of 21.7 percent to achieve the 2020 target. The Scoping Plan strategy will achieve greater than average reductions from energy and mobile source sectors that are the primary sources related to development projects, and lower than average reductions from other sources such as agriculture. The amount of reduction estimated by the ARB for each sector was based on technical feasibility and cost effectiveness. Review of the 2008 Scoping Plan inventory and strategy shows that the reduction from all development related sources is approximately 29 percent from BAU in order to make up for the below average sectors and achieve the required 21.7 percent average reduction. Achieving the

SB 32 2030 target will require an approximate 40 percent reduction from 2020 levels assuming the State achieves the AB 32 target. The 2017 Scoping Plan Update identifies a range of reduction amounts expected from each emission sector, but an amount needed for development's fair share of reductions have not been determined.

As suggested by the Court, a project BAU analysis was prepared for this project that assesses "consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities." The analysis shows the extent to which the project complies with adopted regulations and the additional amount that will be achieved through project design features. At this point in time, no additional reductions are required from new development beyond regulations for the State to achieve its 2020 target. The recently adopted 2030 target will require a reduction from 431 $MTCO_2e$ to 260 $MTCO_2e$ or 40 percent from 1990 levels. After accounting for projected growth of approximately 0.8 percent per year an average decrease of 5.2 percent per year from the State GHG inventory will be required to achieve the target. The 2017 Scoping Plan Update includes a strategy for achieving the needed reductions, but does not identify an amount required specifically from new development. However, all GHG emission sources within development projects are subject to GHG regulations.

Therefore, this analysis demonstrates consistency with the existing 2020 target and shows progress toward achieving the 2030 target. The quantitative analysis prepared for the project provides the reduction from BAU in the 2030 target year to show the progress anticipated prior to applying reductions from new strategies contained in the 2017 Scoping Plan Update. The new reduction strategies from the Plan Update are designed to close the gap between existing commitments and those needed to achieve the 2030 target, but most strategies must go through a regulatory process to be implemented. Therefore, the amount of reductions needed from new development beyond regulations, if any, is uncertain.

The analysis prepared for the project also includes qualitative assessments of compliance with 2008 Scoping Plan, the 2017 Scoping Plan Update, and General Plan measures to support GHG significance findings under Impact GHG-2. There are no measures that identify specific requirements on development projects, but the analysis shows how the applicable measures affect project emission sources.

To determine significance, the analysis first quantifies project-related GHG emissions under a BAU scenario, and then compares these emissions with emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed. The standard and methodology is explained in further detail below.

Impact Analysis

Construction

Total GHG emissions generated during all phases of construction were combined and are presented in Table 15. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the SCAQMD and the SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortization of the total emissions generated during construction were based on the life of the development (commercial—30 years) and added to the operational emissions.

Table 15: Construction Greenhouse Gas Emissions

Year	$MTCO_2e$ per year
2019	449.12
2020	605.63
Total	**3,051.71**
Amortized over 30 years	**101.72**

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: CalEEMod output (Appendix A).

Operation

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities.

Business As Usual Operational Emissions

Operational emissions under the BAU scenario were modeled using CalEEMod 2016.3.2. Modeling assumptions for the year 2005 were used to represent 2020 and 2030 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002–2004 in the baseline scenario to represent conditions—as if regulations had not been adopted—to allow the effect of projected growth on achieving reduction targets to be clearly defined. CalEEMod defaults were used for project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). Full assumptions and CalEEMod model outputs are provided in Appendix A.

2020 and 2030 Operational Emissions

Operational emissions were modeled for the year 2020 and 2030 target year using CalEEMod. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2017). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

Emissions Accounting for Applicable Regulations

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I and Pavley II (LEV III) motor vehicle emission standards
- ARB Medium and Heavy-Duty Vehicle Regulation
- 2005, 2008, 2013, and 2016 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Renewable Portfolio Standards (RPS)
- Low Carbon Fuel Standard (LCFS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)

Pavley II/LEV III standards have been incorporated in the latest version of CalEEMod. ARB estimates a 19 percent reduction from the vehicle categories subject to the regulation by 2030 (ARB 2010b and ARB 2013d).

The ARB GHG Regulation for Medium and Heavy-Duty Engines and Vehicles applies to trucks that will be accessing the project site. The benefits of the regulation were incorporated into CalEEMod 2016.3.2. The ARB estimates that this regulation will reduce GHG emissions from the affected vehicles by 7.2 percent (ARB 2013f).

The Low Carbon Fuel Standard is expected to achieve a 10 percent reduction in emissions by 2020 and 18 percent by 2030 (ARB 2017c).

Title 24 reductions for 2013 and 2016 updates were added to CalEEMod 2016.3.2. The California Energy Commission (CEC) estimates that 2013 Title 24 standards would result in an increase in energy efficiency of 30 percent in non-residential buildings compared to 2008 Title 24 (CEC 2014a). An additional 5 percent reduction from the 2008 standards have been claimed for compliance with 2016 Title 24. This results in a combined reduction of 35 percent (CEC 2015).

RPS is not accounted for in CalEEMod 2016.3.2. Reductions from RPS are addressed by revising the electricity emission intensity factor in CalEEMod to account for the utility RPS rate forecast for 2020 (CPUC 2016). PG&E provides emission factors for the electricity it provides to customers and projections for its energy portfolio for 2020 that is used to estimate project emissions. No data to reflect compliance in 2030 was included in the PG&E projections. The utilities will be required by new legislation to increase the use of renewable energy sources to 50 percent, but details on individual utility compliance have not been determined.

Energy savings from water conservation resulting from the Green Building Code Standards for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not included in CalEEMod. The Water Conservation Act of 2009 mandates a 20 percent reduction in urban water use that is implemented with these regulations (CDWR 2013). Benefits of the water conservation regulations are applied in the CalEEMod mitigation component.

Reductions in emissions from solid waste are based on the City achieving the CalRecycle 75 Percent Initiative by 2020 compared with a 50 percent baseline for 2005. Reductions are taken using the CalEEMod mitigation component.

Regulations applicable to project sources and the percent reduction anticipated from each source are shown in Table 16. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley LEV Standards apply only to light duty cars and trucks.

Table 16: Reductions from Greenhouse Gas Regulations in 2030

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2030
Pavley Low Emission Vehicle Standards	Light duty cars and trucks accessing the site are subject to the regulation.	CalEEMod defaults (Pavley I)	25.1[1]
		Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod.	19.5%[2]
Truck and Bus Regulation	Heavy duty trucks accessing the site for deliveries and services are subject to the regulation.	Adjusted GHG emission factors for the regulation in CalEEMod	7.2%[3]
Low Carbon Fuel Standard (LCFS)	Vehicles accessing the site will use fuel subject to the LCFS.	CalEEMod defaults	18%[1]
Title 24 Energy Efficiency Standards	Project buildings will be constructed to meet the latest version of Title 24 (currently 2016). Reduction applies only to energy consumption subject to the regulation.	CalEEMod defaults	31%[4,5]
Green Building Code Standards	The project will include water conservation features required by the standard.	CalEEMod mitigation component	20%[6]
Water Efficient Land Use Ordinance	The project landscaping will comply with the regulation.	CalEEMod mitigation component	20%[7]
Renewable Portfolio Standard (RPS)	Electricity purchased for use at the project site is subject to the 33 percent RPS mandate.	CalEEMod adjusted energy intensity factors with PG&E emission factors that show the company will exceed the 33 percent mandate.	54.5%[8]
Solid waste	The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate.	CalEEMod mitigation component	25%[9]

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources:

1 Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010b) and (ARB 2017c)
2 ARB Staff Report for LEV III Amendments (ARB 2013e)
3 ARB Staff Report for GHG Regulations for Medium and Heavy-Duty Engines and Vehicles (ARB 2013f)
4 California Energy Commission News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions (CEC 2014b)
5 California Energy Commission Adoption Hearing Presentation: 2016 Buildings Energy Efficiency Standards (CEC 2015)
6 2013 California Green Building Standards Code Section 5.303.2
7 California Water Plan Update 2013 (CDWR 2013)
8 Based on CalEEMod default PG&E rate for 2005 and PG&E projected emission factor for 2020
9 CalRecycle 75 Percent Initiative: Defining the Future (2016b)

In addition to rules and regulations, the project would incorporate design features and would obtain benefits from its location and infrastructure that would reduce project VMT compared with default values. The project would construct pedestrian infrastructure connecting to adjacent land uses.

Note that CalEEMod nominally treats these design elements and conditions as "mitigation measures," despite their inclusion in the project description. Therefore, reported operational emissions are considered to represent unmitigated project conditions. Full assumptions and model outputs are provided in Appendix A and results of this analysis are presented in Table 17 for 2020 and Table 18 for 2030.

Table 17: Project Operational Greenhouse Gases 2020

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2020 (with Regulation and Design Features)	Percent Reduction
Area	0.00	0.00	4.4%
Energy	814.21	455.40	44.1%
Mobile	1,466.85	1,134.01	22.7%
Waste	35.79	26.84	25.0%
Water	10.07	5.62	44.2%
Amortized Construction Emissions	20.61	20.61	0.0%
Total	2,347.55	3,919.24	30.0%
Reduction from BAU		705.06	—
Percent Reduction		30.0%	—
Significance Threshold		29%	—
Are emissions significant?		**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets. No new target has been set for 2030.
Source: CalEEMod output (Appendix A).

Table 18: Project Operational Greenhouse Gases 2030

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2030 (with Regulation and Design Features)	Percent Reduction
Area	0.00	0.00	4.8%
Energy	814.21	455.40	44.1%
Mobile	1,466.85	851.15	42.0%
Waste	35.79	26.84	25.0%

Table 18 (cont.): Project Operational Greenhouse Gases 2030

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2030 (with Regulation and Design Features)	Percent Reduction
Water	10.07	5.62	44.2%
Amortized Construction Emissions	20.61	20.61	0.0%
Total	2,347.55	1,359.63	42.1%
Reduction from BAU		705.06	—
Percent Reduction		42.1%	—
Significance Threshold		29%	—
Are emissions significant?		**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets. No new target has been set for 2030.
Source: CalEEMod output (Appendix A).

As shown in Table 17 and Table 18, the project would achieve a reduction of 30.0 percent from BAU by the year 2020 and 42.1 percent by the year 2030 with adopted regulations and design features incorporated. This is above the 29 percent reduction required by the SJVAPCD threshold, and the 21.7 percent average reduction from all sources of GHG emissions now required to achieve AB 32 targets. The ARB originally identified a reduction of 29 percent from BAU as needed to achieve AB 32 targets. The 2008 recession and slower growth in the years since 2008 have reduced the growth forecasted for 2020, and the amount needed to be reduced to achieve 1990 levels as required by AB 32. The DOF population forecast for 2020 to 2030 predicts growth in the State of 8.1 percent by the 2030 target year or 0.8 percent per year (DOF 2017).

The project includes design features that would result in reductions in energy use and support walking and bicycling. Measures that are part of the project design do not require additional mitigation measures to ensure they are accomplished.

The 30.0 percent reduction from BAU is 8.3 percent beyond the average reduction required by the State from all sources to achieve the AB 32 2020 target and therefore addresses the concern expressed in Newhall Ranch that projects should likely do more than the average to ensure they are providing a fair share of emission reductions. By 2030, the project would achieve a 42.1 percent reduction from BAU or 20.4 percent beyond the 21.7 percent reduction required to reach the 2020 target.

The project operations would begin in 2020, however additional analysis is included to show consistency with post-2020 State legislative GHG goals. The Newhall ruling states, “nevertheless, over time consistency with year 2020 goals will become a less definitive guide, especially for long term projects that will not begin operations for several years. An EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project’s effects on

meeting longer term emissions reduction targets." The SB 32 goal of 40 percent below 1990 emission levels by 2030 is the target addressed by the 2017 Scoping Plan Update. The following discussion addresses the project's impact on meeting the 2030 target and shows reasonable progress toward the SB 32 2030 target.

The analysis presented above does not include new strategies proposed in the 2017 Scoping Plan Update. The update was adopted in December 2017. The update provides alternatives in terms of their likelihood of implementation and ranges of reduction from the strategies. Measures already authorized by legislation are highly likely to be implemented, while measures requiring new legislation are less likely to go forward. The State is highly likely to incorporate zero net energy buildings in future updates to Title 24. A new round of motor vehicle fuel efficiency standards beyond 2025 when LEV III standards are at their maximum reduction level is highly likely. Changing heavy-duty trucks and off-road equipment to alternative fuels face greater technological hurdles and are less likely to provide dramatic reductions by 2030.

The 2030 emission limit is 260 $MMTCO_2e$. The ARB estimates that the 2030 BAU (reference) Inventory will be 392 $MMTCO_2e$—a reduction of 132 $MMCO_2e$, including existing policies and programs but not including known commitments that are already underway. The 2017 Scoping Plan Update includes the estimated GHG emissions by sector compared with 1990 levels that is presented in Table 19. The proposed plan would achieve the bulk of the reductions from Electric Power, Industrial fuel combustion, and Transportation. Cap and Trade would provide between 10 to 20 percent of the required reductions depending on the amounts achieved by the other reduction measures.

Table 19: 2030 Scoping Plan Update Estimated Change in GHG Emissions by Sector

Scoping Plan Sector	Emissions ($MMTCO_2e$ per year)		
	1990	2030 Proposed Plan Ranges	Percent Change form 1990
Agriculture	26	24–25	-4 to -8
Residential and Commercial	44	38–40	-9 to -14
Electric Power	108	42–62	-43 to -61
Agriculture	26	24–25	-4 to -8
Residential and Commercial	44	38–40	-9 to -14
Electric Power	108	42–62	-43 to -61
High GWP	3	8–11	167 to 267
Industrial	98	77–87	-11 to -21
Recycling and Waste	7	8–9	14 to 29
Transportation (including TCU)	152	103–111	-27 to -32
Net Sink	-7	TBD	TBD
Subtotal	**431**	**300–345**	**-20 to -30**
Cap and Trade Program	N/A	40–85	N/A
Total	**431**	**260**	**-40**
ARB 2030 Scoping Plan Update (ARB 2017c)			

Although 2030 Scoping Plan Update focuses on state agency actions necessary to achieve the 2030 GHG limit, the ARB considers local governments essential partners in achieving California's goals to reduce GHG emissions. The 2030 target will require an increase in the rate of emission reductions compared to what was needed to achieve the 2020 limit, and this will require action and collaboration at all levels, including local government action to complement and support State-level actions. For individual projects, the 2030 Scoping Plan Update suggests that all new land use development implement all feasible measures to reduce GHG emissions. The Scoping Plan does not define all feasible measures or attribute an amount of reductions required from new development beyond compliance with regulations. When requiring mitigation of a project's fair share of a cumulative impact, the Lead Agency must show the nexus between the project contribution and its fair share of mitigation to reduce the impact to less than cumulatively considerable. A threshold based on local support and collaboration with state actions as described in the 2017 Scoping Plan Update does not lend itself to a quantitative determination of fair share. Requiring developers and project tenants of the development to fully mitigate emissions without accounting for compliance with regulations would result in double mitigation, first by the developer and then by the project operators and customers purchasing electricity, fuel, and vehicles compliant with regulations in effect at the time of purchase and beyond that would violate constitutional nexus requirements.

In conclusion, the project would achieve reductions 8.3 percent beyond the ARB 2020 21.7 percent target and 1.0 percent beyond the SJVAPCD and City of Clovis General Plan PEIR 29 percent reduction from BAU requirements from adopted regulations. No new threshold has been adopted by the City for the SB 32 2030 target. Now that the 2030 Scoping Plan Update is in place, a process to develop a reasonable fair-share contribution should be considered by the City for new development projects. The fair share may very well be achieved through compliance with increasingly stringent State regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in Table 19, the state strategy relies on the Cap and Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap and Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity, and products produced by regulated industries which include business owners and hotel guests and other purchasers of products and services. Therefore, the impact in terms of Consideration #1 and #2 would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

6.2.2 - Greenhouse Gas Reduction Plans

Impact GHG-2: The project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.

Impact Analysis

The following analysis assesses the project's compliance with Consideration #3 regarding consistency with adopted plans to reduce GHG emissions. The City of Clovis has not adopted a GHG reduction plan. In addition, the City has not 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 amendments adopted for SB 97. The SJVAPCD has adopted a Climate Action Plan, but it does not contain measures that are applicable to development projects. 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 ARB's adopted Scoping Plans. This would be achieved with an assessment of the project's compliance with Scoping Plan measures contained in the 2008 Scoping Plan and the 2017 Scoping Plan Update.

Although the City of Clovis General Plan does not meet the CEQA Guidelines 15064.4(b)(3) requirements for an applicable plan to reduce GHG emissions, it contains policies intended to reduce vehicle travel and energy use that would provide GHG reductions. Therefore, the project's consistency with the General Plan policies is also assessed.

AB 32 Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an "ambitious but achievable" reduction in California's GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020. As stated earlier, the ARB has updated its emission inventory forecasts and now estimates a reduction of 21.7 percent is required from BAU in 2020 to achieve AB 32 targets.

The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 20, the project is consistent with most of the strategies, while others are not applicable to the project. As discussed earlier, the 2017 Scoping Plan Update strategies primarily rely on increasing the stringency of existing regulations for which the project would continue to comply with and support through the project's design and implementation of the General Plan goals and policies.

Table 20: Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles 2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to comply with the Pavley emissions standards.
	Low Carbon Fuel Standard.	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation fuels as required under this measure.

Table 20 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation (*cont.*)	Regional Transportation-Related Greenhouse Gas Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The project will provide development in the region that is consistent with the growth projections in the 2014 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
	Goods Movement	Goods Movement Action Plan January 2007.	**Not applicable**. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicles	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation	**Consistent**. This measure applies to medium- and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with construction and operation of the project would be required to comply with the requirements of this regulation.
	High Speed Rail	Funded under SB 862	**Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or lead agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	**Consistent.** The project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
Electricity and Natural Gas (*cont.*)	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent**. PG&E obtained 33 percent of its power supply from renewable sources such as solar and geothermal in 2017, and about 70 percent of the electricity it delivers is carbon-free, including nuclear and large hydroelectric facilities. The owners of the hotel project would purchase power that consists of a greater percentage of renewable sources and could install renewable solar power systems
		SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	

Table 20 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
			that will assist the utility in achieving exceeding the renewable mandate.
	Million Solar Roofs Program	Tax incentive program	**Consistent.** This measure is intended to increase solar energy generation throughout California by means of a variety of electricity providers and existing solar programs. Projects within the plan area will be able to take advantage of incentives that are in place at the time of construction. The project will meet the "solar ready" requirements of the Green Building Code Standards.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The project will also comply with the MWELO as required by the City's development code.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The State will increase the use of green building practices. The project would implement required green building strategies through existing regulation that requires the project to comply with various CALGreen requirements. The project includes sustainability design features that support the Green Building Strategy.
Industry	Industrial Emissions	2010 ARB Mandatory Reporting Regulation	**Not applicable.** The project is not an industrial land use.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Clovis recycling services. The City has consistently exceeded its state recycling mandates.
		AB 341 Statewide 75 Percent Diversion Goal	

Table 20 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Forests	Sustainable Forests	Cap and Trade Offset Projects	**Not applicable.** The project site is in an area designated for urban uses. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	ARB Refrigerant Management Program CCR 95380	**Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. Homes do not use large systems subject to the refrigerant management regulations adopted by ARB.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	**Not applicable**. The project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the project.
Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008			

General Plan Compliance

The City of Clovis updated and adopted its General Plan in August of 2014. The General Plan contains a limited number goals or policies that relate directly to climate change. However, some of the policies in the Air Quality and Circulation Element would likely reduce GHG emissions as well as the other criteria pollutant emissions, because they attempt to reduce VMT and increase energy efficiency. As shown in Table 21, the project is consistent with the feasible and applicable policies.

Table 21: Consistency with General Plan Policies

General Plan Policy	Project Consistency
Air Quality Policy 1.1: Land use and transportation. Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.	**Consistent.** Residents would have easy access to the existing bike lane on East Shepherd Avenue that connects to destinations throughout the area. Enhancements to encourage walking and bicycling will reduce driving and related pollutant emissions. In addition, the project is near existing primary and secondary schools.
Air Quality Policy 1.6: Alternative fuel infrastructure. Encourage public and private activity and employment centers to incorporate electric charging and alternative fuel stations.	**Consistent.** The project would not preclude future installment of electrical vehicle charging systems. Building codes require homes to be wired to allow future installations of charging equipment.
Air Quality Policy 1.8: Trees. Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.	**Consistent.** The project would incorporate landscaping throughout the project site. The incorporated landscaping would provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
Air Quality Policy 2.1: Regional coordination. Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.	**Not applicable.** This measure applies to local government coordination and not project proponents or residents. However, future residents can participate in educational and grant programs designed to reduce criteria pollutant emissions developed through regional coordination.
Air Quality Policy 2.2: Cross-jurisdictional issues. Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.	**Not applicable.** This measure applies to local government coordination and not to project proponents or residents.
Air Quality Policy 2.6: Innovative mitigation. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.	**Consistent.** The project would comply with Rule 9510, which may include payment of mitigation fees that can be used for innovative mitigation measures that reduce criteria pollutants and GHG emissions. Residents can participate in educational and grant programs designed to reduce GHG emissions developed through regional coordination.
Circulation Policy 1.1: Multimodal network. The City shall plan, design, operate, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.	**Consistent.** The project area includes features designed to provide safe and convenient travel for users of all transportation modes. Residents will have easy access to an existing bike lane on the southern border of the project site on East Shepherd Avenue and connects to the Clovis trail system.

Table 21 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Circulation Policy 1.2: Transportation decisions. Decisions should balance the comfort, convenience, and safety of pedestrians, bicyclists, and motorists.	**Consistent.** The project will comply with City of Clovis standards for street design that supports multiple modes of transportation. Residents will have easy access to the regional bikeways and the City of Clovis trail system, which will provide convenience and safety for pedestrians and bicyclists.
Circulation Policy 1.4: Jobs and housing. Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.	**Consistent.** The project is a hotel development that will provide new jobs for area residents. The project is situated in an area that is nearly built out and is infill of a vacant parcel surrounded by development with fully constructed infrastructure in place.
Circulation Policy 1.5: Neighborhood connectivity. The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).	**Consistent.** The project is within 1 to 2 miles of multiple existing educational, commercial, and businesses uses.
Circulation Policy 3.11: Right-of-way design. Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.	**Consistent.** The project will comply with City of Clovis design standards regarding landscaping and design of road improvements consistent with this policy.
Circulation Policy 5.1: Complete street amenities. Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).	**Consistent.** The project would be required to upgrade existing streets fronting the property in accordance with City standards. The project is located near bike lanes and trail systems, which provide access and safety for pedestrians and cyclists to jobs, schools, and shopping.
Circulation Policy 5.2: Development-funded facilities. Require development to fund and construct facilities as shown in the Bicycle Transportation Plan when facilities are in or adjacent to the development.	**Not applicable.** There is an existing trail directly adjacent to the development. No new trail is needed in this area.
Circulation Policy 5.3: Pathways. Encourage pathways and other pedestrian amenities in urban centers and new development 10 acres or larger.	**Consistent.** The project will be served by a bike path adjacent to the project with connections to bike lanes along the roads near the site.
Circulation Policy 5.4: Homeowner associations. The city may require homeowner associations to maintain pathways and other bicycle and pedestrian facilities within the homeowner association area.	**Not Applicable.** The project is a non-residential development. No homeowner's association is needed.
Circulation Policy 5.5: Pedestrian access. Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.	**Consistent.** Future guests and employees will be able to utilize sidewalks and paths constructed in compliance with City requirements in this area.

Table 21 (cont.): Consistency with General Plan Policies

General Plan Policy	Project Consistency
Land Use Policy 3.9: Connected development. New development in urban centers must fully improve roadway, pedestrian, and bicycle systems within and adjacent to the proposed project and connect to existing urbanized development.	**Not applicable.** The project is not in an urban center, but it will provide required street improvements and connections to pedestrian and bicycle systems.
Open Space and Conservation Policy 3.4: Drought-tolerant landscaping. Promote water conservation through use of drought-tolerant landscaping on existing and new residential properties. Require drought-tolerant landscaping for all new commercial and industrial development and city-maintained landscaping, unless used for recreation purposes.	**Consistent.** The project will promote water conservation through use of drought-tolerant landscaping on new residential properties.
Open Space and Conservation Policy 3.5: Energy and water conservation. Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.	**Consistent:** The project will, at a minimum, comply with the 2016 Title 24 energy efficiency standards, which are 5 percent more stringent than previous standards. The 2016 Title 24 energy efficiency standards went into effect in January 2017 and provide a 5 percent reduction in energy use compared with 2013 Title 24. The 2013 standards are 30 percent more stringent than the 2008 standards they replaced.
Open Space and Conservation Policy 3.6: Renewable Energy. Promote the use of renewable and sustainable energy sources to serve public and private sector development	**Consistent:** The project will comply with Green Building Code requirements for solar-readiness in non-residential buildings.
Open Space and Conservation Policy 3.7: Construction and design. Encourage new construction to incorporate energy efficient building and site design strategies**.**	**Consistent:** The project will meet or exceed the latest most stringent energy standards.
Source: City of Clovis General Plan 2014	

In summary, the project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan and the City of Clovis General Plan. As demonstrated in the impact analysis above, the project would achieve an approximately 30.0 percent reduction from the BAU inventory by 2020 and, therefore, would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or conflict with implementation of the Scoping Plan. The project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in VMT. Therefore, the project does not conflict with any plans to reduce GHG emissions. The impact would be less than significant.

Consistency with Executive Orders S-3-05 and B-30-15

At the state level, Executive Orders S-3-05 and B-30-15 are orders from the State's executive branch for the purpose of reducing GHG emissions. The goal of Executive Order S-3-05 is to reduce GHG

emissions to 1990 levels by 2020 was codified by the Legislature as the 2006 Global Warming Solutions Act (AB 32). The project, as analyzed above, is consistent with AB 32. Therefore, the project does not conflict with this component of Executive Order S-3-05.

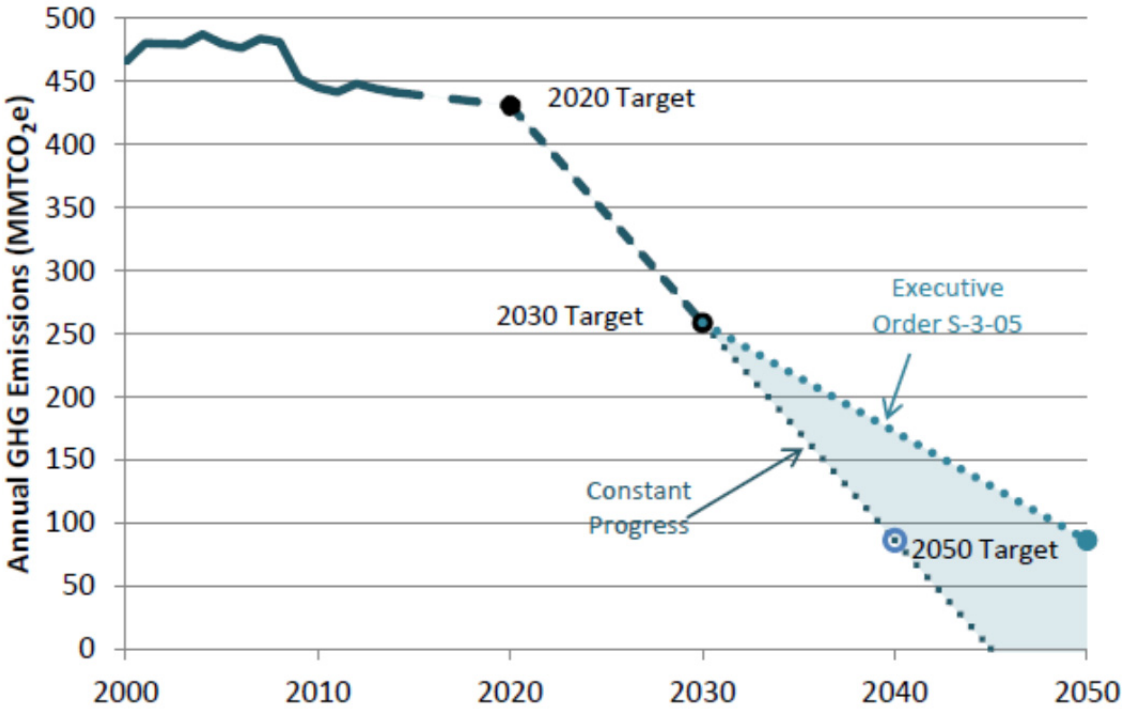
The Executive Orders also establish goals to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. The 2030 goal was recently codified under SB 32 and is now addressed by the 2017 Scoping Plan Update. The new plan provides a strategy that is capable of reaching the SB 32 target if the measures included in the plan are implemented and achieve reductions within the ranges expected. Under the Scoping Plan Update, local government plays a supporting role through its land use authority and control over local transportation infrastructure. The Plan Update includes reductions from implementation of SB 375 that applies to VMT from passenger vehicles. Fresno County targets for SB 375 are a 5 percent reduction by 2020 and a 10 percent reduction by 2035. Fresno COG has proposed to increase the 2035 target to 13 percent per capita GHG reduction (Fresno COG 2017). SB 375 is implemented with the Fresno COG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The RTP/SCS envisions an increase in development density that would encourage fewer and shorter trips and more trips by transit, walking, and bicycling.

Now that the 2017 Scoping Plan has been adopted, additional time is required for the City of Clovis to assess the Update to determine the fair-share contributions City development projects would need to make to achieve the 2030 target. In the meantime, the discussion under “Consistency with SB 32” below addresses the consistency of the proposed project with SB 32, which provides the statutory underpinning of the 2017 Scoping Plan. The SB 32 target requires GHG emissions to be reduced from 1990 levels.

Studies have shown that in order to meet the 2050 targets, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. Because of the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing the proposed project’s impacts further relative to the 2050 goals is speculative for purposes of CEQA (ARB 2014).

The required emission trajectory to achieve the 2030 and the 2050 goal is shown in Figure 8.

Figure 8 California's Path to Achieving the 2050 Target



Source: ARB 2017 Scoping Plan Update (ARB 2017c)

The 2008 Scoping Plan recognized that AB 32 established an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target: "These [greenhouse gas emission reduction] measures also put the State on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels. This trajectory is consistent with the reductions that are needed globally to stabilize the climate." In addition, ARB's First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050," and many of the emission reduction strategies recommended by ARB would serve to reduce the proposed project's post-2020 emissions level to the extent applicable by law:

- **Energy Sector**: Continued improvements in California's appliance and building energy efficiency programs and initiatives, such as the State's zero net energy building goals, would serve to reduce the proposed project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the proposed project's emissions level.
- **Transportation Sector**: Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the proposed project's emissions level.
- **Water Sector**: The proposed project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.

- **Waste Management Sector**: Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the proposed project's emissions level.

In his January 2015 inaugural address, Governor Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions:

- Increasing the State's Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;
- Cutting the petroleum use in cars and trucks in half; and
- Doubling the efficiency of existing buildings and making heating fuels cleaner.

These expressions of executive branch policy may be manifested in adopted legislative or regulatory action through the state agencies and departments responsible for achieving the State's environmental policy objectives, particularly those relating to global climate change (Brown 2015). Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target (Energy and Economics 2015).

Given the proportional contribution of mobile source-related GHG emissions to the State's inventory, recent studies also show that relatively new trends—such as the increasing importance of web-based shopping, the emergence of different driving patterns by the "millennial" generation, and the increasing effect of web-based applications on transportation choices—are beginning to substantially influence transportation choices and the energy used by transportation modes. These factors have changed the direction of transportation trends in recent years and will require the creation of new models to effectively analyze future transportation patterns and the corresponding effect on GHG emissions. For the reasons described above, the proposed project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets.

Consistency with SB 32

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.
  - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB 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 22 provides an analysis of the project's consistency with the 2017 Scoping Plan Update measures.

Table 22: 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.	**Consistent**: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate.
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. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency until residential housing and commercial development achieves zero net energy.
Low Carbon Fuel Standard. This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent**. Vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented.

Table 22 (cont.): Consistency with SB 32 2017 Scoping Plan Update

Scoping Plan Measure	Project Consistency
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**. Project guests and employees can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2016 CALGreen Code requires electrical service in new single-family housing to be EV charger-ready. Home 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, home deliveries 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**. The project will include only natural gas hearths that produce very little black carbon compared to wood burning 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. The targets for Fresno County are	**Consistent**. The project is consistent with the City of Clovis General Plan The project will provide employment in the region that is consistent with the growth projections in the 2014 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
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 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.

Table 22 (cont.): Consistency with SB 32 2017 Scoping Plan Update

Scoping Plan Measure	Project Consistency
Natural and Working Lands Action Plan. The ARB 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 is a hotel development and will not be considered natural or working lands.
Source: ARB 2017c Scoping Plan Update.	

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that 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, ARB 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, ARB 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."

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, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

SECTION 7: REFERENCES

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Appendix A: CalEEMod Modeling Results

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Residence Inn Project

Units	130	Rooms
Acreage	3.14	
SE Corner Clovis/Santa Ana		

Start Construction	Apr-19	
End Construction	Jun-20	

Parking	109	Spaces

Cut and Fill		
Import	15000.00	cubic yards

Emission Summary for Residence Inn Clovis

Construction Emissions		ROG	NOX	CO	SO2	PM10	PM2.5
					Tons/Year		
	2019	0.32	3.04	2.17	0.01	0.07	0.20
	2020	0.67	0.70	0.62	0.00	0.06	0.04
Total		**0.98**	**3.74**	**2.78**	**0.01**	**0.14**	**0.24**

Unmitigated Operational Emissions	ROG	NOX	CO	SO2	PM10	PM2.5
				Tons/Year		
Area	0.88	0.00	0.22	0.00	0.00	0.00
Energy	0.03	0.23	0.20	0.00	0.02	0.02
Mobile	0.36	1.14	3.28	0.01	0.01	0.20
Total	**1.26**	**1.38**	**3.70**	**0.01**	**0.03**	**0.22**

Mitigated Operational Emissions	ROG	NOX	CO	SO2	PM10	PM2.5
				Tons/Year		
Area	0.80	0.00	0.00	0.00	0.00	0.00
Energy	0.03	0.23	0.20	0.00	0.02	0.02
Mobile	0.35	1.10	3.13	0.01	0.69	0.19
Total	**1.18**	**1.34**	**3.33**	**0.01**	**0.70**	**0.21**

Construction Daily Maximum Daily Emission Summer		ROG	NOX	CO	SO2	PM10	PM2.5
					Pounds/Day		
	2019	4.66	97.30	25.75	0.22	20.61	12.17
	2020	65.52	24.98	21.37	0.05	2.40	1.42
Total		**70.18**	**122.28**	**47.12**	**0.27**	**23.01**	**13.59**

Construction Daily Maximum Daily Emission Winter		ROG	NOX	CO	SO2	PM10	PM2.5
					Pounds/Day		
	2019	4.72	99.28	26.88	0.22	20.61	12.17
	2020	65.51	20.98	20.98	0.05	2.40	1.42
Total		**70.24**	**120.25**	**47.86**	**0.27**	**23.01**	**13.59**

Operations Mitigated Winter	ROG	NOX	CO	SO2	PM10	PM2.5
				Pounds/Day		
Maximum Daily Emissions						
Area	4.39	0.00	0.02	0.00	0.00	0.00
Energy	0.14	1.28	1.07	0.01	0.10	0.10
Mobile	1.95	1.62	1.24	0.00	0.29	0.08
	6.48	**2.90**	**2.33**	**0.01**	**0.38**	**0.18**

Mobile emissions reduced to count only localized emissions at the site using a 0.5 mile trip length and the default trip length 7.3 mi.

Localized Trip Length Fraction 0.068493151

Construction GHG Emissions - Hotel Year	MTCO2e/Year
2019	498.70
2020	119.74
Total	**618.45**
Amortized over 30 years	20.61

Operational GHG Emissions Hotel

	BAU (MTCO2e/yr)	2020 (MTCO2e/Yr)	Percent Reduction
Area	0.00	0.00	4.4%
Energy	814.21	455.40	44.1%
Mobile	1,466.85	1,134.01	22.7%
Waste	35.79	26.84	25.0%
Water	10.07	5.62	44.2%
Total	**2,326.93**	**1,621.88**	**30.3%**
Construction	20.61	20.61	0.0%
Total with Amortized Construction	**2,347.55**	**1,642.49**	**30.0%**
Reduction from BAU		**705.06**	

Includes 10% LCFS reduction

Operational GHG Emissions Hotel

	BAU (MTCO2e/yr)	2030 (MTCO2e/Yr)	Percent Reduction
Area	0.00	0.00	4.8%
Energy	814.21	455.40	44.1%
Mobile	1,466.85	851.15	42.0%
Waste	35.79	26.84	25.0%
Water	10.07	5.62	44.2%
Total	**2,326.93**	**1,339.02**	**42.5%**
Construction	20.61	20.61	0.0%
Total with Amortized Construction	**2,347.55**	**1,359.63**	**42.1%**
Reduction from BAU		987.92	

Includes 18% LCFS reduction

CalEEMod Results Construction and 2020 Operations

Clovis Hotel Project

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.96	Acre	0.96	41,817.60	0
Parking Lot	109.00	Space	0.98	43,600.00	0
Hotel	130.00	Room	1.20	188,760.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 Energy Intensity Factor

Land Use - Site Plan Acreage 3.14

Construction Phase -

Trips and VMT - 15,000 cy for soil import.

Grading -

Architectural Coating - Rule 4601 Low VOC Coatings

Construction Off-road Equipment Mitigation - Watering for dust control

Mobile Land Use Mitigation - Clovis Stagelines Line 50

Area Mitigation - Rule 4601 Low VOC Coatings

Water Mitigation - Greenbuilding Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	65
tblGrading	MaterialImported	0.00	15,000.00
tblLandUse	LotAcreage	4.33	1.20
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3160	3.0421	2.1654	5.4800e-003	0.2011	0.1360	0.3371	0.0735	0.1277	0.2011	0.0000	496.6600	496.6600	0.0818	0.0000	498.7049
2020	0.6663	0.6992	0.6193	1.3400e-003	0.0311	0.0334	0.0645	8.4200e-003	0.0314	0.0398	0.0000	119.1951	119.1951	0.0218	0.0000	119.7405
Maximum	**0.6663**	**3.0421**	**2.1654**	**5.4800e-003**	**0.2011**	**0.1360**	**0.3371**	**0.0735**	**0.1277**	**0.2011**	**0.0000**	**496.6600**	**496.6600**	**0.0818**	**0.0000**	**498.7049**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3160	3.0421	2.1654	5.4800e-003	0.1571	0.1360	0.2930	0.0500	0.1277	0.1777	0.0000	496.6597	496.6597	0.0818	0.0000	498.7046
2020	0.6663	0.6992	0.6193	1.3400e-003	0.0311	0.0334	0.0645	8.4200e-003	0.0314	0.0398	0.0000	119.1950	119.1950	0.0218	0.0000	119.7404
Maximum	**0.6663**	**3.0421**	**2.1654**	**5.4800e-003**	**0.1571**	**0.1360**	**0.2930**	**0.0500**	**0.1277**	**0.1777**	**0.0000**	**496.6597**	**496.6597**	**0.0818**	**0.0000**	**498.7046**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**18.97**	**0.00**	**10.97**	**28.63**	**0.00**	**9.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2019	6-30-2019	1.3347	1.3347
2	7-1-2019	9-30-2019	1.0050	1.0050
3	10-1-2019	12-31-2019	1.0085	1.0085
4	1-1-2020	3-31-2020	0.7853	0.7853
5	4-1-2020	6-30-2020	0.5525	0.5525
		Highest	1.3347	1.3347

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8760	2.0000e-005	2.2200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5800e-003
Energy	0.0256	0.2327	0.1955	1.4000e-003		0.0177	0.0177		0.0177	0.0177	0.0000	452.4909	452.4909	0.0200	8.0800e-003	455.3973
Mobile	0.3672	4.2464	3.1281	0.0143	0.7438	0.0164	0.7602	0.2006	0.0155	0.2161	0.0000	1,326.8604	1,326.8604	0.1721	0.0000	1,331.1637
Waste						0.0000	0.0000		0.0000	0.0000	14.4469	0.0000	14.4469	0.8538	0.0000	35.7915
Water						0.0000	0.0000		0.0000	0.0000	1.0462	2.5159	3.5621	0.1077	2.5800e-003	7.0223
Total	**1.2687**	**4.4791**	**3.3258**	**0.0157**	**0.7438**	**0.0341**	**0.7779**	**0.2006**	**0.0332**	**0.2338**	**15.4931**	**1,781.8715**	**1,797.3645**	**1.1535**	**0.0107**	**1,829.3794**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8016	2.0000e-005	2.2200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5800e-003
Energy	0.0256	0.2327	0.1955	1.4000e-003		0.0177	0.0177		0.0177	0.0177	0.0000	452.4909	452.4909	0.0200	8.0800e-003	455.3973
Mobile	0.3593	4.1367	2.9859	0.0135	0.6925	0.0154	0.7079	0.1867	0.0146	0.2013	0.0000	1,255.7558	1,255.7558	0.1703	0.0000	1,260.0137
Waste						0.0000	0.0000		0.0000	0.0000	10.8352	0.0000	10.8352	0.6403	0.0000	26.8436
Water						0.0000	0.0000		0.0000	0.0000	0.8370	2.0127	2.8497	0.0861	2.0600e-003	5.6178
Total	**1.1865**	**4.3695**	**3.1836**	**0.0149**	**0.6925**	**0.0331**	**0.7256**	**0.1867**	**0.0323**	**0.2190**	**11.6721**	**1,710.2637**	**1,721.9358**	**0.9168**	**0.0101**	**1,747.8770**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.48**	**2.45**	**4.28**	**4.92**	**6.90**	**2.85**	**6.72**	**6.90**	**2.74**	**6.31**	**24.66**	**4.02**	**4.20**	**20.53**	**4.88**	**4.46**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/5/2019	5	5	
2	Grading	Grading	4/6/2019	4/17/2019	5	8	
3	Building Construction	Building Construction	4/18/2019	3/4/2020	5	230	
4	Paving	Paving	3/5/2020	3/30/2020	5	18	
5	Architectural Coating	Architectural Coating	3/31/2020	4/23/2020	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 1.94

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 283,140; Non-Residential Outdoor: 94,380; Striped Parking Area: 5,125 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	115.00	45.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0108	0.1139	0.0552	9.0000e-005		5.9800e-003	5.9800e-003		5.5000e-003	5.5000e-003	0.0000	8.5422	8.5422	2.7000e-003	0.0000	8.6097
Total	**0.0108**	**0.1139**	**0.0552**	**9.0000e-005**	**0.0452**	**5.9800e-003**	**0.0512**	**0.0248**	**5.5000e-003**	**0.0303**	**0.0000**	**8.5422**	**8.5422**	**2.7000e-003**	**0.0000**	**8.6097**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.4000e-004	1.4000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3214	0.3214	1.0000e-005	0.0000	0.3216
Total	**2.1000e-004**	**1.4000e-004**	**1.4000e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3214**	**0.3214**	**1.0000e-005**	**0.0000**	**0.3216**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0176	0.0000	0.0176	9.6800e-003	0.0000	9.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0108	0.1139	0.0552	9.0000e-005		5.9800e-003	5.9800e-003		5.5000e-003	5.5000e-003	0.0000	8.5422	8.5422	2.7000e-003	0.0000	8.6097
Total	**0.0108**	**0.1139**	**0.0552**	**9.0000e-005**	**0.0176**	**5.9800e-003**	**0.0236**	**9.6800e-003**	**5.5000e-003**	**0.0152**	**0.0000**	**8.5422**	**8.5422**	**2.7000e-003**	**0.0000**	**8.6097**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.4000e-004	1.4000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3214	0.3214	1.0000e-005	0.0000	0.3216
Total	**2.1000e-004**	**1.4000e-004**	**1.4000e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3214**	**0.3214**	**1.0000e-005**	**0.0000**	**0.3216**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0271	0.0000	0.0271	0.0136	0.0000	0.0136	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.1134	0.0652	1.2000e-004		5.5900e-003	5.5900e-003		5.1400e-003	5.1400e-003	0.0000	10.6569	10.6569	3.3700e-003	0.0000	10.7412
Total	**0.0103**	**0.1134**	**0.0652**	**1.2000e-004**	**0.0271**	**5.5900e-003**	**0.0327**	**0.0136**	**5.1400e-003**	**0.0187**	**0.0000**	**10.6569**	**10.6569**	**3.3700e-003**	**0.0000**	**10.7412**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.1100e-003	0.2826	0.0377	7.6000e-004	0.0160	1.1000e-003	0.0171	4.4100e-003	1.0500e-003	5.4600e-003	0.0000	72.2430	72.2430	6.4500e-003	0.0000	72.4042
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	1.8700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4285	0.4285	1.0000e-005	0.0000	0.4288
Total	**8.3900e-003**	**0.2828**	**0.0395**	**7.6000e-004**	**0.0165**	**1.1000e-003**	**0.0176**	**4.5400e-003**	**1.0500e-003**	**5.5900e-003**	**0.0000**	**72.6714**	**72.6714**	**6.4600e-003**	**0.0000**	**72.8330**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0106	0.0000	0.0106	5.3000e-003	0.0000	5.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.1134	0.0652	1.2000e-004		5.5900e-003	5.5900e-003		5.1400e-003	5.1400e-003	0.0000	10.6569	10.6569	3.3700e-003	0.0000	10.7412
Total	**0.0103**	**0.1134**	**0.0652**	**1.2000e-004**	**0.0106**	**5.5900e-003**	**0.0161**	**5.3000e-003**	**5.1400e-003**	**0.0104**	**0.0000**	**10.6569**	**10.6569**	**3.3700e-003**	**0.0000**	**10.7412**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.1100e-003	0.2826	0.0377	7.6000e-004	0.0160	1.1000e-003	0.0171	4.4100e-003	1.0500e-003	5.4600e-003	0.0000	72.2430	72.2430	6.4500e-003	0.0000	72.4042
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	1.8700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4285	0.4285	1.0000e-005	0.0000	0.4288
Total	**8.3900e-003**	**0.2828**	**0.0395**	**7.6000e-004**	**0.0165**	**1.1000e-003**	**0.0176**	**4.5400e-003**	**1.0500e-003**	**5.5900e-003**	**0.0000**	**72.6714**	**72.6714**	**6.4600e-003**	**0.0000**	**72.8330**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2172	1.9393	1.5791	2.4800e-003		0.1187	0.1187		0.1116	0.1116	0.0000	216.2959	216.2959	0.0527	0.0000	217.6132
Total	**0.2172**	**1.9393**	**1.5791**	**2.4800e-003**		**0.1187**	**0.1187**		**0.1116**	**0.1116**	**0.0000**	**216.2959**	**216.2959**	**0.0527**	**0.0000**	**217.6132**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0191	0.5597	0.0954	1.1800e-003	0.0274	4.0600e-003	0.0315	7.9300e-003	3.8800e-003	0.0118	0.0000	112.6172	112.6172	0.0143	0.0000	112.9749
Worker	0.0500	0.0329	0.3297	8.4000e-004	0.0846	5.6000e-004	0.0851	0.0225	5.2000e-004	0.0230	0.0000	75.5551	75.5551	2.2500e-003	0.0000	75.6113
Total	**0.0691**	**0.5926**	**0.4251**	**2.0200e-003**	**0.1120**	**4.6200e-003**	**0.1166**	**0.0304**	**4.4000e-003**	**0.0348**	**0.0000**	**188.1722**	**188.1722**	**0.0166**	**0.0000**	**188.5862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2172	1.9393	1.5791	2.4800e-003		0.1187	0.1187		0.1116	0.1116	0.0000	216.2956	216.2956	0.0527	0.0000	217.6129
Total	**0.2172**	**1.9393**	**1.5791**	**2.4800e-003**		**0.1187**	**0.1187**		**0.1116**	**0.1116**	**0.0000**	**216.2956**	**216.2956**	**0.0527**	**0.0000**	**217.6129**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0191	0.5597	0.0954	1.1800e-003	0.0274	4.0600e-003	0.0315	7.9300e-003	3.8800e-003	0.0118	0.0000	112.6172	112.6172	0.0143	0.0000	112.9749
Worker	0.0500	0.0329	0.3297	8.4000e-004	0.0846	5.6000e-004	0.0851	0.0225	5.2000e-004	0.0230	0.0000	75.5551	75.5551	2.2500e-003	0.0000	75.6113
Total	**0.0691**	**0.5926**	**0.4251**	**2.0200e-003**	**0.1120**	**4.6200e-003**	**0.1166**	**0.0304**	**4.4000e-003**	**0.0348**	**0.0000**	**188.1722**	**188.1722**	**0.0166**	**0.0000**	**188.5862**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0488	0.4413	0.3875	6.2000e-004		0.0257	0.0257		0.0242	0.0242	0.0000	53.2703	53.2703	0.0130	0.0000	53.5952
Total	**0.0488**	**0.4413**	**0.3875**	**6.2000e-004**		**0.0257**	**0.0257**		**0.0242**	**0.0242**	**0.0000**	**53.2703**	**53.2703**	**0.0130**	**0.0000**	**53.5952**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8700e-003	0.1283	0.0205	2.9000e-004	6.8600e-003	6.8000e-004	7.5400e-003	1.9800e-003	6.5000e-004	2.6300e-003	0.0000	27.9125	27.9125	3.4500e-003	0.0000	27.9987
Worker	0.0114	7.2400e-003	0.0735	2.0000e-004	0.0212	1.4000e-004	0.0213	5.6200e-003	1.3000e-004	5.7500e-003	0.0000	18.3018	18.3018	4.9000e-004	0.0000	18.3140
Total	**0.0153**	**0.1355**	**0.0940**	**4.9000e-004**	**0.0280**	**8.2000e-004**	**0.0288**	**7.6000e-003**	**7.8000e-004**	**8.3800e-003**	**0.0000**	**46.2143**	**46.2143**	**3.9400e-003**	**0.0000**	**46.3128**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0488	0.4413	0.3875	6.2000e-004		0.0257	0.0257		0.0242	0.0242	0.0000	53.2702	53.2702	0.0130	0.0000	53.5951
Total	**0.0488**	**0.4413**	**0.3875**	**6.2000e-004**		**0.0257**	**0.0257**		**0.0242**	**0.0242**	**0.0000**	**53.2702**	**53.2702**	**0.0130**	**0.0000**	**53.5951**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8700e-003	0.1283	0.0205	2.9000e-004	6.8600e-003	6.8000e-004	7.5400e-003	1.9800e-003	6.5000e-004	2.6300e-003	0.0000	27.9125	27.9125	3.4500e-003	0.0000	27.9987
Worker	0.0114	7.2400e-003	0.0735	2.0000e-004	0.0212	1.4000e-004	0.0213	5.6200e-003	1.3000e-004	5.7500e-003	0.0000	18.3018	18.3018	4.9000e-004	0.0000	18.3140
Total	**0.0153**	**0.1355**	**0.0940**	**4.9000e-004**	**0.0280**	**8.2000e-004**	**0.0288**	**7.6000e-003**	**7.8000e-004**	**8.3800e-003**	**0.0000**	**46.2143**	**46.2143**	**3.9400e-003**	**0.0000**	**46.3128**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.1062	0.1105	1.7000e-004		5.8600e-003	5.8600e-003		5.4000e-003	5.4000e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving	1.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0119**	**0.1062**	**0.1105**	**1.7000e-004**		**5.8600e-003**	**5.8600e-003**		**5.4000e-003**	**5.4000e-003**	**0.0000**	**14.7348**	**14.7348**	**4.6300e-003**	**0.0000**	**14.8506**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.9000e-004	5.0000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2455	1.2455	3.0000e-005	0.0000	1.2463
Total	**7.8000e-004**	**4.9000e-004**	**5.0000e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2455**	**1.2455**	**3.0000e-005**	**0.0000**	**1.2463**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.1062	0.1105	1.7000e-004		5.8600e-003	5.8600e-003		5.4000e-003	5.4000e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving	1.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0119**	**0.1062**	**0.1105**	**1.7000e-004**		**5.8600e-003**	**5.8600e-003**		**5.4000e-003**	**5.4000e-003**	**0.0000**	**14.7348**	**14.7348**	**4.6300e-003**	**0.0000**	**14.8506**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.9000e-004	5.0000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2455	1.2455	3.0000e-005	0.0000	1.2463
Total	**7.8000e-004**	**4.9000e-004**	**5.0000e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2455**	**1.2455**	**3.0000e-005**	**0.0000**	**1.2463**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5865					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0152	0.0165	3.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	2.2979	2.2979	1.8000e-004	0.0000	2.3024
Total	**0.5887**	**0.0152**	**0.0165**	**3.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**2.2979**	**2.2979**	**1.8000e-004**	**0.0000**	**2.3024**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.7000e-004	5.7500e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4323	1.4323	4.0000e-005	0.0000	1.4333
Total	**8.9000e-004**	**5.7000e-004**	**5.7500e-003**	**2.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6700e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4323**	**1.4323**	**4.0000e-005**	**0.0000**	**1.4333**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5865					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0152	0.0165	3.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	2.2979	2.2979	1.8000e-004	0.0000	2.3024
Total	**0.5887**	**0.0152**	**0.0165**	**3.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**2.2979**	**2.2979**	**1.8000e-004**	**0.0000**	**2.3024**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.7000e-004	5.7500e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4323	1.4323	4.0000e-005	0.0000	1.4333
Total	**8.9000e-004**	**5.7000e-004**	**5.7500e-003**	**2.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6700e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4323**	**1.4323**	**4.0000e-005**	**0.0000**	**1.4333**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3593	4.1367	2.9859	0.0135	0.6925	0.0154	0.7079	0.1867	0.0146	0.2013	0.0000	1,255.7558	1,255.7558	0.1703	0.0000	1,260.0137
Unmitigated	0.3672	4.2464	3.1281	0.0143	0.7438	0.0164	0.7602	0.2006	0.0155	0.2161	0.0000	1,326.8604	1,326.8604	0.1721	0.0000	1,331.1637

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,062.10	1,064.70	773.50	1,940,291	1,806,411
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,062.10	1,064.70	773.50	1,940,291	1,806,411

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Other Non-Asphalt Surfaces	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Parking Lot	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	199.1562	199.1562	0.0151	3.4300e-003	200.5571
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	199.1562	199.1562	0.0151	3.4300e-003	200.5571
NaturalGas Mitigated	0.0256	0.2327	0.1955	1.4000e-003		0.0177	0.0177		0.0177	0.0177	0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402
NaturalGas Unmitigated	0.0256	0.2327	0.1955	1.4000e-003		0.0177	0.0177		0.0177	0.0177	0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	4.74731e+006	0.0256	0.2327	0.1955	1.4000e-003		0.0177	0.0177		0.0177	0.0177	0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0256**	**0.2327**	**0.1955**	**1.4000e-003**		**0.0177**	**0.0177**		**0.0177**	**0.0177**	**0.0000**	**253.3348**	**253.3348**	**4.8600e-003**	**4.6400e-003**	**254.8402**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	4.74731e+006	0.0256	0.2327	0.1955	1.4000e-003		0.0177	0.0177		0.0177	0.0177	0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0256**	**0.2327**	**0.1955**	**1.4000e-003**		**0.0177**	**0.0177**		**0.0177**	**0.0177**	**0.0000**	**253.3348**	**253.3348**	**4.8600e-003**	**4.6400e-003**	**254.8402**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.49875e+006	197.1488	0.0150	3.4000e-003	198.5357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15260	2.0073	1.5000e-004	3.0000e-005	2.0215
Total		**199.1562**	**0.0151**	**3.4300e-003**	**200.5571**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.49875e+006	197.1488	0.0150	3.4000e-003	198.5357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15260	2.0073	1.5000e-004	3.0000e-005	2.0215
Total		**199.1562**	**0.0151**	**3.4300e-003**	**200.5571**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8016	2.0000e-005	2.2200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5800e-003
Unmitigated	0.8760	2.0000e-005	2.2200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1330					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7427					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5800e-003
Total	**0.8760**	**2.0000e-005**	**2.2200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.2900e-003**	**4.2900e-003**	**1.0000e-005**	**0.0000**	**4.5800e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0587					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7427					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5800e-003
Total	**0.8016**	**2.0000e-005**	**2.2200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.2900e-003**	**4.2900e-003**	**1.0000e-005**	**0.0000**	**4.5800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.8497	0.0861	2.0600e-003	5.6178
Unmitigated	3.5621	0.1077	2.5800e-003	7.0223

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	3.29768 / 0.366409	3.5621	0.1077	2.5800e-003	7.0223
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.5621**	**0.1077**	**2.5800e-003**	**7.0223**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.63814 / 0.293127	2.8497	0.0861	2.0600e-003	5.6178
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8497**	**0.0861**	**2.0600e-003**	**5.6178**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.8352	0.6403	0.0000	26.8436
Unmitigated	14.4469	0.8538	0.0000	35.7915

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	71.17	14.4469	0.8538	0.0000	35.7915
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**14.4469**	**0.8538**	**0.0000**	**35.7915**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	53.3775	10.8352	0.6403	0.0000	26.8436
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**10.8352**	**0.6403**	**0.0000**	**26.8436**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Results Winter Daily
Construction and Operations

Clovis Hotel Project

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	109.00	Space	0.98	43,600.00	0
Hotel	130.00	Room	1.20	188,760.00	0
Other Non-Asphalt Surfaces	0.96	Acre	0.96	41,817.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site Plan Acreage 3.14

Construction Phase -

Trips and VMT - 15,000 cy for soil import.

Architectural Coating - Rule 4601 Low VOC Coatings

Construction Off-road Equipment Mitigation - Watering for dust control

Mobile Land Use Mitigation - Clovis Stagelines Line 50

Area Mitigation - Rule 4601 Low VOC Coatings

Water Mitigation - Greenbuilding Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Grading -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	65
tblGrading	MaterialImported	0.00	15,000.00
tblLandUse	LotAcreage	4.33	1.20

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.7221	99.2753	26.8848	0.2181	18.2141	2.3913	20.6054	9.9699	2.2000	12.1699	0.0000	22,710.7012	22,710.7012	2.8349	0.0000	22,781.5736
2020	65.5139	25.0941	20.9781	0.0479	1.2496	1.1529	2.4025	0.3384	1.0844	1.4228	0.0000	4,709.3038	4,709.3038	0.8232	0.0000	4,729.8832
Maximum	**65.5139**	**99.2753**	**26.8848**	**0.2181**	**18.2141**	**2.3913**	**20.6054**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**22,710.7012**	**22,710.7012**	**2.8349**	**0.0000**	**22,781.5736**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.7221	99.2753	26.8848	0.2181	7.1937	2.3913	9.5850	3.9122	2.2000	6.1122	0.0000	22,710.7012	22,710.7012	2.8349	0.0000	22,781.5736
2020	65.5139	25.0941	20.9781	0.0479	1.2496	1.1529	2.4025	0.3384	1.0844	1.4228	0.0000	4,709.3038	4,709.3038	0.8232	0.0000	4,729.8832
Maximum	**65.5139**	**99.2753**	**26.8848**	**0.2181**	**7.1937**	**2.3913**	**9.5850**	**3.9122**	**2.2000**	**6.1122**	**0.0000**	**22,710.7012**	**22,710.7012**	**2.8349**	**0.0000**	**22,781.5736**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.62**	**0.00**	**47.90**	**58.77**	**0.00**	**44.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8009	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Energy	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Mobile	1.9948	24.3120	18.8266	0.0791	4.3742	0.0954	4.4696	1.1766	0.0905	1.2671		8,117.8060	8,117.8060	1.1587		8,146.7724
Total	**6.9360**	**25.5874**	**19.9223**	**0.0867**	**4.3742**	**0.1924**	**4.5666**	**1.1766**	**0.1875**	**1.3641**		**9,648.0161**	**9,648.0161**	**1.1881**	**0.0281**	**9,686.0791**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3934	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Energy	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Mobile	1.9499	23.6661	18.0468	0.0748	4.0724	0.0899	4.1623	1.0954	0.0853	1.1807		7,677.3209	7,677.3209	1.1474		7,706.0055
Total	**6.4836**	**24.9415**	**19.1426**	**0.0824**	**4.0724**	**0.1869**	**4.2593**	**1.0954**	**0.1823**	**1.2777**		**9,207.5310**	**9,207.5310**	**1.1769**	**0.0281**	**9,245.3121**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.52**	**2.52**	**3.91**	**4.96**	**6.90**	**2.87**	**6.73**	**6.90**	**2.79**	**6.34**	**0.00**	**4.57**	**4.57**	**0.95**	**0.00**	**4.55**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/5/2019	5	5	
2	Grading	Grading	4/6/2019	4/17/2019	5	8	
3	Building Construction	Building Construction	4/18/2019	3/4/2020	5	230	
4	Paving	Paving	3/5/2020	3/30/2020	5	18	
5	Architectural Coating	Architectural Coating	3/31/2020	4/23/2020	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 1.94

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 283,140; Non-Residential Outdoor: 94,380; Striped Parking Area: 5,125 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	115.00	45.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0898	0.0613	0.5541	1.3700e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		136.1943	136.1943	4.1300e-003		136.2976
Total	**0.0898**	**0.0613**	**0.5541**	**1.3700e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**136.1943**	**136.1943**	**4.1300e-003**		**136.2976**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**7.0458**	**2.3904**	**9.4362**	**3.8730**	**2.1991**	**6.0721**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0898	0.0613	0.5541	1.3700e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		136.1943	136.1943	4.1300e-003		136.2976
Total	**0.0898**	**0.0613**	**0.5541**	**1.3700e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**136.1943**	**136.1943**	**4.1300e-003**		**136.2976**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7644	0.0000	6.7644	3.3996	0.0000	3.3996			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.7644**	**1.3974**	**8.1617**	**3.3996**	**1.2856**	**4.6852**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0668	70.8763	10.1296	0.1873	4.1031	0.2778	4.3809	1.1250	0.2658	1.3908		19,660.3992	19,660.3992	1.9023		19,707.9561
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0748	0.0511	0.4618	1.1400e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		113.4953	113.4953	3.4400e-003		113.5814
Total	**2.1416**	**70.9274**	**10.5914**	**0.1884**	**4.2264**	**0.2786**	**4.5049**	**1.1577**	**0.2665**	**1.4242**		**19,773.8945**	**19,773.8945**	**1.9057**		**19,821.5374**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6381	0.0000	2.6381	1.3258	0.0000	1.3258			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**2.6381**	**1.3974**	**4.0355**	**1.3258**	**1.2856**	**2.6114**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0668	70.8763	10.1296	0.1873	4.1031	0.2778	4.3809	1.1250	0.2658	1.3908		19,660.3992	19,660.3992	1.9023		19,707.9561
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0748	0.0511	0.4618	1.1400e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		113.4953	113.4953	3.4400e-003		113.5814
Total	**2.1416**	**70.9274**	**10.5914**	**0.1884**	**4.2264**	**0.2786**	**4.5049**	**1.1577**	**0.2665**	**1.4242**		**19,773.8945**	**19,773.8945**	**1.9057**		**19,821.5374**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2126	6.0746	1.1370	0.0126	0.3049	0.0446	0.3495	0.0878	0.0427	0.1305		1,324.6578	1,324.6578	0.1838		1,329.2518
Worker	0.5737	0.3917	3.5403	8.7400e-003	0.9447	6.0900e-003	0.9508	0.2506	5.6100e-003	0.2562		870.1303	870.1303	0.0264		870.7904
Total	**0.7863**	**6.4663**	**4.6774**	**0.0214**	**1.2496**	**0.0507**	**1.3003**	**0.3384**	**0.0483**	**0.3866**		**2,194.7882**	**2,194.7882**	**0.2102**		**2,200.0423**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2126	6.0746	1.1370	0.0126	0.3049	0.0446	0.3495	0.0878	0.0427	0.1305		1,324.6578	1,324.6578	0.1838		1,329.2518
Worker	0.5737	0.3917	3.5403	8.7400e-003	0.9447	6.0900e-003	0.9508	0.2506	5.6100e-003	0.2562		870.1303	870.1303	0.0264		870.7904
Total	**0.7863**	**6.4663**	**4.6774**	**0.0214**	**1.2496**	**0.0507**	**1.3003**	**0.3384**	**0.0483**	**0.3866**		**2,194.7882**	**2,194.7882**	**0.2102**		**2,200.0423**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1730	5.5632	0.9798	0.0125	0.3049	0.0299	0.3349	0.0878	0.0287	0.1164		1,313.1695	1,313.1695	0.1774		1,317.6041
Worker	0.5240	0.3449	3.1498	8.4700e-003	0.9447	5.9100e-003	0.9506	0.2506	5.4500e-003	0.2560		843.0712	843.0712	0.0229		843.6446
Total	**0.6969**	**5.9081**	**4.1296**	**0.0210**	**1.2496**	**0.0359**	**1.2855**	**0.3384**	**0.0341**	**0.3725**		**2,156.2407**	**2,156.2407**	**0.2003**		**2,161.2487**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1730	5.5632	0.9798	0.0125	0.3049	0.0299	0.3349	0.0878	0.0287	0.1164		1,313.1695	1,313.1695	0.1774		1,317.6041
Worker	0.5240	0.3449	3.1498	8.4700e-003	0.9447	5.9100e-003	0.9506	0.2506	5.4500e-003	0.2560		843.0712	843.0712	0.0229		843.6446
Total	**0.6969**	**5.9081**	**4.1296**	**0.0210**	**1.2496**	**0.0359**	**1.2855**	**0.3384**	**0.0341**	**0.3725**		**2,156.2407**	**2,156.2407**	**0.2003**		**2,161.2487**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005		1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.1426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3264**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**		**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0911	0.0600	0.5478	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.6211	146.6211	3.9900e-003		146.7208
Total	**0.0911**	**0.0600**	**0.5478**	**1.4700e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**146.6211**	**146.6211**	**3.9900e-003**		**146.7208**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005	0.0000	1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.1426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3264**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**	**0.0000**	**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0911	0.0600	0.5478	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.6211	146.6211	3.9900e-003		146.7208
Total	**0.0911**	**0.0600**	**0.5478**	**1.4700e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**146.6211**	**146.6211**	**3.9900e-003**		**146.7208**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.1669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**65.4091**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1048	0.0690	0.6300	1.6900e-003	0.1889	1.1800e-003	0.1901	0.0501	1.0900e-003	0.0512		168.6142	168.6142	4.5900e-003		168.7289
Total	**0.1048**	**0.0690**	**0.6300**	**1.6900e-003**	**0.1889**	**1.1800e-003**	**0.1901**	**0.0501**	**1.0900e-003**	**0.0512**		**168.6142**	**168.6142**	**4.5900e-003**		**168.7289**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.1669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**65.4091**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1048	0.0690	0.6300	1.6900e-003	0.1889	1.1800e-003	0.1901	0.0501	1.0900e-003	0.0512		168.6142	168.6142	4.5900e-003		168.7289
Total	**0.1048**	**0.0690**	**0.6300**	**1.6900e-003**	**0.1889**	**1.1800e-003**	**0.1901**	**0.0501**	**1.0900e-003**	**0.0512**		**168.6142**	**168.6142**	**4.5900e-003**		**168.7289**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9499	23.6661	18.0468	0.0748	4.0724	0.0899	4.1623	1.0954	0.0853	1.1807		7,677.3209	7,677.3209	1.1474		7,706.0055
Unmitigated	1.9948	24.3120	18.8266	0.0791	4.3742	0.0954	4.4696	1.1766	0.0905	1.2671		8,117.8060	8,117.8060	1.1587		8,146.7724

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,062.10	1,064.70	773.50	1,940,291	1,806,411
Parking Lot	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,062.10	1,064.70	773.50	1,940,291	1,806,411

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Parking Lot	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Other Non-Asphalt Surfaces	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
NaturalGas Unmitigated	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	13006.3	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1403**	**1.2751**	**1.0711**	**7.6500e-003**		**0.0969**	**0.0969**		**0.0969**	**0.0969**		**1,530.1576**	**1,530.1576**	**0.0293**	**0.0281**	**1,539.2506**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	13.0063	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1403**	**1.2751**	**1.0711**	**7.6500e-003**		**0.0969**	**0.0969**		**0.0969**	**0.0969**		**1,530.1576**	**1,530.1576**	**0.0293**	**0.0281**	**1,539.2506**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3934	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Unmitigated	4.8009	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7289					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3200e-003	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Total	**4.8009**	**2.3000e-004**	**0.0247**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0525**	**0.0525**	**1.4000e-004**		**0.0560**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3200e-003	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Total	**4.3934**	**2.3000e-004**	**0.0247**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0525**	**0.0525**	**1.4000e-004**		**0.0560**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Results Summer Daily
Construction and Operations

Clovis Hotel Project

Fresno County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	109.00	Space	0.98	43,600.00	0
Hotel	130.00	Room	1.20	188,760.00	0
Other Non-Asphalt Surfaces	0.96	Acre	0.96	41,817.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site Plan Acreage 3.14

Construction Phase -

Trips and VMT - 15,000 cy for soil import.

Architectural Coating - Rule 4601 Low VOC Coatings

Construction Off-road Equipment Mitigation - Watering for dust control

Mobile Land Use Mitigation - Clovis Stagelines Line 50

Area Mitigation - Rule 4601 Low VOC Coatings

Water Mitigation - Greenbuilding Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Grading -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	65
tblGrading	MaterialImported	0.00	15,000.00
tblLandUse	LotAcreage	4.33	1.20

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.6614	97.2965	25.7495	0.2223	18.2141	2.3913	20.6054	9.9699	2.2000	12.1699	0.0000	23,154.5546	23,154.5546	2.6206	0.0000	23,220.0696
2020	65.5221	24.9792	21.3711	0.0495	1.2496	1.1523	2.4019	0.3384	1.0838	1.4222	0.0000	4,870.5853	4,870.5853	0.8055	0.0000	4,890.7218
Maximum	**65.5221**	**97.2965**	**25.7495**	**0.2223**	**18.2141**	**2.3913**	**20.6054**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**23,154.5546**	**23,154.5546**	**2.6206**	**0.0000**	**23,220.0696**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.6614	97.2965	25.7495	0.2223	7.1937	2.3913	9.5850	3.9122	2.2000	6.1122	0.0000	23,154.5546	23,154.5546	2.6206	0.0000	23,220.0696
2020	65.5221	24.9792	21.3711	0.0495	1.2496	1.1523	2.4019	0.3384	1.0838	1.4222	0.0000	4,870.5853	4,870.5853	0.8055	0.0000	4,890.7218
Maximum	**65.5221**	**97.2965**	**25.7495**	**0.2223**	**7.1937**	**2.3913**	**9.5850**	**3.9122**	**2.2000**	**6.1122**	**0.0000**	**23,154.5546**	**23,154.5546**	**2.6206**	**0.0000**	**23,220.0696**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.62**	**0.00**	**47.90**	**58.77**	**0.00**	**44.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8009	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Energy	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Mobile	2.5222	24.0984	18.9793	0.0859	4.3742	0.0926	4.4668	1.1766	0.0879	1.2645		8,815.2589	8,815.2589	1.0438		8,841.3530
Total	**7.4634**	**25.3737**	**20.0751**	**0.0936**	**4.3742**	**0.1896**	**4.5638**	**1.1766**	**0.1849**	**1.3615**		**10,345.4690**	**10,345.4690**	**1.0732**	**0.0281**	**10,380.6596**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3934	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Energy	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Mobile	2.4758	23.5015	18.0203	0.0813	4.0724	0.0871	4.1595	1.0954	0.0826	1.1780		8,343.2567	8,343.2567	1.0316		8,369.0462
Total	**7.0095**	**24.7769**	**19.1160**	**0.0890**	**4.0724**	**0.1841**	**4.2565**	**1.0954**	**0.1796**	**1.2750**		**9,873.4668**	**9,873.4668**	**1.0611**	**0.0281**	**9,908.3528**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.08**	**2.35**	**4.78**	**4.94**	**6.90**	**2.91**	**6.73**	**6.90**	**2.83**	**6.35**	**0.00**	**4.56**	**4.56**	**1.13**	**0.00**	**4.55**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/5/2019	5	5	
2	Grading	Grading	4/6/2019	4/17/2019	5	8	
3	Building Construction	Building Construction	4/18/2019	3/4/2020	5	230	
4	Paving	Paving	3/5/2020	3/30/2020	5	18	
5	Architectural Coating	Architectural Coating	3/31/2020	4/23/2020	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 1.94

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 283,140; Non-Residential Outdoor: 94,380; Striped Parking Area: 5,125 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	115.00	45.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0968	0.0521	0.6474	1.5600e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		155.3904	155.3904	4.6700e-003		155.5072
Total	**0.0968**	**0.0521**	**0.6474**	**1.5600e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**155.3904**	**155.3904**	**4.6700e-003**		**155.5072**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**7.0458**	**2.3904**	**9.4362**	**3.8730**	**2.1991**	**6.0721**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0968	0.0521	0.6474	1.5600e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		155.3904	155.3904	4.6700e-003		155.5072
Total	**0.0968**	**0.0521**	**0.6474**	**1.5600e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**155.3904**	**155.3904**	**4.6700e-003**		**155.5072**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7644	0.0000	6.7644	3.3996	0.0000	3.3996			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.7644**	**1.3974**	**8.1617**	**3.3996**	**1.2856**	**4.6852**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0003	68.9051	8.9167	0.1914	4.1031	0.2721	4.3752	1.1250	0.2603	1.3853		20,088.2558	20,088.2558	1.6875		20,130.4442
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0807	0.0434	0.5395	1.3000e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		129.4920	129.4920	3.8900e-003		129.5893
Total	**2.0810**	**68.9485**	**9.4562**	**0.1927**	**4.2264**	**0.2728**	**4.4992**	**1.1577**	**0.2610**	**1.4187**		**20,217.7479**	**20,217.7479**	**1.6914**		**20,260.0335**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6381	0.0000	2.6381	1.3258	0.0000	1.3258			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**2.6381**	**1.3974**	**4.0355**	**1.3258**	**1.2856**	**2.6114**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.0003	68.9051	8.9167	0.1914	4.1031	0.2721	4.3752	1.1250	0.2603	1.3853		20,088.2558	20,088.2558	1.6875		20,130.4442
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0807	0.0434	0.5395	1.3000e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		129.4920	129.4920	3.8900e-003		129.5893
Total	**2.0810**	**68.9485**	**9.4562**	**0.1927**	**4.2264**	**0.2728**	**4.4992**	**1.1577**	**0.2610**	**1.4187**		**20,217.7479**	**20,217.7479**	**1.6914**		**20,260.0335**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2044	5.9899	0.9652	0.0131	0.3049	0.0438	0.3487	0.0878	0.0419	0.1297		1,367.2177	1,367.2177	0.1625		1,371.2810
Worker	0.6185	0.3328	4.1362	9.9800e-003	0.9447	6.0900e-003	0.9508	0.2506	5.6100e-003	0.2562		992.7721	992.7721	0.0298		993.5179
Total	**0.8228**	**6.3227**	**5.1014**	**0.0230**	**1.2496**	**0.0499**	**1.2995**	**0.3384**	**0.0475**	**0.3859**		**2,359.9898**	**2,359.9898**	**0.1924**		**2,364.7989**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2044	5.9899	0.9652	0.0131	0.3049	0.0438	0.3487	0.0878	0.0419	0.1297		1,367.2177	1,367.2177	0.1625		1,371.2810
Worker	0.6185	0.3328	4.1362	9.9800e-003	0.9447	6.0900e-003	0.9508	0.2506	5.6100e-003	0.2562		992.7721	992.7721	0.0298		993.5179
Total	**0.8228**	**6.3227**	**5.1014**	**0.0230**	**1.2496**	**0.0499**	**1.2995**	**0.3384**	**0.0475**	**0.3859**		**2,359.9898**	**2,359.9898**	**0.1924**		**2,364.7989**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1656	5.4998	0.8243	0.0129	0.3049	0.0293	0.3342	0.0878	0.0281	0.1158		1,355.5551	1,355.5551	0.1566		1,359.4692
Worker	0.5648	0.2933	3.6982	9.6600e-003	0.9447	5.9100e-003	0.9506	0.2506	5.4500e-003	0.2560		961.9672	961.9672	0.0260		962.6182
Total	**0.7304**	**5.7931**	**4.5226**	**0.0226**	**1.2496**	**0.0352**	**1.2848**	**0.3384**	**0.0335**	**0.3719**		**2,317.5223**	**2,317.5223**	**0.1826**		**2,322.0874**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1656	5.4998	0.8243	0.0129	0.3049	0.0293	0.3342	0.0878	0.0281	0.1158		1,355.5551	1,355.5551	0.1566		1,359.4692
Worker	0.5648	0.2933	3.6982	9.6600e-003	0.9447	5.9100e-003	0.9506	0.2506	5.4500e-003	0.2560		961.9672	961.9672	0.0260		962.6182
Total	**0.7304**	**5.7931**	**4.5226**	**0.0226**	**1.2496**	**0.0352**	**1.2848**	**0.3384**	**0.0335**	**0.3719**		**2,317.5223**	**2,317.5223**	**0.1826**		**2,322.0874**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005		1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.1426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3264**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**		**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0510	0.6432	1.6800e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		167.2986	167.2986	4.5300e-003		167.4119
Total	**0.0982**	**0.0510**	**0.6432**	**1.6800e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**167.2986**	**167.2986**	**4.5300e-003**		**167.4119**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005	0.0000	1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.1426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3264**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**	**0.0000**	**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0982	0.0510	0.6432	1.6800e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		167.2986	167.2986	4.5300e-003		167.4119
Total	**0.0982**	**0.0510**	**0.6432**	**1.6800e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**167.2986**	**167.2986**	**4.5300e-003**		**167.4119**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.1669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**65.4091**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1130	0.0587	0.7397	1.9300e-003	0.1889	1.1800e-003	0.1901	0.0501	1.0900e-003	0.0512		192.3934	192.3934	5.2100e-003		192.5236
Total	**0.1130**	**0.0587**	**0.7397**	**1.9300e-003**	**0.1889**	**1.1800e-003**	**0.1901**	**0.0501**	**1.0900e-003**	**0.0512**		**192.3934**	**192.3934**	**5.2100e-003**		**192.5236**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	65.1669					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**65.4091**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1130	0.0587	0.7397	1.9300e-003	0.1889	1.1800e-003	0.1901	0.0501	1.0900e-003	0.0512		192.3934	192.3934	5.2100e-003		192.5236
Total	**0.1130**	**0.0587**	**0.7397**	**1.9300e-003**	**0.1889**	**1.1800e-003**	**0.1901**	**0.0501**	**1.0900e-003**	**0.0512**		**192.3934**	**192.3934**	**5.2100e-003**		**192.5236**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4758	23.5015	18.0203	0.0813	4.0724	0.0871	4.1595	1.0954	0.0826	1.1780		8,343.2567	8,343.2567	1.0316		8,369.0462
Unmitigated	2.5222	24.0984	18.9793	0.0859	4.3742	0.0926	4.4668	1.1766	0.0879	1.2645		8,815.2589	8,815.2589	1.0438		8,841.3530

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,062.10	1,064.70	773.50	1,940,291	1,806,411
Parking Lot	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,062.10	1,064.70	773.50	1,940,291	1,806,411

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Parking Lot	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Other Non-Asphalt Surfaces	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
NaturalGas Unmitigated	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	13006.3	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1403**	**1.2751**	**1.0711**	**7.6500e-003**		**0.0969**	**0.0969**		**0.0969**	**0.0969**		**1,530.1576**	**1,530.1576**	**0.0293**	**0.0281**	**1,539.2506**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	13.0063	0.1403	1.2751	1.0711	7.6500e-003		0.0969	0.0969		0.0969	0.0969		1,530.1576	1,530.1576	0.0293	0.0281	1,539.2506
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1403**	**1.2751**	**1.0711**	**7.6500e-003**		**0.0969**	**0.0969**		**0.0969**	**0.0969**		**1,530.1576**	**1,530.1576**	**0.0293**	**0.0281**	**1,539.2506**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3934	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Unmitigated	4.8009	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7289					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3200e-003	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Total	**4.8009**	**2.3000e-004**	**0.0247**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0525**	**0.0525**	**1.4000e-004**		**0.0560**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3200e-003	2.3000e-004	0.0247	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Total	**4.3934**	**2.3000e-004**	**0.0247**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0525**	**0.0525**	**1.4000e-004**		**0.0560**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Results GHG BAU

Clovis Hotel Project GHG BAU

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.96	Acre	0.96	41,817.60	0
Parking Lot	109.00	Space	0.98	43,600.00	0
Hotel	130.00	Room	1.20	188,760.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Site Plan Acreage 3.14

Construction Phase -

Trips and VMT - 15,000 cy for soil import.

Grading -

Architectural Coating - Rule 4601 Low VOC Coatings

Construction Off-road Equipment Mitigation - Watering for dust control

Mobile Land Use Mitigation - Clovis Stagelines Line 50

Area Mitigation - Rule 4601 Low VOC Coatings

Water Mitigation - Greenbuilding Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - 2020 Fleet Mix

Energy Use -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	65
tblEnergyUse	LightingElect	0.88	0.88
tblFleetMix	HHD	0.11	0.12
tblFleetMix	LDA	0.42	0.48
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LHD1	0.04	0.02
tblFleetMix	LHD2	6.9730e-003	4.9970e-003
tblFleetMix	MCY	5.2690e-003	5.2610e-003
tblFleetMix	MDV	0.18	0.13
tblFleetMix	MH	1.5690e-003	6.6700e-004
tblFleetMix	MHD	0.03	0.03
tblFleetMix	OBUS	2.0990e-003	2.3690e-003
tblFleetMix	SBUS	1.2120e-003	1.1150e-003
tblFleetMix	UBUS	1.7870e-003	1.6750e-003
tblGrading	MaterialImported	0.00	15,000.00
tblLandUse	LotAcreage	4.33	1.20

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	496.6600	496.6600	0.0818	0.0000	498.7049
2020											0.0000	119.1951	119.1951	0.0218	0.0000	119.7405
Maximum											**0.0000**	**496.6600**	**496.6600**	**0.0818**	**0.0000**	**498.7049**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	496.6597	496.6597	0.0818	0.0000	498.7046
2020											0.0000	119.1950	119.1950	0.0218	0.0000	119.7404
Maximum											**0.0000**	**496.6597**	**496.6597**	**0.0818**	**0.0000**	**498.7046**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	4.2900e-003	4.2900e-003	2.0000e-005	0.0000	4.7900e-003
Energy											0.0000	810.4871	810.4871	0.0296	0.0100	814.2128
Mobile											0.0000	1,453.8257	1,453.8257	0.5210	0.0000	1,466.8510
Waste											14.4469	0.0000	14.4469	0.8538	0.0000	35.7915
Water											1.0462	5.5640	6.6102	0.1077	2.5900e-003	10.0745
Total											**15.4931**	**2,269.8811**	**2,285.3742**	**1.5121**	**0.0126**	**2,326.9345**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	4.2900e-003	4.2900e-003	2.0000e-005	0.0000	4.7900e-003
Energy											0.0000	810.4871	810.4871	0.0296	0.0100	814.2128
Mobile											0.0000	1,372.7296	1,372.7296	0.5152	0.0000	1,385.6101
Waste											10.8352	0.0000	10.8352	0.6403	0.0000	26.8436
Water											0.8370	4.4512	5.2882	0.0862	2.0700e-003	8.0596
Total											**11.6721**	**2,187.6722**	**2,199.3443**	**1.2713**	**0.0121**	**2,234.7308**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.66**	**3.62**	**3.76**	**15.92**	**4.12**	**3.96**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/5/2019	5	5	
2	Grading	Grading	4/6/2019	4/17/2019	5	8	
3	Building Construction	Building Construction	4/18/2019	3/4/2020	5	230	
4	Paving	Paving	3/5/2020	3/30/2020	5	18	
5	Architectural Coating	Architectural Coating	3/31/2020	4/23/2020	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 1.94

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 283,140; Non-Residential Outdoor: 94,380; Striped Parking Area: 5,125 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	115.00	45.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	8.5422	8.5422	2.7000e-003	0.0000	8.6097
Total											**0.0000**	**8.5422**	**8.5422**	**2.7000e-003**	**0.0000**	**8.6097**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.3214	0.3214	1.0000e-005	0.0000	0.3216
Total											**0.0000**	**0.3214**	**0.3214**	**1.0000e-005**	**0.0000**	**0.3216**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	8.5422	8.5422	2.7000e-003	0.0000	8.6097
Total											**0.0000**	**8.5422**	**8.5422**	**2.7000e-003**	**0.0000**	**8.6097**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.3214	0.3214	1.0000e-005	0.0000	0.3216
Total											**0.0000**	**0.3214**	**0.3214**	**1.0000e-005**	**0.0000**	**0.3216**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	10.6569	10.6569	3.3700e-003	0.0000	10.7412
Total											**0.0000**	**10.6569**	**10.6569**	**3.3700e-003**	**0.0000**	**10.7412**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	72.2430	72.2430	6.4500e-003	0.0000	72.4042
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.4285	0.4285	1.0000e-005	0.0000	0.4288
Total											**0.0000**	**72.6714**	**72.6714**	**6.4600e-003**	**0.0000**	**72.8330**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	10.6569	10.6569	3.3700e-003	0.0000	10.7412
Total											**0.0000**	**10.6569**	**10.6569**	**3.3700e-003**	**0.0000**	**10.7412**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	72.2430	72.2430	6.4500e-003	0.0000	72.4042
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.4285	0.4285	1.0000e-005	0.0000	0.4288
Total											**0.0000**	**72.6714**	**72.6714**	**6.4600e-003**	**0.0000**	**72.8330**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	216.2959	216.2959	0.0527	0.0000	217.6132
Total											**0.0000**	**216.2959**	**216.2959**	**0.0527**	**0.0000**	**217.6132**

3.4 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	112.6172	112.6172	0.0143	0.0000	112.9749
Worker											0.0000	75.5551	75.5551	2.2500e-003	0.0000	75.6113
Total											**0.0000**	**188.1722**	**188.1722**	**0.0166**	**0.0000**	**188.5862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	216.2956	216.2956	0.0527	0.0000	217.6129
Total											**0.0000**	**216.2956**	**216.2956**	**0.0527**	**0.0000**	**217.6129**

3.4 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	112.6172	112.6172	0.0143	0.0000	112.9749
Worker											0.0000	75.5551	75.5551	2.2500e-003	0.0000	75.6113
Total											**0.0000**	**188.1722**	**188.1722**	**0.0166**	**0.0000**	**188.5862**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	53.2703	53.2703	0.0130	0.0000	53.5952
Total											**0.0000**	**53.2703**	**53.2703**	**0.0130**	**0.0000**	**53.5952**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	27.9125	27.9125	3.4500e-003	0.0000	27.9987
Worker											0.0000	18.3018	18.3018	4.9000e-004	0.0000	18.3140
Total											**0.0000**	**46.2143**	**46.2143**	**3.9400e-003**	**0.0000**	**46.3128**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	53.2702	53.2702	0.0130	0.0000	53.5951
Total											**0.0000**	**53.2702**	**53.2702**	**0.0130**	**0.0000**	**53.5951**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	27.9125	27.9125	3.4500e-003	0.0000	27.9987
Worker											0.0000	18.3018	18.3018	4.9000e-004	0.0000	18.3140
Total											**0.0000**	**46.2143**	**46.2143**	**3.9400e-003**	**0.0000**	**46.3128**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**14.7348**	**14.7348**	**4.6300e-003**	**0.0000**	**14.8506**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2455	1.2455	3.0000e-005	0.0000	1.2463
Total											**0.0000**	**1.2455**	**1.2455**	**3.0000e-005**	**0.0000**	**1.2463**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**14.7348**	**14.7348**	**4.6300e-003**	**0.0000**	**14.8506**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2455	1.2455	3.0000e-005	0.0000	1.2463
Total											**0.0000**	**1.2455**	**1.2455**	**3.0000e-005**	**0.0000**	**1.2463**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.2979	2.2979	1.8000e-004	0.0000	2.3024
Total											**0.0000**	**2.2979**	**2.2979**	**1.8000e-004**	**0.0000**	**2.3024**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4323	1.4323	4.0000e-005	0.0000	1.4333
Total											**0.0000**	**1.4323**	**1.4323**	**4.0000e-005**	**0.0000**	**1.4333**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.2979	2.2979	1.8000e-004	0.0000	2.3024
Total											**0.0000**	**2.2979**	**2.2979**	**1.8000e-004**	**0.0000**	**2.3024**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4323	1.4323	4.0000e-005	0.0000	1.4333
Total											**0.0000**	**1.4323**	**1.4323**	**4.0000e-005**	**0.0000**	**1.4333**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	1,372.7296	1,372.7296	0.5152	0.0000	1,385.6101
Unmitigated											0.0000	1,453.8257	1,453.8257	0.5210	0.0000	1,466.8510

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,062.10	1,064.70	773.50	1,940,291	1,806,411
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,062.10	1,064.70	773.50	1,940,291	1,806,411

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667
Other Non-Asphalt Surfaces	0.415876	0.061183	0.150996	0.176036	0.035163	0.006973	0.031964	0.109874	0.002099	0.001787	0.005269	0.001212	0.001569
Parking Lot	0.415876	0.061183	0.150996	0.176036	0.035163	0.006973	0.031964	0.109874	0.002099	0.001787	0.005269	0.001212	0.001569

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	538.8196	538.8196	0.0244	5.0400e-003	540.9308
Electricity Unmitigated											0.0000	538.8196	538.8196	0.0244	5.0400e-003	540.9308
NaturalGas Mitigated											0.0000	271.6675	271.6675	5.2100e-003	4.9800e-003	273.2819
NaturalGas Unmitigated											0.0000	271.6675	271.6675	5.2100e-003	4.9800e-003	273.2819

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	5.09086e+006											0.0000	271.6675	271.6675	5.2100e-003	4.9800e-003	273.2819
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**271.6675**	**271.6675**	**5.2100e-003**	**4.9800e-003**	**273.2819**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	5.09086e+006											0.0000	271.6675	271.6675	5.2100e-003	4.9800e-003	273.2819
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**271.6675**	**271.6675**	**5.2100e-003**	**4.9800e-003**	**273.2819**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.81398e+006	527.7086	0.0239	4.9400e-003	529.7764
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	38193.6	11.1110	5.0000e-004	1.0000e-004	11.1545
Total		**538.8196**	**0.0244**	**5.0400e-003**	**540.9308**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.81398e+006	527.7086	0.0239	4.9400e-003	529.7764
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	38193.6	11.1110	5.0000e-004	1.0000e-004	11.1545
Total		**538.8196**	**0.0244**	**5.0400e-003**	**540.9308**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	4.2900e-003	4.2900e-003	2.0000e-005	0.0000	4.7900e-003
Unmitigated											0.0000	4.2900e-003	4.2900e-003	2.0000e-005	0.0000	4.7900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.2900e-003	4.2900e-003	2.0000e-005	0.0000	4.7900e-003
Total											**0.0000**	**4.2900e-003**	**4.2900e-003**	**2.0000e-005**	**0.0000**	**4.7900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.2900e-003	4.2900e-003	2.0000e-005	0.0000	4.7900e-003
Total											**0.0000**	**4.2900e-003**	**4.2900e-003**	**2.0000e-005**	**0.0000**	**4.7900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.2882	0.0862	2.0700e-003	8.0596
Unmitigated	6.6102	0.1077	2.5900e-003	10.0745

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	3.29768 / 0.366409	6.6102	0.1077	2.5900e-003	10.0745
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**6.6102**	**0.1077**	**2.5900e-003**	**10.0745**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.63814 / 0.293127	5.2882	0.0862	2.0700e-003	8.0596
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.2882**	**0.0862**	**2.0700e-003**	**8.0596**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.8352	0.6403	0.0000	26.8436
Unmitigated	14.4469	0.8538	0.0000	35.7915

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	71.17	14.4469	0.8538	0.0000	35.7915
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**14.4469**	**0.8538**	**0.0000**	**35.7915**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	53.3775	10.8352	0.6403	0.0000	26.8436
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**10.8352**	**0.6403**	**0.0000**	**26.8436**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Results GHG 2030
Mitigated

Clovis Hotel Project GHG 2030 Mitigated

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.96	Acre	0.96	41,817.60	0
Parking Lot	109.00	Space	0.98	43,600.00	0
Hotel	130.00	Room	1.20	188,760.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Energy Intensity for 2020

Land Use - Site Plan Acreage 3.14

Construction Phase - Operations only run

Trips and VMT - 15,000 cy for soil import.

Grading -

Architectural Coating - Rule 4601 Low VOC Coatings

Construction Off-road Equipment Mitigation - Watering for dust control

Mobile Land Use Mitigation - Clovis Stagelines Line 50

Area Mitigation - Rule 4601 Low VOC Coatings

Water Mitigation - Greenbuilding Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - 2020 Fleet Mix for 2030 Ops Run

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	65
tblConstructionPhase	NumDays	18.00	1.00
tblFleetMix	HHD	0.13	0.02
tblFleetMix	LDA	0.52	0.51
tblFleetMix	LDT1	0.03	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	9.7000e-003	2.1000e-003
tblFleetMix	LHD2	3.4040e-003	1.0000e-003
tblFleetMix	MCY	4.5630e-003	3.1000e-003
tblFleetMix	MDV	0.09	0.06
tblFleetMix	MH	4.3600e-004	2.3000e-003
tblFleetMix	MHD	0.03	9.6000e-003
tblFleetMix	OBUS	2.3060e-003	0.00
tblFleetMix	SBUS	9.9800e-004	1.0000e-003
tblFleetMix	UBUS	1.1850e-003	3.1000e-003
tblLandUse	LotAcreage	4.33	1.20
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	0.2072	0.2072	1.0000e-005	0.0000	0.2075
Maximum											**0.0000**	**0.2072**	**0.2072**	**1.0000e-005**	**0.0000**	**0.2075**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020											0.0000	0.2072	0.2072	1.0000e-005	0.0000	0.2075
Maximum											**0.0000**	**0.2072**	**0.2072**	**1.0000e-005**	**0.0000**	**0.2075**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Clovis Hotel Project GHG 2030 Mitigated - Fresno County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5600e-003
Energy											0.0000	452.4909	452.4909	0.0200	8.0800e-003	455.3973
Mobile											0.0000	586.1302	586.1302	0.0336	0.0000	586.9699
Waste											14.4469	0.0000	14.4469	0.8538	0.0000	35.7915
Water											1.0462	2.5159	3.5621	0.1077	2.5800e-003	7.0223
Total											**15.4931**	**1,041.1413**	**1,056.6344**	**1.0150**	**0.0107**	**1,085.1855**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5600e-003
Energy											0.0000	452.4909	452.4909	0.0200	8.0800e-003	455.3973
Mobile											0.0000	549.9721	549.9721	0.0325	0.0000	550.7852
Waste											10.8352	0.0000	10.8352	0.6403	0.0000	26.8436
Water											0.8370	2.0127	2.8497	0.0861	2.0600e-003	5.6178
Total											**11.6721**	**1,004.4800**	**1,016.1521**	**0.7790**	**0.0101**	**1,038.6485**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24.66**	**3.52**	**3.83**	**23.26**	**4.88**	**4.29**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/31/2020	3/31/2020	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.94

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 283,140; Non-Residential Outdoor: 94,380; Striped Parking Area: 5,125 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total											**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0796	0.0796	0.0000	0.0000	0.0796
Total											**0.0000**	**0.0796**	**0.0796**	**0.0000**	**0.0000**	**0.0796**

3.2 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total											**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0796	0.0796	0.0000	0.0000	0.0796
Total											**0.0000**	**0.0796**	**0.0796**	**0.0000**	**0.0000**	**0.0796**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	549.9721	549.9721	0.0325	0.0000	550.7852
Unmitigated											0.0000	586.1302	586.1302	0.0336	0.0000	586.9699

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,062.10	1,064.70	773.50	1,940,291	1,806,411
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,062.10	1,064.70	773.50	1,940,291	1,806,411

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.511200	0.213700	0.169200	0.061000	0.002100	0.001000	0.009600	0.022100	0.000000	0.003100	0.003100	0.001000	0.002300
Other Non-Asphalt Surfaces	0.517186	0.028486	0.175263	0.093589	0.009700	0.003404	0.033644	0.129242	0.002306	0.001185	0.004563	0.000998	0.000436
Parking Lot	0.517186	0.028486	0.175263	0.093589	0.009700	0.003404	0.033644	0.129242	0.002306	0.001185	0.004563	0.000998	0.000436

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	199.1562	199.1562	0.0151	3.4300e-003	200.5571
Electricity Unmitigated											0.0000	199.1562	199.1562	0.0151	3.4300e-003	200.5571
NaturalGas Mitigated											0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402
NaturalGas Unmitigated											0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	4.74731e+006											0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**253.3348**	**253.3348**	**4.8600e-003**	**4.6400e-003**	**254.8402**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	4.74731e+006											0.0000	253.3348	253.3348	4.8600e-003	4.6400e-003	254.8402
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**253.3348**	**253.3348**	**4.8600e-003**	**4.6400e-003**	**254.8402**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.49875e+006	197.1488	0.0150	3.4000e-003	198.5357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15260	2.0073	1.5000e-004	3.0000e-005	2.0215
Total		**199.1562**	**0.0151**	**3.4300e-003**	**200.5571**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	1.49875e+006	197.1488	0.0150	3.4000e-003	198.5357
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15260	2.0073	1.5000e-004	3.0000e-005	2.0215
Total		**199.1562**	**0.0151**	**3.4300e-003**	**200.5571**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5600e-003
Unmitigated											0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5600e-003
Total											**0.0000**	**4.2900e-003**	**4.2900e-003**	**1.0000e-005**	**0.0000**	**4.5600e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.2900e-003	4.2900e-003	1.0000e-005	0.0000	4.5600e-003
Total											**0.0000**	**4.2900e-003**	**4.2900e-003**	**1.0000e-005**	**0.0000**	**4.5600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.8497	0.0861	2.0600e-003	5.6178
Unmitigated	3.5621	0.1077	2.5800e-003	7.0223

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	3.29768 / 0.366409	3.5621	0.1077	2.5800e-003	7.0223
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.5621**	**0.1077**	**2.5800e-003**	**7.0223**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.63814 / 0.293127	2.8497	0.0861	2.0600e-003	5.6178
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8497**	**0.0861**	**2.0600e-003**	**5.6178**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.8352	0.6403	0.0000	26.8436
Unmitigated	14.4469	0.8538	0.0000	35.7915

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	71.17	14.4469	0.8538	0.0000	35.7915
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**14.4469**	**0.8538**	**0.0000**	**35.7915**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	53.3775	10.8352	0.6403	0.0000	26.8436
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**10.8352**	**0.6403**	**0.0000**	**26.8436**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Final Traffic Impact Analysis

Residence Inn

On the Southeast Corner of Clovis Avenue and Santa Ana Avenue

In the City of Clovis, California

Prepared for:

CA Clovis St., LLC
2260 S. Xanadu Way, Ste. #280
Aurora, CO 80014

June 11, 2018

Project No. 006-021

JLB Traffic Engineering, Inc.

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JLB Traffic Engineering, Inc.

Traffic Engineering, Transportation Planning, & Parking Solutions

Final Traffic Impact Analysis

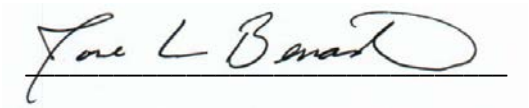
For the Residence Inn located on the Southeast Corner of Clovis Avenue and Santa Ana Avenue

In the City of Clovis, CA

June 11, 2018

This Draft Technical Letter 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:



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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 proposed Residence Inn (Project) located on the southeast corner of Clovis Avenue and Santa Ana Avenue in the City of Clovis. The Project proposes to build a 110-room extended stay, business traveler, mid-scale hotel. Based on information provided, the Project is consistent with the City of Clovis 2035 General Plan.

The purpose of this TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures, and identify any critical traffic issues that should be addressed in the on-going planning process. 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) policy of the City of Clovis, City of Fresno, County of Fresno and Caltrans.

Existing Traffic Conditions

- At present, all intersections operate at an acceptable LOS.

Existing plus Project Traffic Conditions

- A review of the Project driveways to be constructed indicates that they are located at points the minimize traffic operational impacts to the existing roadway network.
- At buildout, the proposed Project is estimated to generate a maximum of 491 daily trips, 37 AM peak hour trips and 40 PM peak hour trips.
- Under this scenario, all study intersections are projected to operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the near term projects is 7,043 daily trips, 407 AM peak hour trips and 638 PM peak hour trips.
- Under this scenario, all study intersections are projected to operate at an acceptable LOS.

Cumulative Year 2035 No Project Traffic Conditions

- Under this scenario, all study intersections are projected to operate at an acceptable LOS.

Cumulative Year 2035 plus Project Traffic Conditions

- Under this scenario, all study intersections are projected to operate at an acceptable LOS.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in Table VIII.

Project's Equitable Fair Share

- It is recommended that the Project contribute its equitable Fair Share as presented in Table IX.

TIA Scope of Work

The study focused on evaluating traffic conditions at the existing study intersections that may potentially be impacted by the proposed Project. On March 23, 2018, 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. The Draft Scope of Work was based on communication with City of Clovis staff. Any comments to the proposed Scope of Work were to be provided by April 12, 2018.

On Tuesday, April 3, 2018, the City of Fresno approved the Draft Scope of Work as presented. Similarly, on Friday, April 6, 2018, Caltrans approved the Draft Scope of Work as presented. On Wednesday, April 11, 2018, the County of Fresno responded to the Draft Scope of Work. The County of Fresno requested that the intersection of Clovis Avenue and Ashlan Avenue and a Cumulative Year 2035 No Project Traffic Conditions scenario be included in the analysis. Moreover, the County of Fresno requested that the Project's trip distribution be provided to them. The distribution of Project Only Trips is described in detail under the Existing plus Project Traffic Conditions scenario. On Wednesday, April 18, 2018, the City of Clovis responded to the Draft Scope of Work. The City of Clovis requested that a trip trace to Sierra Vista and Santa Ana Avenue be provided and that the intersection of the Project Driveway and Santa Ana Avenue be included in the analysis.

Based on the comments received, this TIA includes the analysis of the additional intersections requested by the County of Fresno and the City of Clovis and the analysis of a Cumulative Year 2035 No Project Traffic Conditions scenario. The Draft Scope of Work and the comments received from the lead agency and responsible agencies are included in Appendix A.

Study Facilities

The existing peak hour turning movement volume counts were conducted at the study intersections in April 2018 while schools in the vicinity of the proposed Project were in session. The intersection turning movement counts included pedestrian 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. Clovis Avenue / Santa Ana Avenue
2. Project Driveway / Santa Ana Avenue
3. Sierra Vista Mall Driveway / Santa Ana Avenue
4. Clovis Avenue / Ashlan Avenue

Project Only Trips to State Facilities

1. State Route 168 / Shaw Avenue
2. State Route 180 / Clovis Avenue

Study Scenarios

Existing Traffic Conditions

This scenario evaluates the Existing Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted in the year 2018.

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 intersections were developed based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgment, existing residential and commercial densities, and the City of Clovis 2035 General Plan Circulation Element in the vicinity of the Project. The Fresno COG Models for the Project Select Zone 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 2035 No Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2035 No Project Traffic Conditions. The Cumulative Year 2035 No Project traffic volumes were obtained by subtracting the Project Only Trips from the Cumulative Year 2035 plus Project Traffic Conditions scenario.

Cumulative Year 2035 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2035 plus Project Traffic Conditions. The Cumulative Year 2035 plus Project traffic volumes were obtained from the Fresno COG traffic model runs (Base Year 2018 and Cumulative Year 2035) and existing traffic counts. Under this scenario, the increment method, as recommended by the Model Steering Committee was utilized to determine the Cumulative Year 2035 plus Project traffic volumes. The Fresno COG Models are contained in Appendix C.

Level of Service Analysis Methodology

Level of Service (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 *2010 Highway Capacity Manual* (HCM) 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 2010 methodologies do not allow the analysis of U-turns. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

Criteria of Significance

The 2035 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.

The County of Fresno 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. For those areas that fall within the SOI of a City, the LOS criteria of the City are the criteria of significance used in this report. LOS C is used to evaluate the potential significance of LOS impacts to Fresno County intersections and segments, which fall outside the City of Clovis SOI. In this case, all study facilities fall within the City of Clovis SOI, therefore the City of Clovis LOS D threshold is utilized.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities consistent with the *Caltrans Guide for the Preparation of Traffic Impact Studies* dated December 2002. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In this TIA, however, all study intersections fall within the City of Clovis. Therefore, the City of Clovis LOS D threshold is utilized.

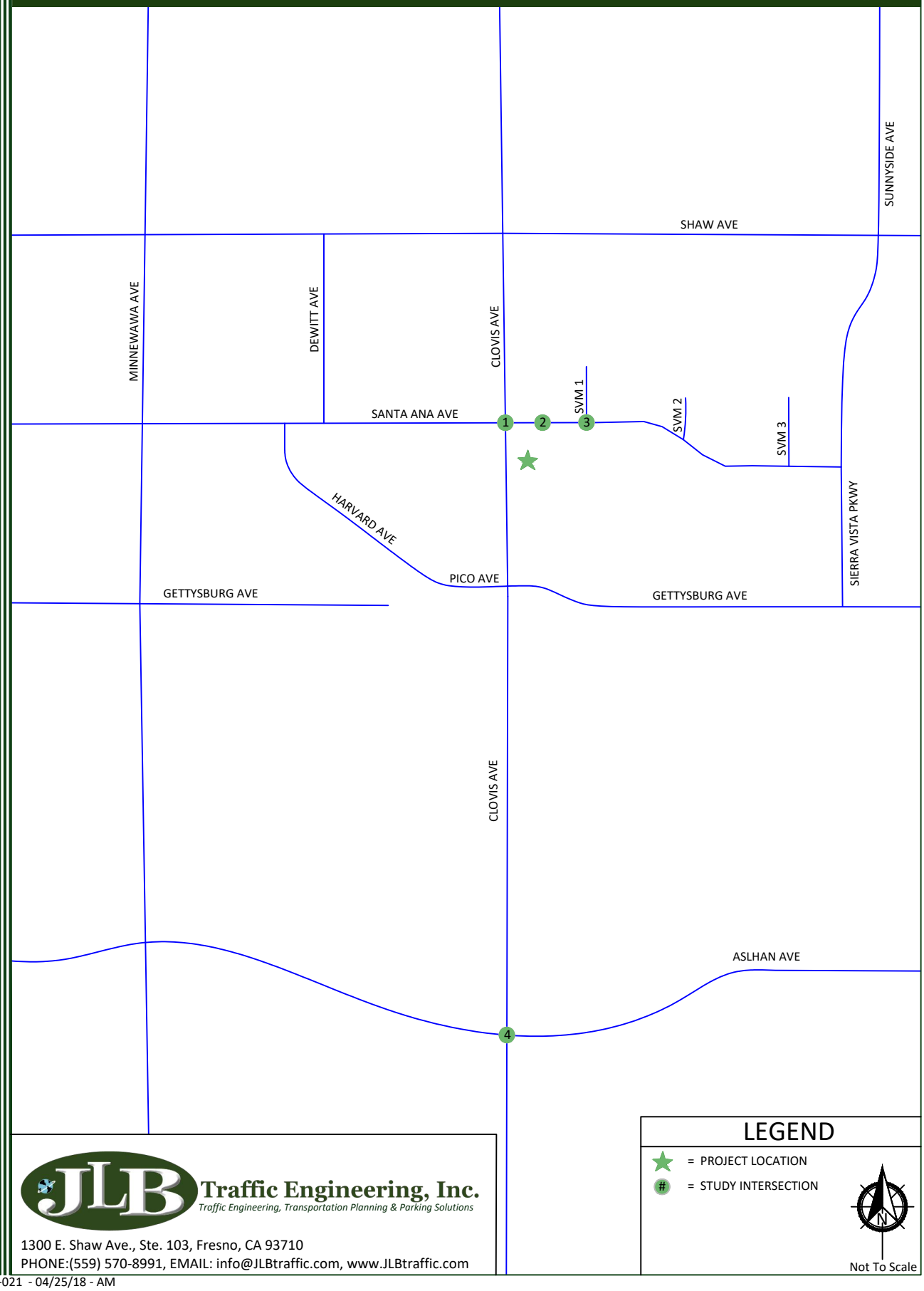
Operational Analysis Assumptions and Defaults

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 of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- 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
- All new or modified signals utilize protective left-turn phasing
- A 3 percent heavy vehicle factor
- The number of observed pedestrians at existing intersections was utilized under all study scenarios
- An average of 3 pedestrian calls per hour at signalized intersections
- At existing intersections, the observed approach Peak Hour Factor (PHF) is utilized in the Existing, Existing plus Project and Near Term plus Project scenarios
- A PHF of 0.92, or the existing PHF if higher, is utilized in the Cumulative Year 2035 No Project and the Cumulative Year 2035 plus Project scenarios

Residence Inn - City of Clovis
Vicinity Map

Figure 1



LEGEND

★ = PROJECT LOCATION

(#) = STUDY INTERSECTION

N

Not To Scale

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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.

Clovis Avenue is an existing north-south six-lane divided arterial adjacent to the proposed Project. In this area, Clovis Avenue extends south of Shepherd Avenue through the City of Clovis SOI and continues south through the City of Fresno SOI and into the County of Fresno. The City of Clovis 2035 General Plan Circulation Element designates Clovis Avenue as a four-lane arterial between Copper Avenue and Perrin Avenue and Shepherd Avenue and Shaw Avenue and a six-lane arterial between Perrin Avenue and Shepherd Avenue and south of Shaw Avenue through the City of Clovis SOI.

Santa Ana Avenue is an existing east-west two-lane divided local street adjacent to the proposed Project. In this area, Santa Ana Avenue is a two-lane undivided local street east of the City of Fresno SOI between Winery Avenue and Clovis Avenue and a four-lane divided local street between Clovis Avenue and Sierra Vista Parkway. The City of Clovis 2035 General Plan Circulation Element designates Santa Ana Avenue as a local street through the City of Clovis SOI.

Sierra Vista Mall Driveway is an existing north-south two-lane access roadway in the vicinity of the proposed Project. Sierra Vista Mall Driveway provides a direct access to Sierra Vista Mall.

Ashlan Avenue is an existing east-west two- to four-lane arterial in the vicinity of the proposed Project. Ashlan Avenue is a four-lane divided arterial east of the City of Fresno SOI between Winery Avenue and Minnewawa Avenue, a two-lane collector between Minnewawa Avenue and Sunnyside Avenue, a four-lane divided arterial between Sunnyside Avenue and McCall Avenue, and a two-lane rural county collector between McCall Avenue and Academy Avenue. The City of Clovis 2035 General Plan Circulation Element designates Ashlan Avenue as a four-lane arterial between State Route 168 and Minnewawa Avenue and Sunnyside Avenue and McCall Avenue and a two-lane collector between Minnewawa Avenue and Sunnyside Avenue and McCall Avenue and Academy Avenue. Furthermore, the City of Clovis 2035 General Plan Circulation Element acknowledged that Ashlan Avenue would exceed LOS D as a two-lane facility between Minnewawa Avenue and Clovis Avenue. However, City Council made the appropriate findings to designate LOS F as the criteria of significance for Ashlan Avenue as a two-lane facility between Minnewawa Avenue and Clovis Avenue.

State Route 168 is an existing east-west state highway near the vicinity of the proposed Project. West of Clovis, State Route 168 is a six-lane freeway that connects Clovis to Fresno Yosemite International Airport, Downtown Fresno, and the greater freeway system via State Route 180, State Route 41, and State Route 99. Within Clovis, State Route 168 is primarily a four- to six-lane freeway with interchanges at Shaw Avenue, Bullard Avenue, Herndon Avenue, Fowler Avenue and Temperance Avenue. East of Temperance Avenue, State Route 168 becomes a four-lane expressway with signalized points of access at Owens Mountain Parkway and Shepherd Avenue. East of Shepherd Avenue, State Route 168 leaves the City of Clovis as a two-lane conventional state highway heading towards Shaver Lake and Huntington Lake in the Sierra Nevada.

State Route 180 is an existing east-west six-lane freeway near the vicinity of the proposed Project. State Route 180 connects southeast and southwest Fresno with Downtown Fresno and has freeway-to-freeway interchanges at State Route 99, State Route 41 and State Route 168. East of Fresno, State Route 180 provides access to Kings Canyon and Sequoia National Parks. West of Fresno, State Route 180 connects to the cities of Kerman and Mendota.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Existing Traffic Conditions scenario. These warrants are found in Appendix J. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized intersections satisfy the peak hour signal warrant during either peak period.

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.

At present, all intersections operate at an acceptable LOS.

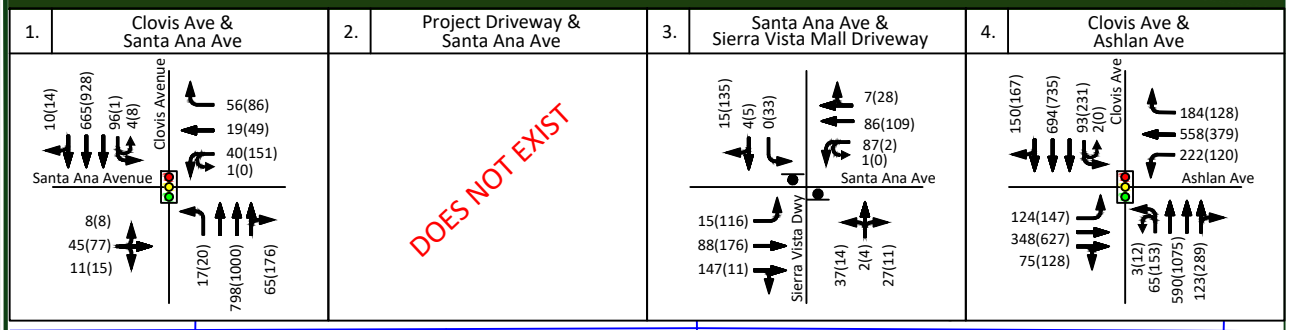
Table I: Existing Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM Peak Hour*		*PM Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Clovis Avenue / Santa Ana Avenue	Signalized	17.0	B	22.0	C
2	Project Driveway / Santa Ana Avenue	Does Not Exist	N/A	N/A	N/A	N/A
3	Sierra Vista Mall Driveway / Santa Ana Avenue	Two-Way Stop	15.4	C	14.3	B
4	Clovis Avenue / Ashlan Avenue	Signalized	37.6	D	50.6	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.

Residence Inn - City of Clovis
Existing - Traffic Volumes, Geometrics and Controls

Figure 2



LEGEND

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Existing plus Project Traffic Conditions

Project Description

The Project proposes to build a 110-room extended stay, business traveler, mid-scale Residence Inn (Project) located on the southeast corner of Clovis Avenue and Santa Ana Avenue in the City of Clovis. Based on information provided to JLB, the Project is consistent with the City of Clovis 2035 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 primarily be from one (1) access to Santa Ana Avenue located north of the proposed Project. The proposed access point is located on along the south side of Santa Ana Avenue approximately 250 feet east of Clovis Avenue and is planned as a right-in, right-out access only. The Project will also have a cross access agreement with properties to the south, giving it a second point of access to Gettysburg Avenue approximately 320 feet east of Clovis Avenue. 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 driveways to be constructed indicates that they are located at points the minimize traffic operational impacts to the existing roadway network.

Trip Generation

Trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table II presents the trip generation for the proposed Project with trip generation rates for an All-Suites Hotel. At buildout, the proposed Project is estimated to generate a maximum of 491 daily trips, 37 AM peak hour trips and 40 PM peak hour trips.

Table II: Project Trip Generation

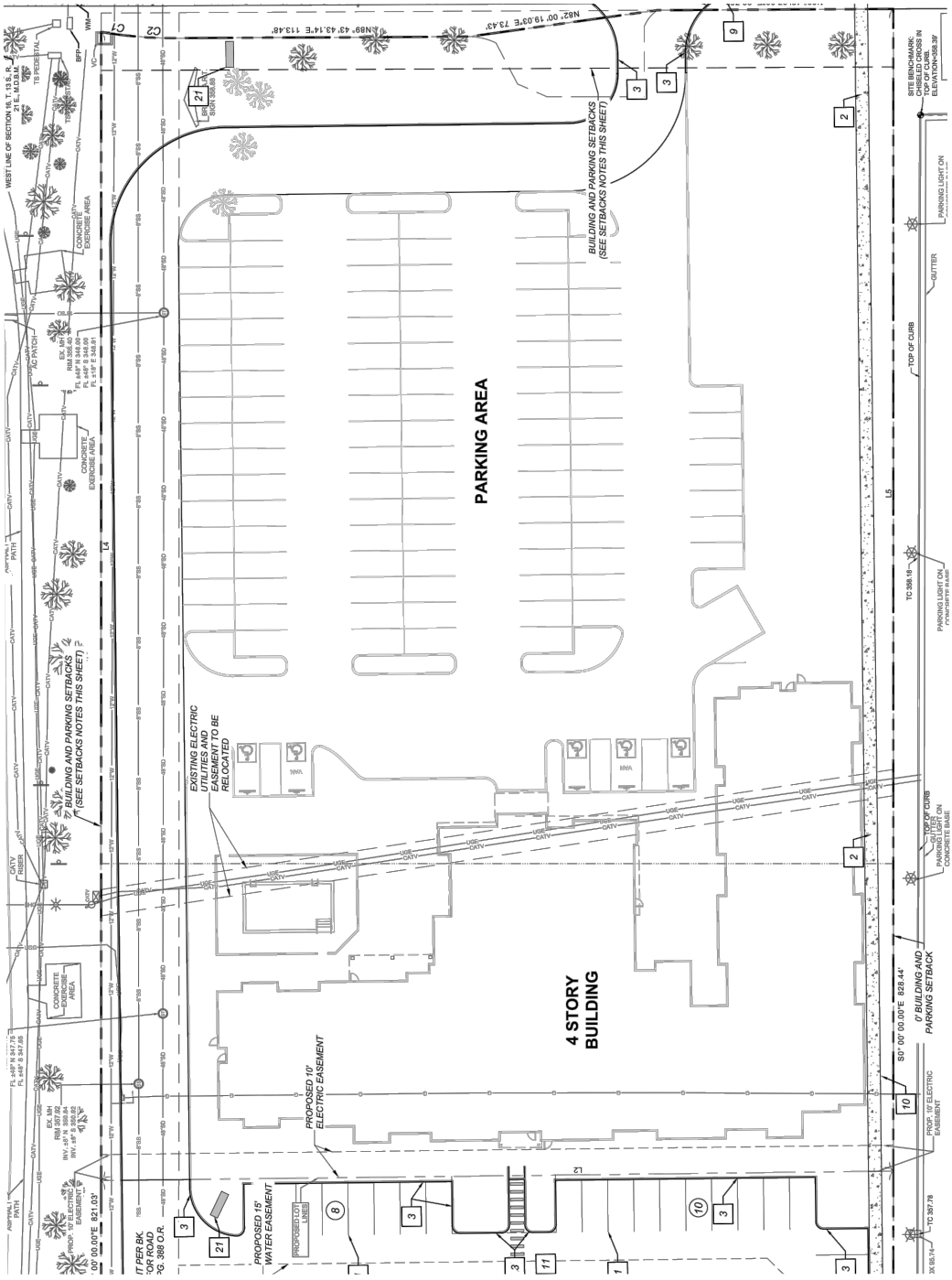
Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM Peak Hour*						*PM Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
All Suites Hotel (331)	110	rooms	4.46	491	0.34	53	47	20	17	37	0.36	48	52	17	21	40
Total Project Trips				**491**				**20**	**17**	**37**				**17**	**21**	**40**

Trip Distribution

The trip distribution assumptions were developed based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgement, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Clovis 2035 General Plan Circulation Element in the vicinity of the Project. Figure 4 illustrates the Project Only Trips to the study intersections.

Residence Inn - City of Clovis
Project Site Plan

Figure 3



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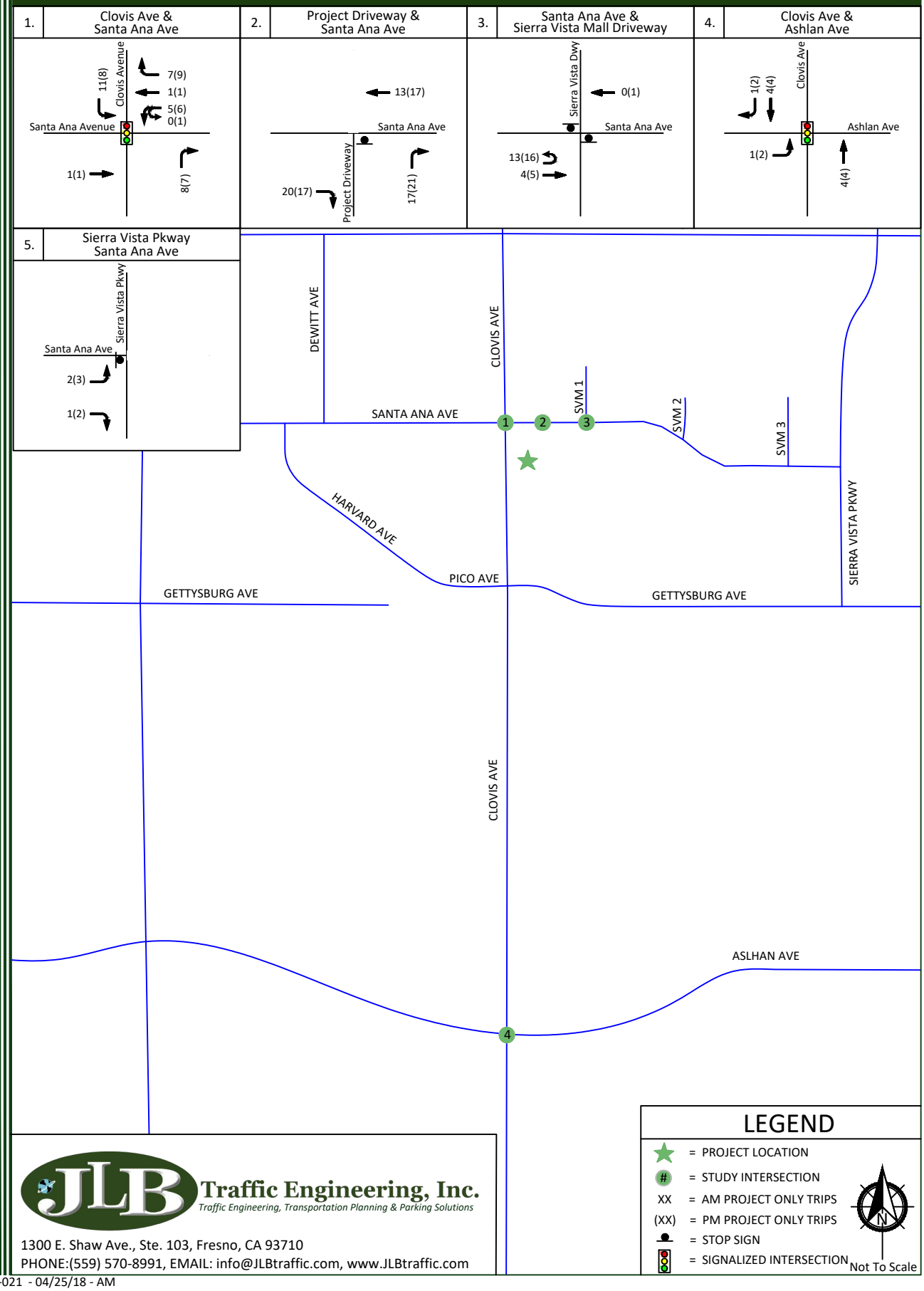
Residence Inn - City of Clovis
Project Only Trips

Figure 4



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Bikeways

Currently, bike lanes exist in the vicinity of the proposed Project site adjacent to the east side of Clovis Avenue and along Ashlan Avenue. The City of Clovis 2035 General Plan Circulation Element recommends that a Class III Bike Route be implemented on Santa Ana Avenue between Winery Avenue and Sierra Vista Parkway.

Transit

Clovis Stageline is the transit operator in the City of Clovis. At present, there are no transit routes operating in the vicinity of the proposed Project. The closest is Route 50, which runs on Shaw Avenue and Cole Avenue, approximately 0.43 miles to the northeast of the proposed Project. Route 50 operates at 30-minute intervals on weekdays and weekends and its nearest stop to the Project site is located on the north side of Shaw Avenue approximately 320 feet west of Cole Avenue. This route provides a direct connection to Kaiser Medical Center, Clovis Community Hospital, Miss Winkles Animal Shelter, Clovis High School, Clovis Civic Center, Cal Skate, Costco/Clovis Industrial Park, Kaplan College and the Department of Motor Vehicles. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and available funding.

Fresno Area Express (FAX) is the transit operator in the City of Fresno. At present, there are no FAX transit routes that operate in the vicinity of the proposed Project. The closest is FAX Route 9, which runs on Shaw Avenue and Cole Avenue, approximately 0.43 miles to the northeast of the proposed Project. Route 9 operates at 30-minute intervals on weekdays and weekends and its nearest stop to the Project site is Shaw Avenue and Cole Avenue, approximately 0.43 miles to the northeast of the proposed Project. This route provides a direct connection to Forestiere Underground Gardens, Fig Garden Shopping Center, Fashion Fair, Fresno State and Vinland Park. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and available funding.

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Existing plus Project Traffic Conditions scenario. These warrants are found in Appendix J. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized intersections satisfy the peak hour signal warrant during either peak period.

Results of Existing plus Project Level of Service Analysis

The Existing plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. 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 III presents a summary of the Existing plus Project peak hour LOS at the study intersections.

Under this scenario, all study intersections are projected to operate at an acceptable LOS.

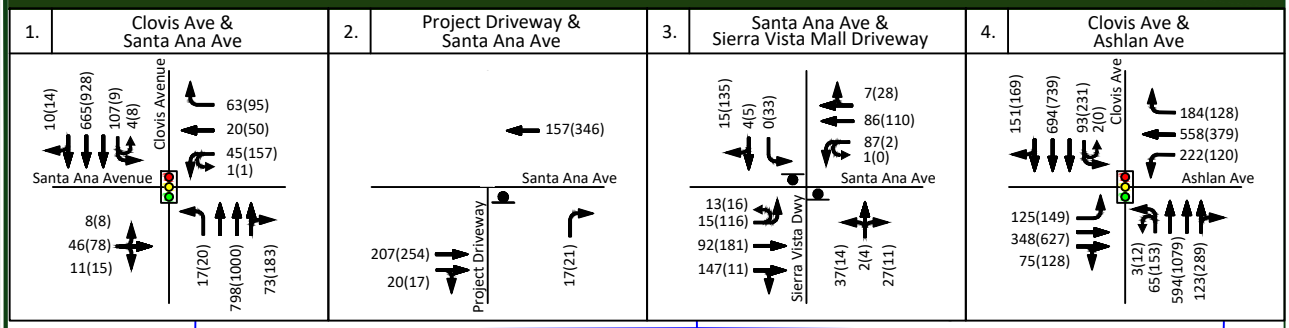
Table III: Existing plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM Peak Hour*		*PM Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Clovis Avenue / Santa Ana Avenue	Signalized	18.4	B	31.7	C
2	Project Driveway / Santa Ana Avenue	Two-Way Stop	8.4	A	8.4	A
3	Sierra Vista Mall Driveway / Santa Ana Avenue	Two-Way Stop	19.1	C	11.1	B
4	Clovis Avenue / Ashlan Avenue	Signalized	38.0	D	50.5	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.

Residence Inn - 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 Approved and Pipeline Projects

Approved and Pipeline 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, City of Fresno, County of Fresno and Caltrans staff were consulted throughout the preparation of this TIA regarding approved and/or known projects that could potentially impact the study intersections. JLB staff conducted a reconnaissance of the surrounding area to confirm the near term projects. Subsequently, it was agreed that the projects listed in Table VIII were approved, near approval, or in the pipeline within the proximity of the proposed Project.

The trip generation listed in Table IV is that which is anticipated to be added to the streets and highways by these projects between the time of the preparation of this report and five years after buildout of the proposed Project. As shown in Table IV, the total trip generation for the near term projects is 7,043 daily trips, 407 AM peak hour trips and 638 PM peak hour trips. Figure 6 illustrates the location of the approved, near approval, or pipeline projects and their combined trip assignment to the study intersections and segments under the Near Term plus Project Traffic Conditions scenario.

Table IV: Near Term Projects' Trip Generation

Approved Project Location	*Approved or Pipeline Project Name*	*Daily Trips*	*AM Peak Hour*	*PM Peak Hour*
A	Costco[1]	4,330	206	389
B	Home 2 Suites[2]	495	38	40
C	Low-Rise Apartments[3]	1,426	100	126
D	Single-Family Housing[3]	792	63	83
Total Approved and Pipeline Project Trips		**7,043**	**407**	**638**

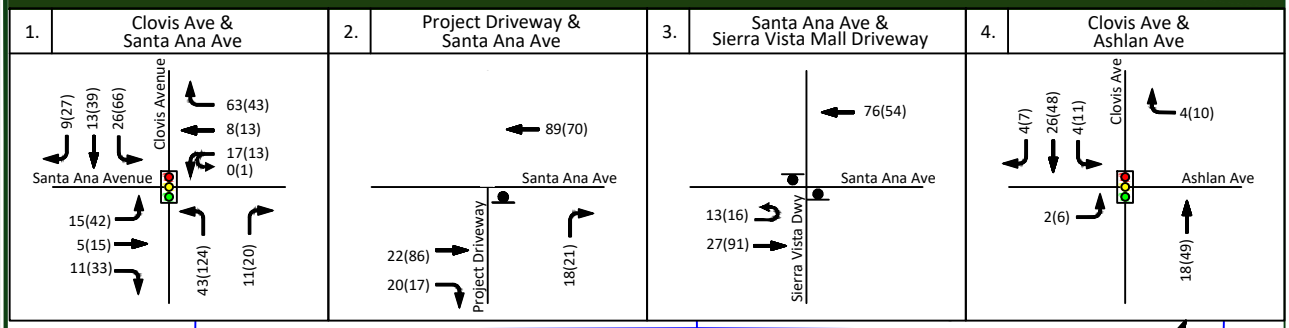
Note: 1 = Trip Generation obtained from Traffic Study prepared by Kittelson & Associates, Inc.
2 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information
3 = Trip Generation obtained from Traffic Study prepared by Peters Engineering Group

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Near Term plus Project Traffic Conditions scenario. These warrants are found in Appendix J. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized intersections satisfy the peak hour signal warrant during either peak period.

Residence Inn - City of Clovis
Near Term Projects' Trip Assignment

Figure 6



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- (#) = NEAR TERM PROJECT LOCATION

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Results of Near Term plus Project Level of Service Analysis

The Near Term plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. 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 V presents a summary of the Near Term plus Project peak hour LOS at the study intersections.

Under this scenario, all study intersections are projected to operate at an acceptable LOS.

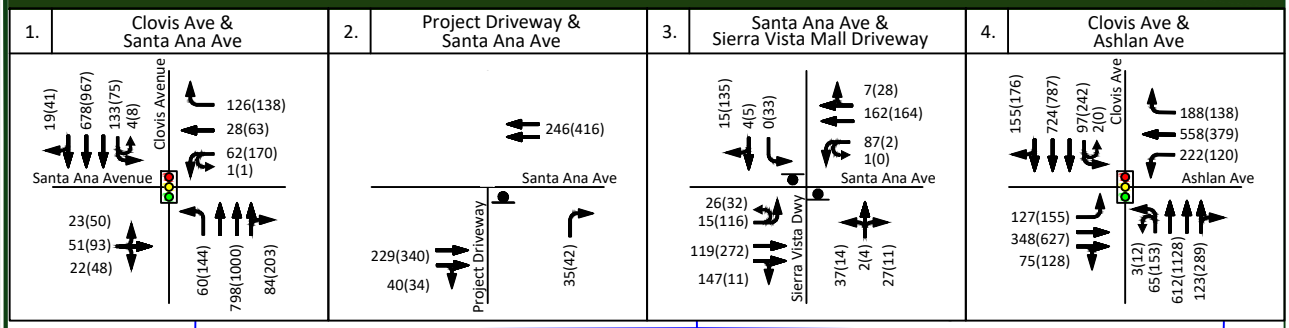
Table V: Near Term plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM Peak Hour*		*PM Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Clovis Avenue / Santa Ana Avenue	Signalized	25.2	C	32.5	C
2	Project Driveway / Santa Ana Avenue	Two-Way Stop	8.6	A	8.8	A
3	Sierra Vista Mall Driveway / Santa Ana Avenue	Two-Way Stop	20.4	C	18.8	C
4	Clovis Avenue / Ashlan Avenue	Signalized	38.5	D	53.3	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.

Residence Inn - City of Clovis
Near Term plus Project - Traffic Volumes, Geometrics and Controls

Figure 7



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Cumulative Year 2035 No Project Traffic Conditions

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2035 No Project Traffic Conditions scenario. These warrants are found in Appendix J. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized intersections satisfy the peak hour signal warrant during either peak period.

Results of Cumulative Year 2035 No Project Level of Service Analysis

The Cumulative Year 2035 No Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 8 illustrates the Cumulative Year 2035 No Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2035 No Project Traffic Conditions scenario are provided in Appendix H. Table VI presents a summary of the Cumulative Year 2035 No Project peak hour LOS at the study intersections.

Under this scenario, the intersection of Clovis Avenue and Ashlan Avenue is projected to fall to LOS E during the PM peak period. To improve the LOS at this intersection, it would be necessary to widen Ashlan Avenue to a four-lane facility west of Clovis Avenue. However, City Council made the appropriate findings to designate LOS F as the criteria of significance for Ashlan Avenue as a two-lane facility between Minnewawa Avenue and Clovis Avenue. As a result, the LOS threshold for the intersection of Clovis Avenue and Ashlan Avenue would be LOS F.

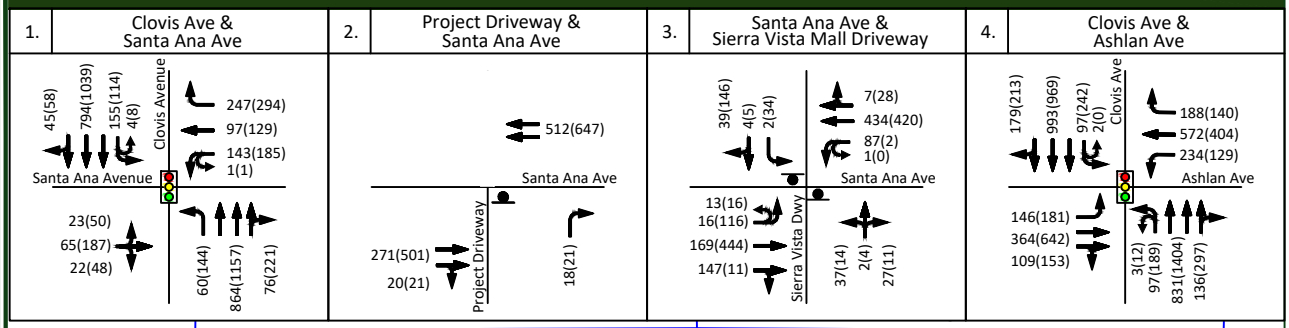
Table VI: Cumulative Year 2035 No Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM Peak Hour*		*PM Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Clovis Avenue / Santa Ana Avenue	Signalized	27.0	C	44.6	D
2	Project Driveway / Santa Ana Avenue	Two-Way Stop	9.3	A	10.2	B
3	Sierra Vista Mall Driveway / Santa Ana Avenue	Two-Way Stop	18.3	C	27.7	D
4	Clovis Avenue / Ashlan Avenue	Signalized	49.0	D	70.6	E

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Residence Inn - City of Clovis
Cumulative Year 2035 No Project - Traffic Volumes, Geometrics and Controls

Figure 8



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Cumulative Year 2035 plus Project Traffic Conditions

Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2035 plus Project Traffic Conditions scenario. These warrants are found in Appendix J. The effects of right-turning traffic from the minor approach onto the major approach were taken into account using engineering judgement pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized intersections satisfy the peak hour signal warrant during either peak period.

Results of Cumulative Year 2035 plus Project Level of Service Analysis

The Cumulative Year 2035 plus Project Traffic Conditions scenario assumes that the Existing plus Project roadway geometrics and traffic controls will remain in place. Figure 9 illustrates the Cumulative Year 2035 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2035 plus Project Traffic Conditions scenario are provided in Appendix I. Table VII presents a summary of the Cumulative Year 2035 plus Project peak hour LOS at the study intersections.

Similar to the Cumulative Year 2035 No Project Traffic Conditions scenario, under this scenario, the intersection of Clovis Avenue and Ashlan Avenue is projected to fall to LOS E during the PM peak period. To improve the LOS at this intersection, it would be necessary to widen Ashlan Avenue to a four-lane facility west of Clovis Avenue. However, City Council made the appropriate findings to designate LOS F as the criteria of significance for Ashlan Avenue as a two-lane facility between Minnewawa Avenue and Clovis Avenue. As a result, the LOS threshold for the intersection of Clovis Avenue and Ashlan Avenue would be LOS F.

Table VII: Cumulative Year 2035 plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM Peak Hour*		*PM Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Clovis Avenue / Santa Ana Avenue	Signalized	27.8	C	46.0	D
2	Project Driveway / Santa Ana Avenue	Two-Way Stop	9.5	A	10.5	B
3	Sierra Vista Mall Driveway / Santa Ana Avenue	Two-Way Stop	19.4	C	30.4	D
4	Clovis Avenue / Ashlan Avenue	Signalized	49.3	D	71.1	E

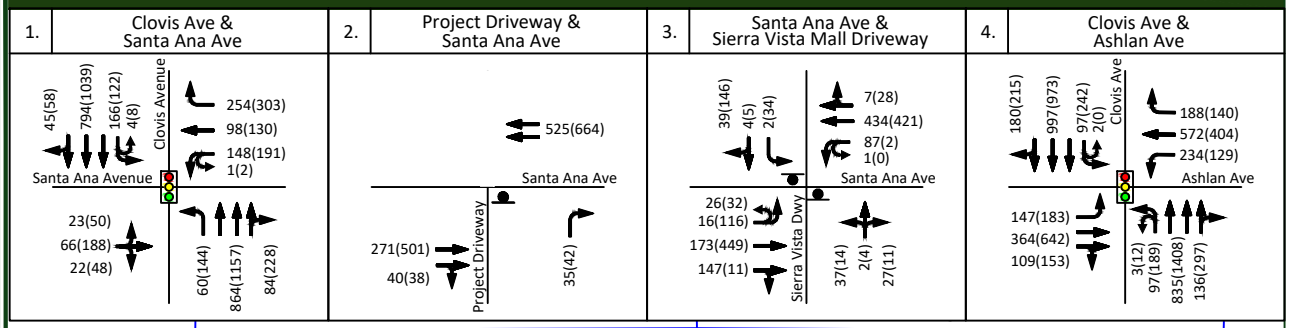
Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Project's Trip Assignment to Caltrans Facilities

The Project Only Trip assignment to the interchanges of State Route 168 at Shaw Avenue and State Route 180 at Clovis Avenue are illustrated in Figures 10 and 11, respectively.

Residence Inn - City of Clovis
Cumulative Year 2035 plus Project - Traffic Volumes, Geometrics and Controls

Figure 9



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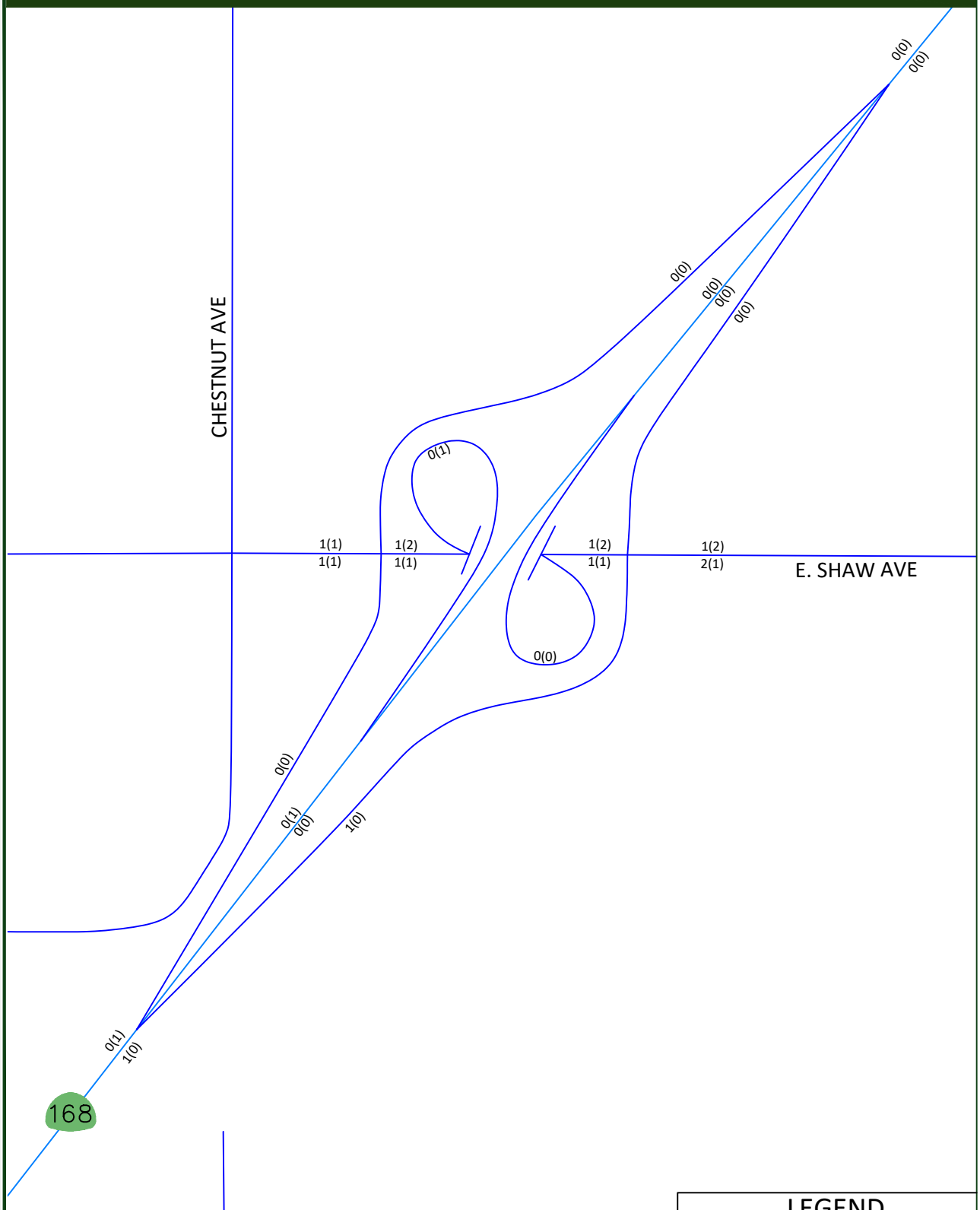
Residence Inn - City of Clovis
State Route 180 at Shaw Avenue Interchange - Project Only Trips

Figure 10



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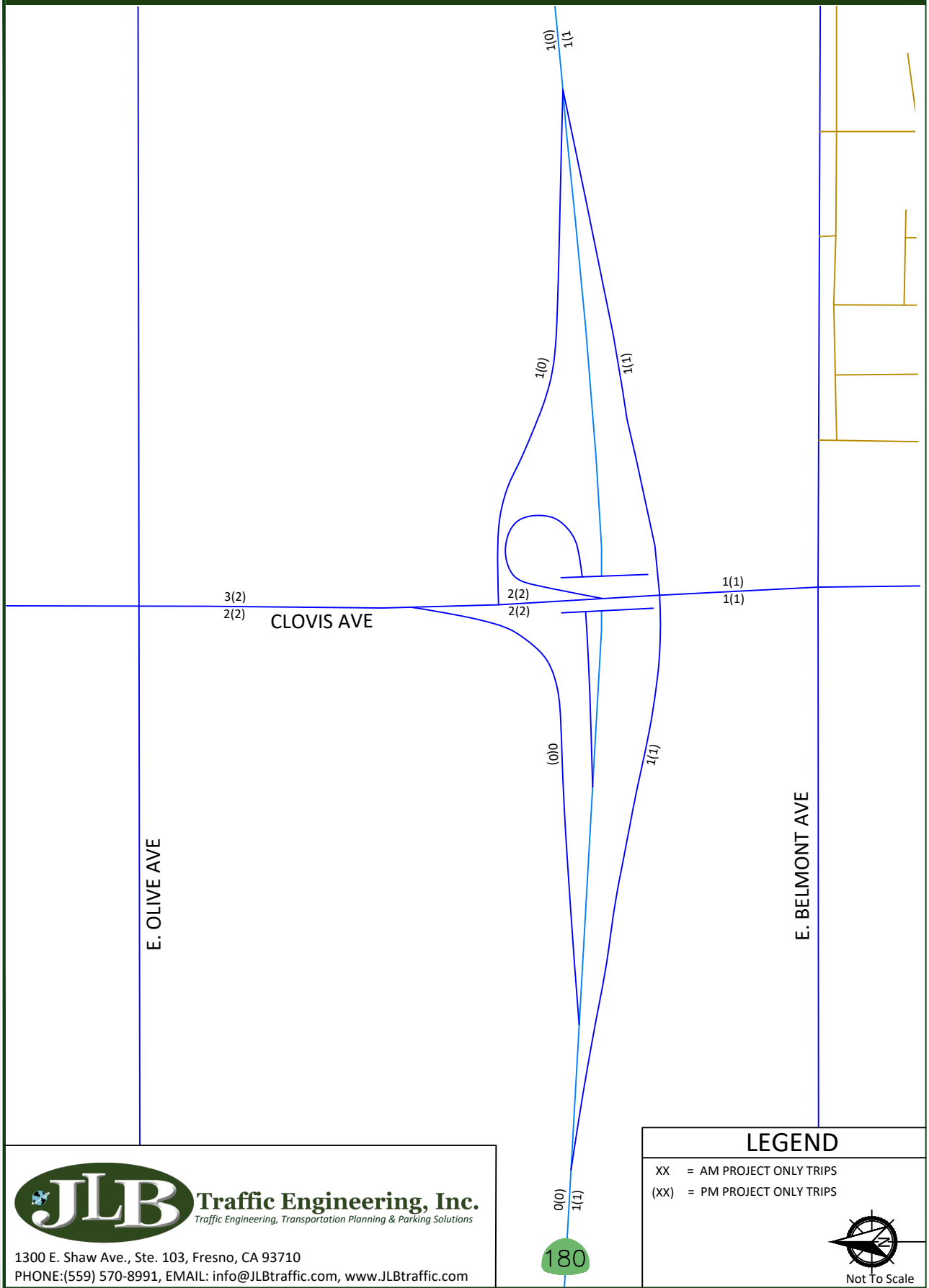
Residence Inn - City of Clovis
State Route 180 at Clovis Avenue Interchange - Project Only Trips

Figure 11



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Queuing Analysis

Table VIII provides a queue length summary for left- 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 Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "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." The queues shown on Table VIII are the 95th percentile queue lengths for the respective lane movements.

The Highway Design Manual (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the 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." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented in Table VIII.

Based on the SimTraffic output files and engineering judgement, it is recommended that the storage capacity for the following be considered for the Cumulative Year 2035 plus Project Traffic Conditions.

- Clovis Avenue and Santa Ana Avenue
  - The existing storage capacity of the westbound left-turn lane exceeds that available for the PM peak period in the Existing Traffic Conditions scenario by two (2) feet. However, increasing the storage capacity of the westbound left-turn pocket is not possible without reducing the existing storage capacity of the eastbound left-turn pocket of the intersection of Sierra Vista Mall Driveway and Santa Ana Avenue. Therefore, it is recommended that this movement be monitored.
  - Consider increasing the storage capacity of the northbound left-turn lane to 275 feet.
  - The existing storage capacity of the southbound left-turn lane exceeds that available by approximately 45 feet. However, increasing the storage capacity of the southbound left-turn pocket is not possible without reducing the existing storage capacity of the northbound left-turn pocket just north of Santa Ana Avenue. Therefore, it is recommended that this movement be monitored.
- Clovis Avenue and Ashlan Avenue
  - The existing storage capacity of the eastbound left-turn lane is projected to exceed that available for the PM peak period in the Cumulative Year 2035 plus Project Traffic Conditions scenario. However, the storage capacity of the eastbound left-turn pocket cannot be increased without reducing the storage capacity of the westbound left-turn pocket at the intersection of Hammel Way and Ashlan Avenue. Therefore, it is recommended that this movement be monitored.
  - Consider increasing the storage capacity of the westbound left-turn lane to 275 feet.
  - Consider increasing the storage capacity of the westbound right-turn lane to 300 feet.
  - Consider increasing the storage capacity of the northbound left-turn lane to 325 feet.
  - Consider increasing the storage capacity of the southbound left-turn lane to 325 feet.

Table VIII: Queuing Analysis

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term plus Project		Cumulative Year 2035 No Project		Cumulative Year 2035 plus Project	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Clovis Avenue / Santa Ana Avenue	WB Left	220	61	222	63	213	80	162	147	203	165	216
		WB Right	>500	51	52	54	99	72	70	114	121	106	144
		NB Left	185	30	26	42	21	61	185	80	246	77	259
		SB Left	185	109	60	111	39	140	156	152	230	204	163
2	Project Driveway / Santa Ana Avenue	NB Right	>300	*	*	45	44	46	49	*	*	43	47
3	Sierra Vista Mall Driveway / Santa Ana Avenue	EB Left	140	12	33	9	52	13	54	26	57	36	63
		WB Left	185	37	0	51	0	33	0	38	0	46	0
		SB Left	130	0	42	0	45	0	45	10	45	14	55
4	Clovis Avenue / Ashlan Avenue	EB Left	200	156	277	222	278	197	278	175	278	196	278
		WB Left	180	258	227	253	234	254	243	251	271	252	255
		WB Right	180	293	208	293	251	293	260	293	293	293	293
		NB Left	200	97	262	93	230	106	280	131	325	144	325
		SB Left	225	124	252	109	309	94	309	161	309	123	309

Note: * = Does not exist or is not projected to exist

Project's Pro-Rata Fair Share of Future Transportation Improvements

The Project's fair share percentage impact to study intersections projected to fall below their LOS threshold and which are not covered by an existing impact fee program is provided in Table IX. The Project's fair share percentage impacts were calculated pursuant to the Caltrans Guide for the Preparation of Traffic Impact Studies. The Project's pro-rata fair shares were calculated utilizing the Existing volumes, Project Only Trips and Cumulative Year 2035 plus Project volumes. Figure 2 illustrates the Existing traffic volumes, Figure 4 illustrates the Project Only Trips, and Figure 9 illustrates the Cumulative Year 2035 plus Project traffic volumes. Since the critical peak period for the study facilities was determined to be during the PM peak, the PM peak volumes are utilized to determine the Project's pro-rata fair share.

It is recommended that the Project contribute its equitable fair share as listed in Table IX for the future improvements necessary to maintain an acceptable queuing capacity. However, fair share contributions should only be made for those facilities or portion thereof currently not funded by the responsible agencies roadway impact fee program(s), as appropriate. For those improvements not presently covered by local and regional roadway impact fee programs, it is recommended that the Project contribute its equitable fair share. Payment of the Project's equitable fair share in addition to the local and regional impact fee programs would satisfy the Project's traffic mitigation measures.

This study does not provide construction costs for the recommended mitigation measures; therefore, if the recommended mitigation measures are implemented, it is recommended that the developer work with the City of Clovis to develop the estimated construction cost.

Table IX: Project's Fair Share of Future Roadway Improvements

ID	*Intersection*	*Existing Traffic Volumes (PM Peak)*	*Cumulative Year 2035 plus Project Traffic Volumes (PM Peak)*	*Project Only Trips (PM Peak)*	*Project's Fair Share (%)*
1	Clovis Avenue / Santa Ana Avenue	2,533	3,668	33	2.91%
4	Clovis Avenue / Ashlan Avenue	4,191	4,987	12	1.51%

Note: Project Fair Share = ((Project Only Trips) / (Cumulative Year 2035 + Project Traffic Volumes - Existing Traffic Volumes)) x 100

Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

Existing Traffic Conditions

- At present, all intersections operate at an acceptable LOS.

Existing plus Project Traffic Conditions

- A review of the Project driveways to be constructed indicates that they are located at points the minimize traffic operational impacts to the existing roadway network.
- At buildout, the proposed Project is estimated to generate a maximum of 491 daily trips, 37 AM peak hour trips and 40 PM peak hour trips.
- Under this scenario, all study intersections are projected to operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the near term projects is 7,043 daily trips, 407 AM peak hour trips and 638 PM peak hour trips.
- Under this scenario, all study intersections are projected to operate at an acceptable LOS.

Cumulative Year 2035 No Project Traffic Conditions

- Under this scenario, all study intersections are projected to operate at an acceptable LOS.

Cumulative Year 2035 plus Project Traffic Conditions

- Similar to the Cumulative Year 2035 No Project Traffic Conditions scenario, under this scenario, all study intersections are projected to operate at an acceptable LOS.

Queuing Analysis

- It is recommended that the City consider left- and right-turn lane storage lengths as indicated in Table VIII.

Project's Equitable Fair Share

- It is recommended that the Project contribute its equitable Fair Share as presented in Table IX.

Study Participants

JLB Traffic Engineering, Inc. Personnel:

Jose Luis Benavides, PE, TE	Project Manager
Susana Maciel, EIT	Engineer I/II
Alan Miao, EIT	Engineer I/II
Jove Alcazar	Engineer I/II

Persons Consulted:

Sean Smith, RCE, QSD	City of Clovis
Jill Gormley, PE	City of Fresno
Harpreet Kooner	County of Fresno
Tong Xiong	County of Fresno
David Padilla	Caltrans
Kai Han, TE	Fresno COG
Lang Yu	Fresno COG

References

1. City of Clovis, *2035 General Plan*.
2. City of Fresno, *2035 General Plan*.
3. County of Fresno, *2000 General Plan*.
4. *Guide for the Preparation of Traffic Impact Studies*, Caltrans, dated December 2002.
5. *Trip Generation,* 10th Edition, Washington D.C., Institute of Transportation Engineers, 2017.
6. *2014 California Manual on Uniform Traffic Control Devices*, Caltrans, November 7, 2014.

Appendix A: Scope of Work

March 23, 2018

Sean Smith, RCE, QSD
Associate Engineer
City of Clovis
1033 Fifth Street
Clovis, CA 93612

Via E-mail Only: seans@cityofclovis.com

Subject: ***Draft Scope of Work for the Preparation of a Traffic Impact Analysis for the proposed Residence Inn Hotel at the Southeast Corner of Clovis Avenue and Santa Ana Avenue in the City of Clovis (JLB Project 06-021)***

Dear Mr. Smith,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Draft Scope of Work for the preparation of a Traffic Impact Analysis (TIA) for the Project described below. The Project proposes to build a 130 Room Residence Inn extended stay business traveler/ mid-scale hotel (Project) at the southeast corner of Clovis Avenue and Santa Ana Avenue in the City of Clovis. Based on information provided to JLB, the Project consistent with the City's general plan land use designation. An aerial of the Project vicinity and the Project site plan can be found in Exhibits A and B respectively.

The purpose of this TIA is to evaluate the potential on- and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. To evaluate the on- and off-site traffic impacts of the proposed Project, JLB proposes the following Draft Scope of Work.

Scope of Work

- 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 2018 and Cumulative Year 2035 plus Project scenarios.
- JLB will evaluate existing and forecast levels of service (LOS) at the study intersection(s). JLB will use HCM 2010 methodologies within Synchro to perform this analysis for the AM and PM peak hours. JLB will identify the cause(s) of poor LOS and proposed improvement measures (if any).
- Evaluate on-site circulation and provide recommendations as necessary to improve circulation to and within the Project site.
- As necessary, JLB will obtain recent or schedule and conduct new traffic counts at the study facility(ies).
- 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.

- Forecast trip distribution will be made on the basis of turn count information and knowledge of the existing and planned circulation network in the vicinity of the Project.
- Prepare California Manual on Uniform Traffic Control Devices (CA MUTCD) peak hour signal warrants for unsignalized study intersections.
- JLB will conduct a qualitative transit evaluation in the vicinity to the Project.
- JLB will conduct a qualitative bikeways evaluation in the vicinity to the Project.

Study Scenarios:

1. Existing Traffic Conditions with proposed improvement measures (if any)
2. Existing plus Project Traffic Conditions with proposed mitigation measures (if any)
3. Near Term plus Project Traffic Conditions with proposed mitigation measures (if any)
4. Cumulative Year 2035 plus Project Traffic Conditions with proposed mitigation measures (if any)

Weekday peak hours to be analyzed:

1. 7 - 9 AM peak hour
2. 4 - 6 PM peak hour

Study Intersections:

1. Santa Ana Avenue / Clovis Avenue
2. Santa Ana Avenue / Proposed Right-in and Right-out Access Road

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- and right-turn lanes at all study intersections.

Study Segments:

1. None

Project Only Trip Assignment to Caltrans Facilities:

1. SR 168 / Shaw Avenue
2. SR 180 / Clovis Avenue

Project Only Trip Generation

Table I presents the trip generation for the proposed Project pursuant to the 10th Edition of the Trip Generation Manual with trip generation rates for an All Suites Hotel. At build-out, the Project is estimated to generate a maximum of 580 daily trips, 44 AM peak hour trips and 47 PM peak hour trips.

Table I: Project Only 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
All Suites Hotel (311)	130	rooms	4.46	580	0.34	53	47	23	21	44	0.36	48	52	23	24	47
Total Project Trips				**580**				**23**	**21**	**44**				**23**	**24**	**47**

Access to the Project

Access to and from the Project site will be primarily from the north side of the Project location near Santa Ana Avenue. The proposed access point is located along the south side of Santa Ana Avenue, approximately 250 feet east of Clovis Avenue, and is planned as full access. The Project will also have a cross access agreement with properties to the south giving it a second point of access to Gettysburg Avenue at a point approximately 320 feet east of Clovis Avenue. Additional Project details are found in Exhibit B.

Near Term Projects to be Included

JLB is working with City of Clovis Engineering and Planning staff to identify Near Term Projects in the vicinity of the proposed Project. The Near Term Projects would then be included under the Near Term plus Project analysis. At this point, the proposed Near Term Projects to be included in the Near Term plus Project analysis are the following:

1. Residential Development — SWC of Sierra Vista Parkway and Santa Ana Avenue
2. Costco — NWC of Clovis Avenue and Santa Ana Avenue

JLB will also include in the Near Term plus Project scenario Near Term Projects provided to us by the City of Clovis or other responsible agencies. These would include Near Term Projects the City of Clovis, County of Fresno or Caltrans has knowledge of and for which it is anticipated that said Project(s) is/are projected to be whole or partially built by the Year 2020, and for which the City of Clovis, County of Fresno and Caltrans, as appropriate, provides JLB with Near Term Project details. Near Term Project details include Project description, location, proposed land uses with breakdowns and type of residential units and amount of square footages for non-residential uses.

The above scope of work is based on our understanding of this Project and our experience with similar Traffic Impact Analysis Projects. In the absence of comments by April 12, 2017, it will be assumed that the above scope of work is acceptable to the agency(ies) that have not submitted any comments to the proposed TIA Scope of Work.

If you have any questions or require additional information, please contact me by phone at (559) 570-8991 or by e-mail at jbenavides@JLBtraffic.com.

Sincerely,

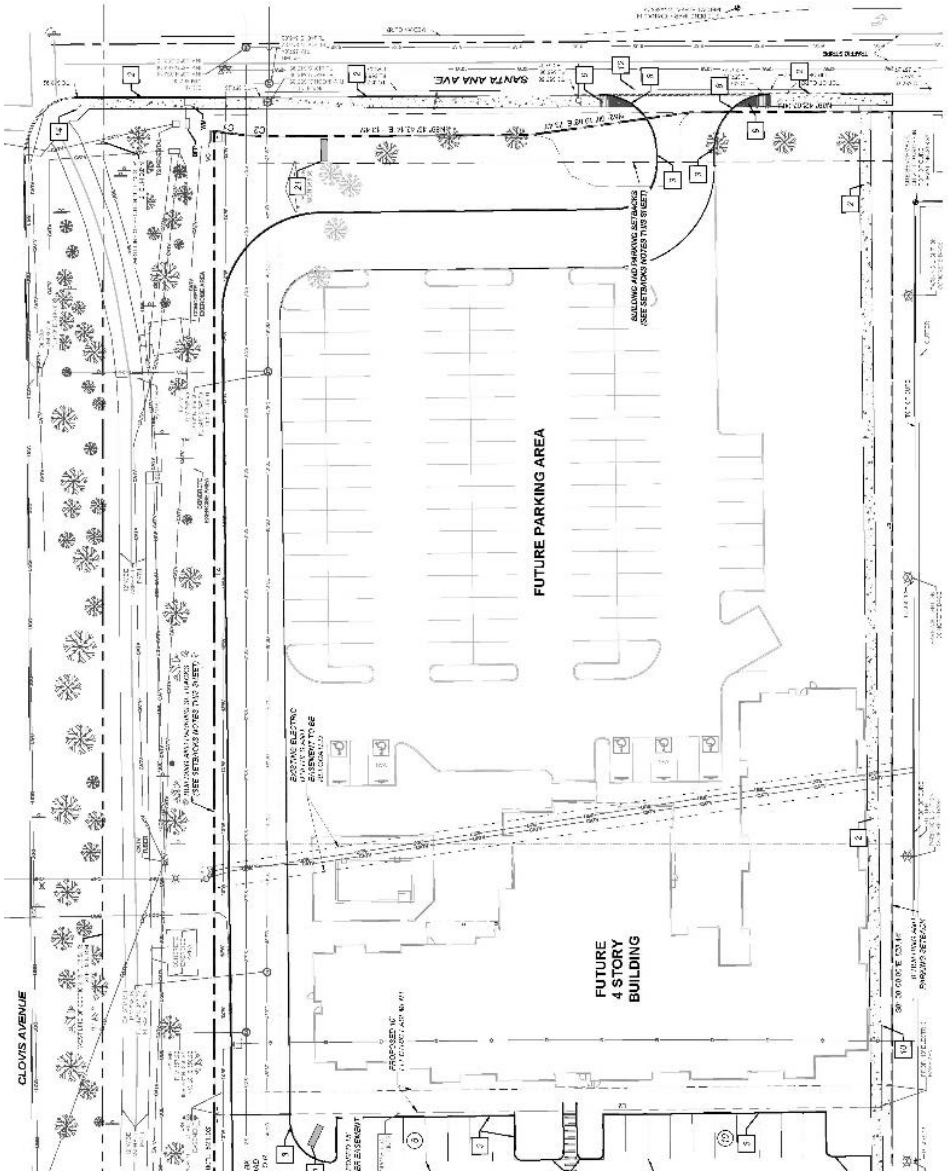
Jose Luis Benavides, P.E., T.E.
President

cc: Jill Gormley, P.E., City of Fresno
Harpreet Kooner, County of Fresno
Tong Xiong, County of Fresno
David Padilla, Caltrans

Z:\01 Projects\006 Clovis\006-021 Residence Inn TIA\Draft Scope of Work\L03232017 Draft Scope of Work.docx

Exhibit A – Aerial

Exhibit B – Site Plan



Jose Benavides

From: Jill Gormley <Jill.Gormley@fresno.gov>
Sent: Tuesday, April 3, 2018 4:32 PM
To: Jose Benavides; Harpreet Kooner (HKooner@co.fresno.ca.us); Xiong, Tong (PWP); David Padilla (dave_padilla@dot.ca.gov)
Cc: Sean Smith
Subject: RE: Residence Inn TIA Draft Scope of Work

I have no comments.

jmg

From: Jose Benavides [mailto:jbenavides@jlbtraffic.com]
Sent: Friday, March 23, 2018 5:55 PM
To: Jill Gormley; Harpreet Kooner (HKooner@co.fresno.ca.us); Xiong, Tong (PWP); David Padilla (dave_padilla@dot.ca.gov)
Cc: Sean Smith
Subject: FW: Residence Inn TIA Draft Scope of Work

Good afternoon,

Attached is the proposed scope of work for the proposed 130 unit Residence Inn All Suites Hotel at proposed for the SE corner of Clovis Avenue and Santa Ana Avenue. As you will notice, the trip generation for this project is relatively low with just under 50 PM peak hour trips. However, we understand that the City of Clovis has received concern over traffic operations in the vicinity of the proposed Project and as a result a TIA will be prepared. In the absence of comments by April 12, 2017, it will be assumed that the above scope of work is acceptable to the agency(ies) that have not submitted any comments to the proposed TIA Scope of Work.

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)

1300 E. Shaw Ave., Ste. 103
Fresno, CA 93710
Office: (559) 570-8991
Cell: (559) 694-6000
www.JLBtraffic.com

Jose Benavides

From: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Sent: Friday, April 6, 2018 2:04 PM
To: Jose Benavides; Jill Gormley (Jill.Gormley@fresno.gov); Harpreet Kooner (HKooner@co.fresno.ca.us); Xiong, Tong (PWP)
Cc: Sean Smith
Subject: RE: Residence Inn TIA Draft Scope of Work

Jose,

We no concerns with the SOW.

Thank you

David Padilla, Associate Transportation Planner
Office of Planning & Local Assistance
1352 W. Olive Avenue
Fresno, CA 93778-2616
Office: (559) 444-2493, Fax: (559) 445-5875
District 6

From: Jose Benavides [mailto:jbenavides@jlbtraffic.com]
Sent: Friday, March 23, 2018 5:55 PM
To: Jill Gormley (Jill.Gormley@fresno.gov) <Jill.Gormley@fresno.gov>; Harpreet Kooner (HKooner@co.fresno.ca.us) <HKooner@co.fresno.ca.us>; Xiong, Tong (PWP) <tonxiong@co.fresno.ca.us>; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Cc: Sean Smith <SeanS@ci.clovis.ca.us>
Subject: FW: Residence Inn TIA Draft Scope of Work

Good afternoon,

Attached is the proposed scope of work for the proposed 130 unit Residence Inn All Suites Hotel at proposed for the SE corner of Clovis Avenue and Santa Ana Avenue. As you will notice, the trip generation for this project is relatively low with just under 50 PM peak hour trips. However, we understand that the City of Clovis has received concern over traffic operations in the vicinity of the proposed Project and as a result a TIA will be prepared. In the absence of comments by April 12, 2017, it will be assumed that the above scope of work is acceptable to the agency(ies) that have not submitted any comments to the proposed TIA Scope of Work.

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

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Jose Benavides

From: Xiong, Tong (PWP) <tonxiong@co.fresno.ca.us>
Sent: Wednesday, April 11, 2018 2:44 PM
To: Jose Benavides
Cc: Kooner, Harpreet; Daniele, Frank
Subject: RE: Residence Inn TIA Draft Scope of Work

Good afternoon Jose,

Thanks for giving us the opportunity to review the draft scope of work for the TIA for a proposed 130 room Residence Inn located at the SE corner of Clovis Avenue and Santa Ana Avenue within the City of Clovis. Fresno County Transportation Planning is generally in agreement with the contents of the scope of work.

The County has the following comments on the traffic scoping document:

1. Add Intersection
    a. Clovis Avenue/ Ashlan Avenue

2. Add Study Scenario
    a. Cumulative Year 2035 No Project

3. Trip Distribution: once the trip distribution is determined, please provide to County. County will review and evaluate if any additional County intersections and roadways need to be analyzed

In addition, Fresno County requests to be present at any traffic scoping meeting and be given the opportunity to review the prepared TIS. Please provide County of Fresno a copy of the TIS for review when it becomes available.

Regards,

Tong Xiong

Design Division
Department of Public Works and Planning
2220 Tulare Street, 7th Floor
Fresno, CA 93721
Tel: (559) 600-4532
E-mail: tonxiong@co.fresno.ca.us

Please consider the environment before printing this e-mailk

From: Jose Benavides <jbenavides@jlbtraffic.com>
Sent: Friday, March 23, 2018 5:55 PM
To: Jill Gormley (Jill.Gormley@fresno.gov) <Jill.Gormley@fresno.gov>; Kooner, Harpreet <HKooner@co.fresno.ca.us>; Xiong, Tong (PWP) <tonxiong@co.fresno.ca.us>; David Padilla (dave_padilla@dot.ca.gov) <dave_padilla@dot.ca.gov>
Cc: Sean Smith <SeanS@ci.clovis.ca.us>
Subject: FW: Residence Inn TIA Draft Scope of Work

County of Fresno

Internal Services Department (ISD) - IT Services
Service Desk 600-5900 (Help Desk)
CAUTION!!!
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Please check the senders email address carefully.
If you were not expecting to receive an email with attachments, please **DO NOT** open the file.
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Good afternoon,

Attached is the proposed scope of work for the proposed 130 unit Residence Inn All Suites Hotel at proposed for the SE corner of Clovis Avenue and Santa Ana Avenue. As you will notice, the trip generation for this project is relatively low with just under 50 PM peak hour trips. However, we understand that the City of Clovis has received concern over traffic operations in the vicinity of the proposed Project and as a result a TIA will be prepared. In the absence of comments by April 12, 2017, it will be assumed that the above scope of work is acceptable to the agency(ies) that have not submitted any comments to the proposed TIA Scope of Work.

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

JLB Traffic Engineering, Inc.

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Jose Benavides

From: Sean Smith <SeanS@ci.clovis.ca.us>
Sent: Wednesday, April 18, 2018 1:02 PM
To: Jose Benavides
Cc: Mike Harrison
Subject: RE: Residence Inn TIA Draft Scope of Work
Attachments: L03232017 Draft Scope of Work.pdf

Jose,
Please add the following two (2) items to the scope of the study

1. Trip Trace at Santa Ana and Sierra Vista.
2. Study the first intersection on Santa Ana east of Clovis due to future U-turn movements

If you have any questions, please feel free to contact me or other Engineering staff. *Please note that our counter is open from 8am – 3pm; staff is available for appointments only after 3 pm.*

Sean Smith, RCE, QSD
Associate Engineer / DRU Manager
City of Clovis
www.cityofclovis.com
1033 Fifth Street ■ Clovis, CA 93612
T 559.324.2363 ■ C 559.765.7505
email seans@cityofclovis.com

cc: project file

From: Jose Benavides [mailto:jbenavides@jlbtraffic.com]
Sent: Monday, April 02, 2018 1:35 PM
To: Sean Smith <SeanS@ci.clovis.ca.us>
Subject: FW: Residence Inn TIA Draft Scope of Work

Good afternoon Sean,

I am following up with you to inquire if you had any comments to the draft scope of work for the preparation of the TIA for the Residence Inn All-Suites Hotel at the SEC of Clovis Avenue and Santa Ana Avenue?

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

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From: Jose Benavides
Sent: Friday, March 23, 2018 10:51 AM
To: 'Sean Smith' <SeanS@ci.clovis.ca.us>
Subject: Residence Inn TIA Draft Scope of Work

Good morning Sean,

Attached is the proposed scope of work for the proposed 130 unit Residence Inn All Suites Hotel at proposed for the SE corner of Clovis Avenue and Santa Ana Avenue. As you will notice, the trip generation for this project is relatively low with just under 50 PM peak hour trips which would generally not necessitate a full TIA. However, we understand based on our phone conversation yesterday, that the City has received concern over traffic operations in the vicinity of the proposed Project. If upon review of the proposed project trip generation, the City determines that a full study is not needed let us know. If the City determines that a full TIA, we will forward this scope of work to the City of Fresno, County of Fresno and Caltrans.

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

JLB Traffic Engineering, Inc.

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Appendix B: Traffic Counts

JLB Traffic Engineering, Inc.

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File Name : 4.5.18 Clovis Santa Ana
Site Code : 00000000
Start Date : 4/5/2018
Page No : 1

Groups Printed- Unshifted - Bank 1

	CLOVIS Southbound					SANTA ANA Westbound					CLOVIS Northbound					SANTA ANA Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	34	108	0	0	142	10	1	5	0	16	0	126	22	4	152	1	4	0	0	5	315
07:15 AM	63	135	0	1	199	12	3	10	0	25	0	171	16	2	189	3	16	1	1	21	434
07:30 AM	26	165	1	0	192	18	5	29	0	52	7	246	15	4	272	2	11	4	0	17	533
07:45 AM	6	189	5	1	201	7	7	7	0	21	7	191	20	2	220	3	12	3	0	18	460
Total	129	597	6	2	734	47	16	51	0	114	14	734	73	12	833	9	43	8	1	61	1742
08:00 AM	5	176	4	0	185	4	4	10	0	18	3	190	14	2	209	0	6	3	2	11	423
08:15 AM	4	130	1	0	135	10	5	9	0	24	2	208	16	2	228	1	4	2	1	8	395
08:30 AM	2	96	3	1	102	6	4	11	0	21	6	174	25	3	208	0	7	4	1	12	343
08:45 AM	4	119	0	1	124	11	4	9	0	24	2	168	18	3	191	0	8	1	1	10	349
Total	15	521	8	2	546	31	17	39	0	87	13	740	73	10	836	1	25	10	5	41	1510
******																					
04:00 PM	17	235	2	0	254	46	15	24	0	85	9	248	42	1	300	4	20	4	0	28	667
04:15 PM	10	227	3	0	240	34	11	19	0	64	3	266	34	4	307	1	13	2	0	16	627
04:30 PM	11	246	4	1	262	27	13	19	0	59	5	244	56	4	309	1	15	6	2	24	654
04:45 PM	11	220	5	0	236	44	10	24	0	78	3	242	44	2	291	2	29	3	0	34	639
Total	49	928	14	1	992	151	49	86	0	286	20	1000	176	11	1207	8	77	15	2	102	2587
05:00 PM	13	272	2	0	287	34	15	11	0	60	6	223	45	0	274	1	13	9	0	23	644
05:15 PM	14	219	2	0	235	33	16	24	0	73	4	257	48	4	313	2	13	8	1	24	645
05:30 PM	9	227	2	1	239	35	13	17	0	65	1	263	45	5	314	1	16	4	2	23	641
05:45 PM	13	203	6	0	222	29	18	21	0	68	6	244	48	2	300	3	19	1	0	23	613
Total	49	921	12	1	983	131	62	73	0	266	17	987	186	11	1201	7	61	22	3	93	2543
Grand Total	242	2967	40	6	3255	360	144	249	0	753	64	3461	508	44	4077	25	206	55	11	297	8382
Apprch %	7.4	91.2	1.2	0.2		47.8	19.1	33.1	0		1.6	84.9	12.5	1.1		8.4	69.4	18.5	3.7		
Total %	2.9	35.4	0.5	0.1	38.8	4.3	1.7	3	0	9	0.8	41.3	6.1	0.5	48.6	0.3	2.5	0.7	0.1	3.5	
Unshifted	220	2967										3461									
% Unshifted	90.9	100	100	100	99.3	99.7	100	100	0	99.9	100	100	100	100	100	100	100	100	100	100	99.7
Bank 1	22	0	0	0	22	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	23
% Bank 1	9.1	0	0	0	0.7	0.3	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.3

JLB Traffic Engineering, Inc.

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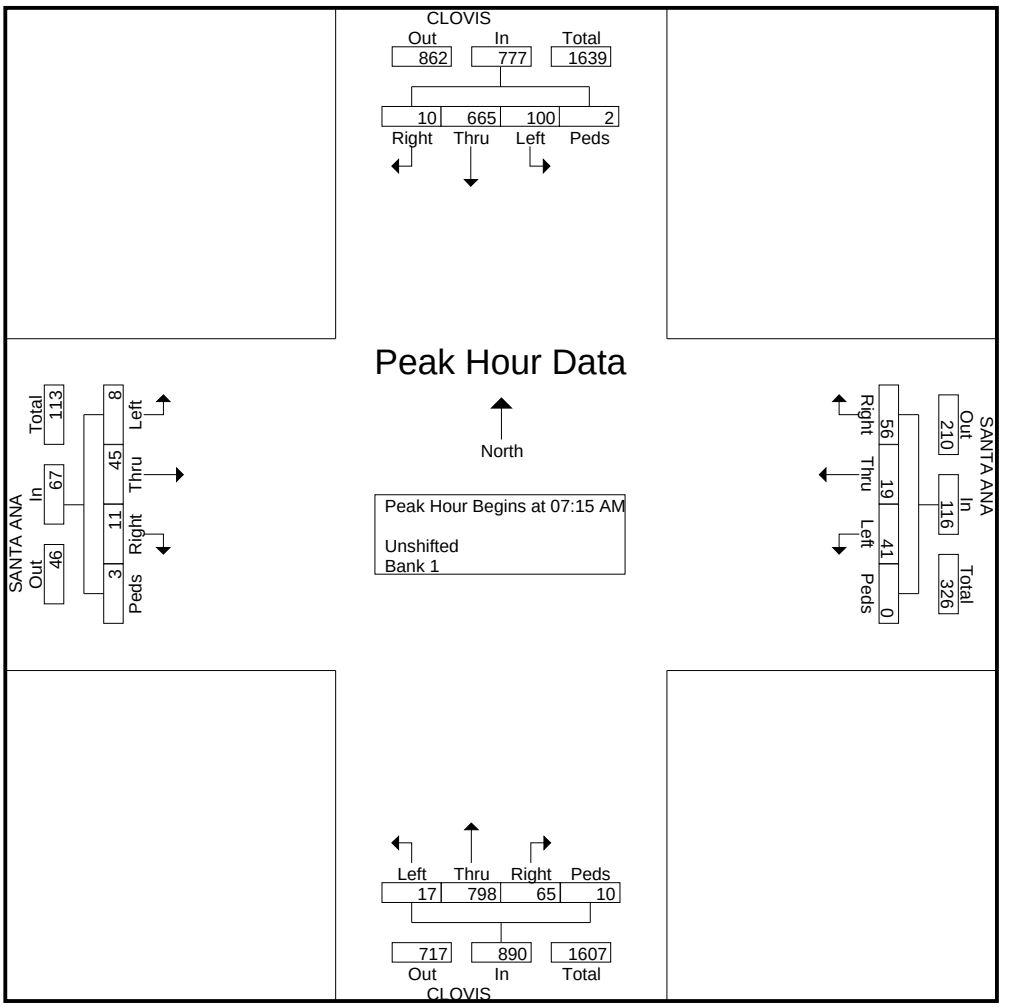
File Name : 4.5.18 Clovis Santa Ana
Site Code : 00000000
Start Date : 4/5/2018
Page No : 2

	CLOVIS Southbound					SANTA ANA Westbound					CLOVIS Northbound					SANTA ANA Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	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 07:15 AM																					
07:15 AM	**63**	135	0	**1**	199	12	3	10	0	25	0	171	16	2	189	**3**	**16**	1	1	**21**	434
07:30 AM	26	165	1	0	192	**18**	5	**29**	0	**52**	**7**	**246**	15	**4**	**272**	2	11	**4**	0	17	**533**
07:45 AM	6	**189**	**5**	1	**201**	7	**7**	7	0	21	7	191	**20**	2	220	3	12	3	0	18	460
08:00 AM	5	176	4	0	185	4	4	10	0	18	3	190	14	2	209	0	6	3	**2**	11	423
Total Volume	100	665	10	2	777	41	19	56	0	116	17	798	65	10	890	8	45	11	3	67	1850
% App. Total	12.9	85.6	1.3	0.3		35.3	16.4	48.3	0		1.9	89.7	7.3	1.1		11.9	67.2	16.4	4.5		
PHF	.397	.880	.500	.500	.966	.569	.679	.483	.000	.558	.607	.811	.813	.625	.818	.667	.703	.688	.375	.798	.868



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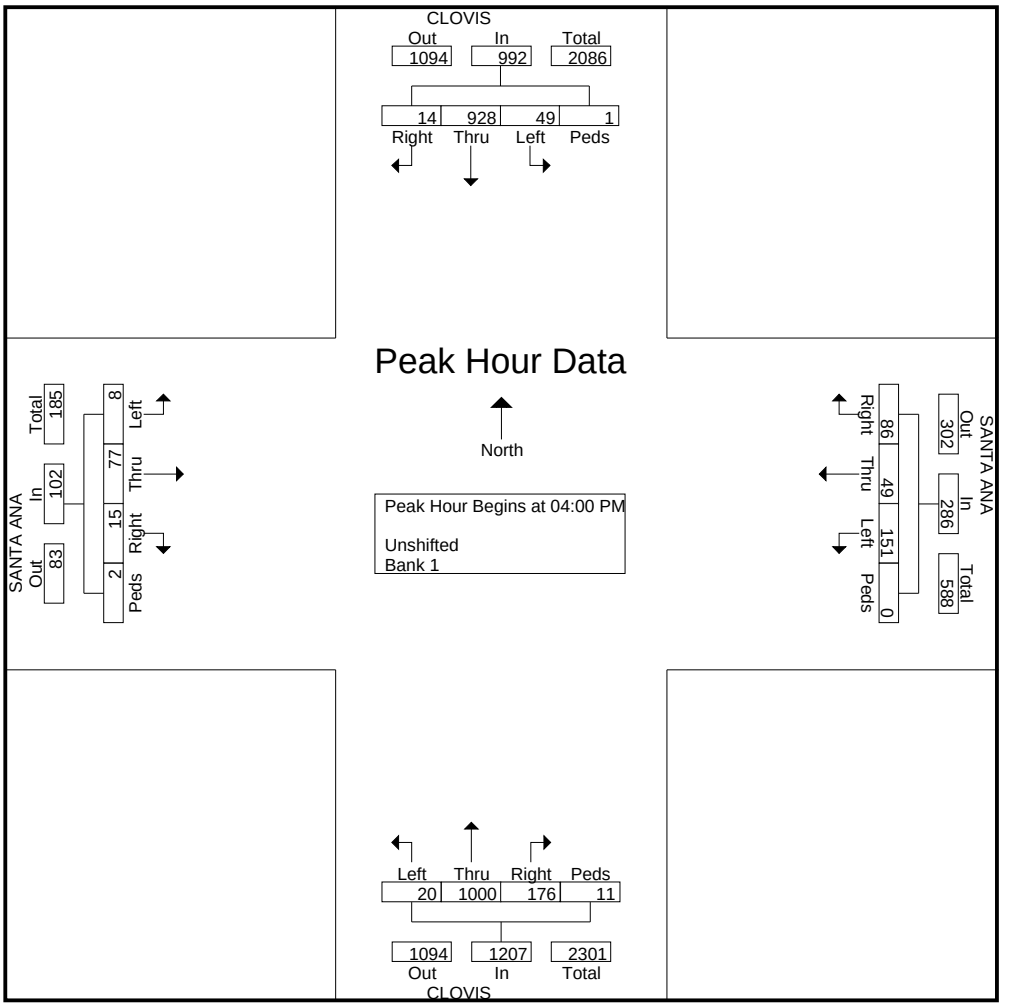
File Name : 4.5.18 Clovis Santa Ana
Site Code : 00000000
Start Date : 4/5/2018
Page No : 3

	CLOVIS Southbound					SANTA ANA Westbound					CLOVIS Northbound					SANTA ANA Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	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	**17**	235	2	0	254	**46**	**15**	**24**	0	**85**	**9**	248	42	1	300	**4**	20	4	0	28	**667**
04:15 PM	10	227	3	0	240	34	11	19	0	64	3	**266**	34	**4**	307	1	13	2	0	16	627
04:30 PM	11	**246**	4	**1**	**262**	27	13	19	0	59	5	244	**56**	4	**309**	1	15	**6**	**2**	24	654
04:45 PM	11	220	**5**	0	236	44	10	24	0	78	3	242	44	2	291	2	**29**	3	0	**34**	639
Total Volume	49	928	14	1	992	151	49	86	0	286	20	1000	176	11	1207	8	77	15	2	102	2587
% App. Total	4.9	93.5	1.4	0.1		52.8	17.1	30.1	0		1.7	82.9	14.6	0.9		7.8	75.5	14.7	2		
PHF	.721	.943	.700	.250	.947	.821	.817	.896	.000	.841	.556	.940	.786	.688	.977	.500	.664	.625	.250	.750	.970



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File Name : 4.5.18 Clovis Santa Ana
Site Code : 00000000
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Groups Printed- Bank 1

	CLOVIS Southbound					SANTA ANA Westbound					CLOVIS Northbound					SANTA ANA Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
******																					
07:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	4	0	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
******																					
08:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
******																					
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
******																					
04:00 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
04:15 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
******																					
04:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
05:00 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Grand Total	22	0	0	0	22	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	23
Apprch %	100	0	0	0		100	0	0	0		0	0	0	0		0	0	0	0		
Total %	95.7	0	0	0	95.7	4.3	0	0	0	4.3	0	0	0	0	0	0	0	0	0	0	

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File Name : 4.24.18 Santa Ana Sierra Vista Mall Driveway 1
Site Code : 00042418
Start Date : 4/24/2018
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	SVM Driveway Southbound					Santa Ana Ave Westbound					Driveway Northbound					Santa Ana Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	1	1	26	8	1	1	36	7	1	2	1	11	1	17	30	0	48	96
07:15 AM	0	1	3	0	4	39	21	2	0	62	8	0	12	1	21	4	18	80	0	102	189
07:30 AM	0	3	5	0	8	21	30	1	1	53	19	0	12	0	31	4	22	36	0	62	154
07:45 AM	0	0	7	0	7	2	27	3	1	33	3	1	1	0	5	6	31	1	0	38	83
Total	0	4	15	1	20	88	86	7	3	184	37	2	27	2	68	15	88	147	0	250	522
08:00 AM	1	0	8	0	9	2	15	3	0	20	1	0	0	0	1	7	18	2	1	28	58
08:15 AM	0	0	11	0	11	0	8	4	0	12	1	0	0	2	3	9	18	4	0	31	57
08:30 AM	1	0	10	0	11	1	17	4	1	23	1	1	1	0	3	12	18	4	0	34	71
08:45 AM	2	1	9	0	12	0	10	4	2	16	1	2	1	0	4	16	13	2	0	31	63
Total	4	1	38	0	43	3	50	15	3	71	4	3	2	2	11	44	67	12	1	124	249
******																					
04:00 PM	8	0	44	1	53	2	33	6	0	41	8	2	8	0	18	20	26	4	0	50	162
04:15 PM	6	1	23	0	30	1	20	3	0	24	7	0	3	0	10	26	34	3	0	63	127
04:30 PM	10	1	29	2	42	0	24	6	0	30	2	0	2	0	4	28	39	1	0	68	144
04:45 PM	10	2	35	0	47	0	33	10	0	43	4	1	0	1	6	39	53	2	0	94	190
Total	34	4	131	3	172	3	110	25	0	138	21	3	13	1	38	113	152	10	0	275	623
05:00 PM	6	1	32	0	39	1	34	4	0	39	5	2	8	2	17	17	48	5	0	70	165
05:15 PM	5	1	32	2	40	1	24	6	0	31	2	1	1	0	4	41	35	2	0	78	153
05:30 PM	12	1	36	0	49	0	18	8	2	28	3	0	2	3	8	19	40	2	0	61	146
05:45 PM	6	1	32	0	39	3	30	6	1	40	1	0	2	4	7	27	39	5	0	71	157
Total	29	4	132	2	167	5	106	24	3	138	11	3	13	9	36	104	162	14	0	280	621
Grand Total	67	13	316	6	402	99	352	71	9	531	73	11	55	14	153	276	469	183	1	929	2015
Apprch %	16.7	3.2	78.6	1.5		18.6	66.3	13.4	1.7		47.7	7.2	35.9	9.2		29.7	50.5	19.7	0.1		
Total %	3.3	0.6	15.7	0.3	20	4.9	17.5	3.5	0.4	26.4	3.6	0.5	2.7	0.7	7.6	13.7	23.3	9.1	0	46.1	
Unshifted	67	13	316	6	402	98	352	71	9	530	73	11	55	14	153	276	469	183	1	929	2014
% Unshifted																					
Bank 1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bank 1	0	0	0	0	0	1	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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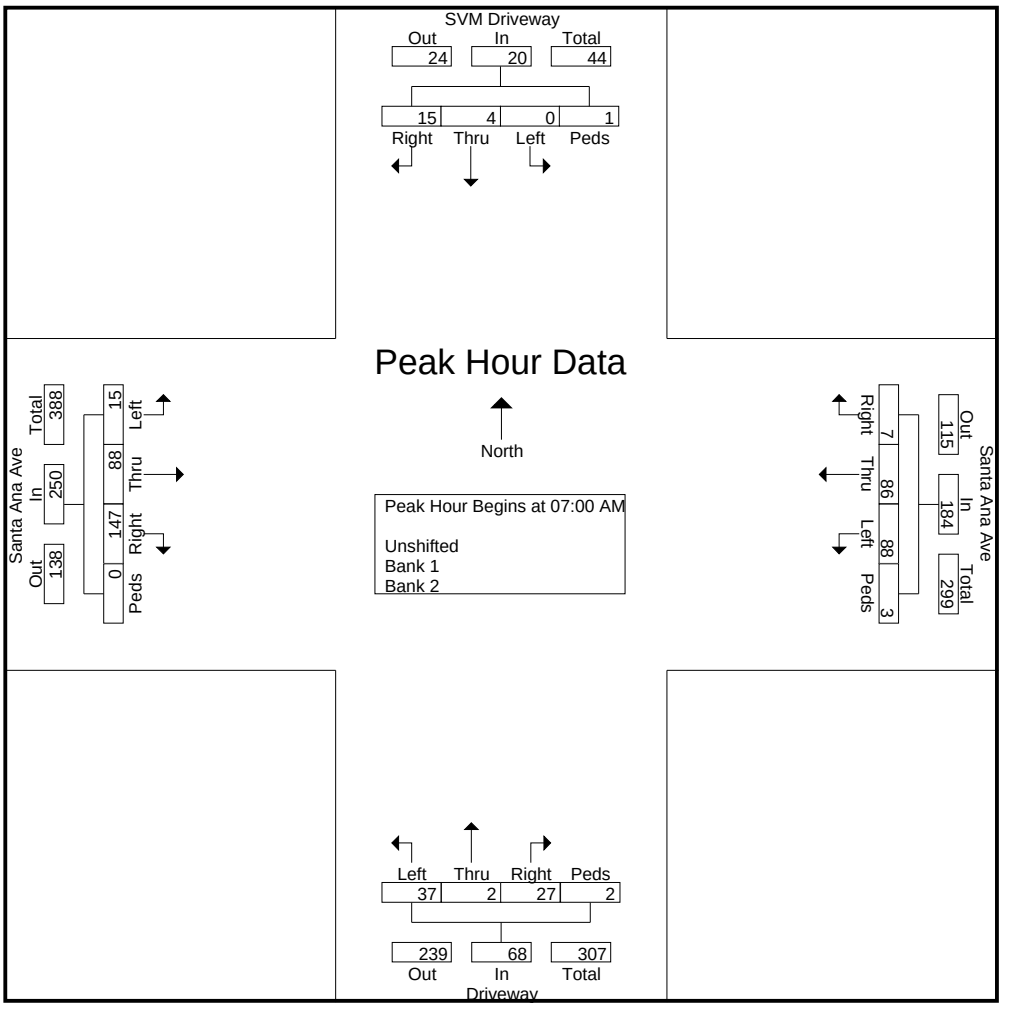
File Name : 4.24.18 Santa Ana Sierra Vista Mall Driveway 1
Site Code : 00042418
Start Date : 4/24/2018
Page No : 2

	SVM Driveway Southbound					Santa Ana Ave Westbound					Driveway Northbound					Santa Ana Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	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	**1**	1	26	8	1	**1**	36	7	**1**	2	**1**	11	1	17	30	0	48	96
07:15 AM	0	1	3	0	4	**39**	21	2	0	**62**	8	0	**12**	1	21	4	18	**80**	0	**102**	**189**
07:30 AM	0	**3**	5	0	**8**	21	**30**	1	1	53	**19**	0	12	0	**31**	4	22	36	0	62	154
07:45 AM	0	0	**7**	0	7	2	27	**3**	1	33	3	1	1	0	5	**6**	**31**	1	0	38	83
Total Volume	0	4	15	1	20	88	86	7	3	184	37	2	27	2	68	15	88	147	0	250	522
% App. Total	0	20	75	5		47.8	46.7	3.8	1.6		54.4	2.9	39.7	2.9		6	35.2	58.8	0		
PHF	.000	.333	.536	.250	.625	.564	.717	.583	.750	.742	.487	.500	.563	.500	.548	.625	.710	.459	.000	.613	.690



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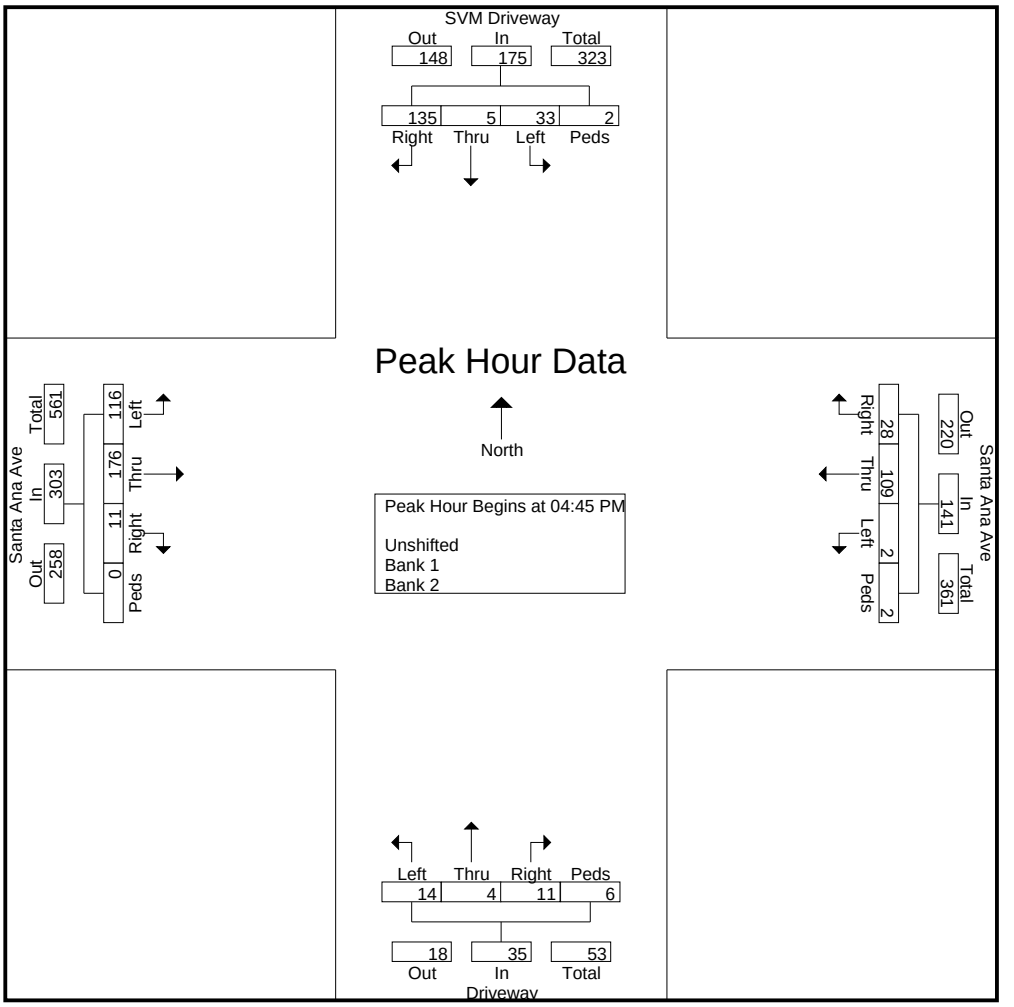
File Name : 4.24.18 Santa Ana Sierra Vista Mall Driveway 1
Site Code : 00042418
Start Date : 4/24/2018
Page No : 3

	SVM Driveway Southbound					Santa Ana Ave Westbound					Driveway Northbound					Santa Ana Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	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	10	**2**	35	0	47	0	33	**10**	0	**43**	4	1	0	1	6	39	**53**	2	0	**94**	**190**
05:00 PM	6	1	32	0	39	**1**	**34**	4	0	39	**5**	**2**	**8**	2	**17**	17	48	**5**	0	70	165
05:15 PM	5	1	32	**2**	40	1	24	6	0	31	2	1	1	0	4	**41**	35	2	0	78	153
05:30 PM	**12**	1	**36**	0	**49**	0	18	8	**2**	28	3	0	2	**3**	8	19	40	2	0	61	146
Total Volume	33	5	135	2	175	2	109	28	2	141	14	4	11	6	35	116	176	11	0	303	654
% App. Total	18.9	2.9	77.1	1.1		1.4	77.3	19.9	1.4		40	11.4	31.4	17.1		38.3	58.1	3.6	0		
PHF	.688	.625	.938	.250	.893	.500	.801	.700	.250	.820	.700	.500	.344	.500	.515	.707	.830	.550	.000	.806	.861



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File Name : 4.24.18 Ashlan at Clovis
Site Code : 00000000
Start Date : 4/24/2018
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	CLOVIS Southbound					ASHLAN Westbound					CLOVIS Northbound					ASHLAN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	14	135	20	0	169	38	136	20	0	194	17	96	27	4	144	19	62	14	4	99	606
07:15 AM	22	166	35	2	225	58	135	44	3	240	12	129	28	0	169	32	78	14	0	124	758
07:30 AM	27	192	37	1	257	58	154	48	0	260	23	138	17	1	179	26	98	20	1	145	841
07:45 AM	22	208	45	0	275	52	127	44	0	223	17	195	43	0	255	28	78	18	0	124	877
Total	85	701	137	3	926	206	552	156	3	917	69	558	115	5	747	105	316	66	5	492	3082
08:00 AM	24	128	33	0	185	54	142	48	0	244	16	128	35	2	181	38	94	23	0	155	765
08:15 AM	20	154	30	0	204	49	114	38	0	201	19	132	20	2	173	24	83	23	0	130	708
08:30 AM	25	116	35	0	176	44	103	29	0	176	19	121	24	0	164	24	69	13	0	106	622
08:45 AM	8	117	27	0	152	42	104	26	0	172	16	125	16	0	157	34	67	12	0	113	594
Total	77	515	125	0	717	189	463	141	0	793	70	506	95	4	675	120	313	71	0	504	2689
******																					
04:00 PM	51	219	50	1	321	24	80	24	1	129	15	200	57	2	274	29	150	24	2	205	929
04:15 PM	44	207	29	0	280	21	75	36	0	132	23	204	53	0	280	41	147	25	1	214	906
04:30 PM	37	207	31	2	277	26	89	31	1	147	24	217	63	3	307	38	131	35	3	207	938
04:45 PM	49	145	32	1	227	29	90	34	1	154	35	230	59	1	325	36	155	21	2	214	920
Total	181	778	142	4	1105	100	334	125	3	562	97	851	232	6	1186	144	583	105	8	840	3693
05:00 PM	56	229	48	0	333	34	93	23	1	151	46	272	67	1	386	32	135	29	2	198	1068
05:15 PM	60	194	42	0	296	27	100	45	1	173	51	304	77	0	432	39	162	24	1	226	1127
05:30 PM	63	162	33	2	260	22	100	26	2	150	36	266	83	3	388	30	163	35	1	229	1027
05:45 PM	52	150	44	0	246	37	86	34	0	157	32	233	62	1	328	46	167	40	1	254	985
Total	231	735	167	2	1135	120	379	128	4	631	165	1075	289	5	1534	147	627	128	5	907	4207
Grand Total	574	2729	571	9	3883	615	1728	550	10	2903	401	2990	731	20	4142	516	1839	370	18	2743	13671
Apprch %	14.8	70.3	14.7	0.2		21.2	59.5	18.9	0.3		9.7	72.2	17.6	0.5		18.8	67	13.5	0.7		
Total %	4.2	20	4.2	0.1	28.4	4.5	12.6	4	0.1	21.2	2.9	21.9	5.3	0.1	30.3	3.8	13.5	2.7	0.1	20.1	
Unshifted	570	2729					1728					2990					1839				13642
% Unshifted	99.3	100	100	100	99.9	100	100	100	100	100	93.8	100	100	100	99.4	100	100	100	100	100	99.8
Bank 1	4	0	0	0	4	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	29
% Bank 1	0.7	0	0	0	0.1	0	0	0	0	0	6.2	0	0	0	0.6	0	0	0	0	0	0.2
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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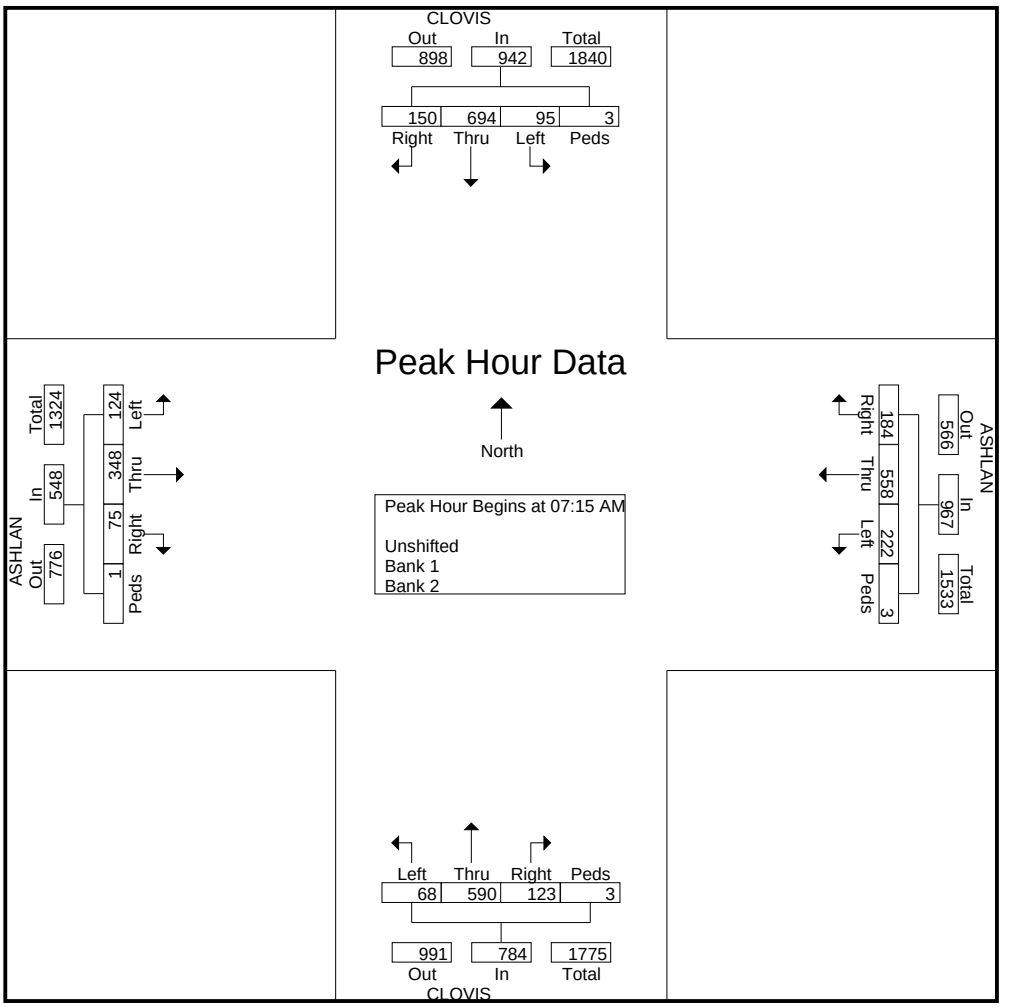
File Name : 4.24.18 Ashlan at Clovis
Site Code : 00000000
Start Date : 4/24/2018
Page No : 2

	CLOVIS Southbound					ASHLAN Westbound					CLOVIS Northbound					ASHLAN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	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 07:15 AM																					
07:15 AM	22	166	35	**2**	225	**58**	135	44	**3**	240	12	129	28	0	169	32	78	14	0	124	758
07:30 AM	**27**	192	37	1	257	58	**154**	**48**	0	**260**	**23**	138	17	1	179	26	**98**	20	**1**	145	841
07:45 AM	22	**208**	**45**	0	**275**	52	127	44	0	223	17	**195**	**43**	0	**255**	28	78	18	0	124	**877**
08:00 AM	24	128	33	0	185	54	142	48	0	244	16	128	35	**2**	181	**38**	94	**23**	0	**155**	765
Total Volume	95	694	150	3	942	222	558	184	3	967	68	590	123	3	784	124	348	75	1	548	3241
% App. Total	10.1	73.7	15.9	0.3		23	57.7	19	0.3		8.7	75.3	15.7	0.4		22.6	63.5	13.7	0.2		
PHF	.880	.834	.833	.375	.856	.957	.906	.958	.250	.930	.739	.756	.715	.375	.769	.816	.888	.815	.250	.884	.924



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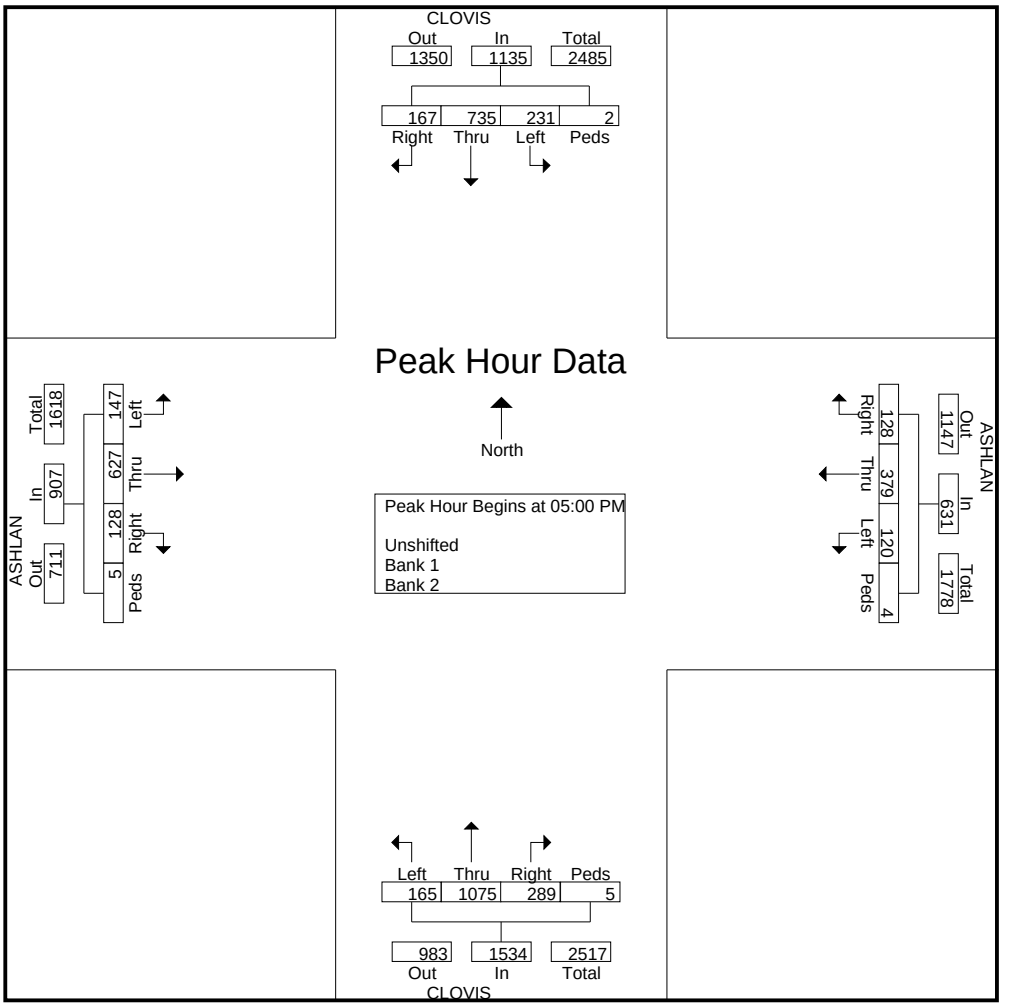
File Name : 4.24.18 Ashlan at Clovis
Site Code : 00000000
Start Date : 4/24/2018
Page No : 3

	CLOVIS Southbound					ASHLAN Westbound					CLOVIS Northbound					ASHLAN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	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 05:00 PM																					
05:00 PM	56	**229**	**48**	0	**333**	34	93	23	1	151	46	272	67	1	386	32	135	29	**2**	198	1068
05:15 PM	60	194	42	0	296	27	**100**	**45**	1	**173**	**51**	**304**	77	0	**432**	39	162	24	1	226	**1127**
05:30 PM	**63**	162	33	**2**	260	22	100	26	**2**	150	36	266	**83**	**3**	388	30	163	35	1	229	1027
05:45 PM	52	150	44	0	246	**37**	86	34	0	157	32	233	62	1	328	**46**	**167**	**40**	1	**254**	985
Total Volume	231	735	167	2	1135	120	379	128	4	631	165	1075	289	5	1534	147	627	128	5	907	4207
% App. Total	20.4	64.8	14.7	0.2		19	60.1	20.3	0.6		10.8	70.1	18.8	0.3		16.2	69.1	14.1	0.6		
PHF	.917	.802	.870	.250	.852	.811	.948	.711	.500	.912	.809	.884	.870	.417	.888	.799	.939	.800	.625	.893	.933



JLB Traffic Engineering, Inc.

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Traffic Engineering, Transportation Planning & Parking Solutions
www.JLBtraffic.com

File Name : 4.24.18 Ashlan at Clovis
Site Code : 00000000
Start Date : 4/24/2018
Page No : 1

Groups Printed- Bank 1 - Bank 2

	CLOVIS Southbound					ASHLAN Westbound					CLOVIS Northbound					ASHLAN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
******																					
07:30 AM	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	3
******																					
Total	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	4
08:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
******																					
Total	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
******																					
04:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
04:30 PM	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
Total	2	0	0	0	2	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	0	0	0	0	0	12
Grand Total	4	0	0	0	4	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	29
Apprch %	100	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	13.8	0	0	0	13.8	0	0	0	0	0	86.2	0	0	0	86.2	0	0	0	0	0	
Bank 1	4	0	0	0	4	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	29
% Bank 1	100	0	0	0	100	0	0	0	0	0	100	0	0	0	100	0	0	0	0	0	100
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix C: Traffic Modeling

~~March 26~~April 11, 2018

Kai Han, P.E.
Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Via Email Only:

Subject: Revised **Modeling Request** ***for the Preparation of a Traffic Impact Analysis for the proposed Residence Inn Hotel at the Southeast Corner of Clovis Avenue and Santa Ana Avenue in the City of Clovis*** **(JLB Project 006-021)**

Dear Mr. Han,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Revised Model Request for the preparation of a Traffic Impact Analysis (TIA) for the Project described below. The Project proposes to build a ~~130~~ 110 Room Residence Inn extended stay business traveler/ mid-scale hotel (Project) at the southeast corner of Clovis Avenue and Santa Ana Avenue in the City of Clovis. An aerial of the Project vicinity and the Project site plan can be found in Exhibits A and B respectively.

Scenarios:

The following scenarios are requested:

1. Base Year 2018 (with Link and TAZ modifications)
2. Year 2018 plus Project Select Zone (with Link and TAZ modifications)
3. Cumulative Year 2035 plus Project Select Zone (with Link and TAZ modifications)
4. Differences between model runs 3 and 1 above

Changes and/or additions to the Model Network or TAZ's

JLB reviewed the Fresno COG model network for the Base Year 2018 and Cumulative Year 2035. Based on this review, JLB requests the following link and TAZ Network modifications. Details on the requested Link and TAZ modifications for Base Year 2018 and Cumulative Year 2035 are illustrated in Exhibit C.

LINK and TAZ MODIFICATIONS (For Base year 2018, Base Year 2018 plus Project Select Zone, and Cumulative Year 2035 plus Project Select Zone Scenarios):

1. Create east/west Santa Ana Avenue between Minnewawa Avenue and Sierra Vista Avenue.
    a. Classification: Collector Road
    b. Between Clovis Avenue and Sierra Vista Avenue
        i. Two lanes in each direction
        ii. Speed: 40 MPH
    c. Between Minnewawa and Clovis Avenue
        i. One lane in each direction
        ii. Speed 25 MPH

2. Create north/south Dewitt Avenue between Shaw Avenue and Santa Ana Avenue
    a. Classification: Local Road
    b. One lane in each direction
    c. Speed 25 MPH
3. Create north/south Harvard Avenue between Santa Avenue and the terminus of Pico Avenue
    a. Classification: Local Road
    b. One lane in each direction
    c. Speed 25 MPH
4. Create east/west Pico Avenue connecting the terminus of Harvard Avenue and node 2422.
    a. Classification: Local Road
    b. One lane in each direction
    c. Speed 25 MPH
5. Modify TAZ 721 and create TAZ 721A bounded by Clovis Avenue, Shaw Avenue, Sierra Vista Avenue, and Santa Ana Avenue with TAZ connectors to Shaw Avenue to the north, Sierra Vista Avenue to the east, and Santa Ana Avenue to the south.
6. Create TAZ 721B bounded by Santa Ana Avenue, Sierra Vista Avenue, Gettysburg Avenue and Clovis Avenue with TAZ connectors to Santa Ana Avenue to the north. Sierra Vista Avenue to the east, and Gettysburg Avenue to the south.
7. Modify TAZ 718 and create TAZ 718A bounded by Dewitt Avenue, Santa Ana Avenue, Minnewawa Avenue, and Shaw Avenue with TAZ connectors to Shaw Avenue to the north, Minnewawa Avenue to the west, Santa Ana Avenue to the south, and Dewitt Avenue to the east.
8. Create TAZ 718B bounded by Dewitt Avenue, Shaw Avenue, Clovis Avenue, and Santa Ana Avenue with TAZ connectors to Shaw Avenue to the north, Santa Ana Avenue to the south, Dewitt Avenue to the west, and Clovis Avenue to the east.
9. Eliminate TAZ 719 Connector to Clovis Avenue to the east and create TAZ connector to Harvard Avenue to the east.
10. Create Project TAZ A generally located southeast of Clovis Avenue and Santa Ana Avenue (see Exhibit C). TAZ A shall have a TAZ Connector to Santa Ana (north).

TAZ A Project Only Trip Generation (For Year 2018 plus Project Select Zone and Cumulative Year 2035 plus Project Select Zone Scenarios Only)

Table I presents the trip generation for the proposed TAZ A Project pursuant to the 10th Edition of the Trip Generation Manual with trip generation rates for All Suites Hotel. At build-out, the Project is estimated to generate a maximum of ~~580~~ 491 daily trips, ~~44~~ 37 AM peak hour trips and ~~47~~ 40 PM peak hour trips.

Table I: TAZ A Project Only 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*
						%						*%*				
All Suites Hotel (311)	~~130~~110	rooms	4.46	~~580~~491	0.34	53	47	~~23~~20	~~21~~17	~~44~~37	0.36	48	52	~~23~~17	~~24~~21	~~47~~40
Total Project Trips				***~~580~~491***				***~~23~~20***	***~~21~~17***	***~~44~~37***				***~~23~~17***	***~~24~~21***	***~~47~~40***

Please invoice JLB Traffic Engineering, Inc. and reference JLB Project No. 006-021 on the invoice. If you have any questions or require additional information, please do not hesitate to contact me by phone at (559) 570-8991 or by e-mail at amiao@JLBtraffic.com.

Sincerely,

Alan Miao, EIT
Engineer I/II

CC: Jose Benavides, JLB Traffic Engineering, Inc.

JLB TRAFFIC ENGINEERING, INC.
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(559) 570-8991

Exhibit A – Aerial

Exhibit B – Site Plan

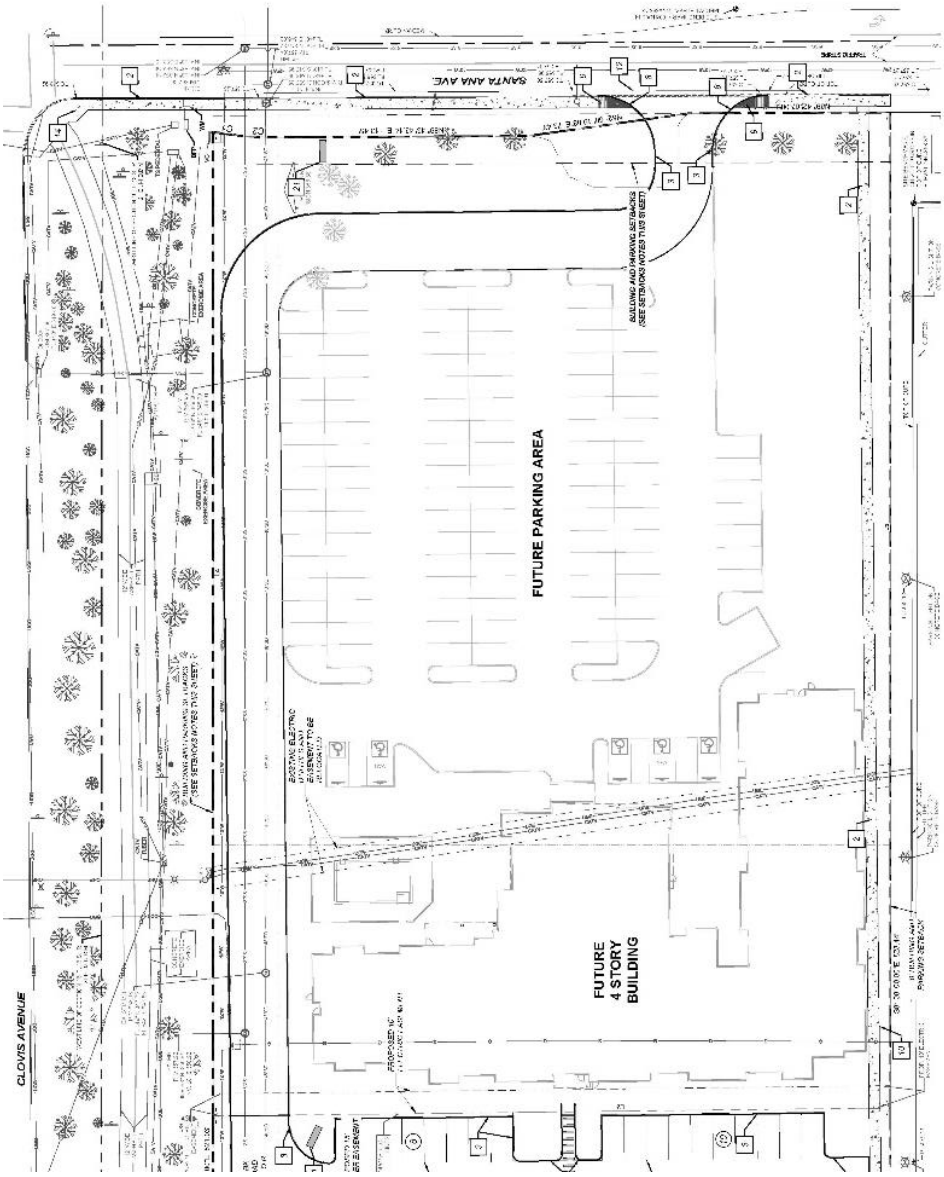
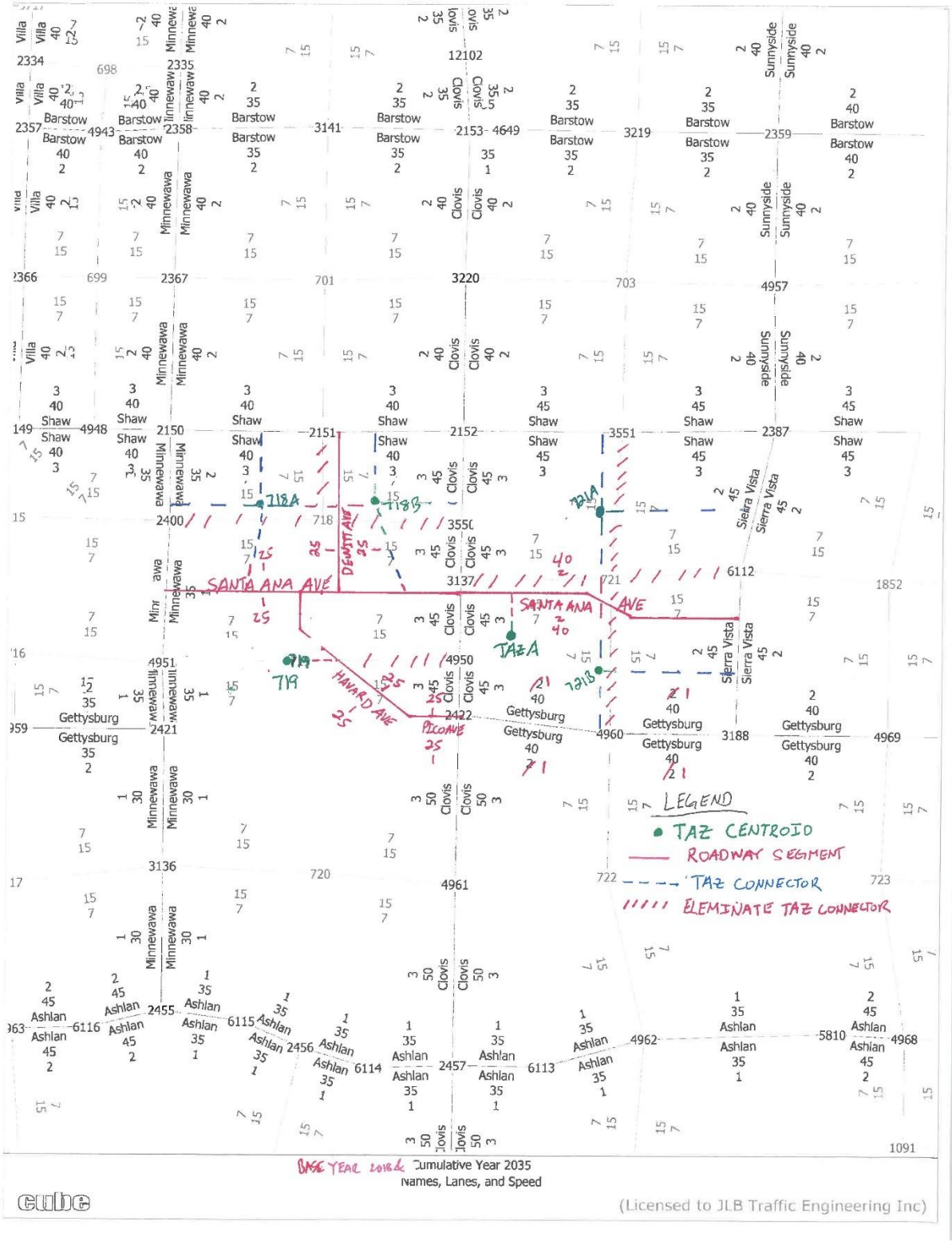
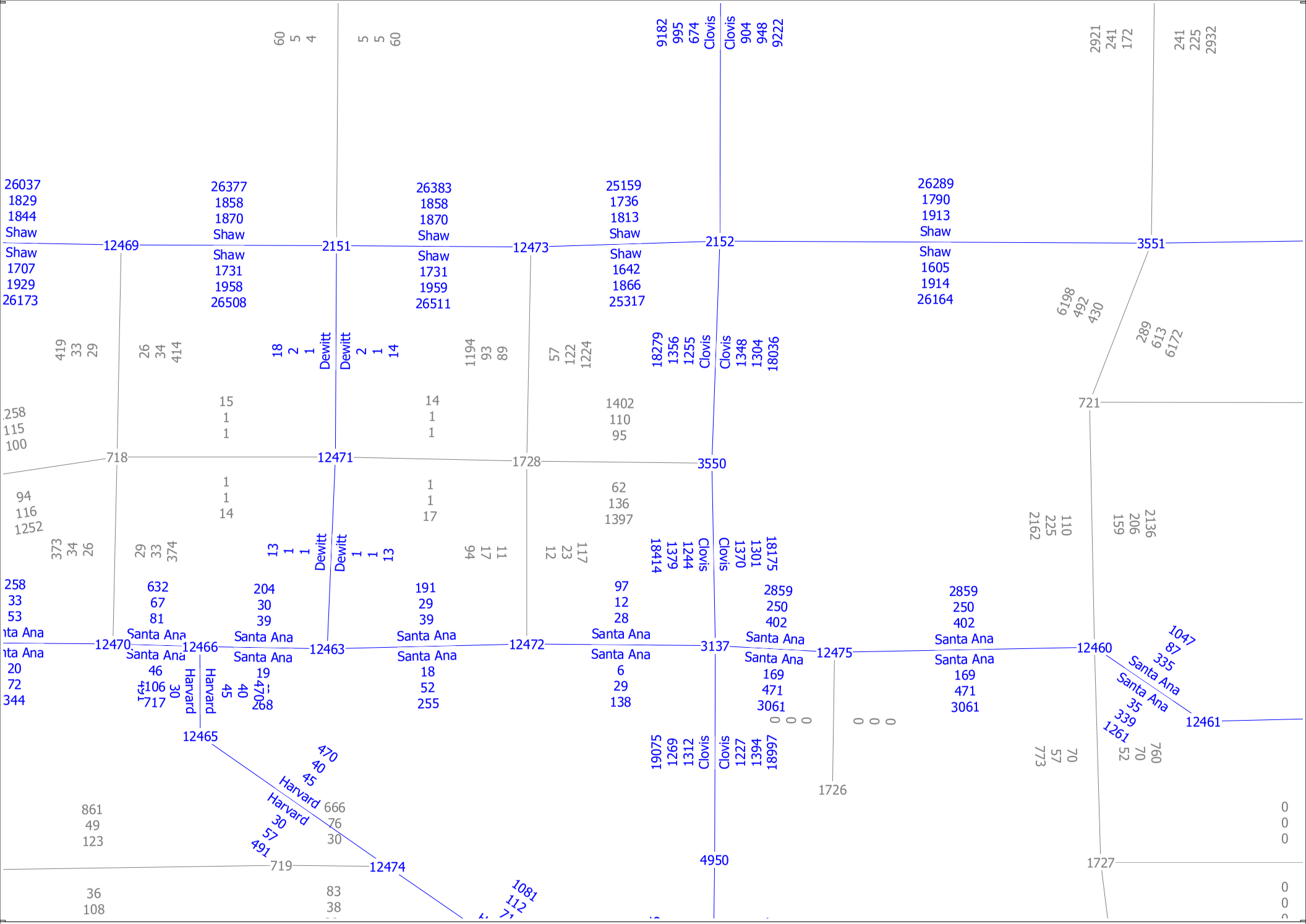


Exhibit C – Model TAZ Modifications





Base Year 2018
AM Volume, PM Volume, Daily Volume
Page 1

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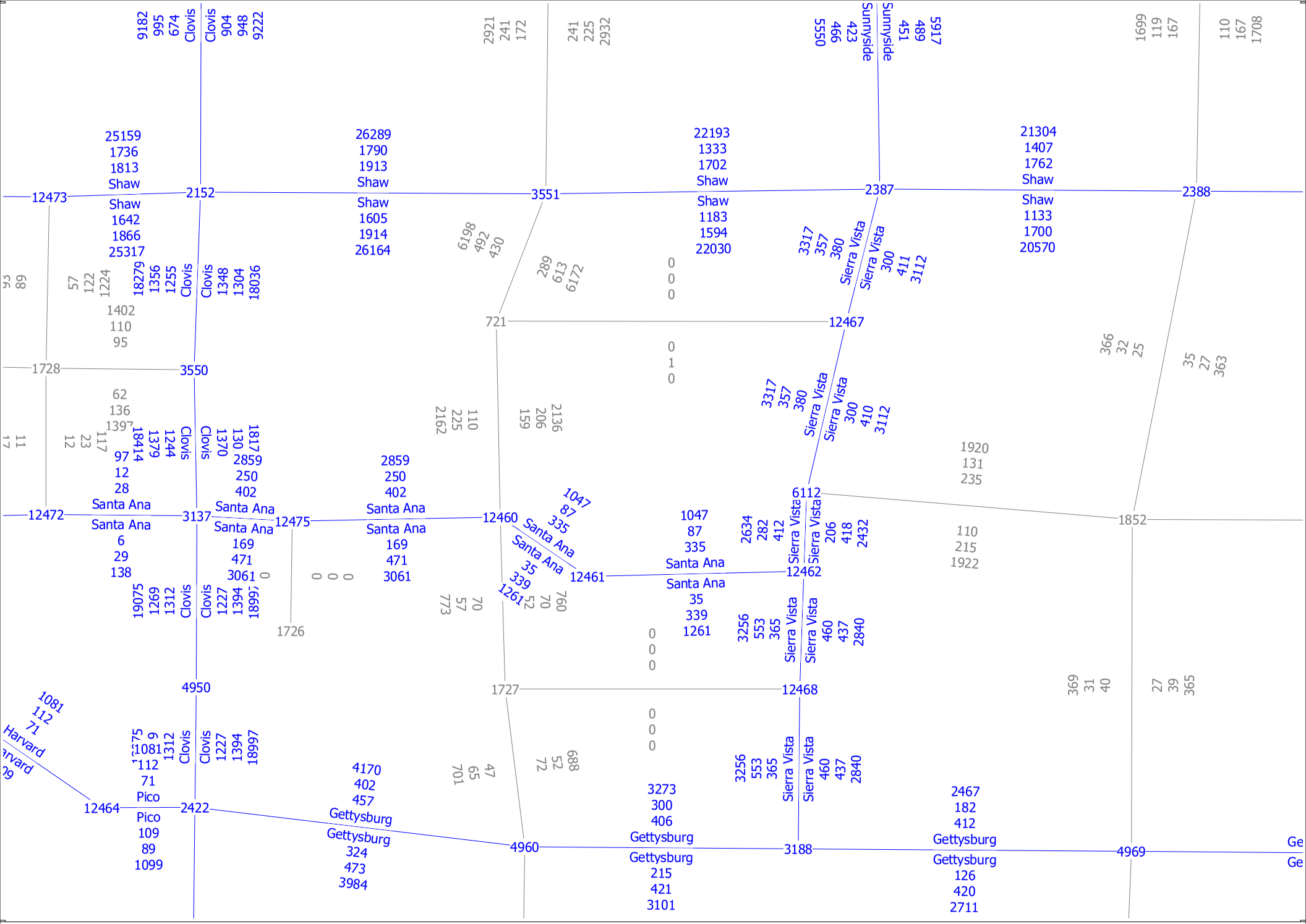

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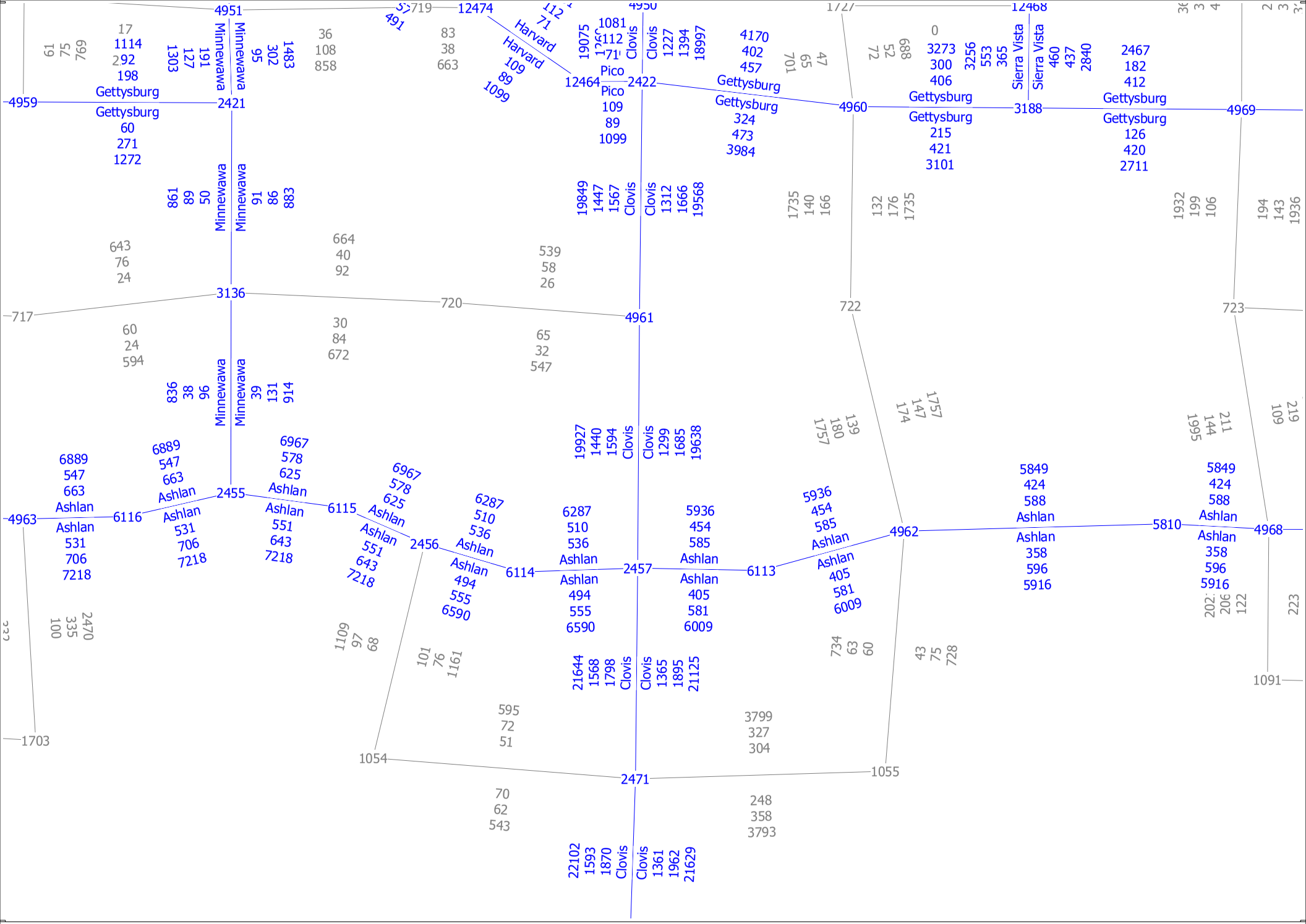

Base Year 2018
AM Volume, PM Volume, Daily Volume
Page 3

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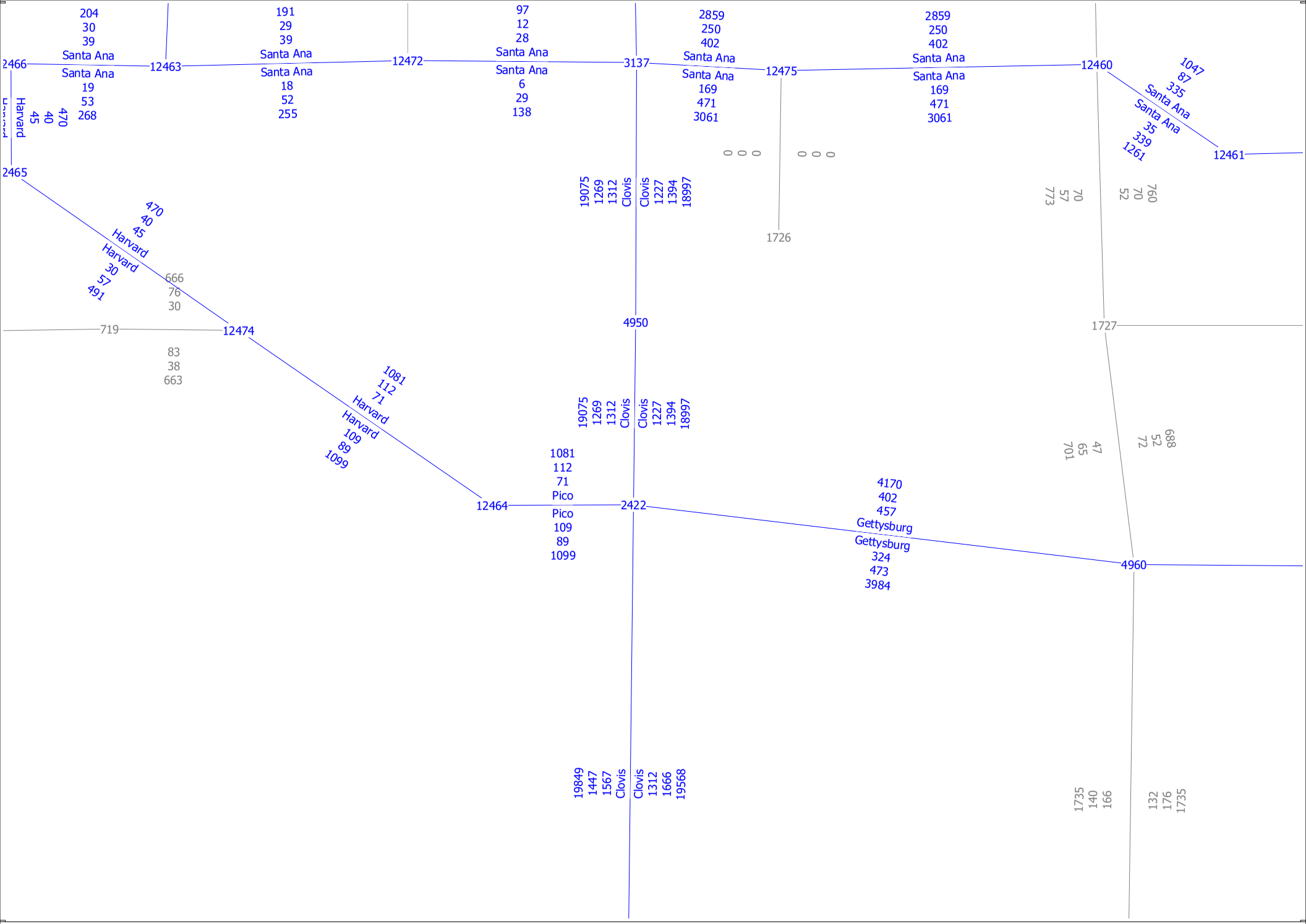

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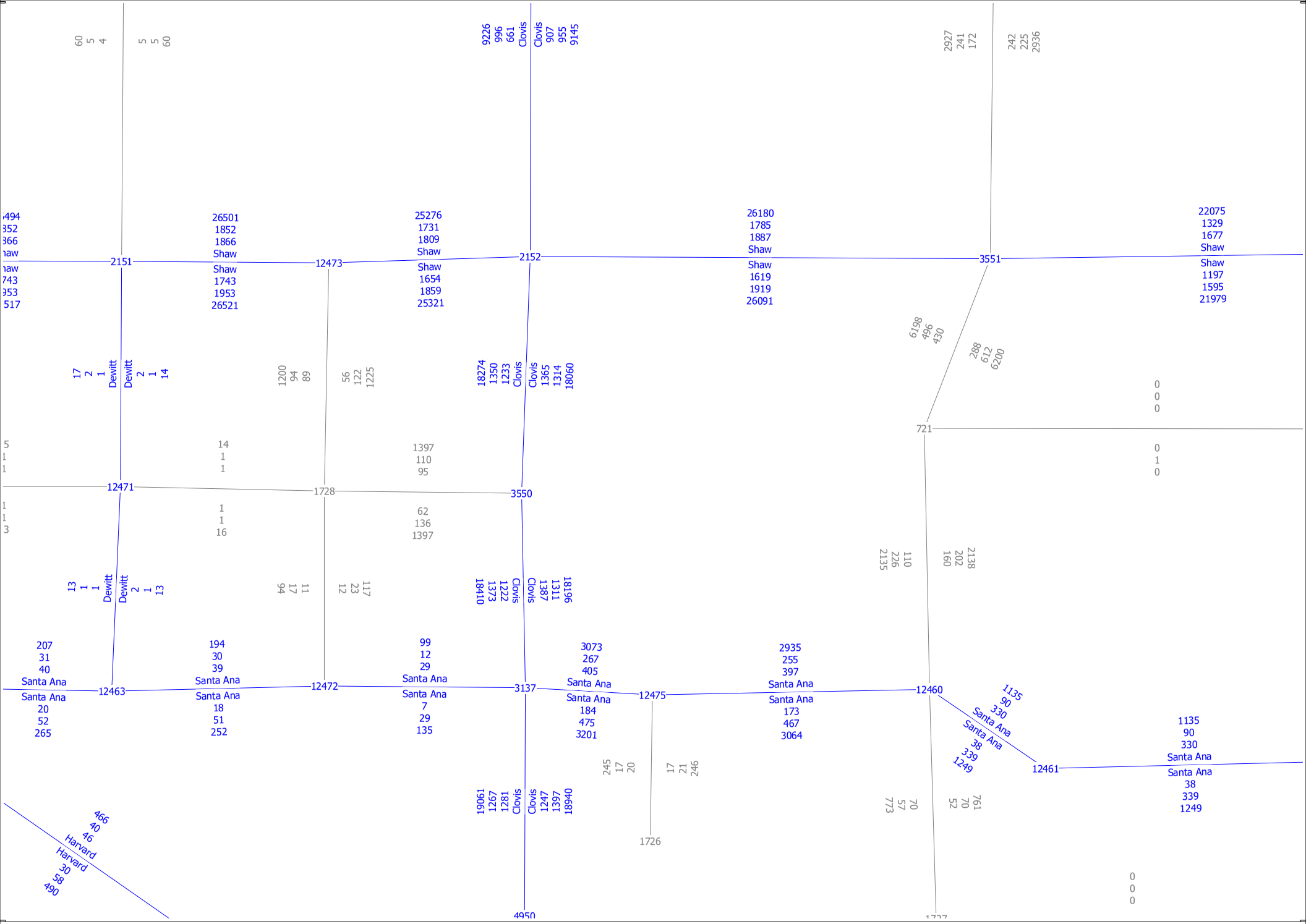

Base Year 2018 plus Project
AM Volume, PM Volume, Daily Volume
Page 1

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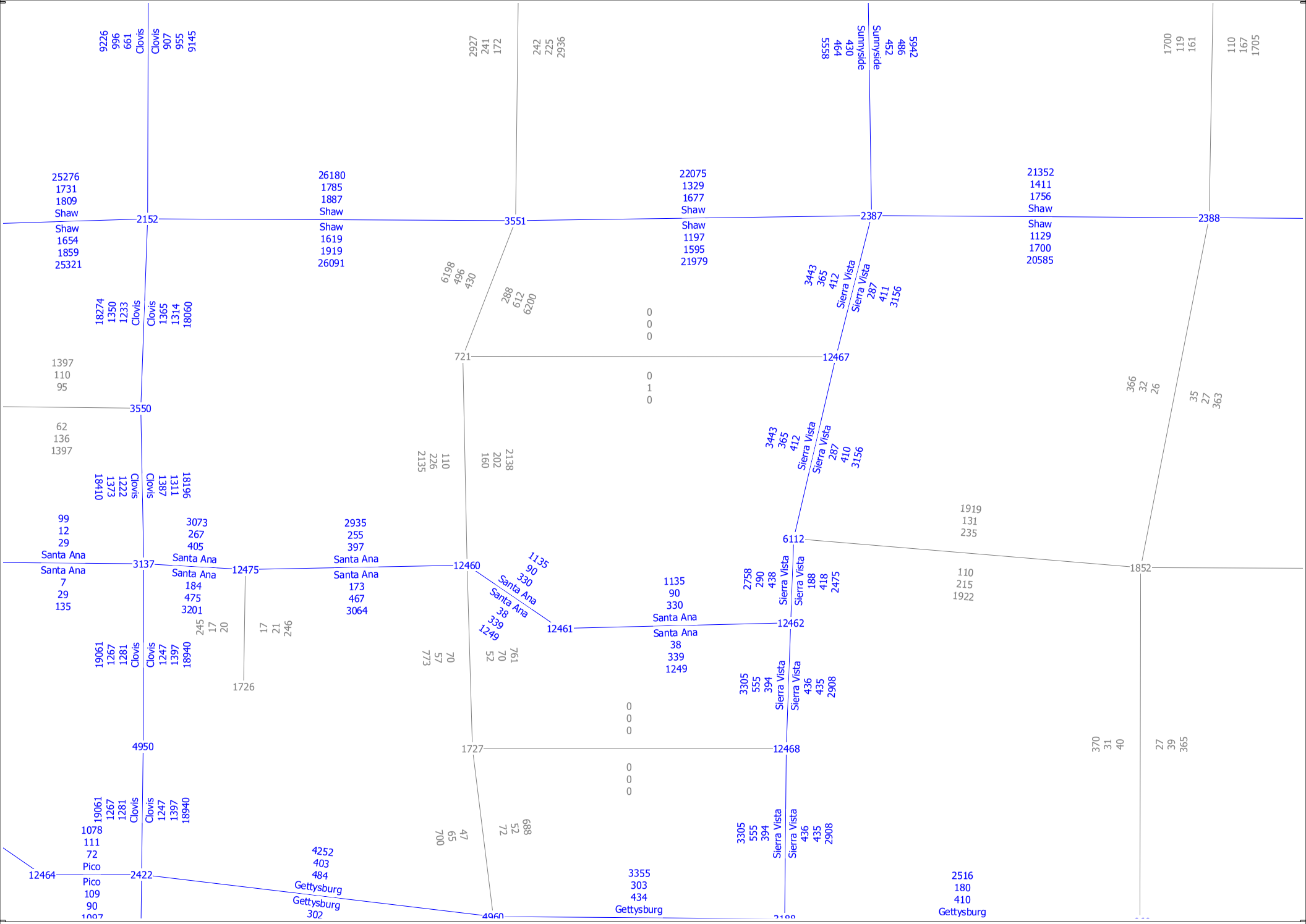

Base Year 2018 plus Project
AM Volume, PM Volume, Daily Volume
Page 2

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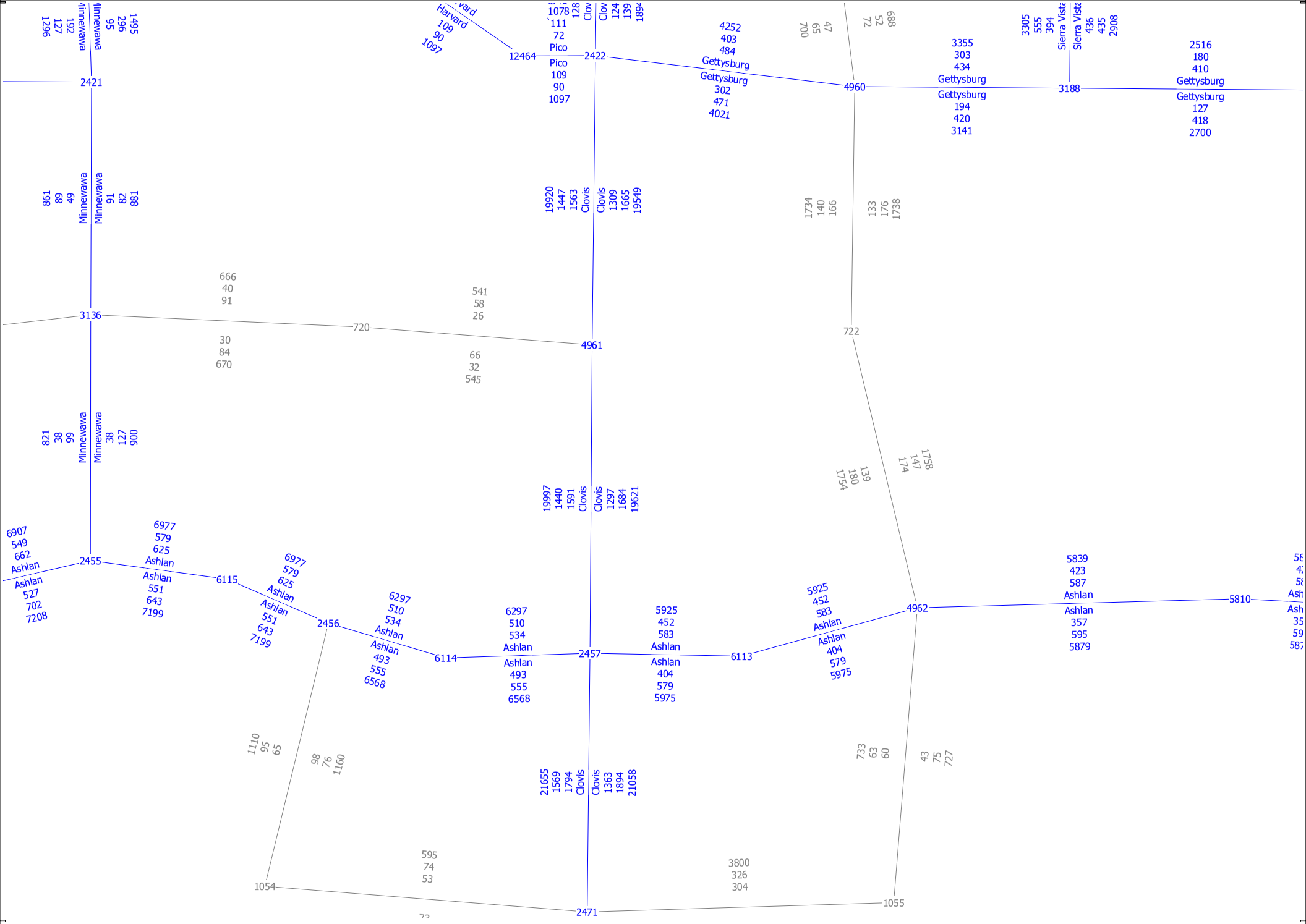

Base Year 2018 plus Project
AM Volume, PM Volume, Daily Volume
Page 3

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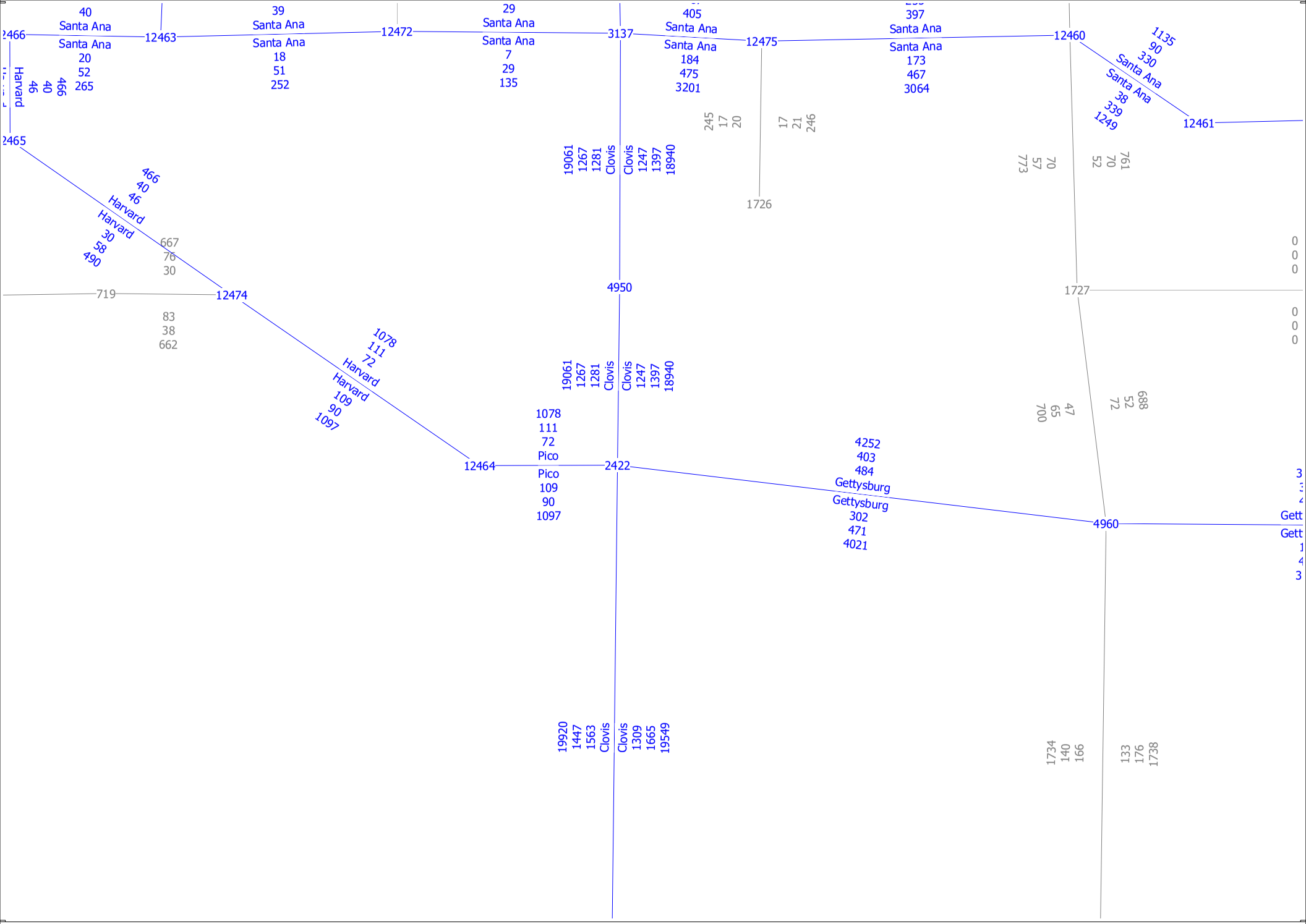

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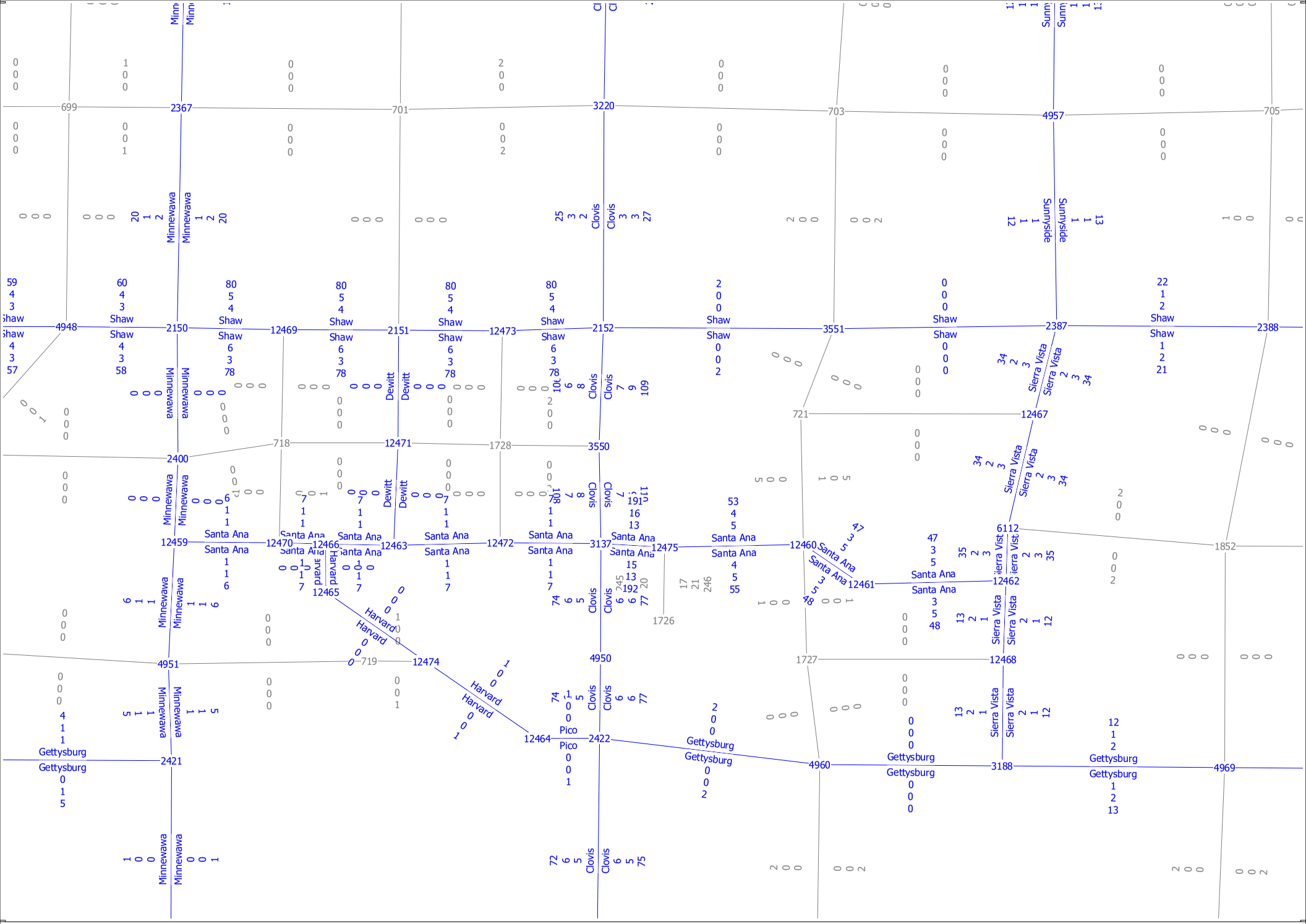

Base Year 2018 plus Project
Select Zone AM Volume, PM Volume, Daily Volume
Page 1

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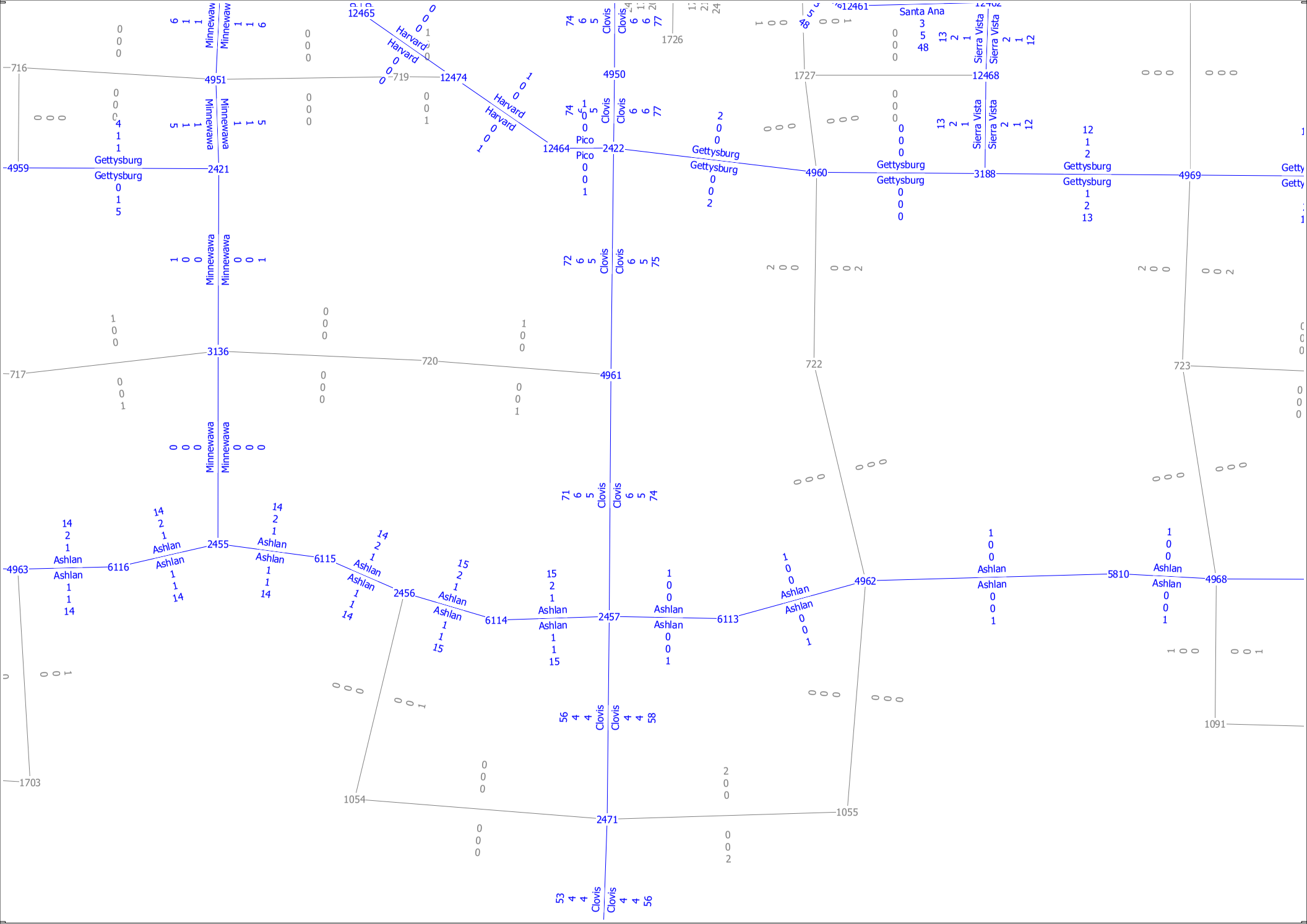

Base Year 2018 plus Project
Select Zone AM Volume, PM Volume, Daily Volume
Page 2

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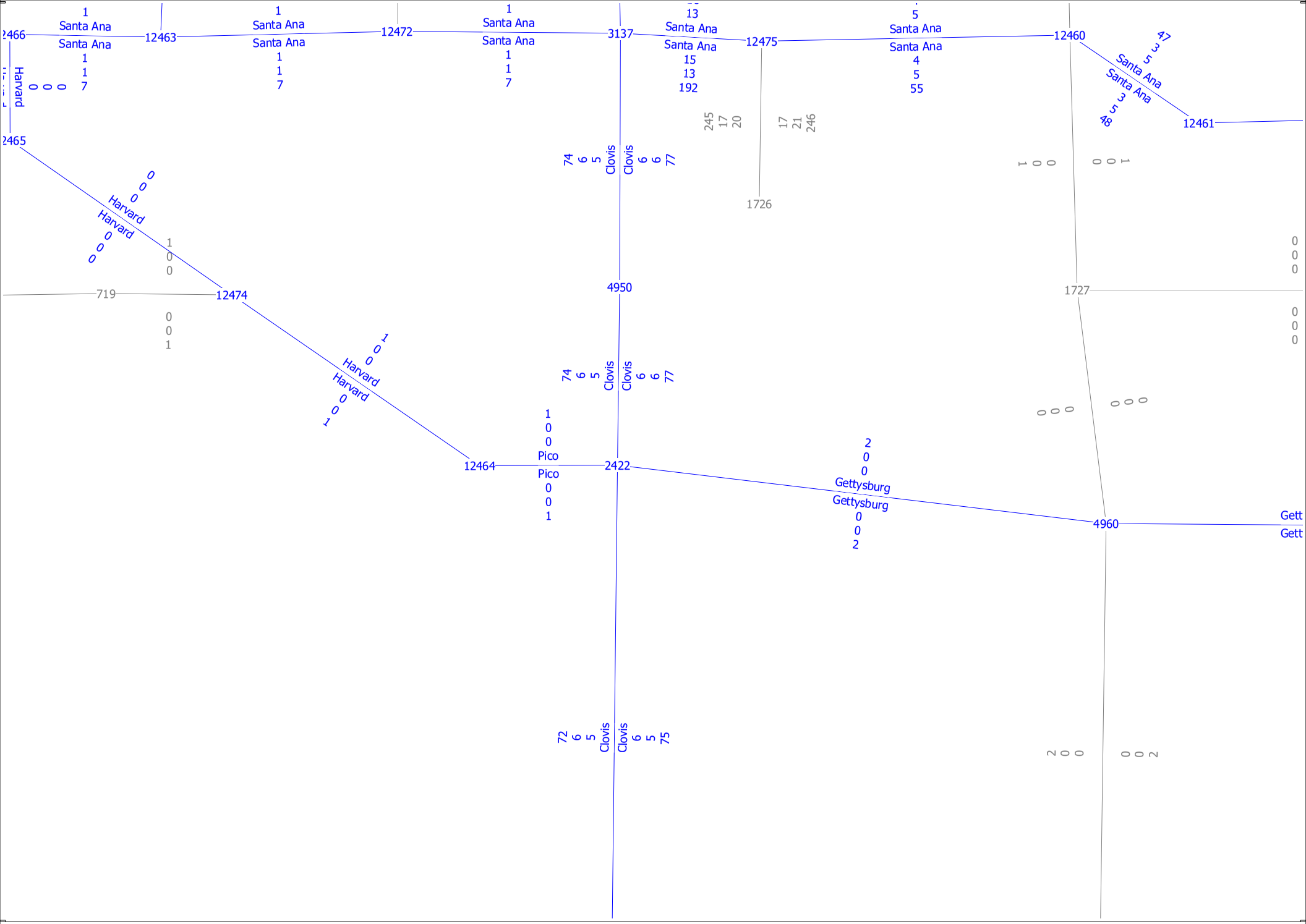

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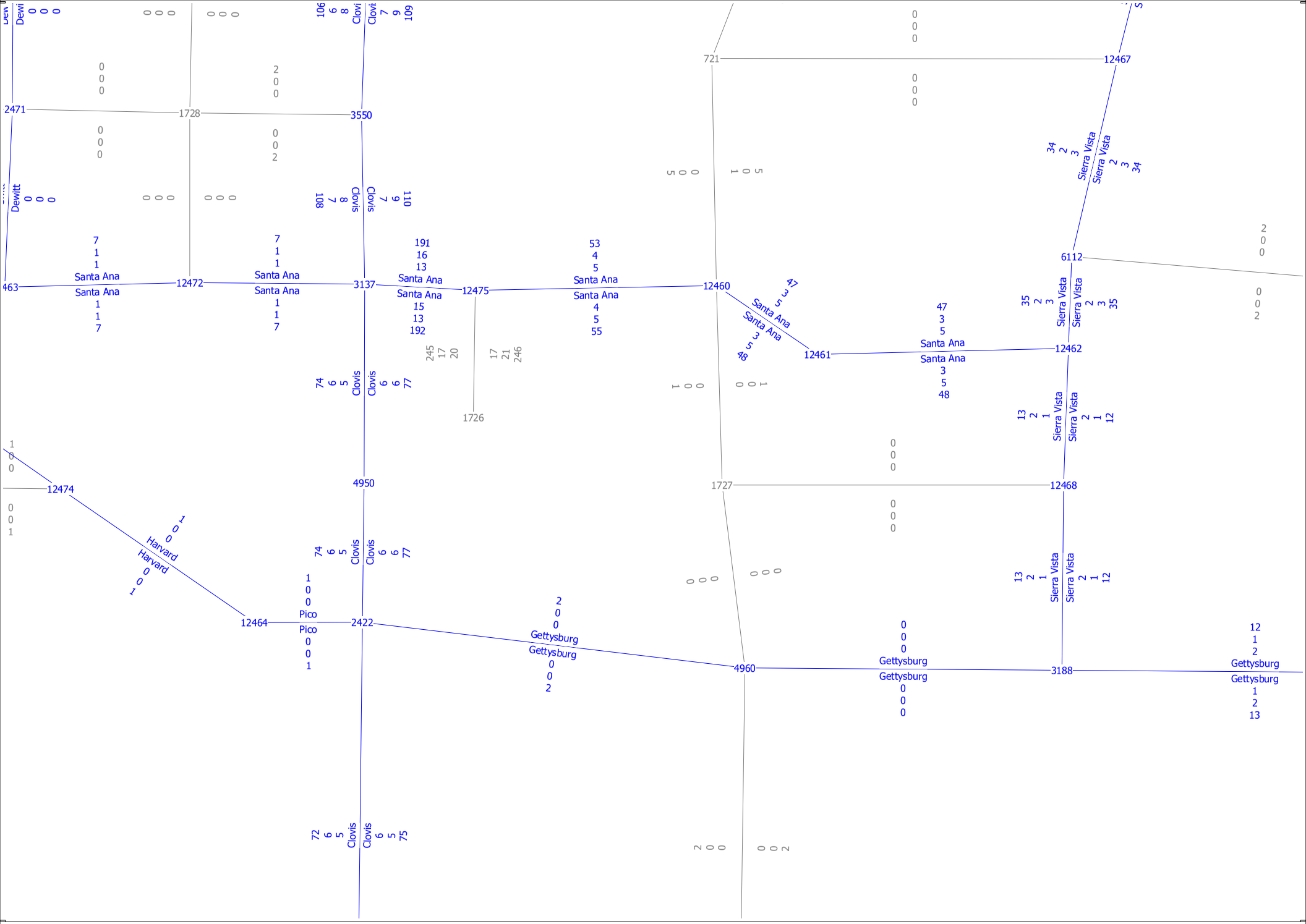

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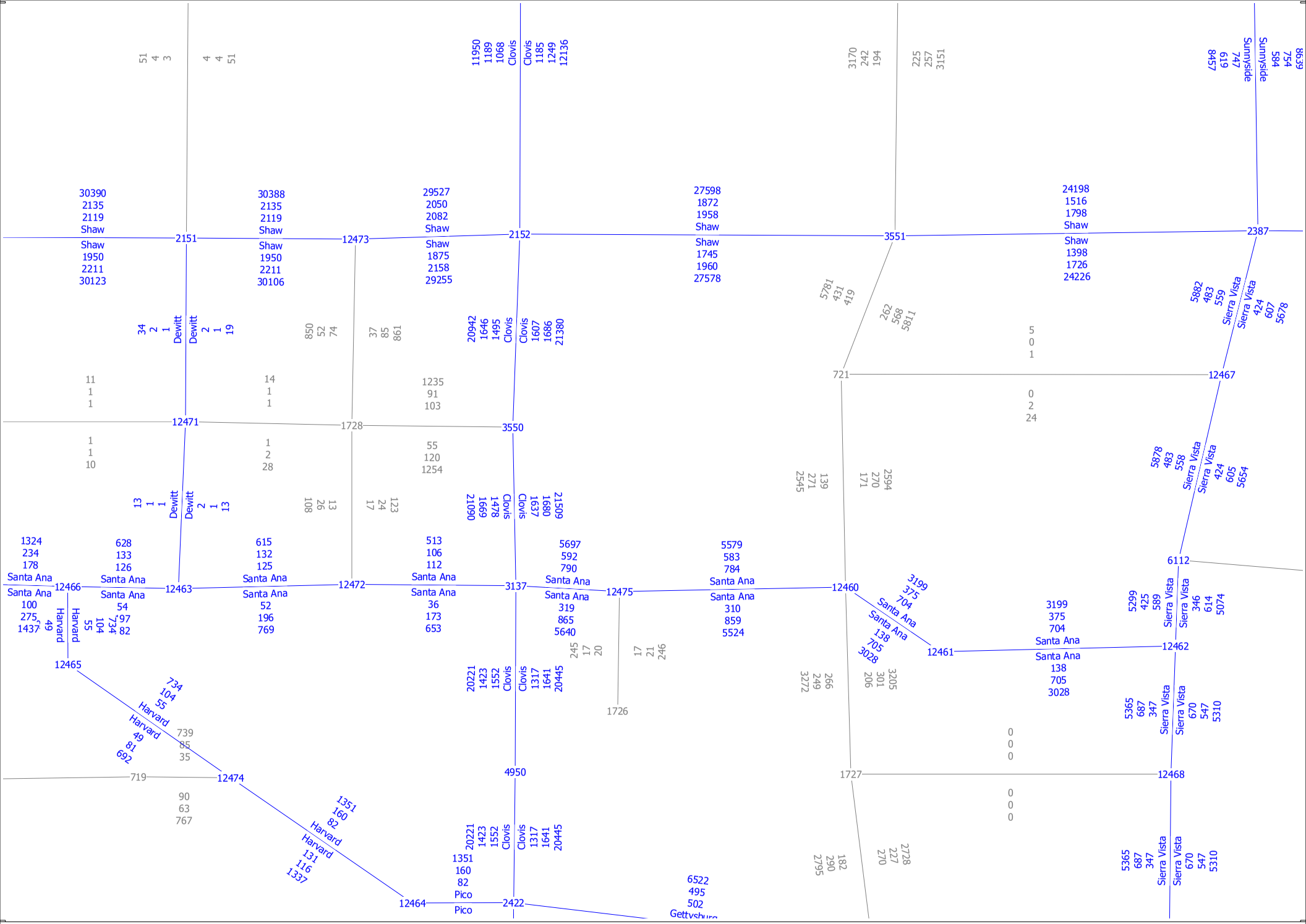

Cumulative Year 2035 Plus Project
AM Volume, PM Volume, Daily Volume
Page 1

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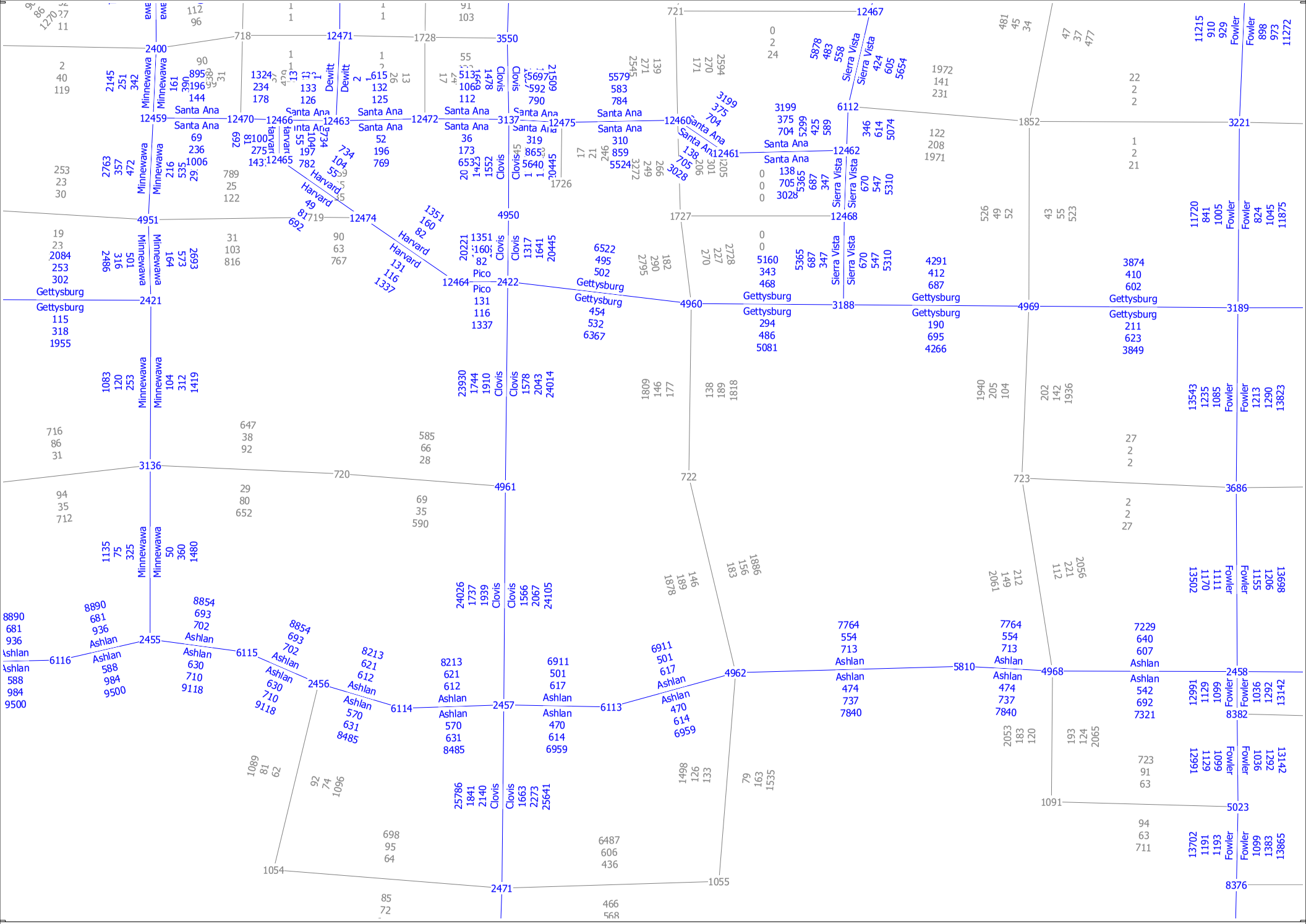

Cumulative Year 2035 Plus Project
AM Volume, PM Volume, Daily Volume
Page 2

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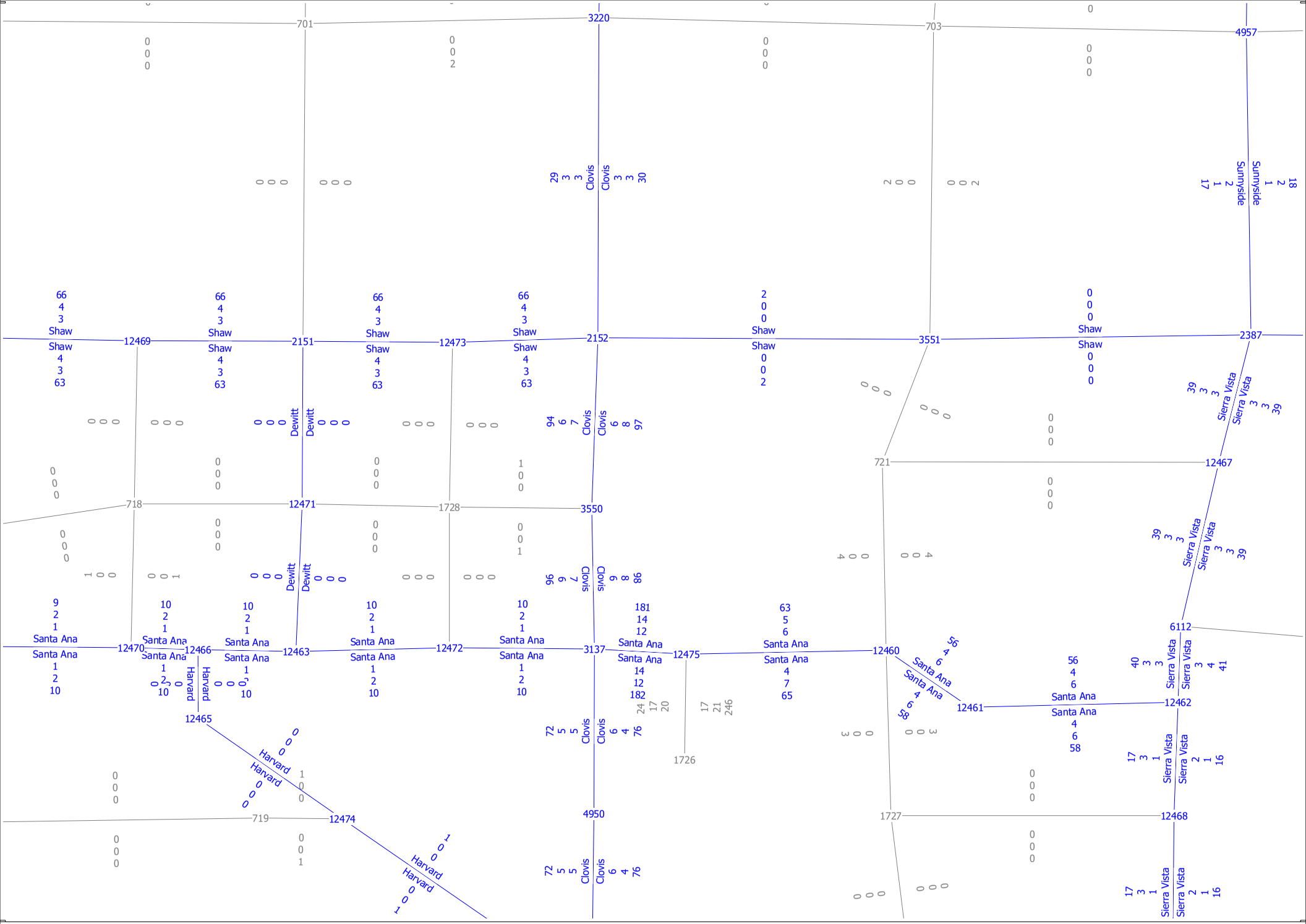

Cumulative Year 2035 Plus Project
Select Zone AM Volume, PM Volume, Daily Volume
Page 1

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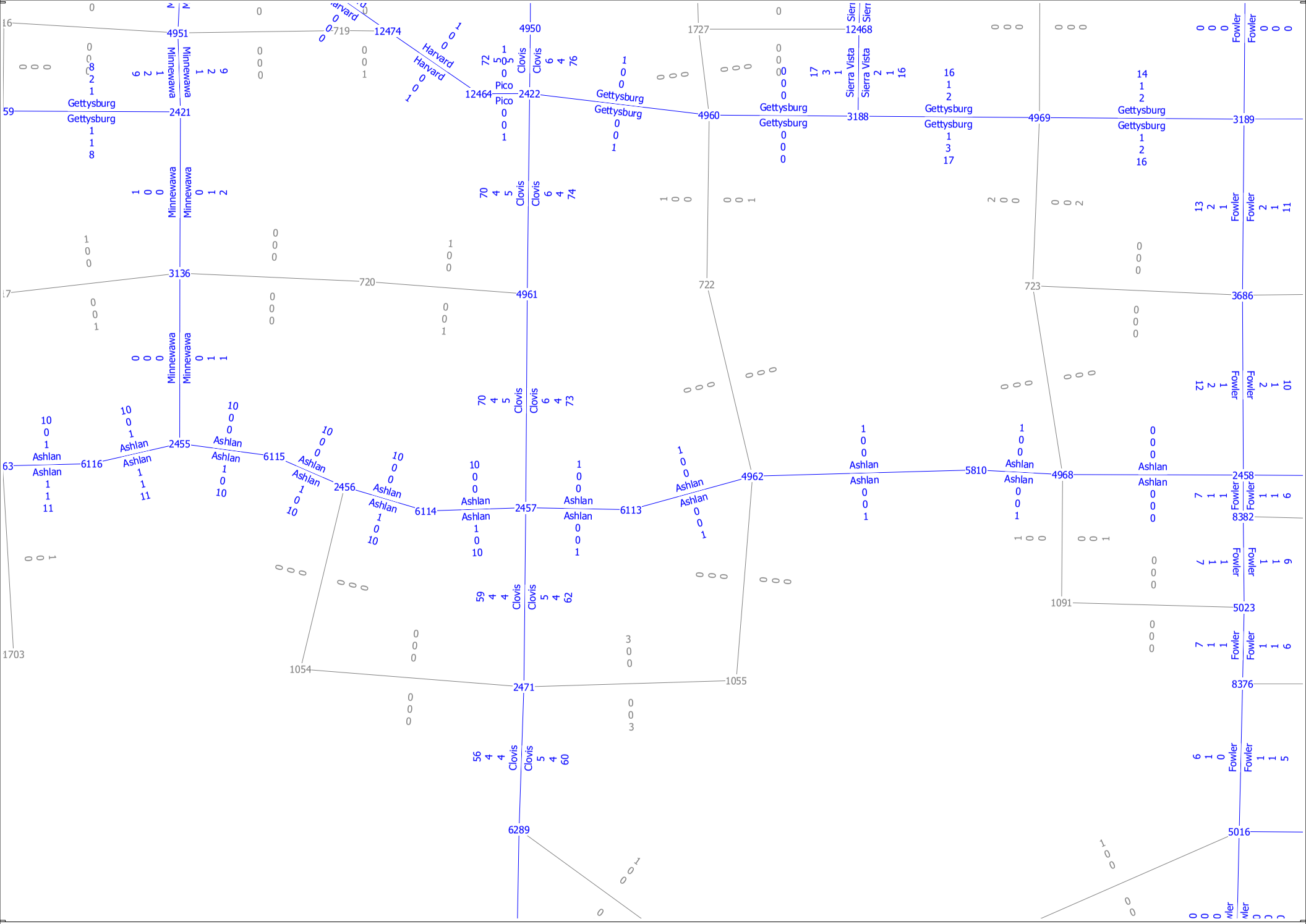

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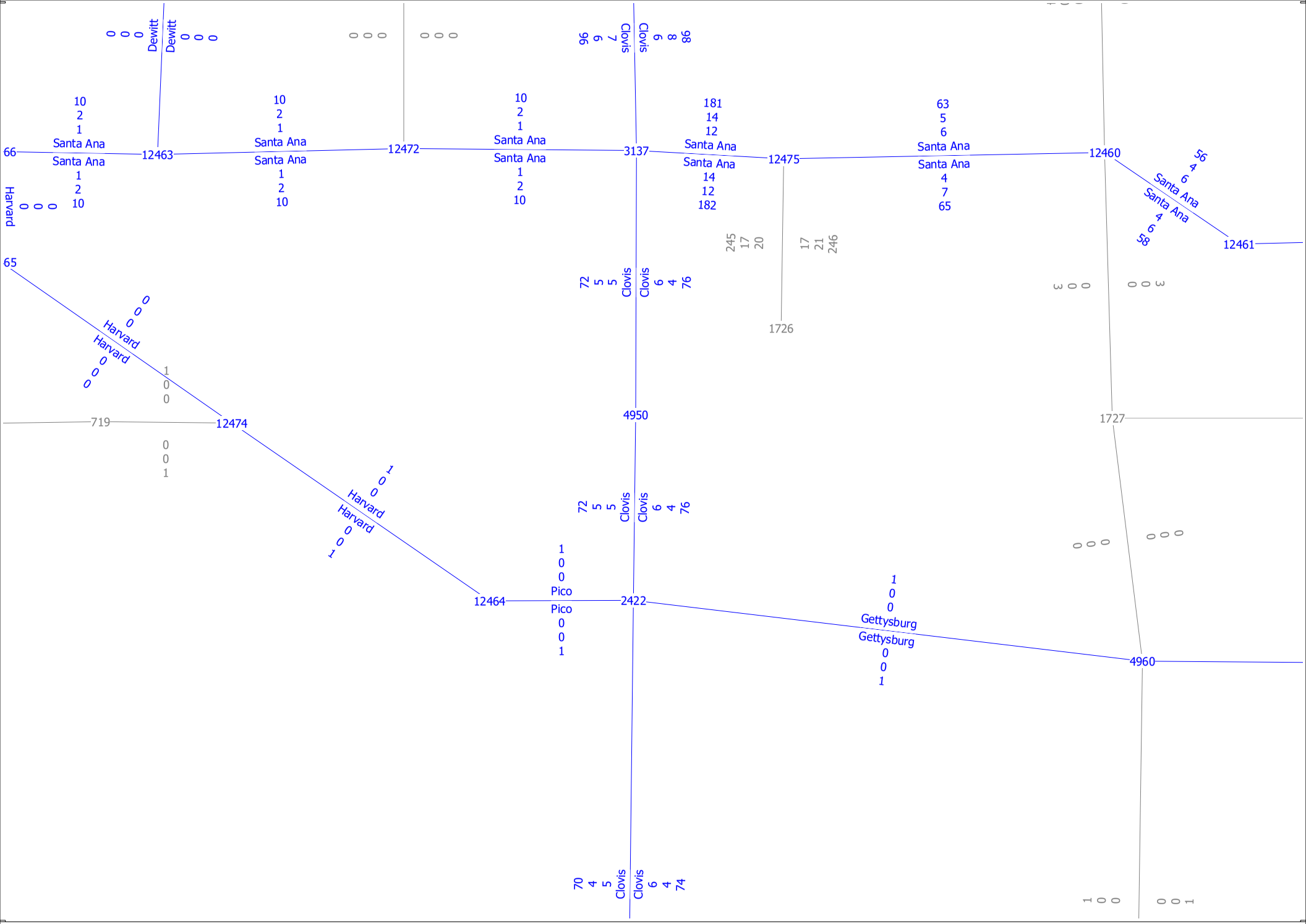

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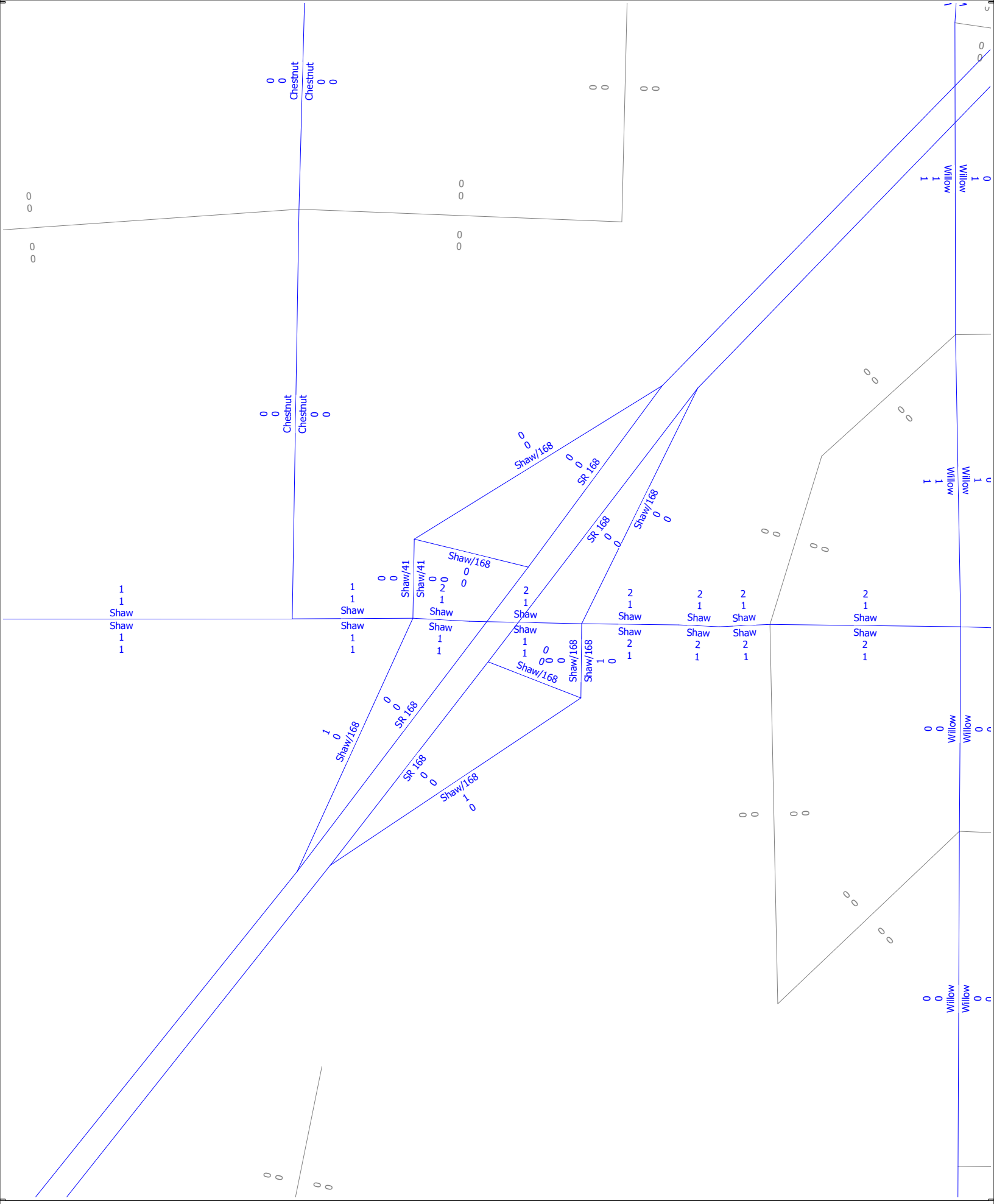

2035 Project only Trips
AM and PM Select Zone
SR 168 at Shaw Ave Interchange

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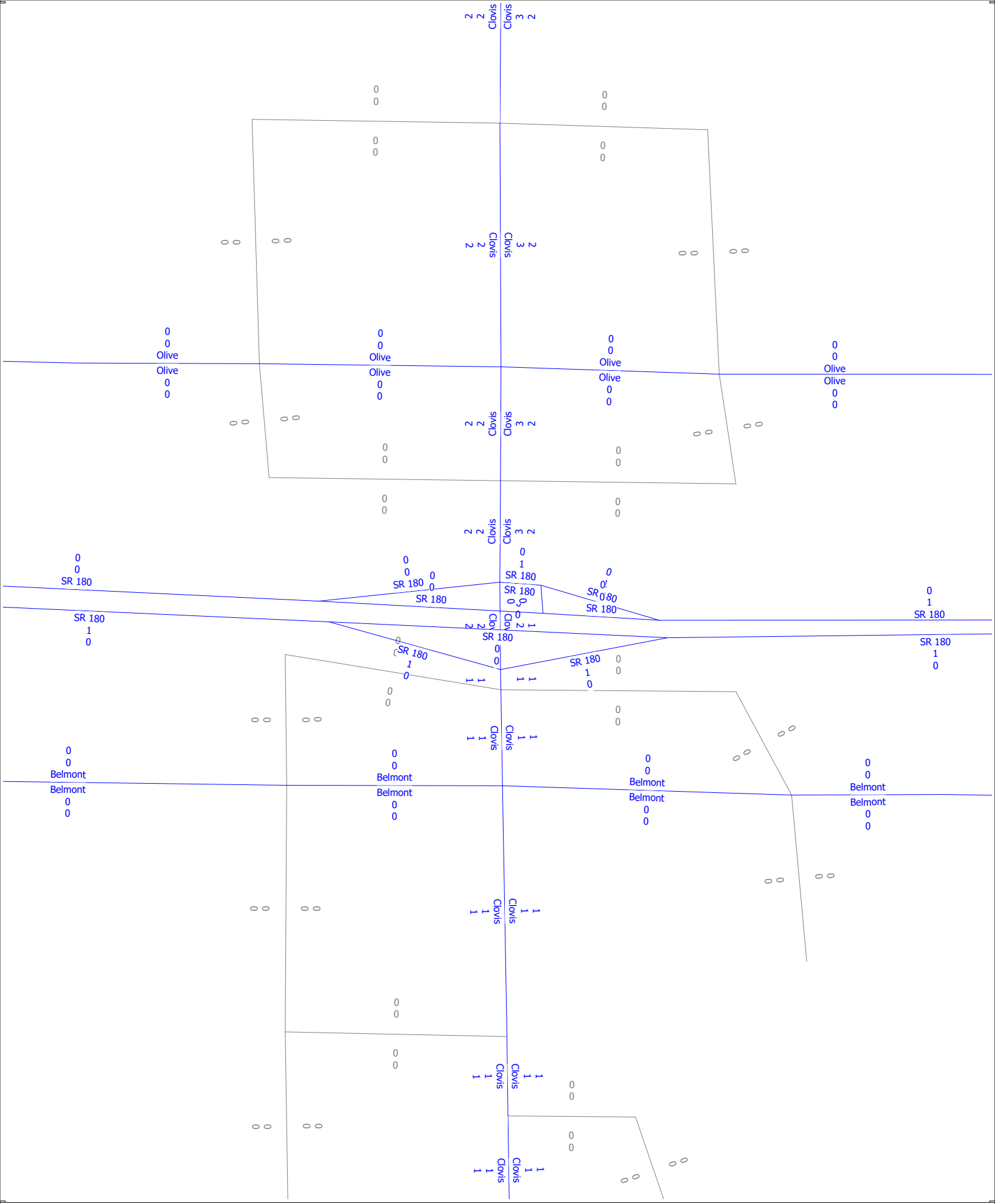

2035 Project only Trips
AM and PM Select Zone
SR 180 at Clovis Ave Interchange

cube
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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 2010 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 a LOS.

Urban Streets (Automobile Mode)

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas. Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials. Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals. Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing taxicabs, buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

Flow Characteristics

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control.

The street environment includes the geometric characteristics of the facility, the character of roadside activity, and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway/access point density, spacing between signalized intersections, existence of parking, level of pedestrian and bicyclist activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic controls (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds; however, such controls are needed to establish right-of-way.

Levels of Service (automobile Mode)

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

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 85 of the base free flow speed (FFS).

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 85 percent of the base FFS.

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.

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, inappropriate signal timing, at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS.

LOS E is characterized unstable operation and 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.

LOS F is characterized by street 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.

Table A-1: Urban Street Levels of Service (Automobile Mode)

Travel Speed as a Percentage of Base Free-Flow Speed (%)	LOS by Critical Volume-to-Capacity Ratio[a]	
	≤1.0	>1.0
>85	A	F
>67 to 85	B	F
>50 to 67	C	F
>40 to 50	D	F
>30 to 40	E	F
≤30	F	F

a = The Critical volume-to-capacity ratio is based on consideration of the through movement-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.
Source: Highway Capacity Manual 2010, Exhibit 16-4. Urban Street LOS Criteria (Automobile Mode)

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 and yield signs.

Signalized Intersections – Performance Measures

For signalized intersections the performance measures include automobile volume-to-capacity ratio, automobile delay, queue storage length, ratio of pedestrian delay, pedestrian circulation area, pedestrian perception score, bicycle delay, and bicycle perception score. LOS is also considered a performance measure. For the automobile mode average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A LOS designation is given to the weighted average control delay to better describe the level of operation. A description of LOS for signalized intersections is found in Table A-2.

Table A-2: Signalized Intersection Level of Service Description (Automobile 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 volume-to-capacity ratio is 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. This level is typically assigned when 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 i ndividual 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

Source: Highway Capacity Manual 2010

Unsignalized Intersections

The HCM 2010 procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i. e., in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

All-Way Stop Controlled Intersections

All-way stop controlled intersections is a form of traffic controls in which all approaches to an intersection are required to stop. Similar to signalized intersections, at all-way stop controlled intersections the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection as a whole. In other words the delay measured for all-way stop controlled intersections is a measure of the average delay for all vehicles passing through the intersection during the peak hour. A LOS designation is given to the weighted average control delay to better describe the level of operation.

Two-Way Stop Controlled Intersections

Two-way stop controlled (TWSC) intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At TWSC intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS for TWSC intersection is determined by the computed or measured control delay for each minor movement. LOS is not defined for the intersection as a whole for three main reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at the typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay from all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. Table A-3 provides a description of LOS at unsignalized intersections.

Table A-3: Unsignalized 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

Source: HCM 2010 Exhibit 19-1.

Appendix E: Existing Traffic Conditions

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	8	45	11	1	40	19	56	17	798	65	4	96
Future Volume (vph)	8	45	11	1	40	19	56	17	798	65	4	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.98			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1790			1744	1845	1568	1752	4979			1752
Flt Permitted		0.99			1.00	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1790			1836	1845	1568	1752	4979			1752
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	9	52	13	1	46	22	64	20	917	75	5	110
RTOR Reduction (vph)	0	11	0	0	0	0	60	0	10	0	0	0
Lane Group Flow (vph)	0	63	0	0	47	22	4	20	982	0	0	115
Confl. Peds. (#/hr)				10							10	
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		7.0			3.8	3.8	3.8	6.4	19.0			6.0
Effective Green, g (s)		7.0			3.8	3.8	3.8	6.4	19.0			6.0
Actuated g/C Ratio		0.13			0.07	0.07	0.07	0.11	0.34			0.11
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		224			125	125	106	200	1695			188
v/s Ratio Prot		c0.03				0.01		0.01	c0.20			c0.07
v/s Ratio Perm					c0.03		0.00					
v/c Ratio		0.28			0.38	0.18	0.04	0.10	0.58			0.61
Uniform Delay, d1		22.1			24.9	24.5	24.3	22.1	15.1			23.8
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2		0.7			1.9	0.7	0.2	0.2	0.5			5.8
Delay (s)		22.8			26.8	25.2	24.5	22.3	15.6			29.6
Level of Service		C			C	C	C	C	B			C
Approach Delay (s)		22.8				25.4			15.7			
Approach LOS		C				C			B			

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	665	10
Future Volume (vph)	665	10
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	1.00	
Flt Protected	1.00	
Satd. Flow (prot)	5025	
Flt Permitted	1.00	
Satd. Flow (perm)	5025	
Peak-hour factor, PHF	0.87	0.87
Adj. Flow (vph)	764	11
RTOR Reduction (vph)	1	0
Lane Group Flow (vph)	774	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	18.6	
Effective Green, g (s)	18.6	
Actuated g/C Ratio	0.33	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1675	
v/s Ratio Prot	0.15	
v/s Ratio Perm		
v/c Ratio	0.46	
Uniform Delay, d1	14.7	
Progression Factor	1.00	
Incremental Delay, d2	0.2	
Delay (s)	14.9	
Level of Service	B	
Approach Delay (s)	16.8	
Approach LOS	B	

Intersection Summary

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	15	88	147	1	87	86	7	37	2	27	0	4	15
Future Vol, veh/h	15	88	147	1	87	86	7	37	2	27	0	4	15
Conflicting Peds, #/hr	1	0	2	0	2	0	1	0	0	3	3	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	140	-	-	-	185	-	-	-	-	-	130	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	22	128	213	1	126	125	10	54	3	39	0	6	22

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	136	0	0	341	343	0	0	601	671	176	498	772	69
Stage 1	-	-	-	-	-	-	-	281	281	-	385	385	-
Stage 2	-	-	-	-	-	-	-	320	390	-	113	387	-
Critical Hdwy	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1439	-	-	868	1206	-	-	382	374	834	453	327	977
Stage 1	-	-	-	-	-	-	-	699	675	-	607	607	-
Stage 2	-	-	-	-	-	-	-	663	604	-	877	605	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1438	-	-	1198	1198	-	-	333	328	830	388	287	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	333	328	-	388	287	-
Stage 1	-	-	-	-	-	-	-	687	664	-	597	541	-
Stage 2	-	-	-	-	-	-	-	573	539	-	817	595	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	4.1	15.4	10.8
HCM LOS			C	B

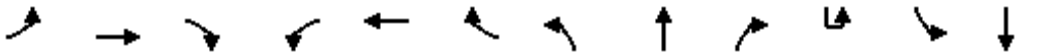
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	441	1438	-	-	1198	-	-	-	648
HCM Lane V/C Ratio	0.217	0.015	-	-	0.106	-	-	-	0.042
HCM Control Delay (s)	15.4	7.5	-	-	8.4	-	-	0	10.8
HCM Lane LOS	C	A	-	-	A	-	-	A	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0.4	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	124	348	75	222	558	184	3	65	590	123	2	93
Future Volume (vph)	124	348	75	222	558	184	3	65	590	123	2	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91			1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97			1.00
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1752	3411		1752	1845	1568		1752	4905			1752
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1752	3411		1752	1845	1568		1752	4905			1752
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	378	82	241	607	200	3	71	641	134	2	101
RTOR Reduction (vph)	0	19	0	0	0	100	0	0	33	0	0	0
Lane Group Flow (vph)	135	441	0	241	607	100	0	74	742	0	0	103
Confl. Peds. (#/hr)							10				10	
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8	8	5	5	2		1	1
Permitted Phases												
Actuated Green, G (s)	8.9	28.2		14.3	33.6	33.6		5.2	22.9			6.7
Effective Green, g (s)	8.9	28.2		14.3	33.6	33.6		5.2	22.9			6.7
Actuated g/C Ratio	0.10	0.31		0.16	0.36	0.36		0.06	0.25			0.07
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	169	1044		272	673	572		98	1219			127
v/s Ratio Prot	0.08	0.13		c0.14	c0.33	0.06		0.04	0.15			c0.06
v/s Ratio Perm												
v/c Ratio	0.80	0.42		0.89	0.90	0.18		0.76	0.61			0.81
Uniform Delay, d1	40.7	25.5		38.1	27.7	19.8		42.8	30.6			42.1
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	22.5	0.3		27.2	15.3	0.1		27.6	0.9			31.0
Delay (s)	63.3	25.7		65.3	43.0	20.0		70.4	31.5			73.1
Level of Service	E	C		E	D	B		E	C			E
Approach Delay (s)		34.3			43.7				34.9			
Approach LOS		C			D				C			

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	92.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	694	150
Future Volume (vph)	694	150
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.97	
Flt Protected	1.00	
Satd. Flow (prot)	4902	
Flt Permitted	1.00	
Satd. Flow (perm)	4902	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	754	163
RTOR Reduction (vph)	34	0
Lane Group Flow (vph)	883	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	24.8	
Effective Green, g (s)	24.8	
Actuated g/C Ratio	0.27	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1319	
v/s Ratio Prot	c0.18	
v/s Ratio Perm		
v/c Ratio	0.67	
Uniform Delay, d1	30.0	
Progression Factor	1.00	
Incremental Delay, d2	1.3	
Delay (s)	31.3	
Level of Service	C	
Approach Delay (s)	35.5	
Approach LOS	D	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	77	15	151	49	86	20	1000	176	8	41	928
Future Volume (vph)	8	77	15	151	49	86	20	1000	176	8	41	928
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6		5.4	5.4	5.4	4.2	5.8			4.2	5.8
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.91			1.00	0.91
Frpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt		0.98		1.00	1.00	0.85	1.00	0.98			1.00	1.00
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1801		1752	1845	1568	1752	4923			1752	5025
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)		1801		1752	1845	1568	1752	4923			1752	5025
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	8	79	15	156	51	89	21	1031	181	8	42	957
RTOR Reduction (vph)	0	9	0	0	0	81	0	23	0	0	0	1
Lane Group Flow (vph)	0	93	0	156	51	8	21	1189	0	0	50	970
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	Prot	NA
Protected Phases	4	4		8	8		5	2		1	1	6
Permitted Phases						8						
Actuated Green, G (s)		9.8		6.1	6.1	6.1	5.9	26.1			2.6	22.8
Effective Green, g (s)		9.8		6.1	6.1	6.1	5.9	26.1			2.6	22.8
Actuated g/C Ratio		0.15		0.09	0.09	0.09	0.09	0.40			0.04	0.35
Clearance Time (s)		4.6		5.4	5.4	5.4	4.2	5.8			4.2	5.8
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		273		165	174	148	160	1989			70	1773
v/s Ratio Prot		c0.05		c0.09	0.03		0.01	c0.24			c0.03	0.19
v/s Ratio Perm						0.01						
v/c Ratio		0.34		0.95	0.29	0.06	0.13	0.60			0.71	0.55
Uniform Delay, d1		24.5		29.1	27.2	26.6	27.0	15.1			30.6	16.8
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2		0.7		53.7	0.9	0.2	0.4	0.5			29.1	0.3
Delay (s)		25.2		82.7	28.2	26.8	27.4	15.6			59.7	17.1
Level of Service		C		F	C	C	C	B			E	B
Approach Delay (s)		25.2			56.5			15.8				19.2
Approach LOS		C			E			B				B

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	14
Future Volume (vph)	14
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.97
Adj. Flow (vph)	14
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	116	176	11	2	109	28	14	4	11	33	5	135
Future Vol, veh/h	116	176	11	2	109	28	14	4	11	33	5	135
Conflicting Peds, #/hr	2	0	6	6	0	2	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	185	-	-	-	-	-	130	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	135	205	13	2	127	33	16	5	13	38	6	157

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	162	0	0	224	0	0	559	654	117	527	644	82
Stage 1	-	-	-	-	-	-	488	488	-	150	150	-
Stage 2	-	-	-	-	-	-	71	166	-	377	494	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1407	-	-	1335	-	-	410	383	910	432	388	958
Stage 1	-	-	-	-	-	-	527	546	-	834	770	-
Stage 2	-	-	-	-	-	-	928	757	-	614	542	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1327	-	-	311	343	903	389	347	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	311	343	-	389	347	-
Stage 1	-	-	-	-	-	-	474	491	-	752	767	-
Stage 2	-	-	-	-	-	-	769	754	-	541	487	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.1	14.3	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	421	1404	-	-	1327	-	-	389	900
HCM Lane V/C Ratio	0.08	0.096	-	-	0.002	-	-	0.099	0.181
HCM Control Delay (s)	14.3	7.8	-	-	7.7	-	-	15.3	9.9
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	0.3	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	147	627	128	120	379	128	12	153	1075	289	231	735
Future Volume (vph)	147	627	128	120	379	128	12	153	1075	289	231	735
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97		1.00	0.97
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1752	3416		1752	1845	1568		1752	4876		1752	4896
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1752	3416		1752	1845	1568		1752	4876		1752	4896
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	158	674	138	129	408	138	13	165	1156	311	248	790
RTOR Reduction (vph)	0	16	0	0	0	94	0	0	43	0	0	33
Lane Group Flow (vph)	158	796	0	129	408	44	0	178	1424	0	248	937
Confl. Peds. (#/hr)							10					
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	NA
Protected Phases	7	4		3	8	8	5	5	2		1	6
Permitted Phases												
Actuated Green, G (s)	10.0	29.7		9.2	28.9	28.9		14.0	32.0		15.4	33.8
Effective Green, g (s)	10.0	29.7		9.2	28.9	28.9		14.0	32.0		15.4	33.8
Actuated g/C Ratio	0.09	0.28		0.09	0.27	0.27		0.13	0.30		0.14	0.32
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	164	954		151	501	426		230	1467		253	1556
v/s Ratio Prot	c0.09	c0.23		0.07	0.22	0.03		0.10	c0.29		c0.14	0.19
v/s Ratio Perm												
v/c Ratio	0.96	0.83		0.85	0.81	0.10		0.77	0.97		0.98	0.60
Uniform Delay, d1	48.0	36.0		47.9	36.2	29.0		44.6	36.7		45.3	30.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	59.0	6.4		34.7	9.8	0.1		14.9	16.9		50.8	0.7
Delay (s)	107.0	42.4		82.6	46.0	29.1		59.5	53.6		96.1	31.2
Level of Service	F	D		F	D	C		E	D		F	C
Approach Delay (s)		52.9			49.5				54.2			44.5
Approach LOS		D			D				D			D

Intersection Summary			
HCM 2000 Control Delay	50.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	167
Future Volume (vph)	167
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	180
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	77	70	66	54	42	131	181	248	131	167	132	81
Average Queue (ft)	41	27	16	24	10	43	70	91	62	84	49	18
95th Queue (ft)	75	61	49	51	30	105	147	183	109	148	102	53
Link Distance (ft)	1552		520	520		4203	4203	4203		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	EB	EB	WB	NB	SB
Directions Served	UL	T	TR	UL	LTR	TR
Maximum Queue (ft)	27	17	16	49	56	29
Average Queue (ft)	2	1	2	13	32	14
95th Queue (ft)	12	6	9	37	52	38
Link Distance (ft)		520	520		279	353
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	140			185		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	B9	WB	WB	WB	B12	NB	NB	NB	NB
Directions Served	L	T	TR	T	L	T	R	T	UL	T	T	TR
Maximum Queue (ft)	277	337	266	115	215	372	293	277	116	175	184	137
Average Queue (ft)	88	158	68	4	189	271	154	37	53	120	104	65
95th Queue (ft)	156	236	181	38	258	397	317	141	97	162	163	120
Link Distance (ft)		278	278	2256		293		1338		2514	2514	2514
Upstream Blk Time (%)	0	1	0			10	0					
Queuing Penalty (veh)	0	0	0			0	0					
Storage Bay Dist (ft)	200				180		180		200			
Storage Blk Time (%)		3			14	21	1					
Queuing Penalty (veh)		4			101	84	11					

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB	SB
Directions Served	UL	T	T	TR
Maximum Queue (ft)	153	175	213	261
Average Queue (ft)	69	115	133	140
95th Queue (ft)	124	161	199	224
Link Distance (ft)		4203	4203	4203
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	225			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 200

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	L	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	116	241	72	54	41	204	220	307	64	233	210	139
Average Queue (ft)	55	129	29	30	9	79	112	137	32	115	83	26
95th Queue (ft)	89	222	62	52	26	163	207	253	60	202	165	73
Link Distance (ft)	1552		520	520		4203	4203	4203		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)		2				0				2		
Queuing Penalty (veh)		1				0				1		

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	WB	NB	SB	SB
Directions Served	UL	TR	LTR	L	TR
Maximum Queue (ft)	48	21	55	30	55
Average Queue (ft)	10	1	17	18	37
95th Queue (ft)	33	7	45	42	59
Link Distance (ft)		1866	279		353
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	140			130	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	B9	WB	WB	WB	B12	NB	NB	NB	NB
Directions Served	L	T	TR	T	L	T	R	T	UL	T	T	TR
Maximum Queue (ft)	277	385	288	2319	214	353	293	310	324	378	427	475
Average Queue (ft)	219	340	259	1752	128	205	98	31	136	230	239	242
95th Queue (ft)	368	357	337	2961	227	352	208	173	262	334	341	384
Link Distance (ft)		278	278	2256		293		1338		2514	2514	2514
Upstream Blk Time (%)	0	57	5	48		6	0					
Queuing Penalty (veh)	0	0	0	0		0	0					
Storage Bay Dist (ft)	200				180		180		200			
Storage Blk Time (%)	2	67			11	9	0		1	16		
Queuing Penalty (veh)	7	99			57	23	0		2	27		

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	284	261	272	335
Average Queue (ft)	142	124	145	168
95th Queue (ft)	252	195	222	254
Link Distance (ft)		4203	4203	4203
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	225			
Storage Blk Time (%)	3	0		
Queuing Penalty (veh)	6	0		

Network Summary

Network wide Queuing Penalty: 223

Appendix F: Existing plus Project Traffic Conditions

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	8	46	11	1	45	20	63	17	798	73	4	107
Future Volume (vph)	8	46	11	1	45	20	63	17	798	73	4	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.98			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1791			1752	1845	1568	1752	4973			1752
Flt Permitted		0.99			1.00	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1791			1845	1845	1568	1752	4973			1752
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	9	53	13	1	52	23	72	20	917	84	5	123
RTOR Reduction (vph)	0	11	0	0	0	0	67	0	11	0	0	0
Lane Group Flow (vph)	0	64	0	0	53	23	5	20	990	0	0	128
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		8.7			3.7	3.7	3.7	6.3	18.9			6.0
Effective Green, g (s)		8.7			3.7	3.7	3.7	6.3	18.9			6.0
Actuated g/C Ratio		0.15			0.06	0.06	0.06	0.11	0.33			0.10
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		271			119	119	101	192	1640			183
v/s Ratio Prot		c0.04				0.01		0.01	c0.20			c0.07
v/s Ratio Perm					c0.03		0.00					
v/c Ratio		0.24			0.45	0.19	0.05	0.10	0.60			0.70
Uniform Delay, d1		21.4			25.8	25.4	25.1	23.0	16.1			24.8
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2		0.5			2.6	0.8	0.2	0.2	0.6			11.1
Delay (s)		21.8			28.5	26.2	25.3	23.2	16.7			35.9
Level of Service		C			C	C	C	C	B			D
Approach Delay (s)		21.8				26.6			16.8			
Approach LOS		C				C			B			

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	665	10
Future Volume (vph)	665	10
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	1.00	
Flt Protected	1.00	
Satd. Flow (prot)	5025	
Flt Permitted	1.00	
Satd. Flow (perm)	5025	
Peak-hour factor, PHF	0.87	0.87
Adj. Flow (vph)	764	11
RTOR Reduction (vph)	1	0
Lane Group Flow (vph)	774	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	18.6	
Effective Green, g (s)	18.6	
Actuated g/C Ratio	0.32	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1631	
v/s Ratio Prot	0.15	
v/s Ratio Perm		
v/c Ratio	0.47	
Uniform Delay, d1	15.4	
Progression Factor	1.00	
Incremental Delay, d2	0.2	
Delay (s)	15.7	
Level of Service	B	
Approach Delay (s)	18.5	
Approach LOS	B	

Intersection Summary

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	20	0	13	0	17
Future Vol, veh/h	0	20	0	13	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	22	0	14	0	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	11
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	1064
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	1064
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	1064	-	-	-
HCM Lane V/C Ratio	0.017	-	-	-
HCM Control Delay (s)	8.4	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	13	15	92	147	1	87	86	7	37	2	27	0	4	0
Future Vol, veh/h	13	15	92	147	1	87	86	7	37	2	27	0	4	0
Conflicting Peds, #/hr	0	2	0	6	0	6	0	2	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	140	-	-	-	185	-	-	-	-	-	130	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	19	22	133	213	1	126	125	10	54	3	39	0	6	0

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	135	137	0	0	346	352	0	0	648	719	181	538	820	70
Stage 1	-	-	-	-	-	-	-	-	328	328	-	386	386	-
Stage 2	-	-	-	-	-	-	-	-	320	391	-	152	434	-
Critical Hdwy	6.46	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1171	1437	-	-	862	1196	-	-	353	351	827	424	306	975
Stage 1	-	-	-	-	-	-	-	-	656	643	-	606	606	-
Stage 2	-	-	-	-	-	-	-	-	663	603	-	832	577	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1299	1299	-	-	1183	1183	-	-	309	301	821	357	262	973
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	309	301	-	357	262	-
Stage 1	-	-	-	-	-	-	-	-	632	619	-	586	539	-
Stage 2	-	-	-	-	-	-	-	-	585	537	-	762	555	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	4.1	16.3	19.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	414	1299	-	-	1183	-	-	-	262
HCM Lane V/C Ratio	0.231	0.031	-	-	0.108	-	-	-	0.022
HCM Control Delay (s)	16.3	7.9	-	-	8.4	-	-	0	19.1
HCM Lane LOS	C	A	-	-	A	-	-	A	C
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.4	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	125	348	75	222	558	184	3	65	594	123	2	93
Future Volume (vph)	125	348	75	222	558	184	3	65	594	123	2	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91			1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97			1.00
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1752	3411		1752	1845	1568		1752	4906			1752
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1752	3411		1752	1845	1568		1752	4906			1752
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	378	82	241	607	200	3	71	646	134	2	101
RTOR Reduction (vph)	0	19	0	0	0	100	0	0	32	0	0	0
Lane Group Flow (vph)	136	441	0	241	607	100	0	74	748	0	0	103
Confl. Peds. (#/hr)							10				10	
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8	8	5	5	2		1	1
Permitted Phases												
Actuated Green, G (s)	8.9	28.3		14.3	33.7	33.7		5.3	23.5			6.7
Effective Green, g (s)	8.9	28.3		14.3	33.7	33.7		5.3	23.5			6.7
Actuated g/C Ratio	0.10	0.30		0.15	0.36	0.36		0.06	0.25			0.07
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	168	1040		269	670	569		100	1242			126
v/s Ratio Prot	0.08	0.13		c0.14	c0.33	0.06		0.04	0.15			c0.06
v/s Ratio Perm												
v/c Ratio	0.81	0.42		0.90	0.91	0.18		0.74	0.60			0.82
Uniform Delay, d1	41.1	25.7		38.5	28.0	20.1		43.1	30.5			42.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	24.2	0.3		29.2	15.8	0.1		24.6	0.8			32.0
Delay (s)	65.3	26.0		67.7	43.9	20.3		67.7	31.4			74.5
Level of Service	E	C		E	D	C		E	C			E
Approach Delay (s)		35.0			44.9				34.5			
Approach LOS		C			D				C			

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	698	151
Future Volume (vph)	698	151
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.97	
Flt Protected	1.00	
Satd. Flow (prot)	4902	
Flt Permitted	1.00	
Satd. Flow (perm)	4902	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	759	164
RTOR Reduction (vph)	33	0
Lane Group Flow (vph)	890	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	25.3	
Effective Green, g (s)	25.3	
Actuated g/C Ratio	0.27	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1336	
v/s Ratio Prot	c0.18	
v/s Ratio Perm		
v/c Ratio	0.67	
Uniform Delay, d1	30.0	
Progression Factor	1.00	
Incremental Delay, d2	1.3	
Delay (s)	31.3	
Level of Service	C	
Approach Delay (s)	35.6	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	8	78	15	1	157	50	95	20	1000	183	8	9
Future Volume (vph)	8	78	15	1	157	50	95	20	1000	183	8	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.98			1.00	1.00	0.85	1.00	0.98			1.00
Flt Protected		1.00			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1801			1752	1845	1568	1752	4919			1752
Flt Permitted		1.00			0.69	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1801			1274	1845	1568	1752	4919			1752
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	8	80	15	1	162	52	98	21	1031	189	8	9
RTOR Reduction (vph)	0	9	0	0	0	0	89	0	23	0	0	0
Lane Group Flow (vph)	0	94	0	0	163	52	9	21	1197	0	0	17
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		9.8			6.0	6.0	6.0	5.8	27.8			0.7
Effective Green, g (s)		9.8			6.0	6.0	6.0	5.8	27.8			0.7
Actuated g/C Ratio		0.15			0.09	0.09	0.09	0.09	0.43			0.01
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		274			118	172	146	158	2126			19
v/s Ratio Prot		c0.05				0.03		0.01	c0.24			c0.01
v/s Ratio Perm					c0.13		0.01					
v/c Ratio		0.34			1.38	0.30	0.06	0.13	0.56			0.89
Uniform Delay, d1		24.4			29.1	27.2	26.6	26.9	13.7			31.8
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2		0.7			215.6	1.0	0.2	0.4	0.3			155.2
Delay (s)		25.1			244.7	28.2	26.8	27.3	14.0			186.9
Level of Service		C			F	C	C	C	B			F
Approach Delay (s)		25.1				140.5			14.3			
Approach LOS		C				F			B			

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	928	14
Future Volume (vph)	928	14
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	1.00	
Flt Protected	1.00	
Satd. Flow (prot)	5025	
Flt Permitted	1.00	
Satd. Flow (perm)	5025	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	957	14
RTOR Reduction (vph)	1	0
Lane Group Flow (vph)	970	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	22.7	
Effective Green, g (s)	22.7	
Actuated g/C Ratio	0.35	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1773	
v/s Ratio Prot	0.19	
v/s Ratio Perm		
v/c Ratio	0.55	
Uniform Delay, d1	16.7	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	17.0	
Level of Service	B	
Approach Delay (s)	19.9	
Approach LOS	B	

Intersection Summary

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	17	0	17	0	21
Future Vol, veh/h	0	17	0	17	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	18	0	18	0	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	9
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	1067
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	1067
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	1067	-	-	-
HCM Lane V/C Ratio	0.021	-	-	-
HCM Control Delay (s)	8.4	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	16	116	181	11	2	110	28	14	4	11	33	5	135
Future Vol, veh/h	16	116	181	11	2	110	28	14	4	11	33	5	135
Conflicting Peds, #/hr	0	2	0	6	6	0	2	0	0	2	2	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	-	140	-	-	185	-	-	-	-	-	130	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	19	135	210	13	2	128	33	16	5	13	38	6	157

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	160	163	0	0	229	0	0	602	698	120	569	688	83
Stage 1	-	-	-	-	-	-	-	531	531	-	151	151	-
Stage 2	-	-	-	-	-	-	-	71	167	-	418	537	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1129	1406	-	-	1329	-	-	381	361	906	403	366	957
Stage 1	-	-	-	-	-	-	-	497	522	-	833	769	-
Stage 2	-	-	-	-	-	-	-	928	757	-	580	519	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	1331	1331	-	-	1321	-	-	285	316	899	357	321	955
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	285	316	-	357	321	-
Stage 1	-	-	-	-	-	-	-	437	459	-	736	766	-
Stage 2	-	-	-	-	-	-	-	768	754	-	500	457	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0.1	15	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	392	1331	-	-	1321	-	-	357	892
HCM Lane V/C Ratio	0.086	0.115	-	-	0.002	-	-	0.107	0.183
HCM Control Delay (s)	15	8.1	-	-	7.7	-	-	16.3	9.9
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0	-	-	0.4	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	149	627	128	120	379	128	12	153	1079	289	231	739
Future Volume (vph)	149	627	128	120	379	128	12	153	1079	289	231	739
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97		1.00	0.97
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1752	3416		1752	1845	1568		1752	4876		1752	4895
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1752	3416		1752	1845	1568		1752	4876		1752	4895
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	160	674	138	129	408	138	13	165	1160	311	248	795
RTOR Reduction (vph)	0	16	0	0	0	94	0	0	43	0	0	33
Lane Group Flow (vph)	160	796	0	129	408	44	0	178	1428	0	248	944
Confl. Peds. (#/hr)							10					
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	NA
Protected Phases	7	4		3	8	8	5	5	2		1	6
Permitted Phases												
Actuated Green, G (s)	10.1	29.7		9.2	28.8	28.8		13.8	32.2		15.2	34.0
Effective Green, g (s)	10.1	29.7		9.2	28.8	28.8		13.8	32.2		15.2	34.0
Actuated g/C Ratio	0.10	0.28		0.09	0.27	0.27		0.13	0.30		0.14	0.32
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	166	954		151	499	424		227	1477		250	1565
v/s Ratio Prot	c0.09	c0.23		0.07	0.22	0.03		0.10	c0.29		c0.14	0.19
v/s Ratio Perm												
v/c Ratio	0.96	0.83		0.85	0.82	0.10		0.78	0.97		0.99	0.60
Uniform Delay, d1	47.9	36.0		47.9	36.3	29.1		44.8	36.5		45.5	30.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	58.7	6.4		34.7	10.0	0.1		16.1	16.0		54.5	0.7
Delay (s)	106.6	42.4		82.6	46.3	29.2		60.9	52.5		100.0	31.1
Level of Service	F	D		F	D	C		E	D		F	C
Approach Delay (s)		52.9			49.8				53.4			45.1
Approach LOS		D			D				D			D

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	169
Future Volume (vph)	169
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	182
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	76	74	78	55	66	160	203	224	128	190	144	148
Average Queue (ft)	37	29	13	30	12	66	90	114	59	83	52	19
95th Queue (ft)	74	63	45	54	42	136	176	196	111	157	117	70
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 2: Project Driveway & Santa Ana Ave

Movement	NB
Directions Served	R
Maximum Queue (ft)	50
Average Queue (ft)	17
95th Queue (ft)	45
Link Distance (ft)	281
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	EB	EB	WB	NB	SB
Directions Served	UL	T	TR	UL	LTR	TR
Maximum Queue (ft)	28	49	26	65	94	46
Average Queue (ft)	1	2	3	18	35	9
95th Queue (ft)	9	16	15	51	72	33
Link Distance (ft)		162	162		279	354
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	140			185		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	B9	WB	WB	WB	B12	NB	NB	NB	NB
Directions Served	L	T	TR	T	L	T	R	T	UL	T	T	TR
Maximum Queue (ft)	277	337	204	55	215	367	293	273	94	163	163	158
Average Queue (ft)	111	182	58	2	174	287	163	68	53	119	112	77
95th Queue (ft)	222	289	152	18	253	406	333	218	93	162	161	141
Link Distance (ft)		278	278	2256		293		1338		2514	2514	2514
Upstream Blk Time (%)	0	1				14	0					
Queuing Penalty (veh)	0	0				0	0					
Storage Bay Dist (ft)	200				180		180		200			
Storage Blk Time (%)	0	7			5	27	2					
Queuing Penalty (veh)	0	9			38	110	15					

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB	SB
Directions Served	UL	T	T	TR
Maximum Queue (ft)	131	201	194	247
Average Queue (ft)	61	109	106	118
95th Queue (ft)	109	173	171	208
Link Distance (ft)		4204	4204	4204
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	225			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 173

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	110	200	172	143	21	263	309	308	62	234	194	175
Average Queue (ft)	50	143	45	49	6	79	104	127	12	129	103	28
95th Queue (ft)	95	213	117	99	21	163	206	233	39	203	172	93
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)		0				1				2		
Queuing Penalty (veh)		0				0				0		

Intersection: 2: Project Driveway & Santa Ana Ave

Movement	NB
Directions Served	R
Maximum Queue (ft)	68
Average Queue (ft)	16
95th Queue (ft)	44
Link Distance (ft)	281
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	WB	NB	SB	SB
Directions Served	UL	TR	LTR	L	TR
Maximum Queue (ft)	96	23	53	49	72
Average Queue (ft)	16	1	20	22	38
95th Queue (ft)	52	7	47	45	58
Link Distance (ft)			279		354
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	140			130	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	B9	WB	WB	WB	B12	NB	NB	NB	NB
Directions Served	L	T	TR	T	L	T	R	T	UL	T	T	TR
Maximum Queue (ft)	278	361	295	2308	215	353	293	131	324	414	392	396
Average Queue (ft)	193	332	247	1676	128	230	109	11	131	240	247	258
95th Queue (ft)	353	393	375	3037	234	372	251	54	230	339	337	367
Link Distance (ft)		278	278	2256		293		1338		2514	2514	2514
Upstream Blk Time (%)	1	55	8	49		5	0					
Queuing Penalty (veh)	0	0	0	0		0	0					
Storage Bay Dist (ft)	200				180		180		200			
Storage Blk Time (%)		65			4	18			2	16		
Queuing Penalty (veh)		98			21	45			5	27		

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB	SB
Directions Served	UL	T	T	TR
Maximum Queue (ft)	309	358	237	277
Average Queue (ft)	205	155	150	177
95th Queue (ft)	309	287	230	251
Link Distance (ft)		4204	4204	4204
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	225			
Storage Blk Time (%)	13	0		
Queuing Penalty (veh)	32	0		

Zone Summary

Zone wide Queuing Penalty: 227

Appendix G: Near Term plus Project Traffic Conditions

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	23	51	22	1	62	28	126	60	798	84	4	133
Future Volume (vph)	23	51	22	1	62	28	126	60	798	84	4	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.97			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1767			1752	1845	1568	1752	4964			1752
Flt Permitted		0.99			0.74	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1767			1366	1845	1568	1752	4964			1752
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	26	59	25	1	71	32	145	69	917	97	5	153
RTOR Reduction (vph)	0	16	0	0	0	0	132	0	14	0	0	0
Lane Group Flow (vph)	0	94	0	0	72	32	13	69	1000	0	0	158
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		9.8			5.4	5.4	5.4	7.9	19.3			5.4
Effective Green, g (s)		9.8			5.4	5.4	5.4	7.9	19.3			5.4
Actuated g/C Ratio		0.16			0.09	0.09	0.09	0.13	0.32			0.09
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		289			123	166	141	231	1599			157
v/s Ratio Prot		c0.05				0.02		0.04	c0.20			c0.09
v/s Ratio Perm					c0.05		0.01					
v/c Ratio		0.33			0.59	0.19	0.09	0.30	0.63			1.01
Uniform Delay, d1		22.1			26.2	25.2	25.0	23.5	17.2			27.2
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2		0.7			6.9	0.6	0.3	0.7	0.8			73.5
Delay (s)		22.8			33.1	25.8	25.3	24.2	18.0			100.8
Level of Service		C			C	C	C	C	B			F
Approach Delay (s)		22.8				27.6			18.4			
Approach LOS		C				C			B			

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	678	19
Future Volume (vph)	678	19
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	1.00	
Flt Protected	1.00	
Satd. Flow (prot)	5015	
Flt Permitted	1.00	
Satd. Flow (perm)	5015	
Peak-hour factor, PHF	0.87	0.87
Adj. Flow (vph)	779	22
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	798	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	16.8	
Effective Green, g (s)	16.8	
Actuated g/C Ratio	0.28	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1406	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.57	
Uniform Delay, d1	18.4	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	19.0	
Level of Service	B	
Approach Delay (s)	32.4	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	22	40	3	99	0	35
Future Vol, veh/h	22	40	3	99	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	43	3	108	0	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	67	0	-	34
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.16	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.23	-	-	3.33
Pot Cap-1 Maneuver	-	-	1525	-	0	1028
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1525	-	-	1028
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1028	-	-	1525	-
HCM Lane V/C Ratio	0.037	-	-	0.002	-
HCM Control Delay (s)	8.6	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	26	15	119	147	1	90	159	7	37	2	27	0	4	15
Future Vol, veh/h	26	15	119	147	1	90	159	7	37	2	27	0	4	15
Conflicting Peds, #/hr	0	2	0	6	0	6	0	2	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	140	-	-	-	185	-	-	-	-	-	130	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	38	22	172	213	1	130	230	10	54	3	39	0	6	22

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	241	242	0	0	386	391	0	0	785	909	201	709	1010	122
Stage 1	-	-	-	-	-	-	-	-	405	405	-	499	499	-
Stage 2	-	-	-	-	-	-	-	-	380	504	-	210	511	-
Critical Hdwy	6.46	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1004	1314	-	-	813	1157	-	-	281	272	803	319	237	903
Stage 1	-	-	-	-	-	-	-	-	591	594	-	519	539	-
Stage 2	-	-	-	-	-	-	-	-	611	537	-	770	533	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	1085	1085	-	-	1144	1144	-	-	233	226	797	262	197	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	233	226	-	262	197	-
Stage 1	-	-	-	-	-	-	-	-	556	558	-	490	476	-
Stage 2	-	-	-	-	-	-	-	-	521	474	-	687	501	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	3	20.4	12.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	328	1085	-	-	1144	-	-	-	514
HCM Lane V/C Ratio	0.292	0.055	-	-	0.115	-	-	-	0.054
HCM Control Delay (s)	20.4	8.5	-	-	8.6	-	-	0	12.4
HCM Lane LOS	C	A	-	-	A	-	-	A	B
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0.4	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	127	348	75	222	558	188	3	65	612	123	2	97
Future Volume (vph)	127	348	75	222	558	188	3	65	612	123	2	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91			1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97			1.00
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1752	3411		1752	1845	1568		1752	4909			1752
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1752	3411		1752	1845	1568		1752	4909			1752
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	378	82	241	607	204	3	71	665	134	2	105
RTOR Reduction (vph)	0	19	0	0	0	102	0	0	31	0	0	0
Lane Group Flow (vph)	138	441	0	241	607	102	0	74	768	0	0	107
Confl. Peds. (#/hr)							10				10	
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8	8	5	5	2		1	1
Permitted Phases												
Actuated Green, G (s)	9.0	28.4		14.3	33.7	33.7		5.3	23.7			6.9
Effective Green, g (s)	9.0	28.4		14.3	33.7	33.7		5.3	23.7			6.9
Actuated g/C Ratio	0.10	0.30		0.15	0.36	0.36		0.06	0.25			0.07
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	169	1038		268	666	566		99	1246			129
v/s Ratio Prot	0.08	0.13		c0.14	c0.33	0.06		0.04	0.16			c0.06
v/s Ratio Perm												
v/c Ratio	0.82	0.43		0.90	0.91	0.18		0.75	0.62			0.83
Uniform Delay, d1	41.3	25.9		38.8	28.4	20.4		43.3	30.8			42.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	25.3	0.3		29.8	16.8	0.2		26.1	0.9			33.6
Delay (s)	66.6	26.2		68.6	45.1	20.5		69.4	31.7			76.2
Level of Service	E	C		E	D	C		E	C			E
Approach Delay (s)		35.5			45.7				34.9			
Approach LOS		D			D				C			

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	724	155
Future Volume (vph)	724	155
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.97	
Flt Protected	1.00	
Satd. Flow (prot)	4903	
Flt Permitted	1.00	
Satd. Flow (perm)	4903	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	787	168
RTOR Reduction (vph)	33	0
Lane Group Flow (vph)	922	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	25.7	
Effective Green, g (s)	25.7	
Actuated g/C Ratio	0.28	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1350	
v/s Ratio Prot	c0.19	
v/s Ratio Perm		
v/c Ratio	0.68	
Uniform Delay, d1	30.2	
Progression Factor	1.00	
Incremental Delay, d2	1.4	
Delay (s)	31.6	
Level of Service	C	
Approach Delay (s)	36.1	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	50	93	48	2	170	63	138	144	1000	203	8	75
Future Volume (vph)	50	93	48	2	170	63	138	144	1000	203	8	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.97			1.00	1.00	0.85	1.00	0.97			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1759			1752	1845	1568	1752	4909			1752
Flt Permitted		0.99			0.63	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1759			1169	1845	1568	1752	4909			1752
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	52	96	49	2	175	65	142	148	1031	209	8	77
RTOR Reduction (vph)	0	15	0	0	0	0	116	0	29	0	0	0
Lane Group Flow (vph)	0	182	0	0	177	65	26	148	1211	0	0	85
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		15.7			14.8	14.8	14.8	9.9	26.4			5.5
Effective Green, g (s)		15.7			14.8	14.8	14.8	9.9	26.4			5.5
Actuated g/C Ratio		0.19			0.18	0.18	0.18	0.12	0.32			0.07
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		335			209	331	281	210	1572			116
v/s Ratio Prot		c0.10				0.04		c0.08	c0.25			0.05
v/s Ratio Perm					c0.15		0.02					
v/c Ratio		0.54			0.85	0.20	0.09	0.70	0.77			0.73
Uniform Delay, d1		30.1			32.7	28.7	28.2	34.8	25.3			37.7
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2		1.8			25.8	0.3	0.1	10.3	2.4			21.1
Delay (s)		31.9			58.5	29.0	28.3	45.1	27.7			58.8
Level of Service		C			E	C	C	D	C			E
Approach Delay (s)		31.9				42.4			29.5			
Approach LOS		C				D			C			

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	967	41
Future Volume (vph)	967	41
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5005	
Flt Permitted	1.00	
Satd. Flow (perm)	5005	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	997	42
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	1035	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	22.0	
Effective Green, g (s)	22.0	
Actuated g/C Ratio	0.27	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1336	
v/s Ratio Prot	0.21	
v/s Ratio Perm		
v/c Ratio	0.77	
Uniform Delay, d1	27.9	
Progression Factor	1.00	
Incremental Delay, d2	2.9	
Delay (s)	30.8	
Level of Service	C	
Approach Delay (s)	32.9	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	34	0	87	0	42
Future Vol, veh/h	86	34	0	87	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	93	37	0	95	0	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	65
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	982
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	982
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	982	-	-	-
HCM Lane V/C Ratio	0.046	-	-	-
HCM Control Delay (s)	8.8	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	32	116	272	11	2	164	28	14	4	11	33	5	135
Future Vol, veh/h	32	116	272	11	2	164	28	14	4	11	33	5	135
Conflicting Peds, #/hr	0	2	0	6	6	0	2	0	0	2	2	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	-	140	-	-	185	-	-	-	-	-	130	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	37	135	316	13	2	191	33	16	5	13	38	6	157

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	223	226	0	0	335	0	0	776	903	173	721	893	114
Stage 1	-	-	-	-	-	-	-	673	673	-	214	214	-
Stage 2	-	-	-	-	-	-	-	103	230	-	507	679	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1030	1332	-	-	1214	-	-	285	274	837	313	278	914
Stage 1	-	-	-	-	-	-	-	409	450	-	765	722	-
Stage 2	-	-	-	-	-	-	-	889	710	-	514	447	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	1196	1196	-	-	1207	-	-	205	232	831	269	235	912
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	205	232	-	269	235	-
Stage 1	-	-	-	-	-	-	-	348	383	-	654	719	-
Stage 2	-	-	-	-	-	-	-	729	707	-	427	380	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.9	0.1	18.8	12.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	294	1196	-	-	1207	-	-	269	827
HCM Lane V/C Ratio	0.115	0.144	-	-	0.002	-	-	0.143	0.197
HCM Control Delay (s)	18.8	8.5	-	-	8	-	-	20.6	10.4
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0	-	-	0.5	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	155	627	128	120	379	138	12	153	1128	289	242	787
Future Volume (vph)	155	627	128	120	379	138	12	153	1128	289	242	787
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97		1.00	0.97
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1752	3416		1752	1845	1568		1752	4882		1752	4898
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1752	3416		1752	1845	1568		1752	4882		1752	4898
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	167	674	138	129	408	148	13	165	1213	311	260	846
RTOR Reduction (vph)	0	15	0	0	0	92	0	0	37	0	0	28
Lane Group Flow (vph)	167	797	0	129	408	56	0	178	1487	0	260	1007
Confl. Peds. (#/hr)							10					
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	NA
Protected Phases	7	4		3	8	8	5	5	2		1	6
Permitted Phases												
Actuated Green, G (s)	12.2	31.9		10.2	29.9	29.9		16.6	36.9		18.4	39.1
Effective Green, g (s)	12.2	31.9		10.2	29.9	29.9		16.6	36.9		18.4	39.1
Actuated g/C Ratio	0.10	0.27		0.09	0.25	0.25		0.14	0.31		0.16	0.33
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	182	928		152	469	399		247	1534		274	1631
v/s Ratio Prot	c0.10	c0.23		0.07	0.22	0.04		0.10	c0.30		c0.15	0.21
v/s Ratio Perm												
v/c Ratio	0.92	0.86		0.85	0.87	0.14		0.72	0.97		0.95	0.62
Uniform Delay, d1	52.1	40.6		52.8	41.9	33.8		48.2	39.7		49.0	32.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	43.4	8.0		33.2	15.7	0.2		9.9	16.1		40.2	0.7
Delay (s)	95.5	48.6		86.1	57.6	34.0		58.1	55.7		89.2	33.6
Level of Service	F	D		F	E	C		E	E		F	C
Approach Delay (s)		56.6			57.9				56.0			44.7
Approach LOS		E			E				E			D

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	176
Future Volume (vph)	176
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	189
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	135	126	125	99	108	213	182	221	191	190	168	55
Average Queue (ft)	59	39	30	38	25	70	91	109	73	100	67	12
95th Queue (ft)	102	80	78	72	61	157	163	191	140	170	137	38
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)						0			0	0		
Queuing Penalty (veh)						0			1	0		

Intersection: 2: Project Driveway & Santa Ana Ave

Movement	NB
Directions Served	R
Maximum Queue (ft)	52
Average Queue (ft)	22
95th Queue (ft)	46
Link Distance (ft)	281
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	EB	WB	WB	NB	SB
Directions Served	UL	TR	UL	T	LTR	TR
Maximum Queue (ft)	28	26	49	52	68	30
Average Queue (ft)	2	2	11	2	36	9
95th Queue (ft)	13	14	33	17	58	30
Link Distance (ft)		162			279	354
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	140		185			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	WB	WB	WB	B12	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	R	T	UL	T	T	TR	UL
Maximum Queue (ft)	235	276	276	215	372	293	297	139	204	182	162	108
Average Queue (ft)	115	148	50	187	313	193	87	57	127	121	86	52
95th Queue (ft)	197	247	144	254	413	352	253	106	178	182	153	94
Link Distance (ft)		278	278		293		1338		2514	2514	2514	
Upstream Blk Time (%)		0	0		18	1						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (ft)	200			180		180		200				225
Storage Blk Time (%)	1	4		13	31	4			0			
Queuing Penalty (veh)	1	5		98	128	30			0			

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	263	199	251
Average Queue (ft)	126	129	166
95th Queue (ft)	191	184	251
Link Distance (ft)	4204	4204	4204
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	1		

Zone Summary

Zone wide Queuing Penalty: 265

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	160	173	115	80	229	375	428	420	282	299	287	224
Average Queue (ft)	92	104	50	47	106	138	191	221	66	187	167	110
95th Queue (ft)	157	162	97	70	185	275	332	371	156	265	248	204
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)					2	3			0	7		
Queuing Penalty (veh)					6	4			0	6		

Intersection: 2: Project Driveway & Santa Ana Ave

Movement	NB
Directions Served	R
Maximum Queue (ft)	55
Average Queue (ft)	24
95th Queue (ft)	49
Link Distance (ft)	281
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	WB	NB	SB	SB
Directions Served	UL	TR	LTR	L	TR
Maximum Queue (ft)	86	21	54	48	77
Average Queue (ft)	19	1	16	21	39
95th Queue (ft)	54	7	43	45	62
Link Distance (ft)			279		354
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	140			130	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	B9	WB	WB	WB	B12	NB	NB	NB	NB
Directions Served	L	T	TR	T	L	T	R	T	UL	T	T	TR
Maximum Queue (ft)	278	361	303	2308	215	353	293	165	325	616	584	591
Average Queue (ft)	218	333	223	1583	125	249	122	15	147	297	296	301
95th Queue (ft)	351	374	355	3028	243	380	260	81	280	473	448	464
Link Distance (ft)		278	278	2256		293		1338		2514	2514	2514
Upstream Blk Time (%)	0	56	6	51		6	0					
Queuing Penalty (veh)	0	0	0	0		0	0					
Storage Bay Dist (ft)	200				180		180		200			
Storage Blk Time (%)	6	65			3	23	0		0	29		
Queuing Penalty (veh)	18	101			17	59	0		1	48		

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB	SB
Directions Served	UL	T	T	TR
Maximum Queue (ft)	309	412	221	271
Average Queue (ft)	215	172	155	185
95th Queue (ft)	338	336	213	244
Link Distance (ft)		4204	4204	4204
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	225			
Storage Blk Time (%)	26	0		
Queuing Penalty (veh)	67	0		

Zone Summary

Zone wide Queuing Penalty: 326

Appendix H: Cumulative Year 2035 No Project Traffic Conditions

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	23	65	22	1	143	97	247	60	864	76	4	155
Future Volume (vph)	23	65	22	1	143	97	247	60	864	76	4	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.97			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1776			1752	1845	1568	1752	4975			1752
Flt Permitted		0.99			0.68	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1776			1254	1845	1568	1752	4975			1752
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	71	24	1	155	105	268	65	939	83	4	168
RTOR Reduction (vph)	0	11	0	0	0	0	227	0	10	0	0	0
Lane Group Flow (vph)	0	109	0	0	156	105	41	65	1012	0	0	172
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		10.9			11.1	11.1	11.1	7.5	22.0			9.2
Effective Green, g (s)		10.9			11.1	11.1	11.1	7.5	22.0			9.2
Actuated g/C Ratio		0.15			0.15	0.15	0.15	0.10	0.30			0.13
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		264			190	279	237	179	1495			220
v/s Ratio Prot		c0.06				0.06		0.04	c0.20			c0.10
v/s Ratio Perm					c0.12		0.03					
v/c Ratio		0.41			0.82	0.38	0.17	0.36	0.68			0.78
Uniform Delay, d1		28.2			30.1	27.9	27.0	30.6	22.5			31.0
Progression Factor		1.00			1.00	1.01	1.03	1.00	1.00			1.00
Incremental Delay, d2		1.0			23.9	0.9	0.3	1.3	1.2			16.4
Delay (s)		29.3			54.1	29.0	28.1	31.9	23.7			47.4
Level of Service		C			D	C	C	C	C			D
Approach Delay (s)		29.3				35.9			24.2			
Approach LOS		C				D			C			

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	794	45
Future Volume (vph)	794	45
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	4995	
Flt Permitted	1.00	
Satd. Flow (perm)	4995	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	863	49
RTOR Reduction (vph)	6	0
Lane Group Flow (vph)	906	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	23.7	
Effective Green, g (s)	23.7	
Actuated g/C Ratio	0.32	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1617	
v/s Ratio Prot	0.18	
v/s Ratio Perm		
v/c Ratio	0.56	
Uniform Delay, d1	20.4	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	20.9	
Level of Service	C	
Approach Delay (s)	25.1	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	271	20	0	512	0	18
Future Vol, veh/h	271	20	0	512	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	295	22	0	557	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	159
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	855
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	855
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	855	-	-	-
HCM Lane V/C Ratio	0.023	-	-	-
HCM Control Delay (s)	9.3	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	13	16	169	147	1	87	434	7	37	2	27	2	4	39
Future Vol, veh/h	13	16	169	147	1	87	434	7	37	2	27	2	4	39
Conflicting Peds, #/hr	0	2	0	6	0	6	0	2	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	140	-	-	-	185	-	-	-	-	-	130	-	-
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	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	14	17	184	160	1	95	472	8	40	2	29	2	4	42

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	479	482	0	0	343	350	0	0	762	1006	180	827	1082	242
Stage 1	-	-	-	-	-	-	-	-	332	332	-	670	670	-
Stage 2	-	-	-	-	-	-	-	-	430	674	-	157	412	-
Critical Hdwy	6.46	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	709	1070	-	-	865	1198	-	-	292	238	829	262	215	756
Stage 1	-	-	-	-	-	-	-	-	652	640	-	410	451	-
Stage 2	-	-	-	-	-	-	-	-	571	449	-	827	590	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	845	845	-	-	1185	1185	-	-	245	209	823	228	189	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	245	209	-	228	189	-
Stage 1	-	-	-	-	-	-	-	-	624	612	-	394	414	-
Stage 2	-	-	-	-	-	-	-	-	490	412	-	763	564	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1.4	18.3	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	341	845	-	-	1185	-	-	228	590
HCM Lane V/C Ratio	0.21	0.037	-	-	0.081	-	-	0.01	0.079
HCM Control Delay (s)	18.3	9.4	-	-	8.3	-	-	20.9	11.6
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.3	-	-	0	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	146	364	109	234	572	188	3	97	831	136	2	97
Future Volume (vph)	146	364	109	234	572	188	3	97	831	136	2	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91			1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1752	3384		1752	1845	1568		1752	4930			1752
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1752	3384		1752	1845	1568		1752	4930			1752
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	396	118	254	622	204	3	105	903	148	2	105
RTOR Reduction (vph)	0	28	0	0	0	98	0	0	23	0	0	0
Lane Group Flow (vph)	159	486	0	254	622	106	0	108	1028	0	0	107
Confl. Peds. (#/hr)							10				10	
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8	8	5	5	2		1	1
Permitted Phases												
Actuated Green, G (s)	10.1	31.2		14.0	35.1	35.1		7.0	26.7			6.5
Effective Green, g (s)	10.1	31.2		14.0	35.1	35.1		7.0	26.7			6.5
Actuated g/C Ratio	0.10	0.32		0.14	0.36	0.36		0.07	0.27			0.07
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	179	1072		249	658	559		124	1337			115
v/s Ratio Prot	0.09	0.14		c0.14	c0.34	0.07		c0.06	0.21			0.06
v/s Ratio Perm												
v/c Ratio	0.89	0.45		1.02	0.95	0.19		0.87	0.77			0.93
Uniform Delay, d1	43.6	26.8		42.2	30.7	21.8		45.3	33.0			45.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	37.1	0.3		62.3	22.4	0.2		44.1	2.7			62.2
Delay (s)	80.7	27.1		104.5	53.1	22.0		89.4	35.7			107.9
Level of Service	F	C		F	D	C		F	D			F
Approach Delay (s)		39.8			59.3				40.7			
Approach LOS		D			E				D			

Intersection Summary			
HCM 2000 Control Delay	49.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	993	179
Future Volume (vph)	993	179
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	4920	
Flt Permitted	1.00	
Satd. Flow (perm)	4920	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	1079	195
RTOR Reduction (vph)	26	0
Lane Group Flow (vph)	1248	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	26.6	
Effective Green, g (s)	26.6	
Actuated g/C Ratio	0.27	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1330	
v/s Ratio Prot	c0.25	
v/s Ratio Perm		
v/c Ratio	0.94	
Uniform Delay, d1	35.1	
Progression Factor	1.00	
Incremental Delay, d2	12.6	
Delay (s)	47.7	
Level of Service	D	
Approach Delay (s)	52.4	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	50	187	48	1	185	129	294	144	1157	221	8	114
Future Volume (vph)	50	187	48	1	185	129	294	144	1157	221	8	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.98			1.00	1.00	0.85	1.00	0.98			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1787			1752	1845	1568	1752	4915			1752
Flt Permitted		0.99			0.58	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1787			1070	1845	1568	1752	4915			1752
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	52	193	49	1	191	133	303	148	1193	228	8	118
RTOR Reduction (vph)	0	6	0	0	0	0	242	0	22	0	0	0
Lane Group Flow (vph)	0	288	0	0	192	133	61	148	1399	0	0	126
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		22.9			22.1	22.1	22.1	12.0	35.1			9.8
Effective Green, g (s)		22.9			22.1	22.1	22.1	12.0	35.1			9.8
Actuated g/C Ratio		0.21			0.20	0.20	0.20	0.11	0.32			0.09
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		372			215	371	315	191	1569			156
v/s Ratio Prot		c0.16				0.07		c0.08	c0.28			0.07
v/s Ratio Perm					c0.18		0.04					
v/c Ratio		0.77			0.89	0.36	0.19	0.77	0.89			0.81
Uniform Delay, d1		41.1			42.7	37.8	36.5	47.6	35.6			49.1
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Incremental Delay, d2		9.6			33.8	0.6	0.3	17.6	6.8			25.5
Delay (s)		50.7			76.6	38.4	36.8	65.3	42.4			74.6
Level of Service		D			E	D	D	E	D			E
Approach Delay (s)		50.7				49.3			44.6			
Approach LOS		D				D			D			

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1039	58
Future Volume (vph)	1039	58
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	4996	
Flt Permitted	1.00	
Satd. Flow (perm)	4996	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1071	60
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1126	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	32.9	
Effective Green, g (s)	32.9	
Actuated g/C Ratio	0.30	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1495	
v/s Ratio Prot	0.23	
v/s Ratio Perm		
v/c Ratio	0.75	
Uniform Delay, d1	34.8	
Progression Factor	1.00	
Incremental Delay, d2	2.2	
Delay (s)	37.0	
Level of Service	D	
Approach Delay (s)	40.8	
Approach LOS	D	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	501	21	0	647	0	21
Future Vol, veh/h	501	21	0	647	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	545	23	0	703	0	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	284
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	710
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	710
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	710	-	-	-
HCM Lane V/C Ratio	0.032	-	-	-
HCM Control Delay (s)	10.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	16	116	444	11	2	420	28	14	4	11	34	5	146
Future Vol, veh/h	16	116	444	11	2	420	28	14	4	11	34	5	146
Conflicting Peds, #/hr	0	2	0	6	6	0	2	0	0	2	2	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	-	140	-	-	185	-	-	-	-	-	130	-	-
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	17	126	483	12	2	457	30	15	4	12	37	5	159

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	487	489	0	0	501	0	0	1016	1274	256	1010	1265	246
Stage 1	-	-	-	-	-	-	-	781	781	-	478	478	-
Stage 2	-	-	-	-	-	-	-	235	493	-	532	787	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	701	1063	-	-	1052	-	-	191	165	740	193	167	751
Stage 1	-	-	-	-	-	-	-	352	401	-	535	551	-
Stage 2	-	-	-	-	-	-	-	744	543	-	496	399	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	959	959	-	-	1046	-	-	129	139	734	163	141	750
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	129	139	-	163	141	-
Stage 1	-	-	-	-	-	-	-	298	339	-	454	549	-
Stage 2	-	-	-	-	-	-	-	580	541	-	409	338	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	27.7	16.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	190	959	-	-	1046	-	-	163	656
HCM Lane V/C Ratio	0.166	0.15	-	-	0.002	-	-	0.227	0.25
HCM Control Delay (s)	27.7	9.4	-	-	8.4	-	-	33.4	12.3
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.6	0.5	-	-	0	-	-	0.8	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	181	642	153	129	404	140	12	189	1404	297	242	969
Future Volume (vph)	181	642	153	129	404	140	12	189	1404	297	242	969
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97		1.00	0.97
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1752	3403		1752	1845	1568		1752	4904		1752	4900
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1752	3403		1752	1845	1568		1752	4904		1752	4900
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	195	690	165	139	434	151	13	203	1510	319	260	1042
RTOR Reduction (vph)	0	15	0	0	0	74	0	0	23	0	0	24
Lane Group Flow (vph)	195	840	0	139	434	77	0	216	1806	0	260	1247
Confl. Peds. (#/hr)							10					
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	NA
Protected Phases	7	4		3	8	8	5	5	2		1	6
Permitted Phases												
Actuated Green, G (s)	16.1	36.3		12.4	32.6	32.6		20.9	50.3		21.0	50.8
Effective Green, g (s)	16.1	36.3		12.4	32.6	32.6		20.9	50.3		21.0	50.8
Actuated g/C Ratio	0.12	0.26		0.09	0.23	0.23		0.15	0.36		0.15	0.36
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	201	882		155	429	365		261	1761		262	1778
v/s Ratio Prot	c0.11	c0.25		0.08	0.24	0.05		0.12	c0.37		c0.15	0.25
v/s Ratio Perm												
v/c Ratio	0.97	0.95		0.90	1.01	0.21		0.83	1.03		0.99	0.70
Uniform Delay, d1	61.7	51.0		63.2	53.7	43.3		57.8	44.9		59.4	38.1
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	54.7	19.6		43.1	46.4	0.3		18.9	28.2		53.3	1.3
Delay (s)	116.4	70.6		106.3	100.1	43.6		76.7	73.1		112.7	39.4
Level of Service	F	E		F	F	D		E	E		F	D
Approach Delay (s)		79.1			89.5				73.4			51.8
Approach LOS		E			F				E			D

Intersection Summary			
HCM 2000 Control Delay	70.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	213
Future Volume (vph)	213
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	229
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	140	193	98	140	127	218	221	270	190	210	228	185
Average Queue (ft)	63	87	54	66	37	84	112	134	85	122	94	55
95th Queue (ft)	125	147	94	114	80	165	203	224	152	192	183	139
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)						0			0	1		
Queuing Penalty (veh)						0			1	2		

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	UL	T	TR	UL	TR	LTR	L	TR
Maximum Queue (ft)	28	27	41	47	30	53	30	52
Average Queue (ft)	6	1	4	14	1	26	1	24
95th Queue (ft)	26	9	18	38	10	54	10	46
Link Distance (ft)		162	162			279		354
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	140			185			130	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	WB	WB	WB	B12	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	R	T	UL	T	T	TR	UL
Maximum Queue (ft)	212	238	190	215	372	293	214	167	276	268	252	238
Average Queue (ft)	102	158	53	171	283	144	51	79	175	171	149	77
95th Queue (ft)	175	233	128	251	406	312	171	131	238	237	223	161
Link Distance (ft)		278	278		293		1338		2514	2514	2514	
Upstream Blk Time (%)					11	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)	200			180		180		200				225
Storage Blk Time (%)	0	3		12	23	0			4			0
Queuing Penalty (veh)	1	5		88	95	4			4			2

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	352	355	380
Average Queue (ft)	177	195	211
95th Queue (ft)	277	305	326
Link Distance (ft)	4204	4204	4204
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	2		
Queuing Penalty (veh)	2		

Zone Summary

Zone wide Queuing Penalty: 203

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	310	222	176	165	285	416	401	470	284	334	348	260
Average Queue (ft)	151	123	89	69	119	235	261	316	124	217	197	144
95th Queue (ft)	244	203	147	121	246	406	421	482	230	295	273	223
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)		1				16			1	16		
Queuing Penalty (veh)		2				23			4	19		

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	WB	NB	SB	SB
Directions Served	UL	TR	LTR	L	TR
Maximum Queue (ft)	55	21	55	51	136
Average Queue (ft)	29	1	26	22	45
95th Queue (ft)	57	7	52	45	84
Link Distance (ft)			279		354
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	140			130	
Storage Blk Time (%)					0
Queuing Penalty (veh)					0

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	B9	WB	WB	WB	B12	NB	NB	NB	NB
Directions Served	L	T	TR	T	L	T	R	T	UL	T	T	TR
Maximum Queue (ft)	278	385	314	2319	215	390	293	1372	325	556	567	586
Average Queue (ft)	246	338	247	1919	169	347	248	749	221	385	382	382
95th Queue (ft)	339	354	367	2895	271	391	375	1652	387	549	542	535
Link Distance (ft)		278	278	2256		293		1338		2514	2514	2514
Upstream Blk Time (%)	1	57	9	63		45	1	7				
Queuing Penalty (veh)	0	0	0	0		0	0	0				
Storage Bay Dist (ft)	200				180		180		200			
Storage Blk Time (%)	13	70			4	59	5		12	38		
Queuing Penalty (veh)	41	126			22	158	24		54	76		

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB	SB
Directions Served	UL	T	T	TR
Maximum Queue (ft)	309	377	334	380
Average Queue (ft)	210	195	234	268
95th Queue (ft)	320	335	353	384
Link Distance (ft)		4204	4204	4204
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	225			
Storage Blk Time (%)	10	5		
Queuing Penalty (veh)	32	12		

Zone Summary

Zone wide Queuing Penalty: 593

Appendix I: Cumulative Year 2035 plus Project Traffic Conditions

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	23	66	22	1	148	98	254	60	864	84	4	166
Future Volume (vph)	23	66	22	1	148	98	254	60	864	84	4	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.97			1.00	1.00	0.85	1.00	0.99			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1777			1752	1845	1568	1752	4969			1752
Flt Permitted		0.99			0.68	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1777			1253	1845	1568	1752	4969			1752
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	72	24	1	161	107	276	65	939	91	4	180
RTOR Reduction (vph)	0	11	0	0	0	0	234	0	11	0	0	0
Lane Group Flow (vph)	0	110	0	0	162	107	42	65	1019	0	0	184
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		10.9			11.1	11.1	11.1	6.8	22.3			9.2
Effective Green, g (s)		10.9			11.1	11.1	11.1	6.8	22.3			9.2
Actuated g/C Ratio		0.15			0.15	0.15	0.15	0.09	0.30			0.13
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		263			189	278	236	162	1507			219
v/s Ratio Prot		c0.06				0.06		0.04	c0.21			c0.10
v/s Ratio Perm					c0.13		0.03					
v/c Ratio		0.42			0.86	0.38	0.18	0.40	0.68			0.84
Uniform Delay, d1		28.4			30.4	28.1	27.2	31.4	22.4			31.4
Progression Factor		1.00			1.01	1.01	1.04	1.00	1.00			1.00
Incremental Delay, d2		1.1			29.7	0.9	0.4	1.6	1.2			24.1
Delay (s)		29.5			60.4	29.3	28.8	33.1	23.7			55.5
Level of Service		C			E	C	C	C	C			E
Approach Delay (s)		29.5				38.3			24.2			
Approach LOS		C				D			C			

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	794	45
Future Volume (vph)	794	45
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	4995	
Flt Permitted	1.00	
Satd. Flow (perm)	4995	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	863	49
RTOR Reduction (vph)	6	0
Lane Group Flow (vph)	906	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	24.7	
Effective Green, g (s)	24.7	
Actuated g/C Ratio	0.34	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1678	
v/s Ratio Prot	0.18	
v/s Ratio Perm		
v/c Ratio	0.54	
Uniform Delay, d1	19.8	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	20.1	
Level of Service	C	
Approach Delay (s)	26.1	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	271	40	0	525	0	35
Future Vol, veh/h	271	40	0	525	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	295	43	0	571	0	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	169
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	842
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	842
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	842	-	-	-
HCM Lane V/C Ratio	0.045	-	-	-
HCM Control Delay (s)	9.5	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	26	16	173	147	1	87	434	7	37	2	27	2	4	39
Future Vol, veh/h	26	16	173	147	1	87	434	7	37	2	27	2	4	39
Conflicting Peds, #/hr	0	2	0	6	0	6	0	2	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	140	-	-	-	185	-	-	-	-	-	130	-	-
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	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	28	17	188	160	1	95	472	8	40	2	29	2	4	42

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	479	482	0	0	348	354	0	0	794	1038	182	857	1114	242
Stage 1	-	-	-	-	-	-	-	-	364	364	-	670	670	-
Stage 2	-	-	-	-	-	-	-	-	430	674	-	187	444	-
Critical Hdwy	6.46	4.16	-	-	6.46	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.53	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	709	1070	-	-	859	1194	-	-	277	228	826	249	205	756
Stage 1	-	-	-	-	-	-	-	-	625	620	-	410	451	-
Stage 2	-	-	-	-	-	-	-	-	571	449	-	794	571	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	783	783	-	-	1181	1181	-	-	229	196	820	213	176	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	229	196	-	213	176	-
Stage 1	-	-	-	-	-	-	-	-	585	580	-	385	414	-
Stage 2	-	-	-	-	-	-	-	-	490	412	-	717	534	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.4	19.4	12.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	322	783	-	-	1181	-	-	213	578
HCM Lane V/C Ratio	0.223	0.058	-	-	0.081	-	-	0.01	0.081
HCM Control Delay (s)	19.4	9.9	-	-	8.3	-	-	22.1	11.8
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.3	-	-	0	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	147	364	109	234	572	188	3	97	835	136	2	97
Future Volume (vph)	147	364	109	234	572	188	3	97	835	136	2	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91			1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1752	3384		1752	1845	1568		1752	4930			1752
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1752	3384		1752	1845	1568		1752	4930			1752
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	160	396	118	254	622	204	3	105	908	148	2	105
RTOR Reduction (vph)	0	28	0	0	0	98	0	0	22	0	0	0
Lane Group Flow (vph)	160	486	0	254	622	106	0	108	1034	0	0	107
Confl. Peds. (#/hr)							10				10	
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8	8	5	5	2		1	1
Permitted Phases												
Actuated Green, G (s)	10.1	31.2		14.0	35.1	35.1		7.0	26.7			6.5
Effective Green, g (s)	10.1	31.2		14.0	35.1	35.1		7.0	26.7			6.5
Actuated g/C Ratio	0.10	0.32		0.14	0.36	0.36		0.07	0.27			0.07
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2			4.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0
Lane Grp Cap (vph)	179	1072		249	658	559		124	1337			115
v/s Ratio Prot	0.09	0.14		c0.14	c0.34	0.07		c0.06	0.21			0.06
v/s Ratio Perm												
v/c Ratio	0.89	0.45		1.02	0.95	0.19		0.87	0.77			0.93
Uniform Delay, d1	43.6	26.8		42.2	30.7	21.8		45.3	33.1			45.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	38.6	0.3		62.3	22.4	0.2		44.1	2.9			62.2
Delay (s)	82.2	27.1		104.5	53.1	22.0		89.4	35.9			107.9
Level of Service	F	C		F	D	C		F	D			F
Approach Delay (s)		40.2			59.3				40.9			
Approach LOS		D			E				D			

Intersection Summary			
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	997	180
Future Volume (vph)	997	180
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	4920	
Flt Permitted	1.00	
Satd. Flow (perm)	4920	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	1084	196
RTOR Reduction (vph)	26	0
Lane Group Flow (vph)	1254	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	26.6	
Effective Green, g (s)	26.6	
Actuated g/C Ratio	0.27	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1330	
v/s Ratio Prot	c0.25	
v/s Ratio Perm		
v/c Ratio	0.94	
Uniform Delay, d1	35.2	
Progression Factor	1.00	
Incremental Delay, d2	13.3	
Delay (s)	48.5	
Level of Service	D	
Approach Delay (s)	53.1	
Approach LOS	D	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	50	188	48	2	191	130	303	144	1157	228	8	122
Future Volume (vph)	50	188	48	2	191	130	303	144	1157	228	8	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	0.91			1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			1.00
Frt		0.98			1.00	1.00	0.85	1.00	0.98			1.00
Flt Protected		0.99			0.95	1.00	1.00	0.95	1.00			0.95
Satd. Flow (prot)		1788			1752	1845	1568	1752	4912			1752
Flt Permitted		0.99			0.58	1.00	1.00	0.95	1.00			0.95
Satd. Flow (perm)		1788			1069	1845	1568	1752	4912			1752
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	52	194	49	2	197	134	312	148	1193	235	8	126
RTOR Reduction (vph)	0	6	0	0	0	0	248	0	23	0	0	0
Lane Group Flow (vph)	0	289	0	0	199	134	64	148	1405	0	0	134
Confl. Peds. (#/hr)												
Turn Type	Split	NA		Perm	Split	NA	Perm	Prot	NA		Prot	Prot
Protected Phases	4	4			8	8		5	2		1	1
Permitted Phases				8			8					
Actuated Green, G (s)		22.9			22.7	22.7	22.7	11.5	34.6			10.0
Effective Green, g (s)		22.9			22.7	22.7	22.7	11.5	34.6			10.0
Actuated g/C Ratio		0.21			0.21	0.21	0.21	0.10	0.31			0.09
Clearance Time (s)		4.6			5.4	5.4	5.4	4.2	5.8			4.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		371			220	380	322	182	1542			158
v/s Ratio Prot		c0.16				0.07		c0.08	c0.29			0.08
v/s Ratio Perm					c0.19		0.04					
v/c Ratio		0.78			0.90	0.35	0.20	0.81	0.91			0.85
Uniform Delay, d1		41.2			42.7	37.5	36.2	48.3	36.3			49.4
Progression Factor		1.00			0.99	0.99	0.96	1.00	1.00			1.00
Incremental Delay, d2		9.9			35.6	0.6	0.3	23.4	8.4			32.2
Delay (s)		51.1			78.0	37.8	35.0	71.7	44.8			81.5
Level of Service		D			E	D	D	E	D			F
Approach Delay (s)		51.1				48.8			47.3			
Approach LOS		D				D			D			

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1039	58
Future Volume (vph)	1039	58
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.8	
Lane Util. Factor	0.91	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	4996	
Flt Permitted	1.00	
Satd. Flow (perm)	4996	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1071	60
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1126	0
Confl. Peds. (#/hr)		
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	33.1	
Effective Green, g (s)	33.1	
Actuated g/C Ratio	0.30	
Clearance Time (s)	5.8	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1500	
v/s Ratio Prot	0.23	
v/s Ratio Perm		
v/c Ratio	0.75	
Uniform Delay, d1	34.8	
Progression Factor	1.00	
Incremental Delay, d2	2.2	
Delay (s)	37.0	
Level of Service	D	
Approach Delay (s)	41.7	
Approach LOS	D	

Intersection Summary

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	501	38	0	664	0	42
Future Vol, veh/h	501	38	0	664	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	545	41	0	722	0	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	293
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.33
Pot Cap-1 Maneuver	-	-	0	-	0	700
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	700
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	700	-	-	-
HCM Lane V/C Ratio	0.065	-	-	-
HCM Control Delay (s)	10.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	32	116	449	11	2	421	28	14	4	11	34	5	146
Future Vol, veh/h	32	116	449	11	2	421	28	14	4	11	34	5	146
Conflicting Peds, #/hr	0	2	0	6	6	0	2	0	0	2	2	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	-	140	-	-	185	-	-	-	-	-	130	-	-
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	35	126	488	12	2	458	30	15	4	12	37	5	159

Major/Minor	Major1				Major2			Minor1			Minor2		
Conflicting Flow All	488	490	0	0	506	0	0	1058	1316	258	1049	1307	246
Stage 1	-	-	-	-	-	-	-	822	822	-	479	479	-
Stage 2	-	-	-	-	-	-	-	236	494	-	570	828	-
Critical Hdwy	6.46	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.53	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	700	1063	-	-	1048	-	-	178	155	738	180	157	751
Stage 1	-	-	-	-	-	-	-	332	384	-	534	551	-
Stage 2	-	-	-	-	-	-	-	743	542	-	471	381	-
Platoon blocked, %			-	-		-	-						
Mov Cap-1 Maneuver	891	891	-	-	1042	-	-	116	126	732	148	127	750
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	116	126	-	148	127	-
Stage 1	-	-	-	-	-	-	-	271	313	-	437	549	-
Stage 2	-	-	-	-	-	-	-	579	540	-	374	310	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0	30.4	17
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	173	891	-	-	1042	-	-	148	645
HCM Lane V/C Ratio	0.182	0.181	-	-	0.002	-	-	0.25	0.254
HCM Control Delay (s)	30.4	9.9	-	-	8.5	-	-	37.2	12.5
HCM Lane LOS	D	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0.6	0.7	-	-	0	-	-	0.9	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	183	642	153	129	404	140	12	189	1408	297	242	973
Future Volume (vph)	183	642	153	129	404	140	12	189	1408	297	242	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	0.91		1.00	0.91
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	0.97		1.00	0.97
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1752	3403		1752	1845	1568		1752	4904		1752	4899
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1752	3403		1752	1845	1568		1752	4904		1752	4899
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	197	690	165	139	434	151	13	203	1514	319	260	1046
RTOR Reduction (vph)	0	15	0	0	0	74	0	0	23	0	0	24
Lane Group Flow (vph)	197	840	0	139	434	77	0	216	1810	0	260	1253
Confl. Peds. (#/hr)							10					
Turn Type	Prot	NA		Prot	NA	Prot	Prot	Prot	NA		Prot	NA
Protected Phases	7	4		3	8	8	5	5	2		1	6
Permitted Phases												
Actuated Green, G (s)	16.3	36.5		12.4	32.6	32.6		20.9	50.1		21.0	50.6
Effective Green, g (s)	16.3	36.5		12.4	32.6	32.6		20.9	50.1		21.0	50.6
Actuated g/C Ratio	0.12	0.26		0.09	0.23	0.23		0.15	0.36		0.15	0.36
Clearance Time (s)	4.2	5.4		4.2	5.4	5.4		4.2	6.2		4.2	5.8
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	203	887		155	429	365		261	1754		262	1770
v/s Ratio Prot	c0.11	c0.25		0.08	0.24	0.05		0.12	c0.37		c0.15	0.26
v/s Ratio Perm												
v/c Ratio	0.97	0.95		0.90	1.01	0.21		0.83	1.03		0.99	0.71
Uniform Delay, d1	61.6	50.8		63.2	53.7	43.3		57.8	45.0		59.4	38.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	54.4	18.5		43.1	46.4	0.3		18.9	30.1		53.3	1.3
Delay (s)	116.0	69.3		106.3	100.1	43.6		76.7	75.1		112.7	39.7
Level of Service	F	E		F	F	D		E	E		F	D
Approach Delay (s)		78.1			89.5				75.3			52.0
Approach LOS		E			F				E			D

Intersection Summary			
HCM 2000 Control Delay	71.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	215
Future Volume (vph)	215
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	231
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	165	203	127	151	125	165	220	285	249	230	201	139
Average Queue (ft)	74	98	69	64	28	89	121	145	107	121	92	39
95th Queue (ft)	133	165	117	106	77	153	187	216	204	212	170	99
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)		0							6	1		
Queuing Penalty (veh)		0							16	2		

Intersection: 2: Project Driveway & Santa Ana Ave

Movement	NB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	21
95th Queue (ft)	43
Link Distance (ft)	281
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	EB	EB	WB	NB	SB	SB
Directions Served	UL	T	TR	UL	LTR	L	TR
Maximum Queue (ft)	51	27	17	67	117	30	66
Average Queue (ft)	12	1	3	21	39	2	27
95th Queue (ft)	36	9	13	46	78	14	57
Link Distance (ft)		162	162		279		354
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	140			185		130	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	WB	WB	WB	B12	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	R	T	UL	T	T	TR	UL
Maximum Queue (ft)	277	308	199	215	400	293	858	187	220	243	209	154
Average Queue (ft)	115	161	76	201	344	224	404	73	157	154	133	68
95th Queue (ft)	196	244	166	252	423	375	736	144	211	214	208	123
Link Distance (ft)		278	278		293		1338		2514	2514	2514	
Upstream Blk Time (%)	0	0			38	1						
Queuing Penalty (veh)	0	0			0	0						
Storage Bay Dist (ft)	200			180		180		200				225
Storage Blk Time (%)		3		23	39	3		0	2			
Queuing Penalty (veh)		4		175	163	27		1	2			

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	279	304	322
Average Queue (ft)	185	206	234
95th Queue (ft)	257	286	333
Link Distance (ft)	4204	4204	4204
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	2		
Queuing Penalty (veh)	2		

Zone Summary

Zone wide Queuing Penalty: 392

Intersection: 1: Clovis Ave & Santa Ana Ave

Movement	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	UL	T	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	291	248	201	222	284	370	386	415	178	281	271	224
Average Queue (ft)	180	136	85	79	127	219	253	282	100	208	188	130
95th Queue (ft)	275	216	151	144	259	370	405	442	163	275	251	216
Link Distance (ft)	1552		316	316		4204	4204	4204		1288	1288	1288
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		220			185				185			
Storage Blk Time (%)		1	0		2	14			0	13		
Queuing Penalty (veh)		2	0		9	20			1	17		

Intersection: 2: Project Driveway & Santa Ana Ave

Movement	NB
Directions Served	R
Maximum Queue (ft)	55
Average Queue (ft)	24
95th Queue (ft)	47
Link Distance (ft)	281
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Santa Ana Ave & Sierra Vista Mall Dwy

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	UL	T	TR	T	TR	LTR	L	TR
Maximum Queue (ft)	71	27	26	26	47	31	52	138
Average Queue (ft)	36	2	1	2	3	16	28	50
95th Queue (ft)	63	13	9	14	20	41	55	97
Link Distance (ft)		162	162			279		354
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	140						130	
Storage Blk Time (%)								0
Queuing Penalty (veh)								0

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	EB	EB	EB	B9	WB	WB	WB	B12	NB	NB	NB	NB
Directions Served	L	T	TR	T	L	T	R	T	UL	T	T	TR
Maximum Queue (ft)	278	356	298	2319	214	372	293	407	325	477	477	442
Average Queue (ft)	206	338	235	1854	164	320	172	92	205	350	340	341
95th Queue (ft)	352	343	378	3012	255	399	343	279	349	465	438	438
Link Distance (ft)		278	278	2256		293		1338		2514	2514	2514
Upstream Blk Time (%)	1	59	3	63		21	1					
Queuing Penalty (veh)	0	0	0	0		0	0					
Storage Bay Dist (ft)	200				180		180		200			
Storage Blk Time (%)	0	70			13	40	2		9	30		
Queuing Penalty (veh)	0	128			68	108	11		41	60		

Intersection: 4: Clovis Ave & Ashlan Ave

Movement	SB	SB	SB	SB
Directions Served	UL	T	T	TR
Maximum Queue (ft)	309	437	346	372
Average Queue (ft)	207	225	217	254
95th Queue (ft)	317	376	315	352
Link Distance (ft)		4204	4204	4204
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	225			
Storage Blk Time (%)	14	2		
Queuing Penalty (veh)	45	5		

Zone Summary

Zone wide Queuing Penalty: 514

Appendix J: Signal Warrants

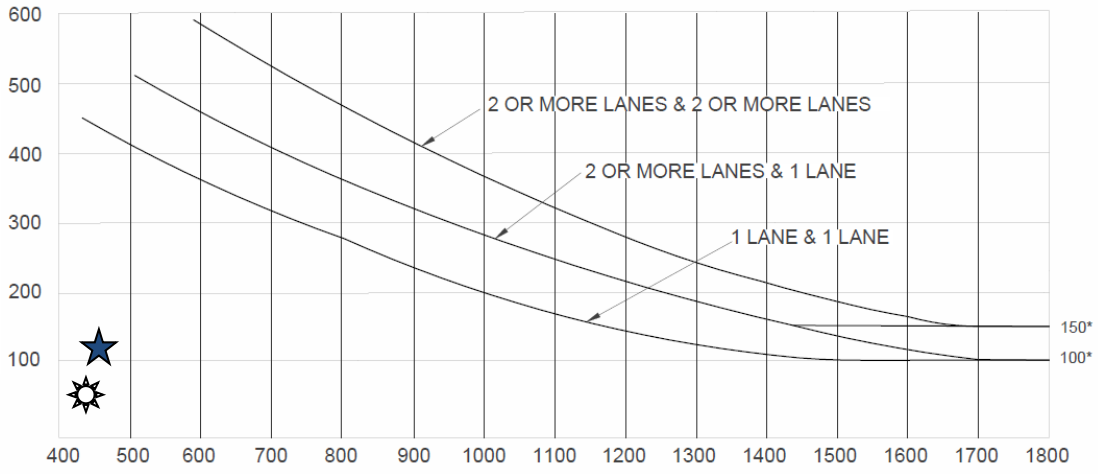
Warrant 3: Peak Hour (Urban)

Existing Traffic Conditions
3. Santa Ana Ave / Sierra Vista Mall Dwy
AM (PM) Peak Hour

Sierra Vista Mall Dwy

Highest Approach Volume =

53 (106) VPH



Santa Ana Ave Total of Both Approaches =

431 (442) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 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

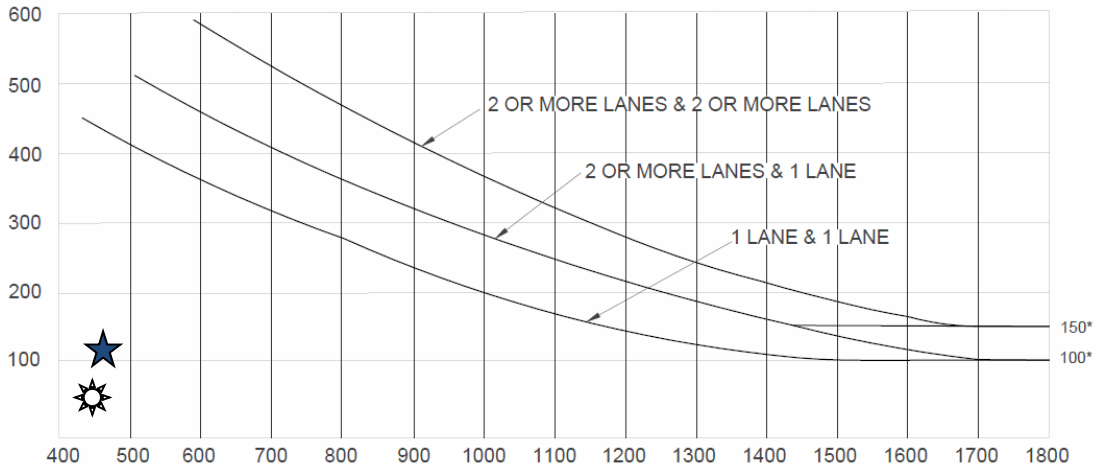
Warrant 3: Peak Hour (Urban)

Existing plus Project Traffic Conditions
3. Santa Ana Ave / Sierra Vista Mall Dwy
AM (PM) Peak Hour

Sierra Vista Mall Dwy

Highest Approach Volume =

53 (106) VPH



Santa Ana Ave Total of Both Approaches =

448 (464) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

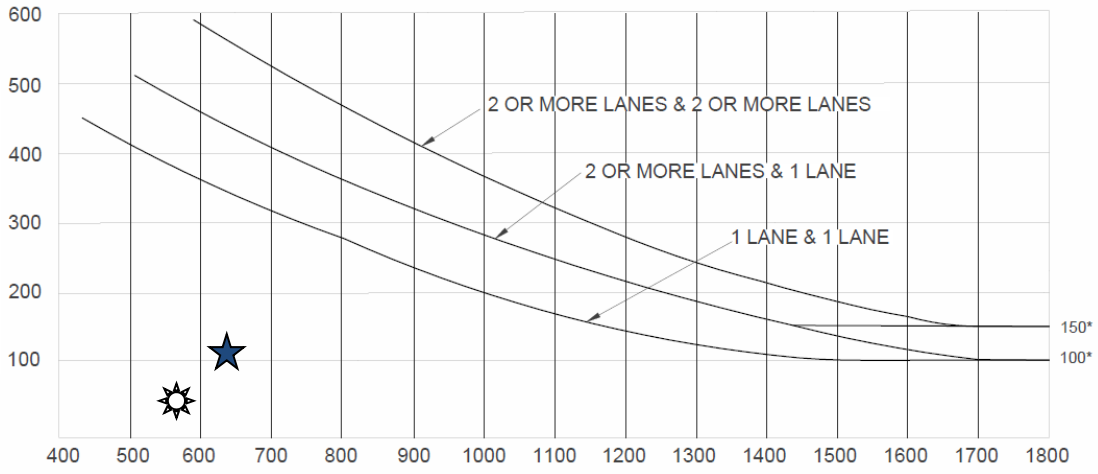
PM Peak Hour – Signal Warrant is Not Met

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 (Urban)

Near Term plus Project Traffic Conditions
3. Santa Ana Ave / Sierra Vista Mall Dwy
AM (PM) Peak Hour

Sierra Vista Mall Dwy Highest Approach Volume = 53 (106) VPH



Santa Ana Ave Total of Both Approaches = 564 (625) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 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

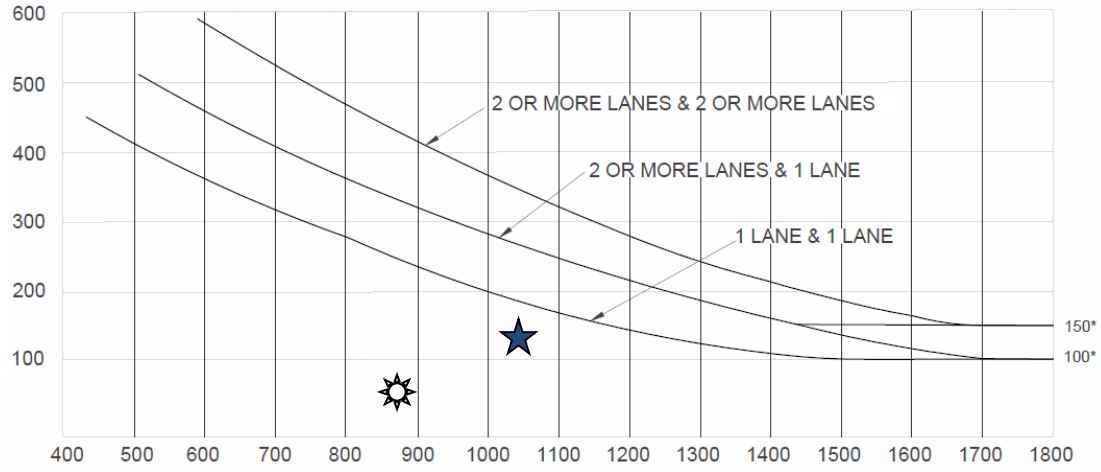
Warrant 3: Peak Hour (Urban)

Cumulative Year 2035 No Project Traffic Conditions
3. Santa Ana Ave / Sierra Vista Mall Dwy
AM (PM) Peak Hour

Sierra Vista Mall Dwy

Highest Approach Volume =

53 (112) VPH



Santa Ana Ave Total of Both Approaches =

874 (1037) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 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

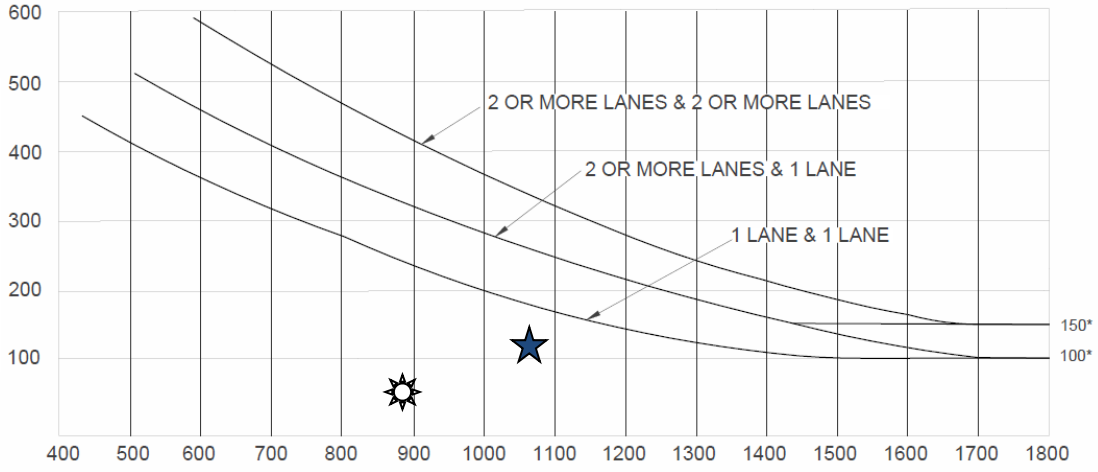
Warrant 3: Peak Hour (Urban)

2035 plus Project Traffic Conditions
3. Santa Ana Ave / Sierra Vista Mall Dwy
AM (PM) Peak Hour

Sierra Vista Mall Dwy

Highest Approach Volume =

53 (112) VPH



Santa Ana Ave Total of Both Approaches =

891 (1059) VPH

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 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