

# REGULAR MEETING OF THE MADERA PLANNING COMMISSION 

205 W. $4^{\text {th }}$ Street, Madera, California 93637

## NOTICE AND AGENDA

## Tuesday, August 8, 2023

Council Chambers
6:00 p.m.
City Hall

The Council Chambers will be open to the public. This meeting will also be available for public viewing and participation through Zoom. Members of the public may comment on agenda items at the meeting or remotely through an electronic meeting via phone by dialing (669) 9006833 enter ID: 84867311128\# followed by *9 on your phone when prompted to signal you would like to speak, or by computer at https://www.zoom.us/i/84867311128. Comments will also be accepted via email at planningcommissionpubliccomment@madera.gov or by regular mail at 205 W. 4th Street, Madera, CA 93637.

## CALL TO ORDER:

## ROLL CALL:

Chairperson Robert Gran Jr.
Vice Chair Ramon Lopez-Maciel
Commissioner Rohi Zacharia
Commissioner Khubaib Sheikh
Commissioner Balwinder Singh
Commissioner Saim Mohammad
Commissioner Jose Eduardo Chavez

## INTRODUCTION OF STAFF:

Adam Sanchez - Planning Intern
Shannon Chaffin - City Attorney

## PLEDGE OF ALLEGIANCE:

APPROVAL OF MINUTES: June 13, 2023

## PUBLIC COMMENT:

The first 15 minutes of the meeting are reserved for members of the public to address the Commission on items which are within the subject matter jurisdiction of the Commission. Speakers shall be limited to
three minutes. Speakers will be asked, but are not required, to identify themselves and state the subject of their comments. If the subject is an item on the Agenda, the Chairperson has the option of asking the speaker to hold the comment until that item is called. Comments on items listed as a Public Hearing on the Agenda should be held until the hearing is opened. The Commission is prohibited by law from taking any action on matters discussed that are not on the agenda, and no adverse conclusions should be drawn if the Commission does not respond to public comment at this time.

## CONSENT ITEMS: None

## PUBLIC HEARINGS:

1. REZ 2022-08, CUP 2022-34 \& SPR 2022-42 - Mammoth Oxygen, Inc.

Subject: A noticed continued public hearing to consider an application for a rezone, conditional use permit and site plan review to allow the establishment of a Mammoth Oxygen wholesale retail welding supply and automotive paint supply store at 794 S . Pine St. The Rezone would rezone the property from the current U (Unclassified) Zone District to the I (Industrial) Zone District for consistency with the site's General Plan land use designation of I (Industrial). The use permit along with the site plan review, would allow the mixing and storage of paint as well as the storage and handling of oxygen supply tanks in an Industrial Zone.

This project is determined to be categorically exempt under the California Environmental Quality Act, Guidelines, Section 15301 (Existing Facilities), of the California Environmental Quality Act (CEQA) Guidelines.

The Applicant has requested this item be continued to a date uncertain.

## 2. CUP 2022-17 \& SPR 2021-25 - 7-Eleven Travel Center

Subject: A continued noticed public hearing to consider an application for a site plan review allowing the development of a 24-hour highway travel center composed of a 4,880 sq. ft. service station, convenience store and fuling station with 4 truck-trailer fuel stations ( 5 diesel pumps), and 6 auto fuel stations ( 12 gasoline pumps) under two independent canopies, and landscape improvements of a 4 acre site located on the northwest corner of Avenue 17 and Golden State Boulevard / Airport Drive. The project also includes approximately 3 acres of adjacent City right-of-way and off-site infrastructure improvements including a two-lane roundabout at Avenue 17 and Golden Sate Boulevard / Airport Dr. The applicant is also applying for a conditional use permit to allow for the ale of tobacco products and for the purpose of securing a Type 20 (off-sale beer \& wine) California Department of Alcohol and Beverage Control (ABC) license to sell beer and wine beverages for off site consumption. The sale of alcohol and tobacco products would be restricted to the proposed convenience store.

Pursuant to the California Environmental Quality Act (CEQA), an Initial Study / Mitigated Negative Declaration has been prepared, describing the degree of potential environmental impacts of the proposed project. The City has assessed the potential environmental impacts of the proposed project and has determined that they will be less than significant.

## Recommendation:

Conduct the hearing and;
a. Adopt a Resolution approving Conditional Use Permit 2022-17 and Site plan Review 202125 , subject to the findings and conditions of approval. (Report by Robert Smith)

## ADMINISTRATIVE REPORTS:

## COMMISSIONER REPORTS:

## ADJOURNMENT:

- The meeting room is accessible to the physically disabled. Requests for accommodations for persons with disabilities such as signing services, assistive listening devices, or alternative format agendas and reports needed to assist participation in this public meeting may be made by calling the Planning Department's Office at (559) 661-5430 or emailing planninginfo@ madera.gov. Those who are hearing impaired may call 711 or 1-800-735-2929 for TTY Relay Service. Requests should be made as soon as practicable as additional time may be required for the City to arrange or provide the requested accommodation. Requests may also be delivered/mailed to: City of Madera, Attn: Planning Department, 205 W. 4th Street, Madera, CA 93637. At least seventy-two (72) hours' notice prior to the meeting is requested but not required. When making a request, please provide sufficient detail that the City may evaluate the nature of the request and available accommodations to support meeting participation. Please also provide appropriate contact information should the City need to engage in an interactive discussion regarding the requested accommodation.
- The services of a translator can be made available. Please contact the Planning Department at (559) 661-5430 or emailing planninginfo@madera.gov to request translation services for this meeting. Those who are hearing impaired may call 711 or 1-800-735-2929 for TTY Relay Service. Requests should be submitted in advance of the meeting to allow the City sufficient time to provide or arrange for the requested services. At least seventy-two (72) hours' notice prior to the meeting is requested but not required.

Any writing related to an agenda item for the open session of this meeting distributed to the Planning Commission less than 72 hours before this meeting is available for inspection at the City of Madera Planning Department, 205 W. 4th Street, Madera, CA 93637 during normal business hours.

Pursuant to Section 65009 of the Government Code of the State of California, notice is hereby given that if any of the foregoing projects or matters is challenged in Court, such challenge may be limited to only those issues raised at the public hearing, or in written correspondence delivered to the Planning Commission at or prior to the public hearing.

All Planning Commission actions may be appealed to the City Council. The time in which an applicant may appeal a Planning Commission action varies from 10 to 30 days depending on the type of project. The appeal period begins the day after the Planning Commission public hearing. There is NO EXTENSION for an appeal period.

If you have any questions or comments regarding this hearing notice, you may call the Planning Department at (559) 661-5430. Si usted tiene preguntas, comentarios o necesita ayuda con interpretación, favor de llamar el Departamento de Planeamiento por lo menos 72 horas antes de esta junta (559) 661-5430.

# REZ 2022-08, CUP 2022-34 \& SPR 2022-4 

 Mammoth Oxygen, Inc.The Applicant is requesting this item be continued to a date uncertain.


## REPORT TO PLANNING COMMISSION

Prepared by: Robert Smith
Meeting of: August 8, 2023
Agenda Item: 2


#### Abstract

SUBJECT Conditional Use Permit 2022-17, Site Plan Review 2022-25 and Environmental 2022-20 - 7-Eleven Travel Center


## RECOMMENDATION

Conduct a public hearing and adopt:

A Resolution of the Planning Commission of the City of Madera adopting Mitigated Negative Declaration 2022-20, and approving Use Permit 2022-17 and Site Plan Review 2022-25.

## PROPOSAL

## 7-Eleven Travel Center

The applicant and property owner, Stock Five Holdings, LLC, is requesting site plan review (SPR 2022-25) approval to construct and establish a new 4-acre 7-Eleven Travel Center in northwest Madera at the northwest corner of Avenue 17 and Golden Gate Boulevard / Airport Drive (refer to Attachment 1). The proposed 7-Eleven Travel Center site would occupy the southern 4-acre portion of a 10.4-acre parcel (Madera County Assessor's Parcel Number (APN) 013-210-005) (refer to Attachment 2).

The proposed Travel Center would include a convenience store, fueling stations for commercial tractortrailers (big rigs), and fueling stations for passenger vehicles (refer to Attachment 4). A summary of the proposed Travel Center improvements is provided below. The applicant is also requesting a use permit (CUP 2022-17) approval to allow for the sale of beer and wine beverages for off-site consumption and for the sale of tobacco products within the convenience store.

## Convenience Store

The Travel Center would include a 4,889 square foot (sf) convenience store. The building will be approximately 25 feet ( ft ) high with the primary building façade facing east towards Golden State Boulevard. A mix of materials consisting of brick panels, metal, wood siding, glass windows as well as various colors proposed with the intent to provide depth and visual interest to the building. The eastfacing façade would include a double entry doorway below an entry canopy. Window panels would surround the entryway. The east-facing entry is intended to serve the passenger vehicle customers pumping fuel as well as other customers seeking to only purchase goods and services provided within the convenience store. The west-facing façade would include a single-entry door below an entry canopy.

Unlike the east-facing façade, only one window panel is proposed. The west-facing entry door is intended to serve the big rig customers. Customers seeking to only purchase goods and services within the convenience store can also access the store from this entry as well.

The convenience store would include merchandise aisles, cooler vault, beer cave, building utilities, restrooms, operations area including cooler, freezer, office and backroom. The proposed convenience store is expected to operate 7 days a week, 24 hours a day and employ an estimated 13 employees over several shifts. Typical shifts will have 2 to 3 employees.

## Fueling Stations

The proposed fueling areas would be comprised of 4 commercial big rig diesel fueling stations approximately 10 feet high ( 5 diesel pumps) and 6 passenger vehicle gasoline fueling stations approximately 8 feet high ( 12 gasoline pumps) under two canopies, 19 feet and 17.5 feet high, respectively (refer to Attachment 10). The commercial big rig diesel fueling stations would be located west of the convenience store and the passenger vehicle gasoline fueling stations would be located east of the convenience store. The diesel fueling stations would have the ability to fuel up to four big rigs at any given time. The gasoline fueling stations would have the ability to fuel up to 120 passenger vehicles at any given time.

Four underground storage tanks (UST) are proposed as part of the proposed project. Two 8,000-10,000gallon capacity USTs would supply gasoline to the pumps east of the convenience store and would be located along the southeast corner of the site. A 10,000 and a 20,000-gallon capacity UST would supply diesel fuel to the diesel pumps and would be placed toward the western property line.

## Lighting and Signaqe

Security lighting would be located throughout the proposed travel center, including around the exterior of the convenience store. Existing streetlights along Golden State Boulevard would remain, and additional streetlights would be placed along the roadways surrounding the travel center and in the on-site parking areas.

The proposed travel center would include a free-standing monument sign located east of the driveway located on the southern boundary of the travel center along Avenue 17. Additionally, the applicant is proposing seven on-building signs to be mounted on the convenience store - two signs each on the south, east, and west facades, and one sign on the north façade). Signage would be reviewed under a separate sign permit for a master sign program at the site.

## Access and Parking

The travel center proposes two points of access. One driveway would be to the east connecting the travel center to Golden State Boulevard and one driveway would be to the south connecting the travel center to Avenue 17. Both driveways would be shared by commercial big rig traffic and by passenger vehicular traffic. Both the driveways will be limited to right in- and right-out traffic patterns. Big rigs and passenger vehicles would be prohibited from turning left to enter or exit the travel center (refer to Attachment 4).

The proposed travel center would provide 48 parking spaces for passenger vehicles, 3 of which would be accessible parking spaces, 2 of which would be designated as "Low Emission" vehicle parking, 2 of which would be electric vehicle (EV) charging station parking spaces with EV charging equipment, and 9 of which
would be "EV-ready" with charging station conduit supplied to spaces. In addition, the proposed site plan includes 10 parking spaces for big rigs, and a 3-bike capacity bike rack.

## Utilities and Services

The travel center proposes to connect to an existing 12 -inch water main beneath Golden State Boulevard, and to 10 -inch sewer line beneath Avenue 17 and / or Golden State Boulevard, underground all existing overhead utility services on-site as well off-site paralleling to the project site.

An off-site stormwater basin was recently constructed in the northern section of APN 013-210-005, approximately 450 feet north of the development area, to replace and expand a temporary basin within the proposed travel center site. The project would direct its drainage to the recently constructed basin.

## Avenue 17 / Golden State Boulevard / Airport Drive Roundabout

The City is requiring, as a component of the proposed 7-Eleven Travel Center project, to reconstruct Avenue 17, Golden State Boulevard / Airport Drive intersection into a roundabout. The roundabout improvements would encompass an additional 3 acres of off-site roadway right-of-way, and adjacent properties to reconstruct the existing 4-way Avenue 17 and Golden State Boulevard / Airport Drive intersection into a 4-legged, 2-lane roundabout (refer to Attachment 5). As proposed, the roundabout would have an outer lane for entering and exiting the roundabout and an inner lane for continuing around the roundabout. Roundabout improvements include paving, curb, gutter, landscaping, accessible sidewalks, pedestrian ramps across project frontages, streetlights, and undergrounding of overhead electric utilities. Roundabout improvements also include bike lanes consistent with planned bike lanes for the project area. The roundabout is subject to an Intersection Control Analysis which is currently in review with the City and Caltrans. The results of this analysis will provide additional detail for the design and composition of the roundabout. The analysis is sufficiently detailed to accept the current roundabout design as acceptable without material amendments being needed once the analysis is adopted.

The Conditions of Approval allow a provision that the developer may enter into a reimbursement/ deferral agreement with the City that will allow the developer to complete an operational roundabout following occupancy of the project within six months of gaining occupancy. This will allow the property to be occupied at time of completion, rather than completion of construction of the roundabout to avoid holding up building occupancy. The agreement has the option for the City Engineer to provide for extensions for unforeseen events.

This Site Plan Review and Environmental IS/MND addresses and analyzes both the proposed 4-acre Travel Center as well as the proposed 3-acre off-site reconstruction and conversion of the existing Avenue 17 and Golden State Boulevard / Airport Drive intersection into a 4-legged, 2-lane roundabout and is herein collectively referenced as the "project site" or "proposed project site," and as the "project" or "proposed project." The 4 -acre Travel Center area apart from the 3 -acre roundabout improvement area is herein referred to as the "travel center development area" or "development area." The 3-acre roundabout area apart from the 4 -acre Travel Center is herein referred to as the "proposed roundabout area" or "roundabout area" (refer to Attachment 5)

## SITE CHARACTERSITICS

## Travel Center Development Area

The proposed Travel Center development area is approximately 465 feet west of the State Route 99 (SR 99) / Avenue 17 interchange southbound ramp (Exit 157) and Avenue 17 intersection. The SR 99 / Avenue

17 interchange is a primary City gateway on the northern fringe of the City. Westbound Avenue 17 serves traffic to and from the Madera Municipal Airport, Airport Industrial Park, Madera Municipal Golf Course. Eastbound Avenue 17 serves traffic to and from the Love's Travel Center, as well as rural and urban residential and commercial development east of the Love's Travel Center.

The proposed rectangular-shaped development area occupies the northwest corner of Avenue 17 and Golden State Boulevard / Airport Way. The area is bound by Golden State Boulevard to the east and Avenue 17 to the south. Street improvements such as curb, gutter, inlet basin, sidewalks are devoid along the development area perimeter. The City of Madera City limit forms the development area's western boundary. The City of Madera City limit also forms the northern boundary of the parcel of which the proposed development area is located within - APN 013-210-005 (refer to Attachment 2). The development area lies within a C2 (Heavy Commercial) zone district and has a General Plan land use designation of C (Commercial) (refer to Attachments 6 and 7, respectively).

The development area is composed of vacant, fallow land which up until around 2013 was used for agriculture. This area is disced annually for vegetation management. An existing fenced temporary stormwater drainage basin, constructed between 2012 and 2014, is in the northeast portion of the development area. The basin serves developed properties to the east of the project site. Cottonwoods and willows are present within the basin. There are two soil stockpiles present in the development area. The lesser stockpile represents soil excavated from the existing stormwater drainage basin within the development area. The second and larger stockpile is composed of the soil excavated from a new off-site temporary basin north of the development area. Pole mounted aerial electrical, and communications lines are present along the development area's east and south frontages.

## Roundabout Area

The roundabout area is composed of developed and partially developed Avenue 17, Golden State Boulevard and Airport Drive rights-of-way (e.g., pavement, curb, gutter, inlet basins, sidewalk, parkway landscape), as well as portions of developed and undeveloped property. The northbound Airport Drive intersection approach includes a shared through-right turn lane and a left turn lane. The southbound Golden State Boulevard approach includes a shared right turn-through and left turn lane. The north and southbound approaches are stop controlled. The east and westbound Avenue 17 approaches include a through lane, and a left and a right turn lane. Marked crosswalks are not present at the intersection.

Developed properties include an ARCO fueling station and an am / pm convenience store (ARCO) east of Golden State Boulevard and the Hampton Inn and Suites hotel to the south of the proposed travel center. Undeveloped properties include lands south of Avenue 17 between Airport Drive and the Hampton Inn and Suites hotel, land east of Airport Drive, and land east of Golden State Boulevard, north of the Arco site (refer to Attachment 3).

Avenue 17, a two-lane, east-west trending road, is identified as an arterial roadway in the City General Plan. Avenue 17 is one of several designated arterials that make up the "Madera Loop." The City General Plan envisions the arterials that make up the Madera Loop to be generally four-lanes (two lanes in each direction) with limited direct access and limited interruptions (i.e., traffic signals). Direct access onto arterials via driveways is generally not permitted. North of the intersection, the north-south trending road is identified as Golden State Boulevard and south of the intersection, the north-south trending road is identified as Airport Drive. Golden State Boulevard is a two-lane road. Airport Drive is a four-lane road. Both Golden State Boulevard and Airport Road are identified as collector roadways.

The southern Avenue 17 street frontage, west of the Avenue 17 and Golden State Boulevard / Airport Drive intersection includes approximately 410 linear ft of curb and gutter, sidewalk, landscaping as well as inlet basins, streetlights and hydrants improvements. A raised landscaped median is present beginning at the east end of Avenue 17's eastbound approach and extends approximately 390 ft west. Street trees are planted in the median. No street frontage improvements are present along the northern (development area) street frontage. East of the intersection, Avenue 17 street frontage improvements are limited to ramp improvement at the southeast corner of the intersection, streetlights at the intersection, and approximately 240 linear ft of temporary vertical asphalt curb along the northern street frontage.

The Golden State Boulevard eastern street frontage, north of the intersection includes approximately 265 linear ft of curb, gutter, sidewalk, landscaping, inlet basins, streetlights and hydrants improvements. No street improvements are present along the westerly (development area) street frontage. The western Airport Drive street frontage, south of the intersection includes curb and gutter, sidewalk, landscaping as well as inlet basins, streetlights and hydrants improvements. The eastern Airport Drive street frontage improvements are limited to curb and gutter, and street trees.

An overview of the proposed project and project site characteristics are provided in Table 1 below.

Table 1: Project Overview

| Project Numbers: | CUP 2022-17; SPR 2022-25; and ENV 2022-20 |
| :--- | :--- |
| Applicant: | Stock Five Holdings, LLC |
| Property Owner: | Stock Five Holdings, LLC |
| Location: | Northwest corner of Avenue 17 and Golden State Blvd / Airport Dr (southern <br> portion of APN 013-21-005) |
| Project Area: | Approximately 7 acres (southern portion of APN 013-210-005 (4 acres)) plus <br> 3 acres of adjacent street right-of-way and infrastructure improvements) |
| Plan Land Use: | C (Commercial) |
| Zoning District: | C-2 (Heavy Commercial) |
| Site Characteristics: | Project site is generally level, disced for vegetation management and was <br> formerly agricultural land. The existing biotic condition is ruderal, composed <br> of herbaceous vegetation. In the project site vicinity, Avenue 17, is a two- <br> lane east-west Arterial and Golden State Boulevard / Airport Drive is a two- <br> lane north-south Collector. |

## SURROUNDING LAND USES

The project site is generally bound by developed and undeveloped commercial properties to the north, east, south, and west. Property to the east, directly across Golden State Boulevard, designated C (Commercial) and zoned C1 (Light Commercial) is occupied by an ARCO fueling station with an am / pm convenience store at the northeast corner of Avenue 17 and Golden State Boulevard. A fast-food sandwich take-out restaurant, Subway, operates within the am / pm convenience store. ARCO, am / pm convenience store and Subway operate 7 days a week, 24 hours a day. Access to the ARCO station and
am / pm convenience store is limited to a single drive approach on Golden State Boulevard. An undeveloped parcel is located to the north of the ARCO fueling station. Both the ARCO station and the vacant parcel adjoin SR 99 to the east. A free-standing freeway sign, marketing the ARCO station, am / pm convenience store and Subway is located on the ARCO site.

Property to the south, directly across Avenue 17, is designated C (Commercial) and zoned C2 (Heavy Commercial). One parcel is occupied by the Hampton Inn and Suites, Madera, a 78-room hotel. A second parcel, west of the hotel at the southwest corner of Avenue 17 and Airport Drive, is improved, but vacant. Street frontage improvements (pavement, curb, gutter, sidewalk, lighting, hydrants, parkway landscaping, lighting) have been constructed along Avenue 17 and Airport Drive. A drive isle with access to Avenue 17 separates the hotel and the vacant parcel. The City has received a development application for a Chevron fueling station, convenience store and fast-food restaurant with a drive-through window for the vacant parcel. The application is currently under review by City staff. The City has also received a development application for a 5 -story, 94 room hotel (TownPlace Suites) proposed directly south of the existing Hampton Inn and Suites.

Property to the west, directly adjacent to the project site, lies outside the Madera City limit. As an area outside the jurisdiction of the City, land use and zoning responsibilities of the property lie with the County of Madera. The County of Madera General Plan designates the property LI (Light Industrial). The County zoning district is IL (Industrial Light) (refer to Attachments 8 and 9 for the Madera County General Plan Land and Zoning Maps, respectively). Given the property is within the City of Madera Urban Growth Boundary and Sphere of Influence, the City General Plan has also assigned a land use designation for this property. The City General Plan land use designation is C (Commercial).

Property to the north and adjacent to APN 013-210-005 also lies outside the Madera City limit and is occupied by single family homes. The homes are approximately $550^{\prime}$ north of the proposed Travel Center. Similarly, property to the west of the project site, land use and zoning responsibilities lie with the County of Madera. The County of Madera General Plan designates land to the north of APN 013-210-005 HSC (Highway Service Commercial). The County zoning district is CRH (Commercial Rural Highway) (refer to Attachments 8 and 9, respectively). Given the property is within the City of Madera Urban Growth Boundary and Sphere of Influence, the City General Plan has designated the property C (Commercial).

Property immediately to the north of the proposed development area - the northern portion of APN 013-210-005 - is within the City of Madera City limit and is designated C (Commercial) and zoned C2 (Heavy Commercial). A temporary stormwater basin was recently constructed in the northern portion of APN 013-210-005, approximately 450 feet north of the proposed Travel Center development site. The temporary basin is to replace and expand the temporary basin that presently exists within the Travel Center development area. Soil excavated from the new basin is presently being stockpiled on-site. The newly constructed basin is to serve existing and planned development to the project area, including the proposed project.

Table 2 below summarizes the existing development/uses, and the General Plan land use designations and zoning districts surrounding the proposed project site. The General Plan designations identified in Table 2 represent the City's General Plan land use designations surrounding the project site. The zoning districts identified in Table 2 include both City and County zone districts based on where the City limit boundary abuts the project site.

Table 2: Bordering Site Information

| Direction | Existing Use | General Plan <br> Designation | Zone District |
| :---: | :--- | :--- | :--- |
| North | Vacant; storm drainage basin; | C-Commercial | C-2 - Heavy Commercial (City) |
| East | ARCO fueling station; am / pm <br> convenience store; Subway | C-Commercial | C-1 - Light Commercial (City) |
| South | Vacant (proposed Chevron fueling <br>  <br> drive-through restaurant); <br> Hampton Inn and Suites | C-Commercial | C-2 - Heavy Commercial (City) |
| West | Vacant; City Limit | C-Commercial | IL - Industrial Light (County) |

## ANALYSIS

The project site is located at the intersection of Avenue 17 and Golden State Boulevard / Airport Drive approximately 465 ft west of the SR 99 / Avenue 17 Interchange southbound off-ramp (Exit 157), a primary gateway on the northern fringe of the City. Avenue 17 currently serves traffic to and from the airport, associated industrial park, Love's Travel Center, east of SR 99 and to other area wide uses. In the future, the interchange, Avenue 17 and the Avenue 17 and Golden State Boulevard / Airport Drive intersection will serve as a primary access to the planned development of The Villages of Almond Grove Specific Plan Area west of the project and possibly serve as a primary entrance to the approved North Fork Rancheria Resort \& Casino gaming complex north of the project, as well as other potential commercial retail developments in the surrounding area. Issues discussed as part of this analysis include land uses and permitting requirements, site design standards, parking requirements, building architecture, landscaping requirements, and the relationship between the project site and the ultimate improvements which will eventually be made to the adjacent intersection and freeway interchange.

## Site Plan Review 2022-25

The Madera Municipal Code (MMC) establishes procedures for the review and approval of Site Plan Reviews (Section 10-3.4). Section 10-3.4.0103 of the MMC requires a site plan review to be prepared for all new uses which involve construction or placement of new structures on a site or new uses which necessitate on-site improvements including projects subject to a use permit. Purpose of the site plan review to ensure that the use and development is in conformity with the intent and provisions of the MMC, to ensure structures, parking areas, walks, landscaping, street improvements and other forms of development are properly related to the proposed site surrounding sites and structures and, to ensure the project development enhances the physical appearance and attractiveness of the City.

Approval of SPR 2022-025 would allow for the development and operation of the proposed 7-Eleven Travel Center as conditioned. If the Planning Commission cannot make the appropriate findings, development should be denied. Conditions may be attached to the approval of the site plan to ensure the project is in conformity with the intent and provisions of the MMC and applicable policies, regulations, standards and guidelines, and to ensure the project is compatible with its surroundings. Project design may be altered and on- and off-site improvements required in order to make the project compatible with nearby uses.

Section 10-3.1001 through 10-3.1004 of the MMC establishes standards specific to development within the C2 (Heavy Commercial) zoning districts. City requirements for off-street parking are provided in Section 10-3.1202 of the MMC. Table 3 below summarizes the development standards for the C2 (Heavy Commercial) zone district and off-street parking requirement for a retail store. The proposal is consistent with the C2 (Heavy Commercial) zone district standards.

Table 3: C2 (Heavy Commercial) Zone District Development Standards

| Standard | Required | Proposed |
| :---: | :---: | :---: |
| Site Area (Minimum) | 2,000 sf for Each Main Building | $\pm 175,545 \mathrm{sf}$ |
| Front Yard Setback (Minimum) | None | $\pm 140 \mathrm{ft}$ (C-Store Setback from Golden State Boulevard) |
| Interior Side Yard Setback (Minimum) | None | $\pm 120 \mathrm{ft}$ |
| Exterior Side Yard Setback (Minimum) | None | $\pm 80 \mathrm{ft}$ (C-Store Setback from Golden State Boulevard) |
| Rear Yard Setback | None | $\pm 350 \mathrm{ft}$ |
| Building Height (Maximum) | 65 ft | $241 / 2 \mathrm{ft}$ |
| Off-Street Parking | 1 Space / 250 sf of Gross Floor Area | 2.6 Spaces / 250 sf of Gross Floor Area |

While the C2 (Heavy Commercial) allows for service stations as a permitted use, the district does not allow uses such as truck stops or terminals, or overnight recreational vehicle (RV) parking. Such uses are only allowed within a CH (Highway Commercial) zone district, subject to a use permit (MMC, Section 10-39.303). The project has been conditioned prohibiting overnight parking of big rigs and RVs.

## Compatibility with Surrounding Uses

The 7-Eleven Travel Center would occupy a parcel that is designated C (Commercial) and zoned C2 (Heavy Commercial). The Travel Center, consisting of convenience store, fueling stations for commercial big rigs, and fueling stations for passenger vehicles is allowed within a C2 (Heavy Commercial) zone district subject to the Planning Commission making a finding that the proposed project is similar in character and not detrimental to the welfare of the neighborhood in which the project site is located.

The Travel Center, which is expected to operate 7 days a week, 24 hours a day, would not place a use onsite that would be an incompatible for the site or with other uses in the surrounding area. The proposed project would be compatible with the existing and proposed uses to the north, east and south of the project site, all of which are located on property designated C (Commercial). The project would support the surrounding Airport industrial businesses as well as automotive and tractor-trailer shipping commerce traffic on SR 99. Existing neighboring uses the Travel Center would be compatible with include the ARCO fueling station, am / pm convenience store, Subway sandwich shop, which operates 7 days a week, 24 hours a day, and the recently completed Fresno Madera Credit building to the east. The Travel Center would also be compatible with the Hampton Inn and Suites, Madera, a 78 -room hotel, to the south.

Furthermore, the Travel Center would be compatible with the North Fork Rancheria Resort \& Casino gaming complex approved to the north of the project site.

The City is currently processing a development application for a new fueling station, convenience store and drive-through restaurant and a development application for a new 5 -store, 94 room to the south of the proposed project. The proposed Travel Center would be compatible with the proposed new hotel project as well as the proposed new fueling station, convenience store and drive-through restaurant project should one or both development proposal be approved and implemented.

The project is conditioned to provide the new street infrastructure along the site frontages in addition to the required intersection enhancement of the roundabout. A 10-foot landscaped buffer is also required around the property line with additional enhanced plantings around the access and egress to the site. The site will be in operation 24 hours a day for 7 days a week which is typical of service stations and appropriate for this area and surrounding uses. A parkland strip of $8^{\prime}$ is required along the property frontages and requirement is included as Condition of Approval.

## Access and On-Site Circulation

The travel center proposes two ingress / egress driveway approaches, both of which are to be shared by commercial big rigs and by passenger vehicles. Both driveway approaches would be restricted to right-in and right-out movements. Left-in and left-out movements would be prohibited. As proposed, the Golden State Boulevard driveway approach, located at the northern limits of the travel center, would be 56 ft wide. Left turn in and out movements at this drive approach would be controlled by a double solid yellow line. The Avenue 17 driveway approach, located approximately 290 feet west of the intersection, would be 73 ft wide. Left turn in and out movements at this driveway approach would be controlled by a raised median.

As proposed, both driveway approaches exceed the City Engineering Standard Drawings and Specifications for commercial driveway approach (ST-13B). For commercial development, the maximum width is 35 ft . Construction of an approach wider than a stated maximum specification is subject to prior approval of the City Engineer. Without special approval from the City Engineer, the maximum driveway width cannot exceed 35 ft . The project has been conditioned requiring the applicant secure special approval from the City Engineer to exceed the Engineering Standard Drawings and Specifications for commercial driveway approaches.

The majority of the on-site circulation pattern is bilateral (2-way). The exception is the proposed one-way routing for commercial big rigs to access the commercial diesel fuel islands and the 10 tractor-trailer parking spaces. A landscaped island north of the convenience store separates commercial big rig traffic traveling to and from the Golden State Boulevard driveway approach and the commercial diesel fuel islands and tractor-trailer parking from vehicles traveling to and from the convenience store parking areas and the passenger vehicle fuel islands. A second landscape island west of the convenience store also separates big rig traffic traveling to and from the Avenue 17 driveway approach from passenger vehicles traveling to and from the convenience store parking areas and passenger vehicle fuel islands (refer to Attachment 4).

As proposed, the one-way counterclockwise commercial big rig circulation pattern entering and existing the Avenue 17 drive approach is prone to causing westbound Avenue 17 traffic to stall and back-up and create accidents. Westbound Avenue 17 traffic would stall and / or back-up should one or more big rigs and /or passenger vehicles attempt exit the Avenue 17 drive approach while a big rig is attempting to
enter the drive approach and immediately turn left to following the on-site one-way big rig traffic circulation pattern to either park or fuel. On-site traffic flow would also be impacted until the driveway approach clears (refer to Attachment 4). To reduce the potential of traffic delays on Avenue 17, staff recommends that the one-way counterclockwise commercial big rig circulation pattern be reversed. Staff is recommending commercial big rigs entering the Avenue 17 drive approach to proceed directly towards the commercial diesel fuel islands as opposed to immediately turning left upon entry leading towards the tractor-trailer parking area and potentially obstructing on-site traffic. Big rigs proceeding forward may either directly enter the fuel islands or bypass the fuel islands. Big rigs entering the Avenue 17 drive approach in need of the goods and / or services from the convenience store, but not fuel may by-pass the fuel station and then turn left and into the tractor-trailer parking area. The tractor-trailer parking spaces will need to be repositioned in response to changing the one-way big rig traffic pattern from counterclockwise to clockwise. The parking spaces will need to be aligned to reflect a northwest diagonal alignment. The project has been conditioned requiring the one-way commercial big rig circulation pattern entering and exiting the Avenue 17 drive approach reflect a clockwise circulation pattern and the tractortrailer parking spaces demonstrate a northwest diagonal alignment.

## General Parking Requirements

Parking has been allocated so that sufficient parking is available for the Travel Center. The Travel Center project proposes 58 parking spaces for the entire development site. Of the 58 spaces provided, 48 spaces are for passenger vehicles and 10 spaces are designated for tractor-trailer (big rigs). As shown in Table 4 below, the project provides sufficient off-street parking and is consistent with the parking requirements of the MMC Section 10-3.1202 (Parking Spaces Required).

Table 4: Parking

| Travel Center <br> Element | Structural Gross <br> Square Footage | Parking <br> Standards | Required <br> Parking | Provided Parking |
| :--- | :---: | :---: | :---: | :---: |
| Convenience Store | $4,889 \mathrm{sf}$ | 1 space $/ 250$ <br> gross sf | 20 | 48 Passenger <br> Vehicle Spaces <br> 10 Big Rig Spaces |
| Total |  | 58 Spaces |  |  |

As proposed, two vertical parking bollards would be installed at the front of each parking space perpendicular to and abutting the concrete pedestrian walkway surrounding the convenience store in lieu of raised six-inch curb separating the parking area from the building. As proposed the walkway would be sloped downward towards the parking areas surrounding the building. Placement of the vertical bollards, as proposed, is likely to increase potential physical damage to vehicles parking within these spaces. The project has been conditioned to exclude the installation of the vertical parking bollard and in lieu of the bollards, a six-inch curb shall form the outer edge of the pedestrian walkway surrounding the convenience store. The walkway shall be formed and installed such that the height of the walkway matches the back of curb. The conditions of approval also prohibit the installation of parking wheel stops except when and where required pursuant to the Americans with Disabilities Act (ADA) parking specifications.

## ADA Parking Requirements

Pursuant to ADA requirements based on the total number of proposed parking spaces, ( 58 spaces), 3 spaces must be handicap accessible of which 1 must be van accessible. Of the 58 spaces proposed, the travel center site plan only includes 2 handicap accessible spaces of which 1 is van accessible. The project has been conditioned to provide a minimum of 3 ADA accessible spaces of which 1 must be van accessible.

## Electric Vehicle Parking Requirements

Pursuant to the California Building Code Cal Green Standards based on the total number of proposed parking spaces to provided ( 58 spaces), 13 spaces must be electric vehicle (EV) capable, of which 3 must have the electric vehicle supply (charging) equipment (EVSE) installed for the purpose of charging an electric vehicle. Of the 3 EVSE spaces required, 1 space must be van accessible and 1 space must meet the standard disability accessibility requirements to comply with Section 11B-812 of the California Building Code.

Of the 58 spaces proposed, the travel center site plan includes 9 EV capable spaces and 2 EVSE spaces. Of the two EVSE spaces provided, 1 space is van accessible. The project has been conditioned to provide a minimum of 13 EV capable spaces of which 3 must be EVSE spaces, including 1 van accessible and 1 standard disability accessible space. All EV and EVSE capable spaces must meet the design specifications of the California Building Code.

## Bicycle Parking Requirements

Pursuant to the California Building Code Cal Green Standards and convenience store gross square footage, 2 short term and 2 long term bicycle parking spaces must be provided. The proposed travel center site plan delineates one 3-capacity bike rack to be placed within the 7.5 ft wide concrete pedestrian walkway abutting the convenience store. As proposed, the single bike rack would be placed on the southside of the convenience store, out of view the store employees. The project has been conditioned to provide a adequate space and bicycle parking equipment to meet the requirements for a minimum of 3 short and 2 long-term bicycle parking spaces.

## Building Architecture and Elevations

The single-story commercial store is representative of a typical structure for this type of use and demonstrates all the required architectural features that would be expected and is intended for a single tenant. The building is 25 ft high at the top parapet, stepping down to 21 ft at the north elevation. The building will be constructed of a variety of materials brick, metal, wood, and cement board. The main structure is accompanied by two sets of fueling stations for both commercial big rig trucks and passenger vehicles. The fuel pumps are standard pumps, and each set is covered by a canopy, 18 ft high for the passenger vehicles and 22 ft high for the truck refueling location.

The City's General Plan Community Design Element Policy CD-52 addresses Goal 12 of the General Plan, which is well-designed commercial development. Policy CD-52 states:
"When more than one structure is on a site, they should be linked visually through architectural style, colors and materials, signage, landscaping, design details such as light fixtures, and the use of arcades, trellises, or other open structures."

## Policy CD-53 goes on to state:

"Unarticulated, boxy structures shall be broken up by creating horizontal emphasis through the use of trim, varying surfaces, awnings, eaves, or other ornamentation, and by using a combination of complementary colors."

The Design and Development Guidelines for Commercial Development within the City express the guiding principles for development within the City, including:

- Enhance the aesthetic value of the community and build a sense of identity for Madera as a place where quality development prevails;
- Recognize the contribution of all projects, large and small, to the character of Madera and recognize that small details can have large impacts on each project's contribution;
- Create projects of positive architectural and visual interest, while recognizing the need to achieve a balance between form, function, and economic limitations;
- Create and support usable, active, and thriving spaces that add positively to the community's character without losing context with the community;
- Promote project designs that are attractive and safe for customers and pedestrians in general.
- Incorporate environmentally sustainable features into project design where feasible.

Avenue 17 is a collector street according to the General Plan's Circulation and Infrastructure Element. The project is subject to the Design and Development Guidelines for Commercial Development and the standards within the document apply. The project is considered to be a well-designed commercial development with the retail store located centrally to the site with service stations either side and the site surroundings appropriately landscaped with areas of enhanced landscaping to emphasis certain project elements. The application of the Commercial Design and Development Guidelines provides for a visually appealing building façade in views from Avenue 17 and Golden Gate Blvd, in accordance with both General Plan Policies CD-52; CD-52, and the Design and Development Guidelines for Commercial Development.

## Landscaping

A conceptual landscaping plan has been provided with the site plan which proposes consistent landscape treatments throughout the center (refer to Attachment 4). Landscape improvements are proposed along each side of the project property lines. Enhanced planting is proposed along the southerly project frontage per General Plan Policy and Commercial Design Guidelines to enhance the project's primary frontage. Landscaping incorporates native and low water use vegetation which is a priority for landscaping compliance. Trees are interspersed throughout the site and adjacent to parking areas for shading and building screening. An alternative means of compliance for tree planting is proposed to ensure sufficient tree numbers are incorporated into the project while not impacting the need to keep refueling areas clear of obstruction, leaf litter and biodiversity. The project has been conditioned requiring a detailed landscape and irrigation plan be submitted to the Planning Department for review and approval as a component of submittal for building permits. Additionally, the project has been conditioned requiring the landscape and irrigation plan incorporate landscaping elements between structures and pedestrian elements in order to provide separation between hardscape and the structural elements of the project.

## Signage

The proposal is subject to Section 10-6.09 of the City's Sign Regulations and a separate sign permit must be applied for specifically approving any sign. Any signs shown on the proposed plan set are indicative and for illustrative purposes only. Preparation of a master sign program is recommended to demonstrate a unified sign style within the center and to establish allowances for individual sign permits when they are proposed. The program should cover on-building signage on-site freestanding signage and directional signage. The master sign program should also identify sign requirements and allowances consistent with the intent of the provisions of the City's sign ordinance. The total amount of the signage proposed and the method of allocation consistent with the scale of the proposed commercial center. The consistency in sign design and where signs are to be placed will enhance the site aesthetically.

The master sign program is to be submitted by the applicant and reviewed and approved by the Planning Department prior to issuance of building permits. It is recommended that the design of monument signage be consistent with primary design details for buildings in the travel center. Freestanding signage should include internal illumination, stucco structural surfacing, and a unifying treatment as a component of the base.

## Utility Management

The project will provide a connection to a temporary Madera Irrigation District detention basin in compliance with the project conditions of approval. Development of the project site will not put additional stress on the City of Madera's public infrastructure and utilities systems. The necessary water, wastewater, storm drainage, and roadway improvements to serve the project site have been reflected in the conditions of approval.

The travel center would connect to an existing 12-inch water main in Golden State Boulevard, and 10-inch sewer lines located along Avenue 17 and/or Golden State Boulevard. Natural gas, electricity, and communication services would be provided to the Development Site by Pacific Gas and Electric (PG\&E) and AT\&T via new undergrounded connections to existing infrastructure located immediately adjacent to the Development Site along Avenue 17 and Golden State Boulevard. Pursuant to City General Plan policies and standards, the Proposed Project will be required to underground all existing overhead utility services on-site as well off-site paralleling the Development Site.

An off-site stormwater basin was recently constructed in the northern section of APN 013-210-005, approximately 450 feet north of the development area, to replace and expand a temporary basin within the development area. The relocated basin will continue to serve the Arco fueling station and convenience store. The relocated basin has the capacity to serve commercial uses now under development east of Golden State Boulevard, north of Avenue 17 as well as the Project Site until a permanent municipal storm drain is provided by the City in the future.

## Use Permit 2022-17

## Alcohol Beverage Control License Type 20

The California Department of Alcoholic Beverage Control (ABC) administers and issues licenses that allow establishments to serve alcohol. The applicant has applied for a Type 20 license, which would authorize the off-site sales from the retail outlet.

The Department of Alcoholic Beverage Control (ABC) regulates the number of off-sale licenses allowed within the specific Census Tract. For Census Tract 5.13, the total number allowed is 4 . When the maximum number of off-sale licenses allowed in a census tract has been reached, ABC then considers any additional licenses within the census tract to be an "undue concentration." Sections 23958 and 23958.4 of the Business and Professions Code require that ABC deny an application for an off-sale license at a premises where undue concentration exists unless the local governing body, or its designated subordinate officer determines that public convenience or necessity would be served by the issuance. Due to a moratorium on the issuance of New Type 20 licenses in overconcentrated census tracts, an applicant could not apply for a New Type 20 license. They could apply for the double-transfer of an existing Type 20. The current number of issued licenses is 17 , overconcentrated, therefore a double transfer would be required by the applicant.

## Beer and Wine Sales

In January of 1998, Section 23817.5 of the State of California Business and Professions Code was amended to permanently establish a moratorium on the issuance of California State Department of Alcoholic Beverage Control (ABC) licenses for the off-site consumption of beer and wine (Type 20 ABC license) in cities and counties where the ratio of Type 20 licenses exceeds one for each 2,500 inhabitants. The most recent moratorium list of cities and counties was updated on January 30, 2017, which includes all of Madera County. The moratorium specifically prohibits the purchase of a new Type 20 ABC license or transfer of a Type 20 license from any city or county outside of Madera County. The moratorium does not apply to transferred licenses from within Madera County. If approved, conditions of approval require a Type 20 ABC license to be obtained as a double transfer license only. The license should only be transferred from another location within the boundaries of Madera County.

The City Council has directed staff to observe every application for the sale of alcohol on a case-by-case basis. A convenience store typically sells beer and wine for off-site consumption. Conditions of approval will ensure the sale of beer and wine for off-site consumption in conjunction with the proposed convenience store will not be detrimental to the health, safety, peace, morals, comfort and general welfare of persons residing or working in the neighborhood of the project site.

## Public Convenience or Necessity for Issuance of Alcohol Licenses

The project site is in Census Tract 5.13 which generally encompasses the norther portion of the City and includes a large portion of unincorporated County lands. Census Tract 5.13 is an area of overconcentration for ABC licenses for both the on- and off-site sale and consumption of alcoholic beverages. Currently there are 17 off-sale licenses. Ideally, there should be only three (4) off-sale licenses issued in Census Tract 5.13. Thus, the Tract is an over-concentrated with a high concentration of businesses and a low number of residences.

Historically, the Police Department (PD) has opposed any request for the issuance of an alcohol license in overconcentrated Census Tracts. When opposition is recorded for overconcentration of alcohol licenses result in public nuisance to the City's welfare and safety in that area. This matter was brought to City Council in an administrative report during the April 20, 2011, Council hearing with request from staff for direction regarding businesses who wish to obtain an ABC license in an overconcentrated census tract. The Council came to a unanimous decision that provided staff with direction to review each conditional use permit for the sale and/or consumption of alcoholic beverages within areas of overconcentration on an individual case by case basis and weigh each application on its own merits.

In the case for CUP 2022-25, PD has raised no serious concerns that would merit a denial. PD did not provide conditions that would limit the hours of operations. Staff, however, has identified conditions prohibiting off-site alcohol sales. Allowance to operate as a bar, club, liquor store, or similar use is strictly prohibited. The proposal is anticipated to be able to operate in a manner that is not detrimental to the welfare and well-being of the surrounding uses and the City at large.

## Tobacco Sales

In September 2015, the Commission determined the sale of tobacco and tobacco-related products and sundries would require the approval of a conditional use permit. The Commission acknowledged concerns that tobacco sales be located sensibly within the commercial areas of the City, mindful of surrounding land uses. Schools are a primary land use that is negatively affected by the sale of tobacco. The closest schools in the area are Matilda Torres School (outside the City limits) and Lincoln Elementary School. Both Schools are more than a mile from the project site. There are no City parks in close proximity to the application site and the commercial zoning surrounding this site is likely to limit the possibility of schools locating in this area in the future. The City has not adopted an ordinance which specifies the length of distance a tobacco retailer should be from any school or other sensitive use.

Staff recommends the applicant be limited to only the sale of cigarettes and tobacco only, consistent with the recommended conditions of approval. No allowance for the sale of e-cigarettes, vape paraphernalia (including juices) and/or marijuana paraphernalia, such as pipes and "bongs", is proposed.

## Madera Countywide Airport Land Use Compatibility Plan Conformance

The Madera Countywide Airport Land Use Compatibility Plan (ALUCP) contains a compatibility plan for the Madera Municipal Airport. The project site lies within Compatibility Zone D of the Madera Municipal Airport. Fueling facilities (gas stations, trucking and other transportation fueling facilities), are considered normally acceptable in Zone D with the following restrictions: 1) objects greater than 150 are subject to review by the Federal Aviation Administration (FAA); and 2) use or improvement having the potential to cause an increase in the attraction of birds or other wildlife.

The project, as proposed, does not include objects, individually or combined, that would exceed a height of 150 ft . The project, however, would increase the amount of stormwater discharged into the temporary stormwater basin located to the north of the project site. The temporary stormwater basin also lies within Compatibility Zone D. The anticipated increased volume of stormwater to be discharged into the basin is not anticipated to attract additional birds to the area.

## Specific Plan No. 1 Compatibility

The project site lies within the City's Specific Plan No. 1 Plan Area. All development in the Plan Area is subject to conformance with the Specific Plan's commercial development standards. The Plan's commercial development standards focus on architecture, landscaping, and traffic and circulation. The southernmost portion of the roundabout area also lies within the Bratton Investments Development Master Design Guidelines area. The Design Guidelines specify site development standards as well as bike lane, sidewalk and landscape improvements along the westside of Airport Drive and southside of Avenue 17. The area is identified to develop as highway related commercial development which this use is consistent with. Utility requirements associated with this area are reviewed through the Engineering Code and are included as conditions of approval. Setbacks associated with this plan are met due to the central location of associated site structures and the large expanse of at grade hardscape leading up to these
structures. The project must also comply with the City of Madera Design Guidelines and in some instances such as landscaping standards there is inconsistency between standards. Conditions of approval require further review of proposed landscaping prior to building permit issuance.

## City of Madera Design and Development Guidelines for Commercial Development

The proposed project would be a commercial development within the C 2 (Heavy Commercial) zoning district. As such, the proposal is also subject to the approved City of Madera Design and Development Guidelines for Commercial Development (2007). As noted in § 1, Purpose, "The City's intent is that all projects constructed be developed to the highest quality possible, given the specific circumstances associated with each project."

## Bratton Investments Development Master Design Guidelines

The subject lot adjacent to the approved 8.48-acre, 6-lot Bratton Properties Subdivision 06-S-09 (2007) with frontage improvements identified in these guidelines. All Bratton Properties are governed by the associated Subdivision Improvement Agreement, Reciprocal Access Agreement, Drainage Covenant, CC\&Rs, and the Bratton Master Design Guidelines. These Design Guidelines provide a clear and cohesive design intent for all of the Bratton Properties.

The purpose of the Bratton Master Design Guidelines is to ensure that projects within the commercial center are developed in a cohesive fashion that creates an apparent integration of facilities and features, such as circulation, pedestrian connections, landscaping, architecture, signage, and lighting. Individual uses/buildings should be allowed their own unique identity but still be identified with the other uses.

The Bratton Master Design Guidelines specifies the arrangement for the street improvements associated with the Avenue 17 and Golden State Boulevard for the right of way. Conditions of approval are attached for approval of improvements during the building permit phase of the project; therefore, the project will be compliant.

## Madera County Regional Bicycle Transportation Plan

The Madera County Regional Bicycle Transportation Plan designates Avenue 17, Golden State Boulevard and Airport Drive in the vicinity of the project site as Class 2 Bike Lanes. Right of way alignment is subject to Engineering final review and approval during the Improvement Plan phase and the associated cycle lane design will be finalized through that process.

## General Plan Conformance

The existing General Plan land use designation for the subject property is $C$ (Commercial), which functions as the City's retail commercial land use category. The individual components of the travel center are cumulatively consistent with this land use designation. The City of Madera General Plan also includes numerous goals and policies which are to be applied to commercial development. A summary of key policy areas is provided below:

General Plan policies require that commercial developments are aesthetically pleasing; that all new development shall adhere to the basic principles of high-quality urban design, architecture and landscape architecture including, but not limited to, human-scaled design, pedestrian orientation, entryways, gathering points, and the practice of holding corners. The project includes variations of contemporary architectural design, incorporates pedestrian connectivity across the various components of the project.

Parking lots are required to be landscaped, to include shade trees, in order to create an attractive pedestrian environment with safe and well-defined pedestrian connections from buildings to parking areas, and from buildings to the adjoining street(s). Parking lot landscaping is included as a project feature and logical pedestrian connections are provided within the travel center. In this big rig fueling, service and parking component of the site, a larger parking field provides greater turn radius and parking stall dimensions so as to better accommodate these larger vehicles.

The General Plan also specifies that developers proposing to rely on the use of "standard designs" or "corporate architecture" be required to improve their designs as necessary to meet the City's overall standards for quality; buildings include human-scale details such as windows facing the street, awnings, and architectural features that create a visually interesting pedestrian environment. When more than one structure is on a site, they should be linked visually through architectural style, colors and materials, signage, landscaping, design details such as light fixtures, and the use of arcades, trellises, or other open structures. Unarticulated boxy structures shall be broken up by creating horizontal emphasis through the use of trim, varying surfaces, awnings, eaves, or other ornamentation, and by using a combination of complementary colors. The architectural styles proposed by the applicant are consistent with these General Plan criteria. The individual buildings developed within the various components of the project embrace the concepts outlined in the Community Design Element.

CUP 2022-17 and SPR 2022-25 supports goals and policies established in the General Plan. In allowing a proposed establishment to include in its business off-site alcohol consumption supports Vision Madera 2025 and encourages "economic opportunities and underscores the need to attract commercial and retail businesses and to encourage residents to buy locally" (General Plan, p. 1-2. CUP 2022-17 also supports goals and polices outlined in the General Plan's Sustainability Element:

- Goal SUS-1 - Establish and maintain a diverse and sustainable local economy.

Policy SUS-11 - The City seeks to allow abundant commercial opportunities and the development of a strong local workforce. The City recognizes the interrelated nature of economic development among the various cultural, social, and economic segments of the community, and will work with local entrepreneurs to develop cooperative programs that increase and enhance opportunities for businesses growth within the City.

## ENVIRONMENTAL REVIEW:

The proposed project has been reviewed for compliance with CEQA. The City has prepared an initial study and determined that although the project could have a significant effect on the environment, there will not be a significant effect because mitigation measures have been identified to reduce the significant direct, indirect or cumulative effects on the environment, and that a Mitigated Negative Declaration is appropriate for this project. The Initial Study/Mitigated Negative Declaration (IS/MND) was published for a 30-day review and comment period commencing on June 3, 2023, and ending on July 2,2023 . The review received public comment from Caltrans on a number of issues associate with the requirements for project compliance, rather than items related to CEQA deficiencies. The superseded comment letter from Caltrans is attached and comments listed below. In conjunction with City review many of the original comments from Caltrans were shown to be addressed.

Comments from Caltrans Dated July 3, 2023 (refer to attachment 13 and 14).

Sidra Analysis Comments:

1. The Sidra analysis is required to amend a number of items for clarification.

## Response:

These comments relate to the execution of the Sidra analysis and do not change the outcome of the IS/MND, nor would they affect the mitigations associated. Conditions of Approval are included to ensure the analysis is satisfactorily completed prior to final building permit issuance and no additional analysis is required at this time.

## Project Site Plan

1. The access on Avenue 17 seems close to the end of the curb return of the roundabout at Golden State Boulevard/Avenue 17, which may impact the traffic operations of the roundabout at Golden State Boulevard and pose traffic safety issues. Our office previously recommended relocating the driveway farther west.

## Response:

Detailed design of the curb return is included as a Condition of Approval and is typically dealt with during the Building Permit phase. This comment does not impact the IS/MND or mitigations.
2. The driveway at Golden State Boulevard would only be right turns in/out per Index 1.1 .1 on page 1 of the TIS. However, the Project site plan in the TIS shows a median opening across the driveway. There should be an adequate length to place northbound left-turn storage on Golden State Boulevard to the driveway. Our office previously recommended the issues on the median opening across the driveway.

## Response:

Addressing the median crossing is included as a Condition of Approval and may be dealt with during the Building Permit phase. This comment does not impact the IS/MND or mitigations.
3. Constructing a westbound right-turn lane to the driveway and the two westbound through lanes on Avenue 17 is recommended. It is expected that most of the trucks will enter the driveway on Avenue 17, which may cause traffic operational and safety issues.

## Response:

Addressing the right turn lane is included as a Condition of Approval and may be dealt with during the Building Permit phase. This comment does not impact the IS/MND or mitigations.

4, A roundabout performance check for Golden State Boulevard/Avenue 17 per NCHRP 627 should be provided.

## Response:

The City regularly evaluates the effectiveness of its circulation network and the impact of future traffic on this roundabout will be dealt with separately. The roundabout is designed accordingly for this project and this comment does not impact the IS/MND or mitigations.
5. A STAA 56 feet truck turning diagram for the Golden State Boulevard/Avenue 17 roundabout should be provided.

Response:
An Intersection Control Analysis is underway and nearing completion that will address this comment. The roundabout is designed accordingly for this project and this comment does not impact the IS/MND or mitigations.
6. A landscape buffer between the proposed sidewalk and roundabout circulating lanes is recommended.

## Response:

Landscape design will be considered in detail at the Building Permit phase and this comment will be taken into consideration. This comment does not impact the IS/MND or mitigations.
7. After addressing the above comments, there should be adequate right-of-way for the two-lane roundabout at Golden State Boulevard/Avenue 17. Additional right of way along the Project frontage may be needed.

Response:
An Intersection Control Analysis is underway and nearing completion that will address this comment. The roundabout is designed accordingly for this project and this comment does not impact the IS/MND or mitigations.

## RECOMMENDED ACTION:

The Commission will be acting on the Conditional Use Permit CUP 2022-17 and Site Plan Review 2022-25. Staff recommends that the Commission:

1. Move to adopt a Resolution of the Planning Commission adopting a Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program, and approve Conditional Use Permit 2022-17 and Site Plan Review 2022-25, based on and subject to the findings and conditions of approval as contained in Exhibit A.

The Commission's action is final unless appealed for consideration by the City Council.

## ALTERNATIVES:

As an alternative, the Commission may elect to:

1. Move to continue the application for Conditional Use Permit 2022-17 and Site Plan Review 2022-25 to the September 12, 2023, Planning Commission hearing with direction to staff to return with an updated resolution with appropriate findings modifying the conditions of approval for the following reasons: (Specify - Planning Commission should articulate reasons for modifications to findings and conditions of approval.)
2. Move to continue the application for Conditional Use Permit 2022-17 and Site Plan Review 2022-25 to the September 12, 2023, Planning Commission hearing with direction to staff with an updated resolution with appropriate findings for denial for the following reasons: (Specify - Planning Commission should articulate reasons for denial.)

## ATTACHMENTS:

1. Vicinity Map
2. Madera County Assessor's Parcel Map
3. Aerial Photo Map
4. Proposed Site Plan and Landscape Plan
5. Proposed Avenue 17 and Golden State Blvd / Airport Way Roundabout
6. City of Madera General Plan Land Use Map
7. City of Madera Zoning Map
8. County of Madera General Plan Land Use Map
9. County of Madera Zoning Map
10. Elevations
11. Planning Commission Resolution for CUP 2022-17 and SPR 2022-25
"Exhibit A" Conditions of Approval
"Exhibit B" Mitigation Monitoring and Reporting Program
12. Initial Study/ Mitigated Negative Declaration (IS/MND) for CUP 2022-17 and SPR 2022-25
13. Cal Trans Letter 07/03/23
14. Cal Trans Letter 07/25/23
15. Intersection Control Evaluation Report

## ATTACHMENT 1

Vicinity Map


## ATTACHMENT 2

Madera County Assessor's
Parcel Map


## ATTACHMENT 3

Aerial Photo Map


## ATTACHMENT 4

Proposed Site Plan





## ATTACHMENT 5

Proposed Roundabout


## ATTACHMENT 6

City of Madera General Plan Land Use Map


## ATTACHMENT 7

City of Madera Zoning Map


## ATTACHMENT 8

County of Madera General Plan


## ATTACHMENT 9

County of Madera Zoning Map


## ATTACHMENT 10

Elevations





LET SIDE - SOUTH ELEVATION


RIGHT SIDE - NORTH ELEVATION


$3 / 32^{\prime \prime}=1^{\prime}-0^{\prime \prime}$

## ATTACHMENT 11

Planning Commission<br>Resolution for<br>CUP 2022-17 \& SPR 2022-25

## RESOLUTION NO. 1966

## RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MADERA APPROVING CONDITIONAL USE PERMIT 2022-17, SITE PLAN REVIEW 2022-25 AND MITIGATED NEGATIVE DECLARATION (ENV 2022-20) <br> ( 7 ELEVEN TRAVEL CENTER)

WHEREAS, Stock Five Holdings, LLC ("Owner") owns APN 013-210-005, an existing vacant lot approximately 10 acres in size located north of Avenue 17 and west of Golden State Boulevard in Madera, California ("site"); and is planned and zoned for Commercial land uses; and

WHEREAS, the applicant is seeking a Use Permit (CUP) and Site Plan Review (SPR) to allow for the construction of a retail convenience store building of 4,730 square feet ( $s f$ ) including two areas for refueling for passenger vehicles and big rig trucks, as proposed by CUP 2022-17 and SPR 2022-25; and

WHEREAS, the applicant is also seeking tobacco and off-site alcohol sales (Type 20 License) as part of the Use Permit (CUP), and

WHEREAS, CUP 2022-17 has been determined to be able to operate in a manner that is not detrimental to the welfare and well-being of the surrounding uses and the City at large; and

WHEREAS, the site provides sufficient parking space to support the proposed use and all other uses associated with the commercial project; and

WHEREAS, operations under CUP 2022-17 and SPR 2022-25 as conditioned would not be detrimental to the welfare and well-being of the surrounding uses and the City at large; and

WHEREAS, this project was assessed under the California Environmental Quality Act ("CEQA"). Environmental Assessment 2022-20 (ENV 2022-20), which includes an Initial Study/Mitigated Negative Declaration and a Mitigation Monitoring and Reporting Program, has been prepared, circulated, and made available for public comment pursuant to CEQA and the Madera Municipal Code; and

WHEREAS, under the City's Municipal Code, the Planning Commission is authorized to review and approve use permits, site plan reviews and environmental assessments associated projects on behalf of the City; and

WHEREAS, the City provided notice of the Planning Commission hearing as required by law; and
WHEREAS, the Planning Commission received and continued CUP 2022-17, SPR 2022-25 and ENV 2022-20 to the following meeting on August 8, 2023; and

WHEREAS, the Planning Commission received and reviewed CUP 2022-17, SPR 2022-25 and ENV 2022-20 at a duly noticed meeting on August 8, 2023; and

WHEREAS, on August 8, 2023, the Planning Commission opened the public hearing, closed the public hearing for CUP 2022-17, SPR 2022-25 and ENV 2022-20; and

WHEREAS, the Planning Commission has completed its review of the staff report and documents submitted for CUP 2022-17, SPR 2022-25 and ENV 2022-20, evaluated the information contained in the Mitigated Negative Declaration, and considered testimony received as a part of the public hearing process; and

WHEREAS, the Planning Commission now desires to approve CUP 2022-17, SPR 2022-25 and ENV 2022-20, subject to conditions of approval and mitigation measures.

NOW THEREFORE, be it resolved by the Planning Commission of the City of Madera as follows:

1. Recitals: The above recitals are true and correct and are incorporated herein.
2. CEQA: The Planning Commission finds an environmental assessment initial study and Mitigation Monitoring and Reporting Program were prepared for this project in accordance with the requirements of the California Environmental Quality Act (CEQA) Guidelines. This process included the distribution of requests for comment from other responsible or affected agencies and interested organizations. Preparation of the environmental assessment necessitated a thorough review of the proposed project and relevant environmental issues. Based on this review and assessment, the Planning Commission finds that although the project could have a significant effect on the environment, there will not be a significant effect because mitigation measures have been identified to reduce the significant direct, indirect or cumulative effects on the environment, and that a Mitigated Negative Declaration is appropriate for this project. The Planning Commission further finds the Initial Study and Mitigated Negative Declaration were timely and properly published and noticed as required by CEQA. As such, the Planning Commission adopts a Mitigated Negative Declaration (ENV 2022-20) and the Mitigation Monitoring and Reporting Program (Exhibit B) for the project.
3. Findings to Approve CUP 2022-17: The Planning Commission finds and determines that there is substantial evidence in the administrative record to support the approval of CUP 2022-17, as conditioned. The Planning Commission further approves, accepts as its own, incorporates as if set forth in full herein, and makes each and every one of the findings, based on the evidence in the record, as follows:

Finding a: $\quad$ The proposal is consistent with the General Plan and Zoning Ordinance.

The General Plan designates the subject site for commercial uses, and the proposed use is consistent with its zoning district of C2- Heavy Commercial. CUP 2022-17 is also found to be consistent with all regulations set forth by Madera Municipal Code ("MMC") Section 103.405 (Uses). Finally, the proposal is consistent with the existing Specific Plan number 1 and identified development standards within this Specific plan.

Finding b: $\quad$ The proposed use will be compatible with the surrounding properties.

The project site is suited for commercial uses. The project site is located within a commercial area and is surrounded by like uses to the south, with similar uses proposed to the east of the property. As conditioned, the use will be compatible with surrounding properties and is consistent with applicable requirements regulating such use.

Finding c: $\quad$ The establishment, maintenance, or operation of the use or building applied for will not, under the circumstances of the particular case, be detrimental to the health, safety, peace, morals, comfort, and general welfare of persons residing or working in the neighborhood of such
proposed use or be detrimental or injurious to property and improvements in the neighborhood or general welfare of the city.

The proposed use is compatible with surrounding properties and will not have a significant, adverse environmental impact. The request will not result in a detriment to the health, safety, peace, morals, comfort, or general welfare of surrounding uses. The general welfare and safety of the surrounding uses and the City at large are not negatively impacted.
4. Findings for SPR 2022-25: The Planning Commission finds and determines that there is substantial evidence in the administrative record to support the approval of SPR 2022-25, as conditioned. With conditions, the project is consistent with the requirements of the Madera Municipal Code, including Sections 10-3.4 and Sections 10-3.1001 through 10-3.1004. The Planning Commission further approves, accepts as its own, incorporates as if set forth in full herein, and makes each and every one of the findings, based on the evidence in the record, as follows:
a. The proposal is consistent with the General Plan and Zoning Ordinance.

The site is zoned C-2 (Heavy Commercial), which is consistent with the existing General Plan land use designation of C (Commercial). Among others, the proposed use under SPR 2022-25 is consistent with General Plan Policies including CD-52, as well as the Design and Development Guidelines for Commercial Development. SPR 2022-25 is consistent with the purpose and intent of the C-2 (Heavy Commercial) zoning district and does not conflict with City standards or other provisions of the Madera Municipal Code.
b. The proposal is consistent with any applicable specific plans.

The site has a specific plan overly with Specific Plan number 1. The proposal is consistent with the existing specific plan and identified development standards within this Specific plan. The project meets the purpose and intent of the specific plan.
c. The proposed project includes facilities and improvements; vehicular and pedestrian ingress, egress, and internal circulation; and location of structures, services, walls, landscaping, and drainage that are so arranged that traffic congestion is avoided, pedestrian and vehicular safety and welfare are protected, there will be no adverse effects on surrounding property, light is deflected away from adjoining properties and public streets, and environmental impacts are reduced to acceptable levels.

The project (SPR 2022-25) has been reviewed and is consistent with surrounding uses and with all applicable requirements for development in the Commercial zoning district, including provisions for access to and from the site, parking, drainage, lighting, on-site and off-site improvements. Based on the environmental analysis prepared, the project will not generate significant amounts of noise, light, traffic, or other environments impacts.
d. The proposed project is consistent with established legislative policies relating to traffic safety, street dedications, street improvements, and environmental quality.

The project (SPR 2022-25) will be required to install street improvements in accordance with City standards. Related infrastructure improvements will also be required for curb, gutter, storm drainage, utilities and other related street infrastructure in conformance with City
standards. The project site has access to Avenue 17 and Golden State Boulevard, which can accommodate traffic generated from the proposed project. Based on the environmental analysis prepared, the project will not have a significant impact on traffic or the environment.
5. Approval of CUP 2022-17 and SPR 2022-25: Given that all findings can be made, the Planning Commission hereby approves CUP 2022-17 and SPR 2022-25 as conditioned as set forth in the Conditions of Approval attached as Exhibit A.
6. Effective Date: This resolution is effective immediately.

Passed and adopted by the Planning Commission of the City of Madera this 8th day of August 2023, by the following vote:

## AYES:

NOES:

## ABSTENTIONS:

ABSENT:

Robert Gran Jr.
Planning Commission Chairperson
Attest:

Gary Conte, AICP
Planning Manager
Exhibit "A" - Conditions of Approval for CUP 2022-17 and SPR 2022-25
Exhibit "B" - Mitigation Monitoring and Reporting Program for ENV 2022-20

# "EXHIBIT A" <br> CUP 2022-17, SPR 2022-25 \& ENV 2022-20 <br> 7-ELEVEN TRAVEL CENTER PROJECT CONDITIONS OF APPROVAL 

## August 8, 2023

## Notice to Applicant

In accordance with the provisions of Government Code Section 66020(d)(1), the imposition of fees, dedications, reservations, or exactions for this project are subject to protest by the project applicant at the time of approval or conditional approval of the development or within ninety ( 90 ) calendar days after the date of imposition of fees, dedications, reservation, or exactions imposed on the development project. This notice does not apply to those fees, dedications, reservations, or exactions which were previously imposed and duly noticed; or where no notice was previously required under the provisions of Government Code Section 66020(d)(1) in effect before January 1, 1997.

## IMPORTANT: PLEASE READ CAREFULLY

This project is subject to a variety of discretionary conditions of approval. These include conditions based on adopted City plans and policies; those determined through site plan review, and environmental assessment essential to mitigate adverse effects on the environment including the health, safety, and welfare of the community; and recommended conditions for development that are not essential to health, safety, and welfare, but would on the whole enhance the project and its relationship to the neighborhood and environment.

Approval of this permit shall be considered null and void in the event of failure by the applicant and/or the authorized representative, architect, engineer, or designer to disclose and delineate all facts and information relating to the subject property and the proposed development.

Approval of this permit may become null and void in the event that development is not completed in accordance with all the conditions and requirements imposed on this permit, the zoning ordinance, and all City standards and specifications. This permit is granted, and the conditions imposed, based upon the application submittal provided by the applicant, including any operational statement. The application is material to the issuance of this permit. Unless the conditions of approval specifically require operation inconsistent with the application, a new or revised permit is required if the operation of this establishment changes or becomes inconsistent with the application. Failure to operate in accordance with the conditions and requirements imposed may result in revocation of the permit or any other enforcement remedy available under the law. The City shall not assume responsibility for any deletions or omissions resulting from the review process or for additions or alterations to any construction or building plans not specifically submitted and reviewed and approved pursuant to this permit or subsequent amendments or revisions. These conditions are conditions imposed solely upon the permit as delineated herein and are not conditions imposed on the City or any third party. Likewise, imposition of conditions to ensure compliance with federal, state, or local laws and regulations does not preclude any other type of compliance enforcement.

Discretionary conditions of approval may be appealed. All code requirements, however, are mandatory and may only be modified by variance, provided the findings can be made.

All discretionary conditions of approval for SPR 2021-25 will ultimately be deemed mandatory unless appealed by the applicant to the City Council within ten (10) days after the decision by the Planning Commission. All discretionary conditions of approval for CUP 2022-17 will ultimately be deemed mandatory unless appealed by the applicant to the City Council within fifteen (15) days after the decision by the Planning Commission. In the event you wish to appeal the Planning Commission's decision or discretionary conditions of approval, you may do so by filing a written appeal with the City Clerk. The appeal shall state the grounds for the appeal and wherein the Commission failed to conform to the requirements of the zoning ordinance. This should include identification of the decision or action appealed and specific reasons why you believe the decision or action appealed should not be upheld.

These conditions are applicable to any person or entity making use of this permit, and references to "developer" or "applicant" herein also include any applicant, property owner, owner, successors-ininterest, lessee, operator, or any other person or entity making use of this permit. Furthermore, "project site" refers to the portions of APN 013-210-005 that are being developed under CUP 2022-17 and SPR 2022-25 by the applicant. The following conditions apply only to these portions of the subject site, unless specifically noted otherwise.

## GENERAL CONDITIONS (CUP 2022-17 AND SPR 2022-25)

1. All conditions of approval shall be the sole financial responsibility of the applicant/owner, except where specifically noted in the conditions or mandated by statutes.
2. The applicant shall submit to the City of Madera Planning Department a check in the amount necessary to file a Notice of Determination at the Madera County Clerk. This amount shall equal the Madera County filing fee in effect at the time of filing. Such check shall be made payable to the Madera County Clerk and submitted no later than three (3) days following approval of the Mitigated Negative Declaration for CUP 2022-17 and SPR 2022-25.
3. Project approval is conditioned upon acceptance of the conditions of approval contained herein, as evidenced by the applicant's signature on the Acknowledgement and Acceptance of Conditions of Approval.
4. CUP 2022-17 and SPR 2022-25 will expire one (1) year from the effective date of the approval, unless a building permit is issued by the Building Official and construction is commenced and diligently pursued toward completion of the site or structures which were the subject of the site plan review or the required action is taken to extend the approval before expiration date (Municipal Code Section 10-3.4.0114, Lapse of Site Plan Approval).
5. It shall be the responsibility of the property owner, operator, and/or management to ensure that any required permits, inspections, and approvals from any regulatory agency be obtained from the applicable agency prior to issuance of a building permit and/or the issuance of a certificate of completion, as determined appropriate by the City of Madera Planning Department.
6. Deferrals are not permitted for any condition included herein, unless otherwise stated.
7. Development of the project shall conform to the plans designated by the City including those submitted and dated 04//21/23; 04/04/2023 and undated plans, and comprising 8 pages, subject to the conditions noted herein. Minor modifications to the approved Conditional Use Permit 2022-17 and Site Plan Review 2022-25 necessary to meet regulatory, engineering or similar constraints may at a minimum be made at the discretion and approval of the Engineering Manager and Planning Manager. However, should the Engineering Manager and Planning Manager determine that modifications are substantive, he/she may require that an amendment to CUP 2022-17 and SPR 2022-20 be filed for review and approval through the applicable City process.
8. Any proposed modifications to the approved site plan and elevations of SPR 2022-25, including but not limited to building exteriors, access drive locations, parking/loading areas, fence/walls, lighting, new buildings, landscaping or use of the site shall require an amendment (modification) to CUP 2022-17 and SPR 2022-20 as specified in the Madera Municipal Code ("MMC").
9. Conditional Use Permit 2022-17 and Site Plan Review 2022-25 approval is not an authorization to commence construction. On- and off-site improvements, building construction, sign erection or occupancy shall not be permitted without prior approval of the City through issuance of any required grading, encroachment, or building permits.
10. The site or building plans submitted for any building permit applications shall reflect changes required by the herein listed conditions of approval.
11. It shall be the responsibility of the applicant, property owner and/or successor-in-interest to ensure that any required permits, inspections, and approvals from any regulatory agency shall be obtained from the concerned agency prior to establishment of the use.
12. The applicant, property owner and/or successors-in-interest shall comply with all federal, State and local laws. Material violation of any applicable laws concerning the use of subject site will be cause for revocation of CUP 2022-17 and SPR 2022-25.
13. Approval of this project is for the benefit of the applicant. The submittal of applications by the applicant for this project was a voluntary act on the part of the applicant not required by the City. Therefore, as a condition of approval of this project, the applicant agrees to defend, indemnify, and hold harmless the City of Madera and its agents, officers, consultants, independent contractors, and employees ("City") from any and all claims, actions, or proceedings against the City to attack, set aside, void, or annul an approval by the City concerning the project, including any challenges to associated environmental review, and for any and all costs, attorneys' fees, and damages arising therefrom (collectively "claim").

The City shall promptly notify the applicant of any claim and the City shall cooperate in the defense. If the City fails to promptly notify the applicant of any claim or if the City fails to cooperate in the defense, the applicant shall not thereafter be responsible to defend, indemnify, or hold harmless the City.

Nothing in this condition shall obligate the City to defend any claim and the City shall not be required to pay or perform any settlement arising from any such claim not defended by the City, unless the City approves the settlement in writing. Nor shall the City be prohibited from independently defending any claim, and if the City does decide to independently defend a claim, the applicant shall be responsible for City's attorneys' fees, expenses of litigation, and costs for that independent defense, including the costs of preparing any required administrative record. Should the City decide to independently defend any claim, the applicant shall not be required to pay or perform any settlement arising from any such claim unless the applicant approves the settlement.
14. The project shall comply with all mitigation measures contained in the attached Mitigation Monitoring and Reporting Program.

## PLANNING DEPARTMENT

## General Conditions

15. All on-site improvements shall be completed prior to final building inspection and shall be completed in conformance with CUP 2022-17 and SPR 2022-20 to the satisfaction of the City of Madera prior to issuance of a certificate of completion.
16. The project site shall be subject to periodic reviews and inspection by the City to determine compliance with the conditions of approval and applicable codes. If at any time, the use is determined by staff to be in violation of the conditions, the property owner, operator, and/or manager may be subject to corrective action.
17. Vandalism and graffiti shall be corrected in accordance with the provisions of the Madera Municipal Code.
18. The property owner, operator, and/or manager shall operate the site in a manner that does not generate noise, odor, blight, environmental harm, or vibration that adversely affects adjacent properties and shall keep the property clear of all trash, rubbish, and debris at all times.
19. Occupancy or use is subject to the issuance of a Business License.

## CONDITIONAL USE PERMIT CONDITIONS (CUP 2022-17)

## Tobacco and Alcohol

20. Conditional Use Permit CUP 2022-17 authorizes the sale of tobacco and issuance of a State of California Department of Alcoholic Beverage Control (ABC) Type 20 Off-Sale Beer \& Wine license (authorizes the sale of beer and wine for consumption off the premises where sold) for the convenience store approved for development on the subject site.
a. A Type 20 ABC license from the Department of Alcoholic Beverage Control must be obtained prior to the sale of beer or wine on the subject site. The applicant, its operators and successors shall comply with all applicable City, State and Federal requirements and standards.
i. The use of the subject site as authorized by CUP 2022-17, must comply with any license requirements of the Alcoholic Beverage Control at all times.
21. Sale of alcohol within the convenience store shall be limited to the hours between 5:00 a.m. and 12:00 a.m. on all days of the week.
22. Business operation for the convenience store may be 24 hours on all days of the week in accordance with the project operational statement.
23. No open alcoholic beverage containers or loitering shall be allowed on the premises.
24. All employees shall be trained to report emergencies to law enforcement and to the manager on duty.
25. There shall be no exterior advertising or signs of any kind or type placed in the exterior windows or door of the premises promoting or indicating the availability of alcoholic beverages. Signs promoting alcoholic beverages shall not be visible from the exterior of the structure.
26. All indoor display(s) of alcohol beverages shall be located at least five (5) feet away from the store entrance.
27. The applicant shall regularly monitor the area under its control to prevent the loitering of persons about the premises.
28. The applicant shall post signs in the area under its control prohibiting open containers and loitering at the location and stating that no loitering will be tolerated.
29. No promotional signage and/or displays promoting alcohol, tobacco and/or tobacco-related products shall be utilized in any way.
30. The applicant shall post "No Smoking" signage to the extent required by law.
31. There shall be no coin-operated video or arcade games. No adult magazines or videos shall be sold.
32. Digital security cameras shall be installed to monitor the interior and exterior of the premises. Footage shall be maintained in a digital format of no less than thirty (30) days. Footage will be shared with law enforcement upon request.
33. Cooler doors for alcoholic beverage products will be locked during hours when alcoholic beverages may not be sold.
34. The sale of beer shall occur in packs of six or greater. However, 24 -ounce bottled imported and/or specialty craft beers not normally sold in multi-package containers may be sold individually.

35 . The sale of 32 -ounce to 40 -ounce beer and malt beverage products shall be prohibited.
36. The sale of wine coolers shall occur in no less than packs of four (4).
37. The sale of wine shall not be sold in containers less than 750 ml .
38. No malt liquor or fortified wine products shall be sold.
39. No display of alcohol shall be made from an ice tub, barrel or similar container.
40. No sale or distribution of alcoholic beverages shall be made from a drive-up or walk-up window.
41. Any proposed change to the ABC license type or hours of operation or changes to operational conditions will require submittal of an application to the Planning Department for a modification to the CUP and consideration by the Planning Commission for action.
42. In accordance with MMC Section 10-3.1311 (Termination and Revocation), use permits which have been granted for purposes of authorizing the sale of alcoholic beverages shall be subject to annual review for a determination of compliance with all of the terms and conditions of the issuance of the permit and to determine the existence of conditions or occurrences that are or may contribute to the detriment of the health, safety, peace, morals, comfort and general welfare of the persons residing or working in the neighborhood of the use or detrimental or injurious to property and improvements in the neighborhood or general welfare of the City.

## SITE PLAN REVIEW CONDITIONS (SPR 2022-25)

## Building Architecture, Materials and Colors

43. All roof and ground mounted utility, electrical and mechanical equipment shall be screened to the specifications of the Planning Department. If ground mounted, applicant shall identify proposed methods to architecturally integrate equipment locations or identify proposed methods to screen equipment using landscaping. Any roof mounted equipment placements shall be completely screened from view and architecturally integrated into the roof using roof wells or continuous building perimeter fascia screening. Any wall mounted equipment shall be painted to match the exterior wall.
44. All ducts and vents penetrating roofs or exterior building walls shall be directed away from the front of project site entrance sides of the buildings (facing Avenue 17 and Golden Gate Boulevard) using methods to minimize their appearance and visibility from the street. All roof mounted ducts and vents shall be painted matt black or with a color better suited to minimize their appearance.
45. Fire sprinkler risers shall be located within the interior of the buildings or located out of public view.
46. Prior to issuance of a building permit, applicant and / or successors-in-interest shall identify the following information on one (1) or more site plans for the Planning Department review and approval:
a) Location of natural gas and electrical utility meters.
b) Location of all exterior heating, ventilation and air conditioning (HVAC) and / or evaporative cooler equipment.
c) Location of exterior mechanical and electrical equipment.
47. Any ground mounted electrical transformer or other type of ground mounted electrical cabinet shall be screened from the public viewshed.
48. Roof access ladders on buildings shall be located within the interior of the buildings.
49. Prior to issuance of a building permit, the applicant shall submit to the Planning Department for review and approval, a materials and color presentation board(s) detailing building; mechanical enclosure; and trash enclosure materials, colors (minimum of three) and color elevations. All mechanical equipment shall be screened from view.
50. Prior to issuance of a building permit the applicant shall submit to the Planning Department for review and approval, a photometric plan including type and specifications of exterior lighting fixtures to be installed on the site. All exterior lighting shall be directed away from adjoining properties, shielded against the night sky (dark sky compliant), and not interfere with the driving safety of vehicular traffic. Exposed bulbs are not permitted.

## Parking and On-Site Circulation

51. Parking areas shall be constructed according to the conditionally approved site plan. Any deviation from the conditionally approved site plan shall be evaluated by the Planning Manager to determine the need for modification to the site plan. Flow through planters shall be incorporated to all landscape parking areas.
52. Off-street parking shall comply with the Americans with Disabilities Act (ADA) and with the California Building Code regulations for electric vehicle (EV) capable parking spaces. Based on a total of 58 on-site parking spaces to be provided, 3 ADA spaces shall be provided of which one space shall be an ADA van accessible space. Thirteen (13) spaces shall be EV capable of which three shall have the electric vehicle supply (charging) equipment (EVSE) installed for the purpose of charging an electric vehicle. Of the three EVSE spaces required, one space shall be van accessible and one space shall meet the standard accessibility requirements in compliance with Section 11B-812 of the California Building Code. An increase or decrease in the total number of actual on-site parking spaces could potentially decrease or increase the number of dedicated ADA and EV capable spaces required.
53. Off-street parking areas shall be paved and maintained so as to eliminate dust or mud and shall be so graded and drained as to dispose of all surface water. In no case shall such drainage be allowed to cross sidewalks, unless approved by the City Engineer.
54. Parking areas shall be constructed in accordance with City of Madera Standard E-4, have a width of not less than nine (9) feet and a length of not less than nineteen (19) feet except that up to 25 percent of the required parking spaces may be designated for compact car use.
55. No vertical parking bollards shall be incorporated into the parking field/parking space layout and no wheel stops shall be incorporated into the parking field/parking space layout except as required by ADA design specifications or protect landscape improvements or to light fixtures. In
no case shall any parking space incorporate a wheel stop to provide for less than a nine (9) foot by nineteen (19) foot dimension parking space.
56. Commercial tractor-trailer (big rig) on-site circulation entering and exiting the Avenue 17 drive approach to and from the big rig fueling station and / or big rig parking area shall be a one-way clockwise circulation route. Upon entering the Avenue 17 drive approach, big rigs shall be directed (sign and striped) to travel toward the big rig the fueling station. A bypass lane shall be provided and clearly marked allowing big rigs to bypass the fuel station in route to the tractor-trailer parking area and for parked and fueled big rigs to travel to and exit the site via the Golden State Boulevard drive approach. Big rigs exiting the site via Avenue 17 drive approach after fueling shall be routed through the truck-trailer parking area.
57. Tractor-trailer parking spaces west of the commercial big rig fueling station shall be oriented diagonally northwest alignment and striped accordingly.
58. No outdoor storage of materials or equipment shall be permitted.
59. Overnight parking of vehicles (Big rig; recreational vehicle (RV); or other vehicles) and the storage or parking of inoperative vehicles on-site is prohibited.
60. The site's parking area shall not be used for alternative uses other than parking of vehicles.
61. Bicycle parking spaces and structures shall be provided to meet the needs and security of five (5) bicycles. The bicycle parking structure shall be composed of one (1) of the following forms: "Inverted U" also referred to as the "Staple" or "Loop;" "Post \& Ring;" or the "Staggered Wheel well-secured" type racks. Placement of bicycle parking spaces shall be within the visible of convenience store employees from within the store sales counter and the building's east elevation entrance and be a minimum of twenty-four (24) inches end to end from the building and sixty (60) inches end to end between racks, and thirty-six (36) inches from side to side from the building as well as side to side between racks. Bicycle parking shall be well lit and placed outside of any exit door walkway, ADA path of travel or emergency corridor.
62. Plans of the proposed parking area shall be submitted to the Building Department at the time of an application for a building permit for any building to which the parking area is accessory. The plans shall clearly indicate the proposed development, including the location, size, shape, design, curb cuts, lighting, landscaping, and other features and appurtenances of the proposed parking lot.

## Trash Enclosures

63. Outdoor trash areas shall be screened on three sides with masonry wall composed of an exterior cement plaster finish painted consistent with building colors to reduce visual appearance.
64. Trash enclosures gates shall be composed of metal and shall be hinged on the outside with cane bolts to hold the gates open.
65. Trash enclosure shall have a roof covering the entire structure to avoid stormwater infiltration of the area.
66. Driveways or travel aisles shall provide unobstructed access for waste collection vehicles to directly access trach enclosures without need of the waste hauler to rollout or reorient waste bins for loading operations, consistent and compliant with the servicing requirements established by the City's waste hauling operations. In loading areas, the minimum overhead vertical clearance shall be twenty-two (22) feet for loading operations.
67. Separate containers shall be provided for compositable/food waste in accordance with State requirements.

## Fencing

68. All walls and fences shall be consistent with the Madera Municipal Code. No wall or fence shall exceed a maximum height of six (6) feet measured from finish grade. Installation of barbed wire or other form of security wire is prohibited.
69. Fencing materials, location, and height shall conform to those listed on the approved Site Plan. All fences shall be properly maintained so as not to create a hazard, public nuisance, or blight in the surrounding neighborhood.

## Landscaping

70. Landscaping shall be installed in accordance with the submitted landscape sheets, showing landscaping on all property lines, and enhanced landscaping at the corner and entrances to the property, subject to final approval by the Planning Manager prior to issuance of building permits.
71. Landscape and irrigation plan shall be prepared by a licensed Landscape Architect and submitted as part of the submittals for a building permit. Landscape and irrigation plans shall comply with all the specific landscape requirements and be approved by the Planning Department, unless specific deviation from the standards are approved by the Planning Manager, prior to issuance of building permits. The plans shall:
a) Demonstrate compliance with the State of California's Model Water Efficient Landscape Ordinance (MWELO);
b) Provide permanent automatic irrigation systems for all landscaped areas with design to have moisture and/or rain sensor shutoff (weather based automatic, self-adjusting), minimize irrigation runoff, promote surface infiltration where possible, minimize the use of fertilizers and pesticides that can contribute to storm water pollution;
c) Provide vegetative matter coverage of a minimum of seventy percent (70\%) of all landscaped areas;
d) Street trees shall be planted at a maximum thirty (30) foot intervals. Street tree selection shall be from the City's "Approved City Street Tree List". Trees must be established to the satisfaction of the Planning Manager after five (5) years or shall be enhanced or replaced subject to the above condition for a further five (5) year period of establishment or to the Planning Managers satisfaction;
e) Locate landscape material in such a way that it does not interfere with utilities above or below ground. All existing and proposed site utility features shall be fully screened with landscaping at appropriate clearances. A detail of screening shall be included on the plans and approved prior to building permit issuance and subject to Planning Manager review; and
f) Provide detailed planting lists for all landscaping, with the number, size, spacing (where applicable) and species of all plant life and groundcover, as well as tree staking, soil preparation techniques for all landscaped areas.
g) Where feasible, landscaping shall be designed and operated to treat stormwater runoff by incorporating elements that collect, detain, and infiltrate runoff, particularly the use of flow through planters from areas of impermeable paving (such as parking and circulation areas). In areas of water detention, species shall be tolerant of saturated soil conditions and prolonged exposure to water shall be specified.
72. Parking lot shade trees should be planted within the parking area to provide a minimum of $50 \%$ shade coverage over parking bays at high noon or a rate of one 15 gallon tree for each 3
passenger and big rig truck parking spaces. Where shade trees are not located immediately adjacent to parking spaces, trees shall be located in the nearest most appropriate location. The total number of required trees (one 15 -gallon tree for every 3 -parking spaces - inclusive of big rig truck parking) shall be planted on the site.
73. On-site and off-site landscaping and irrigation shall not be installed until a landscape plan(s) is approved by the Planning Department. Any deviation from the approved plan(s) shall require written request and approval by the Planning Manager.
74. Approved landscape and irrigation plan(s) shall be fully installed and operational prior to granting occupancy.
75. The property owner, operator, and/or manager shall develop and submit to the Planning Department for review and approval, prior to issuance of a building permit certificate of completion, a landscape maintenance and irrigation program for the first three (3) years to ensure that streetscapes and landscaped areas are installed and maintained as approved under SPR 202225.
76. The property owner shall maintain all landscaping in a healthy and well-manicured appearance. This includes, but is not limited to, ensuring properly operating irrigation equipment at all times, trimming and pruning of trees and shrubs, and replacing dead or unhealthy vegetation with drought-tolerant plantings.
77. A maintenance agreement is required for all landscaping located within the public right-of-way. Such agreement shall be entered into prior to issuance of a certificate of completion.

## Signage

78. No signs apart from "No Parking" are approved as part of CUP 2022-17 and SPR 2022-25. Approval of CUP 2022-17 and SPR 2022-25 constitutes neither a basis for, nor approval of, any exceptions to the Madera Sign Ordinance Section 10.6 and all permanent signage is required to have an approved Sign Permit issued by the Planning Department per Madera Municipal Code Section 106.
79. Applicant shall prepare and submit a Master Sign Program for the purpose of providing a cohesive, complementary, and proportionate signage for the entire project site. Master Sign Program shall at a minimum: 1) identify and define complex on-building and freestanding identification signage allowance, type, dimensions, material, colors, and location; 2) directional signage allowance, type, dimensions, material, color and location(s); 3) on-building signage allowances type, dimensions, material color and locations; and 4) address sign designs - no plastic, vinyl or similar type of material shall be used for the building address. Master Sign Program is subject review and approval of the Planning Department prior to submittal of a building permit application.

## ENGINEERING

## General Conditions

80. Nuisance onsite lighting shall be redirected as requested by City Engineer within 48 hours of notification.
81. Development Impact fees shall be paid at time of building permit issuance.
82. Developer shall pay all required fees for completion of project. Fees due may include but shall not be limited to the following: plan review, easement acceptance, encroachment permit processing and improvement inspection fees.
83. Improvement plans signed and sealed by an engineer shall be submitted to the Engineering Division in accordance with the Civil Improvements Submittal Checklist.
84. The improvement plans for the project shall include the most recent version of the City's General Notes.
85. In the event archeological resources are unearthed or discovered during any construction activities on site, construction activities shall cease, and the Community Development Director or City Engineer shall be notified so that procedures required by state law can be implemented.
86. Improvements within the City right-of-way require an Encroachment Permit from the Engineering Division.
87. All off-site improvements shall be completed prior to issuance of final occupancy, except as may be specified in a reimbursement/ deferral agreement between the developer and the City as referenced below.
88. The developer shall file an application to the Planning Department for the proposed lot line adjustment.
89. The applicant shall coordinate with the United States Post Office relative to the proposed location of the postal boxes for the project.

## Water

90. New or existing water service connection(s), including landscape areas, shall be constructed or upgraded to current City standards including Automatic Meter Reading (AMR) water meter installed within City right-of-way and backflow prevention device installed within private property.
91. A separate water meter and backflow prevention device will be required for landscape areas.
92. Existing water service connections that will not be used for the project shall be abandoned at the mains per City of Madera standards.
93. Existing wells, if any, shall be abandoned as directed and permitted by City of Madera for compliance with State standards, prior to issuance of building permits or any activities in which the well to be abandoned may be further damaged resulting in potential contamination to the aquifer below.
94. The developer shall reimburse its fair share cost for one half of the 8-inch component of the future 24 -inch water main to be constructed along the project frontage on Avenue 17 between the westerly property line and the existing 12 -inch water main to the east. As remaining components of this master planned transmission main have not been installed, this development will not be required to install the 20 -inch or 24 -inch pipelines. The design of the frontage improvements and intersection shall, however, provide sufficient space in the road to accommodate the installation of the 21 -inch and 24 -inch pipelines without damaging proposed improvements associated with the roundabout.
95. The Developer shall reimburse its fair share cost for one half of the 8 -inch component of the existing 12 -inch water main that was previously constructed along the project frontage on Golden State Boulevard.
96. The Developer shall reimburse its fair share cost for one half of the 8 -inch component of the existing 12 -inch water main that was previously constructed along the project frontage on Avenue 17.

## Sewer

97. New or existing sewer service connection(s) shall be constructed or upgraded to current City standards.
98. Existing sewer service connections that will not be used for the project shall be abandoned at the mains per current City of Madera standards.
99. Sewer main connections six (6) inches and larger in diameter shall require manhole installation.
100. Existing septic tanks, if found, shall be removed, permitted and inspected by City of Madera Building Department.
101. The Developer shall reimburse its fair share cost for one half of the 8 -inch component of the existing 10-inch sewer main that was previously constructed along the project frontage on Avenue 17.
102. The Developer shall reimburse its fair share cost for one half of the 8 -inch component of the existing 10-inch sewer main that was previously constructed along the project frontage on Golden State.

## Storm Drain

103. Storm runoff from this project site is required to go to the Airport Basin located to the southeast of the project site. In the alternative, it may go to a nearly complete temporary basin constructed on a parcel to the north of this project. In accordance with the language contained in the drainage covenant associated with the temporary basin that includes this project site, runoff from this site shall be directed to the temporary basin subject to execution by all parties, including this Developer, of the temporary drainage basin covenant which is currently in draft form. The Developer shall also be responsible for abandonment of the temporary basin in accordance with the covenant. Runoff volume calculations shall be provided, and the Developer shall excavate basin to an amount equivalent to this project's impact on the temporary basin.
104. Support calculations shall be provided that prove the existing storm drainage facilities are capable of intercepting runoff in accordance with the provisions of the Storm Drainage System Master Plan.
105. This project shall, as applicable, comply with the design criteria as listed on the National Pollutant Elimination Systems (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer System (MS4's) as mandated by Water Quality Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004. For the purpose of this proposed development, postdevelopment runoff shall match or be less than pre-development runoff. The development shall be subject to future inspections by City or other designated agencies relative to the improvements installed as a result of this condition to ensure they remain in compliance with the conditions imposed under this condition.
106. Subject to the design requirements based on the evaluation by consultant's engineer, construction of a currently unknown length and size of storm drainpipe within Avenue 17 and Golden State are considered reimbursable through the City's Development Impact Fee Program, subject to the availability of funds.

## Streets

107. Based on the traffic study conducted by VRPA Technologies, Inc. dated December 9, 2022, the developer shall construct a two-lane roundabout at the intersection of Avenue 17 and Golden State Boulevard/Airport Drive in accordance with the conceptual roundabout design approved by Caltrans in the Intersection Control Evaluation (ICE) report prepared by Peters Engineering Group
for the North Fork Casino. As the General Plan and the Vision 2025 Plan encourage pedestrian and bicycling activities, the roundabout shall incorporate enough pavement width to accommodate bicycles while Avenue 17 and Golden State shall provide sufficient pavement width for two twelve-foot travel lanes and a bike lane. The roundabout shall transition into exiting improvements on all approaches to the roundabout and/or should anticipate the ultimate design with of 80 -feet on the north south approaches or 100 -feet on the east west approaches.

Roundabout improvements shall be reimbursed as follows:

- For those improvements within Avenue 17, any roundabout associated improvements within the equivalent arterial street cross section width of the three center travel lanes (one westbound lane, one center turn lane and one eastbound lane) totaling 40-feet total) are reimbursable through the arterial street and arterial median impact fees.
- For those improvements within Golden State or Airport Drive, any roundabout associated improvement within the equivalent arterial street cross section width of the three center travel lanes (one northbound lane, one center turn lane and one southbound lane totaling 36 -feet total) are reimbursable through the arterial street and arterial median impact fees.
- Roundabout (Improvements central to the intersection itself and splitter islands on all approaches) are reimbursable through the traffic signal impact fees.
- Roundabout (Equivalent frontage improvements on northeast, southeast and southwest quadrants to the intersection) are reimbursable through the traffic signal impact fees.
- Subject to impact fees not being available or eligible, property owners on the southeast and southwest quadrants of Avenue 17 and Golden State will be responsible for reimbursement of improvement costs for those items that are constructed along their project frontage.
- Only those impact fees cited above are eligible for reimbursement from the Development Impact Fee Program. Improvements along the Project frontage are considered to be equivalent to typical project frontage improvements.
- Reimbursement by the City using impact fees would also be adjusted to account for any contribution received from property owners on the southeast and southwest quadrants of Avenue 17 and Golden State with the maximum reimbursement not exceeding the actual cost minus the total of all amounts provided by other sources.
- A minimum of three bids shall be secured for off-site reimbursements that are subject to reimbursement.
- Developer may assign its rights to reimbursement from the City to third parties as further defined and required in a reimbursement agreement.

108. The developer may enter into a reimbursement/ deferral agreement with the City which allows the developer to complete an operational roundabout following occupancy of the project within six months of gaining occupancy rather than at time of occupancy. Said agreement may provide for extensions by the City Engineer, with the developer able to appeal the decision of the City Engineer to the City Council if the extension is denied. Additionally, if certain improvements are not capable of being improved solely due to the developer being unable to acquire right-of-way from a third party, the agreement may also provide for a process for the City to acquire said right-
of-way (including by eminent domain), and if the City chooses not to do so, a process by which the developer may deposit the estimated cost of said acquisition and improvements with the City to satisfy the condition to install the affected improvement.
109. The west half of Golden State Boulevard along the entire project frontage shall be improved to that which is necessary to construct the two-lane roundabout. Improvements shall include but not be limited to fire hydrants, streetlights, curb and gutter, park strip, sidewalk and a 28 -foot paved section. Typical cost of the improvements (curb, gutter sidewalk, streetlights, park strip, the asphalt paving between the three center travel lanes and the curb) are not subject to reimbursement as all new development is required to construct those improvements.
110. The north half of Avenue 17 along the entire project frontage shall be improved to that which is necessary to construct the two-lane roundabout. Improvements shall include but not be limited to fire hydrants, streetlights, curb and gutter, park strip, sidewalk and a 30-foot paved asphalt section. Typical cost of the improvements (curb, gutter sidewalk, streetlights, park strip, the asphalt paving between the three center travel lanes and the curb) are not subject to reimbursement as all new development is required to construct those improvements.
111. The proposed driveway approaches on Avenue 17 and Golden State Boulevard shall be constructed to a street-type entrance with a minimum face curb radius of 15 feet and be constructed to current City and ADA standards. Without special approval, maximum driveway width is 35 feet. The roundabout shall be designed to the maximum truck turning radius STAA 56.
112. The Developer shall pay its Project Fair Share amount for roundabout improvements at the Caltrans ramp locations based on the higher of the AM or PM if both peak hours are projected to operate at a deficient Level of Service (LOS) or the lower if it corresponds to only one peak hour being considered to have a deficient LOS. The dollar value is based on the estimated cost of constructing roundabouts at the locations shown in the draft Intersection Control Evaluation State Route 99/Avenue 17 Interchange study dated April 8, 2022. At present, said amounts (subject to change based on final study) are:
a) Avenue 17 and SB Offramp - 7.57\% (based on PM peak hour) of the estimated construction cost of $\$ 1,837,936$ for a total of $\$ 139,132$.
b) Avenue 17 and Northbound Ramp - 5.41\% (based on AM peak hour) of the estimated construction cost of $\$ 2,289,721$ for a total of $\$ 123,846.54$
Note - The above amounts are based on the corrected percentages from Table 4-2 of the traffic study.
113. The Developer shall address and comply with Caltrans comments in the Caltrans letter dated July 25,2023 , or as may be agreed upon between the developer or the developer's traffic engineer and Caltrans for the purpose of confirming the mitigation measures recommended in the traffic study remain valid. At present, this letter results in the need to provide revised Sidra analysis to address needed refinements and clarifications.
114. [Reserved]
115. The proposed driveway approaches on Avenue 17 and Golden State Boulevard shall be limited to right-in, right-out turn movements from the 7 Eleven project site based on the conceptual geometry of the intersection. Right-in, right-out and left-out movements shall be provided for the gas station on the east side of Golden State Boulevard as illustrated in the appendix to the traffic study.
116. The driveway approaches shall have a minimum throat length of thirty (30) feet from face of curb to eliminate the possibility of vehicles queuing into the City right-of-way.
117. Driveways, regardless of future lot line adjustments or parcel mapping along Golden State Boulevard shall be spaced no closer than 200 feet from nearest driveway.
118. Curb access ramps shall be installed at all curb returns in accordance with City and ADA standards.
119. The developer shall install streetlights along Avenue 17 and Golden State Boulevard frontages in accordance with current City standards. Streetlights shall be LED using Beta Lighting standards or equal in accordance with City of Madera standards.
120. "No Parking" signs shall be installed along Avenue 17 and Golden State Boulevard project frontages per City standards.
121. The developer shall provide a site circulation plan that shows anticipated vehicles can enter and exit the site without impacting opposing traffic.
122. The developer shall record a Reciprocal Easement Agreement for ingress/egress, utility, drainage, access for emergency services, and parking easements in the City of Madera standard form. The easements shall provide the mutual right of access for all future uses in the project site. Said language should be consistent with any applicable CC\&Rs. At a minimum, the Reciprocal Easement Agreement should provide a responsible party and method in which said responsibility is conveyed to future successors. The developer shall be responsible for paying all associated fees to the Engineering Department. If an existing cross access agreement has already been recorded, it shall be revised based upon the proposed changes.

If a mutual easement and reciprocal use agreement for cross access with the adjacent property to the north is not executed as a result of this project, upon request of the City in conjunction with future development of the adjacent property to the north the applicant/property owner shall provide a mutual easement and reciprocal use agreement for cross access (including pedestrian and vehicular traffic) with the property to the north and consents to recordation of the same subject to the following:
i. Any future obligation for the provision of cross-access shall be limited to the area(s) identified on the final approved site plan.
ii. Any mutual easement and reciprocal use agreement to be executed in accordance with this condition shall be in a form approved by the City of Madera.

This condition shall be binding on each/any successive owner of the subject property regardless of any subdivision or adjustment of lot lines which may occur in the future.
123. The developer shall dedicate a Public Utility Easement 10 -feet wide along the entire project parcel frontages on Avenue 17 and Golden State Boulevard. The fee in effect (currently $\$ 466$ ) at for grant easement or deed acceptance shall be paid with the Engineering Department.
124. The developer shall annex into and execute such required documents that may be required to participate in Landscape Maintenance District Zone 51 for the purpose of participating in the cost of maintaining landscape improvements within said zone.

## Dry Utilities

125. All existing and proposed public utilities (electric, telephone, cable, etc.) shall be undergrounded, except transformers, which may be mounted on pads. Public utility easements shall be dedicated outside and adjacent to all streets rights-of-way. All public utilities within the project property and adjacent to the project property frontage on peripheral streets (on the development side of the street centerline) shall be placed underground except those facilities exempted by the Public Utilities Commission Regulations or operating at 70,000 volts or greater. Undergrounding of
utilities shall not result in the addition of new poles being installed on other properties or street frontages

## BUILDING DEPARTMENT

126. Submit five (5) full sets and one (1) full digital set in Portable Document Format (PDF) of plans for review and approval prior to obtaining all required permits for construction of project.
127. A building permit is required for all construction on the site.
128. A business license is required, and a business license inspection shall be conducted prior to operation.
129. State and federal accessibility requirements shall apply to the entire site and all structures and parking thereon. Compliance shall be verified at the permit stage and confirmed at final inspection.

## FIRE DEPARTMENT

130. Permits shall be submitted for the required fire sprinklers, fire alarm, underground fire main systems, and fire pump.
131. A Knox Box type and location must be reviewed and approved and must be provided for access.
132. Fire Lanes are required at the site and must be clearly posted with signs and red curb according to City Standards.
133. Sufficient clearances and height limits shall be applied to landscaping surrounding and existing or proposed fire hydrants or FDCs, so that it may not interfere with access or visibility.
134. Fire extinguisher placement shall comply with the CFC.
135. The address shall be posted and plainly visible from the street.
136. Provision shall be made in the project design and construction to allow for the discharge of fire sprinkler test water to an on-site vegetated area. If this is not feasible, provide for discharge to the sanitary sewer in accordance with the current plumbing codes.
137. On site fire hydrants shall be required due to the size of the structure.
138. Additional public road access must comply with the CFC including Appendix $D$, as well as the City of Madera Engineering Department Standards.

## AIRPORT LAND USE COMMISSION

139. No component of operations of the facility shall create, or cause to be created, electrical interference with aircraft communications or navigation; and
140. No component of operations of the facility shall create, or cause to be created, any form of visual or other sensory distractions to those aircraft landing or taking off from the airport.

## SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

141. Applicant shall consult with and shall comply with the requirements of the San Joaquin Valley Air Pollution Control District (SJVAPCD), including but not limited to compliance with Regulation VIII (Fugitive PM10 Prohibitions), Rules 2010 and 2201 (Air Quality Permitting for Stationary Sources), Rule 9410 (Employer Based Trip Reduction), and Rule 9510 (Indirect Source Review).
142. Applicant shall submit to, and have approved by, the SJVAPCD an Authority to Construct (ATC) application and present a copy of an approved ATC application to the City prior to issuance of a grading or building permit.
143. Applicant shall submit to, and have approved by, the SJVAPCD an Air Impact Assessment (AIA) application prior to issuance of a grading or building permit.
144. Applicant shall submit to, and have approved by, the SJVAPCD a "Dust Control Plan" and present a copy of an approved Dust Control Plan to the City prior to issuance of a grading or building permit.
-END OF CONDITIONS-
"EXHIBIT B"
MITIGATION MONITORING AND REPORTING PROGRAM

## Section 5 | Mitigation Monitoring and Reporting Program

| Mitigation Measure | Monitoring \& Reporting Schedule | Implementing Party | Method to Verify Compliance | Date \& Signature of Party <br> Responsible for <br> Verification of Compliance |
| :---: | :---: | :---: | :---: | :---: |
| BIO-1: A preconstruction burrowing owl survey shall be completed by a qualified biologist no more than 14 days prior to groundbreaking to confirm the absence or presence of burrowing owls. The qualified biologist shall survey on and within 500 feet of the impact area, as accessible. The preconstruction survey shall follow the methodology for take avoidance surveys outlined in the California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation (CDFW, 2012). <br> Should active burrows be observed, or sign of active burrows be observed, such burrows shall be provided a disturbance-free buffer, consistent with CDFW's Staff Report on Burrowing Owl Mitigation. Should implementation of a buffer around an active burrow be impractical, consultation with CDFW shall occur to identify appropriate exclusion methods. <br> Additionally, a qualified biologist shall provide worker environmental awareness training to construction personnel that will work on the Project Site. The training | Prior to issuance of any grading or construction building and prior to any earthwork or construction activity. | Applicant / <br> Project <br> Contractor | Applicant / project contractor shall submit preconstruction survey documentation of compliance to the City prior to issuance of grading or building permits. <br> City Planning and Building Departments shall verify preconstruction survey documentation is complete prior to issuance of grading or building permit. <br> City Planning Department to field verify prior to commencement of any project related grading or construction activities that applicable survey specifications are implemented. |  |


| shall cover burrowing owl identification, important life history stages, and how to respond to an on-site observation of a burrowing owl. Personnel shall be instructed to store equipment and materials such that the creation of artificial burrows is minimized. This shall include practices such as capping the ends of pipe six inches in diameter or greater when stored on-site prior to use. The training shall also require that personnel inspect potential burrowing owl refuge before removing or operating materials or equipment. If burrowing owl is observed within an impact area during construction, work shall be halted until it exits on its own accord. CDFW shall be consulted for proper relocation of individuals that do not exit the impact area. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| BIO-2: A preconstruction nesting bird survey shall be conducted by a qualified biologist no more than five days prior to the start of ground disturbing activities should work commence during the nesting season (February 15 to September 15). Areas within 500 feet of construction shall be surveyed as possible for active nests. Should an active nest be identified, a "disturbance-free" buffer shall be established by the qualified biologist based on the needs of the species identified. The buffer shall be demarcated using high visibility flagging or similar and shall remain in place until the biologist determines that the nest is no longer active. Should construction cease for a period of five days or more during the nesting season, an additional pre-construction nesting bird survey shall be conducted. | Prior to issuance of any grading or building permit and prior to any earthwork or construction activity. | Applicant / <br> Project <br> Contractor | Applicant / project contractor shall submit preconstruction survey documentation of compliance to the City prior to issuance of grading or building permits. <br> City Planning and Building Departments shall verify preconstruction survey documentation is complete prior to issuance of grading or building permit. <br> City Planning Department to field verify prior to commencement of any project related grading or construction activities that |  |


|  |  |  | applicable survey specifications are implemented. |  |
| :---: | :---: | :---: | :---: | :---: |
| GEO-1: To mitigate the potential for adverse effects to unknown paleontological resources, a monitoring program shall be developed by a professional paleontologist, which would provide intermittent inspection of excavations at the Project site by a professional paleontologist during site grading and excavation activities of in situ native sediment that is one to two meters below ground surface. Should the construction crew or paleontologist uncover any bones or teeth, all construction-related activities in the immediate vicinity would be stopped until the paleontologist has assessed the find and, if deemed significant, salvaged it for deposition in a repository such as University of California Museum of Paleontology where it would be properly curated and preserved for scientific study. Any period in which construction is halted shall be kept to the minimum amount of time feasible under the circumstances. To avoid any unnecessary loss of time during construction, the City shall require the paleontologist to assess the significance of the affected resources as soon as is feasible under the circumstances. Following the completion of the above tasks, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources on-site. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Madera Community Development Department and to the Natural History Museum of Los Angeles County. | Prior to issuance of any grading or building permit and prior to any earthwork or construction activity. | Applicant / Project Contractor | Applicant / project contractor shall submit a paleontological resources monitoring program to City Planning and Building Departments prior to the issuance of grading or building permits. |  |

HYD-1: The following measures will be implemented to reduce impacts to water quality from operation:

- All stormwater runoff from parking and vehicle circulation areas will be treated prior to entering the stormwater drainage system and detention basin via bioretention facilities or catch basins with rechargeable, media-filled cartridges that trap particulates and adsorb pollutants from stormwater runoff such as total suspended solids, hydrocarbons, nutrients, metals, and other common pollutants.
- The gas station shall be equipped with catchment basins of sufficient size to contain small spills. At a minimum, the basin shall be large enough to contain what may spill when the delivery hose is uncoupled from the fill pipe. Any spilled fuel shall be removed and disposed of immediately.
- The fueling station pad shall be graded to prevent runoff from flowing across the pad, or to a drain with an oil and water separator prior to connection to the sanitary system or a closed sump. This would isolate any fuel or oil contamination in the fueling station area from the stormwater system.

Prior to issuance of any grading or construction building and prior to any earthwork or construction activity, and during operation.

| Applicant / <br> Project <br> Contractor | Applicant / project contractor <br> shall submit design plan to the <br> City prior to issuance of grading <br> or building permits. |
| :--- | :--- |
| City Planning Department to field <br> verify prior to gas station <br> operation. |  |
| City to verify operational |  |
| compliance. |  |

## ATTACHMENT 12

Initial Study/ Mitigated Negative Declaration (IS/MND) CUP 2022-17 \& SPR 2022-25

https://www.madera.gov/home/departments/planning/\#tr-current-projects-environmental-review-2436011

## ATTACHMENT 13

## Caltrans Letter Dated <br> 07/03/23

## California Department of Transportation

DISTRICT 6 OFFICE
1352 WEST OLIVE AVENUE |P.O. BOX 12616 |FRESNO, CA 93778-2616
(559) 488-4057 | FAX (559) 488-4195 | TTY 711
www.dot.ca.gov


July 3, 2023
Madera-99-14.638
Stock 5 Holdings 7-11 Travel Center - Madera https://dd-igr-gts.dot.ca.gov/district/6/report/27339

Mr. Robert Smith, Senior Planner
City of Madera
205 W. 4th Street
Madera, CA 93637
Dear Mr. Smith,
Thank you for the opportunity to review the Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of the City of Madera (City) to address the environmental effects of the proposed 7 -Eleven Travel Center ("Proposed Project" or "Project"). The Project is located on the northwest corner of the Avenue 17/Golden State Boulevard (Blvd) intersection, approximately 400 feet west of the State Route (SR) 99/Avenue 17 interchange.

Caltrans provides the following comments consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

## Initial Study Index 4.17 Transportation (Page 82-93) Comments:

1. There should be a clear conclusion on the responsibility of the proposed Project to mitigate the traffic impact to SR 99 ramps/Avenue 17 \& Golden State Blvd/Avenue 17 for the opening day and the future roundabouts or Project fair share. The Project fair share was concluded in Table 4-2 of the traffic impact study (TIS) dated April 10, 2023.
2. Refer to Index 4.17.2 Impact Assessment and the last paragraph, page 92, it is stated that the Project trips will not increase traffic on SR 99. However, the Project trips and additional truck traffic would exit and enter the SR 99 ramps, thus increasing traffic to SR 99 ramps and increasing the potential for traffic operational and traffic safety issues. The vehicle miles traveled (VMT) analysis should provide a traffic safety evaluation.
3. Based on the current Caltrans IGR Safety Guidance, dated December 18, 2020, a safety review for the proposed land use projects and plans on local roadways that affect State Highway System will need to be conducted. The guidance enhances
safety for pedestrians, bicycles, transit, and vehicular modes. This guidance establishes the safety impact review expectations for Caltrans and lead agencies to comply with CEQA. A traffic safety evaluation on the roadway that the Project trips will impact should be studied.
4. It is stated in the last paragraph of page 91 , that the roundabouts at three intersections would operate at acceptable level of service (LOS) for the 2023 opening year but not for the 2043 design year. The proposed roundabout lane configuration should be clarified.
5. Based on the Intersection Control Evaluation (ICE) study prepared by Peter's Engineering Group, the roundabouts at the Avenue 17 ramp intersections would operate at acceptable LOS in 2032. Per the recent TIS for Chevron gas station/convenience store/fast-food restaurant also prepared by Peters Engineering Group, the intersection of Golden State Blvd/Avenue 17 would operate at acceptable LOS for both a single-lane roundabout for the Near-Term with the project and a two-lane roundabout for 2043 with Project. Please add the LOS information for the 10 -year design life of the roundabouts.
6. Refer to the LOS section. The LOS for NB ramp/Avenue 17 for AM peak hour in Tables $10,11, \& 13$ shows LOS " $D$ " with a 95.8 -second delay. This is inconsistent with Appendix G's TIS Table 2-1 on page 12.
7. Please update traffic information per the final TIS.

## TIS dated 4/10/2023 (Appendix G) Comments:

1. Comments \#2 \& \#3 for the Transportation section in the Initial Study above apply to TIS.

## Sidra Analysis Comments:

1. The Sidra setup is US HCM (Customary). However, the units for input data and the results are in Metric units. US Customary or English unit should be used.
2. Sidra Standard methodology should be checked to compare the results with HCM 6.0 methodology. The following are our Sidra Standard defaults:
a. Set the Model to US HCM (customary).
b. Set the Roundabout Option Tab to "Sidra Standard" and the Roundabout LOS method to "Sign Control," everything else should be unchecked.
c. Set Roundabout Data Tab for Environment Factor to 1.2 for Existing and 1.1 for 10 -year design. Environment Factor 1.05 to 1.1 may be used for the 20 -year design. The Entry/Circ Flow Adjustment should be set to "Medium."
d. Set Option Tab in Model Settings to Delay \& v/c (HCM 6.0) for LOS method, LOS "D" for LOS target, $95 \%$ for percentile queue, and check "Include Short Lane in determining Approach Queve Storage Ratio."
e. Set the Setting tab in the Gap Acceptance dialog to "Sidra Standard (Akcelik M3D) for Gap Acceptance Capacity.
f. Set the Gap Acceptance Data tab to Program for Critical Gap in the Gap Acceptance dialog.
3. Geometric data would impact the capacity of the roundabout with the above Sidra Standard methodology.
4. The truck percentages used in the existing traffic scenario analysis must be consistent with the heavy vehicle percentages in Appendix F. The additional truck traffic from the proposed Project and other approved/pending projects should be added to the existing truck counts for future scenarios.
5. Provide Sidra's roundabout layout in the attachments.
a. NB off-ramp/Avenue 17 for 2043 Project: There were two entrances on the east leg. However, there was only one circulating lane on the north leg.
b. To increase the capacity, consider a westbound right-turn bypass lane to the northbound on-ramp on the east leg.
c. To increase the capacity, consider a dual northbound left-turn lane and a rightturn bypass lane on the south leg.
d. Lane and movement summaries report should be attached in the TIS.
6. SB off-ramp/Avenue 17 for 2043 Project:
a. There were two westbound entrances on the east leg. However, there was only one circulating lane on the north leg.
b. Consider a dual southbound left-turn lane with two circulating lanes on the west leg to increase the capacity.
7. Golden State Blvd/Avenue 17 for 2043 Project:
a. The proposed Chevron gas station study by Peters Engineering Consultant dated 12/5/2022 determined the need for an additional westbound right-turn bypass lane for the 2043 Project. Our office recently commented on the proposed Chevron study. The Chevron study still needs to be revised.
b. There should be one eastbound left-turn lane and one through lane at the NB off-ramp intersection for the existing geometry in Figure 2-1.
c. It should be Figures 11 \& 12 instead of Figures 9 \& 10 in Index 3.7, page 17.
8. Revise TIS \& Sidra Files and resubmit to Caltrans for review.

## Project Site Plan

1. The access on Avenue 17 seems close to the end of the curb return of the roundabout at Golden State Blvd/Avenue 17, which may impact the traffic operations of the roundabout at Golden State Blvd and may pose traffic safety issues. Our office previously recommended relocating the driveway farther west. However, this is under the jurisdiction of the City of Madera.
2. The driveway at Golden State Blvd would be right turns in/out only per Index 1.1.1 on page 1 of the TIS. However, the Project site plan in the TIS shows a median opening across the driveway. There should be an adequate length to place northbound left-turn storage on Golden State Blvd to the driveway. Our office previously recommended the issues on the median opening across the driveway. However, this is under the jurisdiction of the City of Madera.
3. Constructing a westbound right-turn lane to the driveway in addition to the two westbound through lanes on Avenue 17 is recommended. It is expected that most of the trucks will enter the driveway on Avenue 17, which may cause traffic operational and safety issues.
4. A roundabout performance check for Golden State Blvd/Avenue 17 per NCHRP 627 should be provided.
5. A STAA 56 feet truck turning diagram for the Golden State Blvd/Avenue 17 roundabout should be provided.
6. A landscape buffer between the proposed sidewalk and roundabout circulating lanes is recommended.
7. It should be ensured that there is adequate right of way for the two-lane roundabout at Golden State Blvd/Avenue 17 after the above comments are addressed. Additional right of way along the Project frontage may be needed.

Mr. Robert Smith, Senior Planner
July 3, 2023
Page 5
If you have any other questions, please call or Keyomi Jones at (559) 981-7436 or keyomi.jones@dot.ca.gov.

Sincerely,


David Padilla, Branch Chief
Transportation Planning - North

## ATTACHMENT 14

## Caltrans Letter Dated <br> 7/25/2023

## California Department of Transportation



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July 25, 2023

Stock 5 Holdings 7-11 Travel Center - Madera https://ld-igr-gts.dot.ca.gov/district/6/report/27339

SUPERSEDES LETTER DATED JULY 3, 2023
Mr. Robert Smith, Senior Planner
City of Madera
205 W. 4th Street
Madera, CA 93637
Dear Mr. Smith,
This letter supersedes and replaces our previous letter dated July 3, 2023, regarding the Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of the City of Madera (City) to address the environmental impacts of the proposed 7-Eleven Travel Center ("Proposed Project" or "Project"). Upon additional research regarding the IS/MND, we provide the following comments:

## Initial Study Index 4.17 Transportation (Page 82-93) Comments:

1. There should be a clear conclusion on the responsibility of the proposed Project to mitigate the traffic impact to SR 99 ramps/Avenue 17 and Golden StateBoulevard/Avenue 17 for the opening day and the future roundabouts or Project fair share. The Project fair share was concluded in Table 4-2 of the traffic impact study (TIS) dated April 10, 2023. The TIS, dated April 10, 2023, addressed this comment.
2. Refer to Index 4.17.2 Impact Assessment and the last paragraph, page 92 , it is stated that the Project trips will not increase traffic on SR 99. However, the Project trips and additional truck traffic would exit and enter the SR 99 ramps, thus increasing traffic to SR 99 ramps and increasing the potential for traffic operationat and safety issues. The vehicle miles traveled (VMT) analysis should provide a traffic safety evaluation. The TIS, dated April 10, 2023, addressed this comment.
3. Based on the current Caltrans IGR Safety Guidance, dated December 18, 2020, asafety review for the proposed land use projects and plans on local roadways that affect State Highway System will need to be conducted. The guidance enhances safety for pedestrians, bicycles, transit, and vehicular modes. This guidanceestablishes the safety impact review expectations for Caltrans and lead agencies

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†o comply with CEQA. A traffic safety evaluation on the roadway that the Project trips will impact should be studied. This comment was addressed in Peters Engineering Group's draft Intersection Control Evaluation report dated October 17, 2022.
4. It is stated in the last paragraph of page 91 that the roundabouts at three intersections would operate at an acceptable level of service (LOS) for the 2023 opening year but not for the 2043 design year. The proposed roundabout lane configuration should be clarified. The roundabouts' future lane configuration will be two lanes. After the roundabouts are constructed, it is recommended that the City and Caltrans monitor the intersections. If the roundabouts degrade in the future, the City should consider alternate finance sources, such as development fees, local measures, or grant funding, to mitigate the future impacts.
5. Based on the Intersection Control Evaluation (ICE) study prepared by Peter's Engineering Group, the roundabouts at the Avenue 17 ramp intersections would operate at acceptable LOS in 2032. Per the recent TIS for Chevron gas station/convenience store/fast-food restaurant, also prepared by Peters Engineering Group, the intersection of Golden State Boulevard/Avenue 17 would operate at acceptable LOS for both a single-tane roundabout for the Near-Term with the project and a two lane roundabout for 2043 with Project. Please add the LOS information for the 10 -year design life of the roundabouts. Upon additional investigation, the comment was deemed unsuitable for this project.

## Sidra Analysis Comments:

1. The Sidra setup is US HCM (Customary). However, the units for input data and the results are in Metric units. US Customary or English unit should be used.
2. Sidra Standard methodology should be checked to compare the results with HCM 6.0 methodology. The following are our Sidra Standard defaults:
a. Set the Model to US HCM (customary).
b. Set the Roundabout Option Tab to "Sidra Standard" and the Roundabout LOS method to "Sign Control," everything else should be unchecked.
c. Set Roundabout Data Tab for Environment Factor to 1.2 for Existing and 1.1 for 10-year design. Environment Factor 1.05 to 1.1 may be used for the 20-year design. The Entry/Circ Flow Adjustment should be set to "Medium."
d. Set Option Tab in Model Settings to Delay and v/c (HCM 6.0) for LOS method, LOS "D" for LOS target, $95 \%$ for percentile queve, and check "Include Short Lane in determining Approach Queve Storage Ratio."
e. Set the Setting tab in the Gap Acceptance dialog to "Sidra Standard (Akcelik M3D) for Gap Acceptance Capacity.
f. Set the Gap Acceptance Data tab to Program for Critical Gap in the Gap Acceptance dialog.
"Provide a safe and reliable transportation network that serves all people and respects the environment"

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3. Geometric data would impact the capacity of the roundabout with the above Sidra Standard methodology.
4. The truck percentages used in the existing traffic scenario analysis must be consistent with the heavy vehicle percentages in Appendix F. The additional truck traffic from the proposed Project and other approved/pending projects should be added to the existing truck counts for future scenarios.
5. Provide Sidra's roundabout layout in the attachments.
a. NB off-ramp/Avenue 17 for 2043 Project: There were two entrances on the east leg. However, there was only one circulating lane on the north portion.
b. To increase the capacity, consider a westbound right-turn bypass lane to the northbound on-ramp on the east leg.
c. To increase the capacity, consider a dual northbound left-turn lane and a rightturn bypass lane on the south leg.
d. Lane and movement summaries report should be attached in the TIS.
6. SB off-ramp/Avenue 17 for 2043 Project:
a. There were two westbound entrances on the east leg. However, there was only one circulating lane on the north leg.
b. Consider a dual southbound left-turn lane with two circulating lanes on the west leg to increase the capacity.
7. Golden State Boulevard/Avenue 17 for 2043 Project:
a. The proposed Chevron gas station study by Peters Engineering Consultant dated 12/5/2022 determined the need for an additional westbound right-turn bypass lane for the 2043 Project. Our office recently commented on the proposed Chevron study. The Chevron study still needs to be revised.
b. There should be one eastbound left-turn lane and one through lane at the NB off-ramp intersection for the existing geometry in Figure 2-1.
c. It should be Figures 11 and 12 instead of Figures 9 and 10 in Index 3.7, page 17.

The Sidra analysis should be refined and resubmitted for our records. We anticipate the mitigations will be the same as those currently proposed in the IS/MND. Conversely, the consultant should respond to our comments and provide the analysis for clarification. No additional analysis is needed.

## Project Site Plan

1. The access on Avenue 17 seems close to the end of the curb return of the roundabout at Golden State Boulevard/Avenue 17, which may impact the traffic operations of the roundabout at Golden State Boulevard and pose traffic safety issues. Our office previously recommended relocating the driveway farther west. However, this is under the jurisdiction of the City of Madera.
2. The driveway at Golden State Boulevard would only be right turns in/out per Index 1.1.1 on page 1 of the TIS. However, the Project site plan in the TIS shows a median opening across the driveway. There should be an adequate length to place northbound left-turn storage on Golden State Boulevard to the driveway. Our office previously recommended the issues on the median opening across the driveway. However, this is under the jurisdiction of the City of Madera.
3. Constructing a westbound right-turn lane to the driveway and the two westbound through lanes on Avenue 17 is recommended. It is expected that most of the trucks will enter the driveway on Avenue 17, which may cause traffic operational and safety issues. Future funding mechanisms should be researched to mitigate future impacts.
4. A roundabout performance check for Golden State Boulevard/Avenue 17 per NCHRP 627 should be provided. However, this is under the jurisdiction of the City of Madera.
5. A STAA 56 feet truck turning diagram for the Golden State Boulevard/Avenue 17 roundabout should be provided. However, this will be addressed in the Intersection Control Evaluation prepared by Peters Engineering Group.
6. A landscape buffer between the proposed sidewalk and roundabout circulating lanes is recommended.
7. After addressing the above comments, there should be adequate right-of-way for the two-lane roundabout at Golden State Boulevard/Avenue 17. Additional right of way along the Project frontage may be needed. However, this is under the jurisdiction of the City of Madera and should be conditioned as such.
If you have any other questions, please call or Keyomi Jones at (559) 981-7436 or keyomi.jones@dot.ca.gov.

Sincerely,


David Padilla, Branch Chief
Transportation Planning - North

## ATTACHMENT 15

Intersection Evaluation Report

# Intersection Control Evaluation State Route 99 ／Avenue 17 Interchange Madera County，California 

## Prepared For：

North Fork Rancheria of Mono Indians

P．O．Box 929
North Fork，California 93643
and
Station Casinos，LLC
1505 South Pavilion Center Drive Las Vegas，Nevada 89135

## Date：

October 7， 2022

## Job No．：

16－007．06

## PETERS ENGINEERING GRロUP A CALIFロRNIA CIRPロRATIGN

Ms. Elaine Fink, Chairperson
North Fork Rancheria of Mono Indians
P.O. Box 929

North Fork, California 93643
and

Mr. Scott Zucker, Vice President/Design \& Construction
Station Casinos, LLC
1505 South Pavilion Center Drive
Las Vegas, Nevada 89135

Subject: Intersection Control Evaluation
State Route 99 / Avenue 17 Interchange
Madera County, California

Dear Ms. Fink and Mr. Zucker:
The purpose of this letter is to address a majority of the information required in an Intersection Control Evaluation (ICE) as described in the Caltrans Traffic Operations Policy Directive 1302. The intersections within the subject interchange were recently included in a traffic study and the results were presented in a report entitled Traffic Impact Study, Proposed North Fork Rancheria Casino Project - Phase 1 dated February 23, 2021 by Peters Engineering Group (hereinafter referred to as the TIS) and a response to Caltrans comments presented in a letter dated June 6, 2021 (hereinafter referred to as the TIS Response Letter).

Caltrans provided additional comments in letters dated July 1, 2021, January 27, 2022, June 10, 2022, and June 30, 2022, with final comments provided in an email dated August 18, 2022. Peters Engineering Group provided responses to Caltrans comments on previous versions of the ICE in a letter dated July 22, 2022.

### 1.0 BACKGROUND

The intent of the proposed improvements is to satisfy the Casino project's Phase 1 mitigation requirements with a 10 -year design life without widening existing bridge structures.
The TIS and Response Letter indicate that the intersection of the State Route (SR) 99 southbound ramps and Avenue 17 will require improvements in the form of either signalization or a roundabout. Caltrans has indicated that the intersection of Avenue 17 and Golden State Boulevard/Airport Drive is within 400 feet of the SR 99 southbound off ramp and that a mandatory design exception would be required for the signalized option. Caltrans
also indicated that the intersection of Avenue 17 and Golden State Boulevard/Airport Drive should be realigned to the west if it is signalized. The City of Madera has indicated that the intersection of Avenue 17 and Golden State Boulevard/Airport Drive will be improved as a roundabout in its current location. Realigning Golden State Boulevard to the west and installing a traffic signal is not currently an option.

The TIS and Response Letter indicate that the intersection of the SR 99 northbound ramps and Avenue 17 will require improvements in the form of either signalization or a roundabout.

Policy Directive 13-02 identifies a two-step evaluation process for intersection control strategies:

Step 1: Access Strategy and Configuration Assessment/Screening
Step 2: Engineering Analyses
This report presents engineering analyses of two intersection control strategies that are considered to be potentially feasible:

1. Traffic Signals (warrant analyses utilizing pre-pandemic traffic counts and intersection operational analyses for year 2032 conditions).
2. Roundabout (intersection operational analyses for year 2032 conditions).

All-way stop control is not considered to be a feasible alternative for any of the study intersections.

### 2.0 EXISTING INTERCHANGE AND INTERSECTIONS

A site vicinity map is presented in Figure 1, Vicinity Map, following the text of this report. An aerial view of the existing interchange is presented in Figure 2, Existing Interchange.

## SR 99 southbound ramps and Avenue 17

The west side of the interchange is generally an L-9 configuration with slip ramps from Avenue 17 to the southbound on ramps. The intersection of the SR 99 southbound off ramp and Avenue 17 is a three-legged, one-way-stop-controlled intersection.

The existing lane configurations approaching the intersection are as follows:
Eastbound (Avenue 17): one through lane.
Westbound (Avenue 17): one through lane.
Northbound: no northbound approach, there is no south leg.
Southbound (SR 99 southbound off ramp): one left-turn lane and one right-turn lane with a stop sign.

SR 99 northbound ramps and Avenue 17
The east side of the interchange is generally an L-1 configuration with Avenue 17 elevated. The northbound ramps are situated between the bridge structure over the freeway and a bridge structure over the railroad tracks east of the ramps. The distance between structures along Avenue 17 is on the order of 285 feet. The intersection of the SR 99 northbound ramps and Avenue 17 is a four-legged, one-way-stop-controlled intersection.

The existing lane configurations approaching the intersection are as follows:
Eastbound (Avenue 17): one dedicated left-turn lane (approximately 120 feet long) and one through lane.
Westbound (Avenue 17): one through lane with a shared right turn.
Northbound (SR 99 off ramp): one left-turn lane and one right-turn lane with a stop sign.
Southbound: no southbound approach. The north leg is the northbound on ramp.

### 3.0 TRAFFIC VOLUMES

Peak-hour intersection turning movement counts and 24 -hour approach counts were taken in February 2022. The projected year 2032 traffic volumes utilized in the analyses are presented in Figure 3, Year 2032 Traffic Volumes. The traffic count data sheets are presented in Appendix A.

### 4.0 INTERSECTION ANALYSES

### 4.1 Traffic Signals

### 4.1.1 Traffic Signal Warrants

The CMUTCD presents various criteria (warrants) for determining the need for traffic signals. The CMUTCD states that an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location. If one or more of the signal warrants is met, signalization of the intersection may be appropriate. However, a signal should not be installed if none or few of the warrants are met since the installation of signals may increase delays on the previously uncontrolled major street and may contribute to an increase in collisions.

The warrant analyses are presented in Appendix B.
For the intersection of Avenue 17 and the southbound SR 99 off ramp, where the approaching speed on Avenue 17 is greater than 40 miles per hour (mph), Warrants 1, 2, 3 and 8 are satisfied in the existing condition. Warrants 4 through 6 and 9 are not satisfied based on existing volumes.
To analyze Warrant 7, Crash Experience Warrant, crash records were obtained from the Statewide Integrated Traffic Records System (SWITRS) for the years 2015 through 2020. Table 1 summarizes general crash information at the intersection of Avenue 17 and the southbound SR 99 off ramp. The SWITRS crash records are presented in Appendix D.

Table 1
Crash Records Summary－ 2015 Through 2020
Intersection of SR 99 Southbound Ramps and Avenue 17

|  | Type of Collision |  |  |  |  |  |  | Severity |  |  | Primary Factor |  |  |  |  |  | Involved |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date |  |  | $\begin{aligned} & \tilde{O} \\ & \text { 䔍 } \\ & \text { 年 } \end{aligned}$ | $\begin{gathered} \stackrel{\rightharpoonup}{0} \\ \stackrel{0}{0} \end{gathered}$ | $\begin{aligned} & \stackrel{0}{3} \\ & \frac{3}{3} \\ & \stackrel{0}{6} \end{aligned}$ | $\begin{aligned} & \dot{\Xi} \\ & \text { ָ̄ } \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { ⿹ㅔ } \\ & \text { [ix } \end{aligned}$ | 空 |  |  |  |  | $\begin{aligned} & \ddot{0} \\ & \text { \# } \end{aligned}$ | $\begin{aligned} & \text { E } \\ & \text { E } \\ & \text { O. } \\ & \text { B. } \end{aligned}$ | Driving Under Influence |  | $\begin{aligned} & \stackrel{\rightharpoonup}{0} \\ & \stackrel{0}{0} \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \end{aligned}$ | シ |
| 2－12－16 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 3－14－16 |  |  |  |  |  |  | X |  | X |  |  |  |  | X |  |  |  |  | X |
| 7－15－16 |  | X |  |  |  |  |  |  | X |  |  |  | X |  |  |  | X |  |  |
| 12－31－16 |  |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |
| 3－29－17 |  |  |  |  | X |  |  |  |  | X |  |  |  | X |  |  | X |  |  |
| 1－6－18 |  |  |  |  |  |  | X |  |  | X |  |  | X |  |  |  |  |  | X |
| 1－25－18 |  |  |  |  |  |  | X |  |  | X |  |  |  |  | X |  |  |  | X |
| 5－31－18 |  |  |  | X |  |  |  |  |  | X |  |  |  | X |  |  |  |  | X |
| 6－7－18 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 6－15－18 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 7－15－18 |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  | X |  |  | X |
| 7－22－18 |  |  |  | X |  |  |  |  | X |  |  |  | X |  |  |  |  | X |  |
| 1－15－19 |  |  |  |  | X |  |  |  | X |  |  |  |  | X |  |  | X |  |  |
| 3－3－19 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 3－19－19 |  |  |  |  |  |  | X |  |  | X |  |  | X |  |  |  |  |  | X |
| 9－25－20 |  |  |  |  | X |  |  |  |  | X |  |  |  |  | X |  | X |  |  |
| 11－27－19 |  |  |  |  |  |  | X |  |  | X |  |  |  |  | X |  |  |  | X |
| 11－30－19 |  |  |  |  |  |  | X |  |  | X |  |  | X |  |  |  |  |  | X |

The data summarized in Table 1 indicates that none of the collisions within the six－year period studied are susceptible to correction with the installation of traffic signals occurred at the intersection of Avenue 17 and the southbound SR 99 off ramp．Therefore，Warrant 7 is not satisfied，and the frequency of crashes would not be a principal reason to consider installing a traffic control signal or other intersection control．

For the intersection of Avenue 17 and the northbound SR 99 ramps，Warrants 1，2， 3 and 8 are satisfied in the existing condition．Warrants 4 through 6 and 9 are not satisfied based on
existing volumes. The SWITRS crash records for analysis of Warrant 7 are summarized in Table 2 for the intersection of Avenue 17 and the northbound SR 99 ramps. The SWITRS crash records are presented in Appendix D.

Table 2
Crash Records Summary - 2015 Through 2020
Intersection of SR 99 Northbound Ramps and Avenue 17

|  | Type of Collision |  |  |  |  |  |  | Severity |  |  | Primary Factor |  |  |  |  |  | Involved |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date |  |  |  | $\begin{gathered} \stackrel{\rightharpoonup}{0} \\ \stackrel{0}{0} \\ \hline \end{gathered}$ | $\begin{aligned} & \stackrel{0}{3} \\ & \frac{0}{3} \\ & \frac{0}{n} \end{aligned}$ | $\begin{array}{r} \stackrel{\Xi}{\Xi} \\ \hline 0 \end{array}$ | $\begin{aligned} & \text { D } \\ & \text { E } \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |  | 尝 |  |  |  | $\begin{aligned} & \ddot{0} \\ & \stackrel{0}{n} \\ & \stackrel{0}{2} \\ & \tilde{0} \\ & \stackrel{0}{5} \end{aligned}$ | $\begin{aligned} & \dot{\Xi} \\ & \stackrel{\Xi}{0} \end{aligned}$ | $\begin{aligned} & \text { E } \\ & \text { E. } \\ & \text { O. } \\ & \text { O. } \end{aligned}$ | Driving Under Influence |  |  | 芯 |
| 2-21-15 | X |  |  |  |  |  |  |  |  | X |  |  |  |  | X |  | X |  |  |
| 6-3-16 |  |  |  | X |  |  |  | X |  |  |  |  |  | X |  |  |  | X |  |
| 7-20-17 | X |  |  |  |  |  |  |  |  | X |  |  |  |  |  | X | X |  |  |
| 11-14-17 |  | X |  |  |  |  |  |  |  | X |  |  |  | X |  |  | X |  |  |
| 12-18-17 |  |  |  |  |  |  | X |  | X |  |  |  |  |  | X |  |  |  | X |
| 6-30-18 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 5-27-18 |  |  |  | X |  |  |  |  | X |  |  |  |  |  | X |  |  |  | X |
| 6-16-18 |  |  |  |  |  |  | X |  | X |  |  |  |  |  |  | X |  |  | X |
| 12-24-18 |  |  |  | X |  |  |  |  |  | X |  |  | X |  |  |  |  | X |  |
| 1-8-19 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 2-3-19 |  |  |  |  |  |  | X |  |  | X |  |  |  |  | X |  |  |  | X |
| 5-6-20 |  |  |  | X |  |  |  |  |  | X |  |  |  | X |  |  |  |  | X |
| 5-7-19 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 5-8-19 |  | X |  |  |  |  |  |  |  | X |  | X |  |  |  |  | X |  |  |
| 6-11-19 |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |  | X |  |
| 7-19-19 |  |  |  | X |  |  |  |  |  | X |  |  |  |  |  | X |  | X |  |
| 8-27-19 |  |  |  |  | X |  |  |  |  | X |  |  |  |  | X |  | X |  |  |
| 7-23-20 |  | X |  |  |  |  |  |  |  | X |  |  | X |  |  |  | X |  |  |
| 8-20-20 |  |  |  | X |  |  |  |  | X |  |  |  |  |  | X |  |  | X |  |
| 11-13-20 |  |  |  | X |  |  |  |  |  | X |  |  |  |  | X |  |  | X |  |

The data summarized in Table 2 indicates that one collision occurred within the six-year period studied that may be susceptible to correction with the installation of traffic signals at the intersection of Avenue 17 and the northbound SR 99 ramps. Therefore, Warrant 7 is not satisfied, and the frequency of crashes would not be a principal reason to consider installing a traffic control signal or other intersection control.

### 4.1.2 Traffic Signal Operational Analyses

The operational analyses were performed using the computer program Synchro 11 to calculate LOS and queue lengths.

The primary constraint with respect to the proposed lanes is that the 10 -year scenario is intended to identify an option that can be constructed without bridge widening at the freeway or at the railroad.

The following lane configurations were analyzed for the intersection of the SR 99 southbound off ramp and Avenue 17:

Eastbound (Avenue 17): one through lane with a shared right turn.
Westbound (Avenue 17): one through lane.
Northbound: no northbound approach, there is no south leg.
Southbound (SR 99 southbound off ramp): one left-turn lane and one right-turn lane.
Crosswalks are not required, as a sidewalk can be constructed along the south side of the intersection.

The following lane configurations were analyzed for the intersection of the SR 99 northbound ramps and Avenue 17:

Eastbound (Avenue 17): one dedicated left-turn lane (approximately 120 feet long) and one through lane.
Westbound (Avenue 17): one through lane and a short, dedicated right-turn lane.
Northbound (SR 99 off ramp): one left-turn lane and one right-turn lane.
Southbound: no southbound approach. The north leg is the northbound on ramp.
Crosswalk on the south leg.
The LOS results of the intersection operational analyses are presented in Table 3. The intersection analysis sheets are included in Appendix B.

## Table 3

Intersection LOS Summary - Year 2032 Signalized Conditions

| Intersection | Control Type | A.M. Peak Hour |  | P.M. Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Delay (sec) | LOS | Delay (sec) | LOS |
| SR 99 SB off / Ave 17 | Signals | 10.7 | B | 14.4 | B |
| SR 99 NB / Ave 17 | Signals | 33.8 | C | 35.7 | D |

Table 4 presents a summary of the calculated $95^{\text {th }}$-percentile queues produced in the Synchro analysis. The intersection analysis sheets are included in Appendix B.

Table 4
Intersection Queuing Summary - Year 2032 Signalized Conditions

| Intersection | A5th Percentile Queue <br> Length (feet)  |  |
| :---: | :---: | :---: |
| SR 99 SB off / Ave 17 | A.M. | P.M. |
| Eastbound T (1 lane) |  |  |
| Westbound TR (1 lane) | 78 | 273 |
| Southbound L (1 lane) | 70 | 308 |
| Southbound R (1 lane) | 28 | 305 |
| SR 99 NB / Ave 17 |  |  |
| Eastbound L (1 lane) | 80 | 125 |
| Eastbound T (1 lane) | 138 | 370 |
| Westbound T (1 lane) | 903 | 608 |
| Westbound R (1 lane) | 333 | 100 |
| Northbound L (1 lane) | 425 | 338 |
| Northbound R (1 lane) | 150 | 475 |

L: Left-turn lane T: Through lane R: Right-turn lane

The operational analyses indicate that the study intersections can operate at acceptable LOS; however, the calculated queues indicate potential concerns. At the intersection of the SR 99 southbound off ramp and Avenue 17 the queues on the eastbound approach are likely to back up near the intersection of Avenue 17 and Golden State Boulevard/Airport Drive. At the intersection of the SR 99 northbound ramps and Avenue 17 the queues on the westbound approach are expected near the signalized intersection at the Love's Travel Stop. These queueing issues suggest that traffic signals would not be a feasible alternative without bridge widening.

### 4.1.3 Traffic Signal Layout and Cost

Conceptual layouts of the signalized intersection alternatives are presented in Figures 4 and 5. The escalated cost of signalization of the intersection of the SR 99 southbound off ramp and Avenue 17 is estimated to be on the order of $\$ 1,435,108$. The escalated cost of signalization of the intersection of the SR 99 northbound ramps and Avenue 17 is estimated to be on the order of $\$ 1,355,128$. The cost estimates are presented in Appendix B.

Annual maintenance costs and electric service costs are estimated at $\$ 6,000$ per year (excluding pavement maintenance). The 20-year life-cycle cost of the signals is estimated to be $\$ 120,000$.

### 4.2 Roundabouts

### 4.2.1 Roundabout Criteria

Specific criteria (warrants) for roundabouts have not been developed. In general, roundabouts may be considered at locations where other forms of intersection control do not result in acceptable LOS or where other forms of intersection control are not warranted.

### 4.2.2 Roundabout Operational Analyses

The primary constraint with respect to the proposed lanes is that the 10 -year scenario is intended to identify an option that can be constructed without bridge widening at the freeway or at the railroad.

The operational analyses were performed using the Sidra Intersection 9.0 Plus software with the following options selected:

- Sidra Standard model
- Environmental factor of 1.1
- Entry/Circ Flow Adjustment set to Medium
- LOS method same as sign control
- HCM delay formula unchecked
- Gap Acceptance Capacity set to Sidra Standard (Akcelik M3D)

The LOS results of the intersection operational analyses are presented in Tables 5 and 6. The intersection analysis sheets are included in Appendix C.

Table 5
Intersection LOS Summary - Year 2032 Roundabout Conditions

| Intersection | Control | A.M. Peak Hour |  | P.M. Peak Hour |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  | Delay <br> $(\mathrm{sec})$ | LOS | Delay <br> (sec) | LOS |
| SR 99 SB / Ave 17 | Roundabout | 5.0 | A | 5.8 | A |
| SR 99 NB / Ave 17 | Roundabout | 9.0 | A | 12.2 | B |

Table 6
Intersection Queuing Summary - Year 2032 Roundabout Conditions

| Intersection | 95 <br> th <br> -Percentile Queue <br> Length (feet) |  |
| :--- | :---: | :---: |
| Approach | A.M. | P.M. |
| SR 99 SB / Ave 17 |  |  |
| Eastbound LT (1 lane) | 32 | 79 |
| Eastbound T (1 lane) | 33 | 82 |
| Westbound LT (1 lane) | 79 | 75 |
| Westbound TR (1 lane) | 79 | 77 |
| Southbound L (1 lane) | 19 | 39 |
| Southbound R (1 lane) | 12 | 16 |
| SR 99 NB / Ave 17 | 0 |  |
| Eastbound (1 lane) | 155 | 0 |
| Westbound T (1 lane) | 161 | 132 |
| Westbound TR (1 lane) | 58 | 146 |
| Northbound LT (1 lane) | 52 | 298 |
| Northbound R (1 lane) |  | R: Right-turn lane |

The operational analyses indicate that roundabouts will operate at acceptable levels of service and relatively short queues that are not expected to cause blocking issues.

### 4.2.3 Roundabout Layout and Cost

Conceptual layouts of the roundabout alternatives accommodating the California Design Vehicle are presented in Figures 6 and 7. Performance checks are presented in Figures 8 through 29. The configurations are based on the National Cooperative Highway Research Program (NCHRP) Report 672 entitled "Roundabouts: An Informational Guide, $2^{\text {nd }}$ Edition."

The escalated cost of the construction of a roundabout at the intersection of the SR 99 southbound off ramp and Avenue 17 is estimated to be on the order of $\$ 1,837,936$. The escalated cost of the construction of a roundabout at the intersection of the SR 99 northbound ramps and Avenue 17 is estimated to be on the order of $\$ 2,289,721$. The cost estimates are presented in Appendix C.
For purposes of this analysis, it is assumed that annual maintenance and operation costs will be on the order of $\$ 4,000$ to $\$ 6,000$. The 20-year life-cycle maintenance and operation cost of the roundabout is estimated to be $\$ 80,000$ to $\$ 120,000$. The cost estimate is presented in Appendix C.

### 4.3 Adjacent Intersection - Avenue 17 and Golden State Boulevard / Airport Drive

The intersection of Avenue 17 and Golden State Boulevard / Airport Drive will be improved as a roundabout. The recommended lane configurations that are expected to have a design life of at least 10 years are illustrated in Figure 6. The LOS results of the intersection operational analyses are presented in Tables 7 and 8. The intersection analysis sheets are included in Appendix C.

Table 7
Intersection LOS Summary - Year 2032 Roundabout Conditions

| Intersection | Control <br> Type | A.M. Peak Hour |  | P.M. Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Delay <br> $(\mathrm{sec})$ | LOS | Delay <br> (sec) | LOS |
| Ave 17 / Golden St. / Airport | Roundabout | 7.6 | A | 10.3 | B |

Table 8
Intersection Queuing Summary - Year 2032 Roundabout Conditions

| Intersection | $\mathbf{9 5}^{\text {th }}$-Percentile Queue <br> Length (feet) |  |
| :---: | :---: | :---: |
| Approach | A.M. | P.M. |
| Ave 17 / Golden St. / Airport |  |  |
| Eastbound LT (1 lane) | 33 | 68 |
| Eastbound R (1 lane) | 5 | 7 |
| Westbound LT (1 lane) | 54 | 54 |
| Westbound R (1 lane) | 52 | 63 |
| Northbound (1 lane) | 48 | 137 |
| Southbound (1 lane) | 62 | 167 |

LT: Shared left-turn/through lane R: Right-turn lane

The analyses indicate that the queues at the intersection of Avenue 17 and Golden State Boulevard / Airport Drive are not expected to back up to the SR 99 southbound off ramp.

### 5.0 BENEFIT / COST ANALYSES

Traffic volumes and project-specific cost estimates were provided to Caltrans District 6 Traffic Safety to perform collision cost analyses and to determine the safety performance benefit/cost (B/C) ratios. In addition, the traffic volumes and results of operational analyses were utilized to perform an operational $B / C$ analysis. The results of the analyses are summarized in Table 9 and the analysis sheets are presented in Appendix E.

Table 9
Benefit / Cost Summary

| Intersection | Performance Measure | Benefit / Cost Ratio |  |
| :---: | :---: | :---: | :---: |
|  |  | Signals | Roundabout |
| SR 99 SB / Ave 17 | Safety Performance | 0.65 | 1.36 |
|  | Operational Performance | 1.24 | 1.11 |
| SR 99 NB / Ave 17 | Safety Performance | 6.16 | 6.70 |
|  | Operational Performance | 5.01 | 3.31 |

The $\mathrm{B} / \mathrm{C}$ ratios for roundabouts exceed those for traffic signals. Although the operational performance $\mathrm{B} / \mathrm{C}$ ratios for the signalization option appear to be greater than those for the roundabout option, the issue of queuing is not completely reflected in these B/C analyses. Considering that the primary project constraint for these analyses is that this phase of the interchange improvements will not include bridge widening, the additional costs that would be
required to alleviate the queuing issues described in Section 4.1.2 above are not reflected in the B/C analyses. The queuing issues described in Section 4.1.2 render the signalization option practically infeasible due to the potential for blocking of adjacent intersections. If the operational performance $\mathrm{B} / \mathrm{C}$ were to include bridge widening at a cost of several million dollars, then the $\mathrm{B} / \mathrm{C}$ ratios for the signalization option would be reduced substantially below those for the roundabouts.

### 6.0 CONCLUSIONS AND RECOMMENDATIONS

The intent of the proposed improvements is to satisfy the Casino project's Phase 1 mitigation requirements with a 10 -year design life without widening existing bridge structures.

All-way stop control is not considered to be a feasible alternative at either of the study intersections.

Traffic signals with lane configurations that do not require bridge widening are expected to cause queues that will back up into and block adjacent intersections. Therefore, traffic signals are not considered a feasible option.

It is recommended that roundabouts similar to those illustrated in Figures 6 and 7 be designed for construction. Additional roundabout traffic analyses will be performed during the geometric design phase to finalize the roundabout layout.

Thank you for the opportunity to perform this ICE. Please feel free to contact our office if you have any questions.

Sincerely,

## PETERS ENGINEERING GROUP



## Attachments: Figures

Appendix A - Traffic Count Data Sheets
Appendix B - Traffic Signal Analyses
Appendix C - Roundabout Analyses
Appendix D - SWITRS Crash Records
Appendix E - Benefit / Cost Analyses

## FIGURES



Intersection Control Evaluation
State Route 99 / Avenue 17 Interchange
Madera County, California



LEGEND

| $* 8$ | STUDY AREA INTERSECTIONS |
| :--- | :--- |
| XROJ | PROJECT SITE |
| $X X(Y Y)$ | AM (PM) VOLUMES |

Intersection Control Evaluation
State Route 99 / Avenue 17 Interchange
Madera County, California

YEAR 2032 PEAK-HOUR TRAFFIC VOLUMES

Figure 3




USER: SNaamouche DATE: Jul 20, 2022 7:44am

USER: SNaamouche DATE: Jul 20, 2022 7:44am

USER: SNaamouche DATE: Jul 20, 2022 7:44am

USER: SNaamouche DATE: Jul 20, 2022 7:44am




DWG: S: \2016\16-007\ICE \Roundabout Figures \PERFORMANCE CHECK $\backslash 5-17 \& 99$ SB $\backslash$ SSD $17 \& 99$ SB.dwg USER: SNaamouche DATE: Apr 07, 2022 10:55am

USER: SNaamouche DATE: Apr 07, 2022 10:55am




DWG: S: \2016\16-007\CE\roundabout figures \performance check $\backslash 4$ - $17 \& 99 \mathrm{nb} \backslash$ TRUCK TEMPLATE 17 \& $99 \mathrm{NB} . \mathrm{dwg} \quad$ USER: SNaamouche DATE: Jul 19, 2022 4:12pm
(
USER: SNaamouche DATE: Jul 19, 2022 4:12pm






s


DWG: S: \2016\16-00 7\ICE \roundabout figures \performance check $\backslash 4-17$ \& $99 \mathrm{nb} \backslash$ SD ON CIRCULATORY ROAD 17 \& 99 NB.dwg USER: SNaamouche DATE: Apr 07, 2022 11:01am

$\Omega_{\lambda}{ }^{\Omega}$

AVENUE 17


SCALE: $1^{\prime \prime}=60^{\circ}$
Peters Engineering Group
-


$$
\begin{aligned}
& \text { CITY OF MADERA } \\
& \text { AVENUE } 17 \& \text { SR }-99 \text { NB ROUNDABOUT } \\
& \text { SIGHT DISTANCE ON CIRCULATORY ROAD }
\end{aligned}
$$



# APPENDIX A 

## TRAFFIC COUNT DATA SHEETS

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For

Peters Engineering Group
862 Pollasky Avenue
Clovis, CA 93612

| LOCATION | Ave 17 @ SR 99 SB Ramps |
| :---: | :---: |
| COUNTY | Madera |

COLLECTION DATE $\qquad$ Wednesday, February 16, 2022
-

Southbound

|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 7:00 AM - 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 7 | 4 | 0 | 0 | 22 | 15 | 2 | 0 | 0 | 40 | 87 | 5 |
| 7:15 AM - 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 14 | 3 | 0 | 0 | 21 | 16 | 4 | 0 | 0 | 42 | 106 | 7 |
| 7:30 AM - 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 13 | 2 | 0 | 0 | 17 | 17 | 2 | 0 | 0 | 51 | 122 | 8 |
| 7:45 AM - 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 8 | 3 | 0 | 0 | 40 | 36 | 5 | 0 | 0 | 69 | 120 | 3 |
| 8:00 AM - 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 12 | 5 | 0 | 0 | 47 | 20 | 10 | 0 | 0 | 46 | 110 | 5 |
| 8:15 AM - 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 16 | 3 | 0 | 0 | 16 | 18 | 1 | 0 | 0 | 49 | 101 | 6 |
| 8:30 AM - 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 16 | 3 | 0 | 0 | 26 | 15 | 3 | 0 | 0 | 48 | 58 | 4 |
| 8:45 AM - 9:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 13 | 5 | 0 | 0 | 30 | 10 | 3 | 0 | 0 | 40 | 51 | 4 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 0 | 99 | 28 | 0 | 0 | 219 | 147 | 30 | 0 | 0 | 385 | 755 | 42 |


| LATITUDE | 36.9965 |
| ---: | :---: |
| LONGITUDE | -120.1046 |
| WEATHER | Clear |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 4:00 PM - 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 17 | 8 | 0 | 0 | 57 | 43 | 6 | 0 | 0 | 47 | 66 | 16 |
| 4:15 PM - 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 13 | 8 | 0 | 0 | 64 | 28 | 2 | 0 | 0 | 52 | 49 | 9 |
| 4:30 PM - 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 10 | 4 | 0 | 0 | 61 | 36 | 3 | 0 | 0 | 33 | 56 | 4 |
| 4:45 PM - 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 16 | 8 | 0 | 0 | 50 | 26 | 0 | 0 | 0 | 44 | 67 | 7 |
| 5:00 PM - 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 9 | 6 | 0 | 0 | 76 | 32 | 0 | 0 | 0 | 49 | 57 | 5 |
| 5:15 PM - 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 17 | 5 | 0 | 0 | 37 | 25 | 1 | 0 | 0 | 46 | 61 | 5 |
| 5:30 PM - 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 7 | 8 | 0 | 0 | 55 | 14 | 5 | 0 | 0 | 37 | 78 | 9 |
| 5:45 PM - 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 8 | 1 | 0 | 0 | 31 | 17 | 2 | 0 | 0 | 31 | 47 | 6 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 297 | 0 | 97 | 48 | 0 | 0 | 431 | 221 | 19 | 0 | 0 | 339 | 481 | 61 |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HOUR | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 7:30 AM - 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 49 | 13 | 0 | 0 | 120 | 91 | 18 | 0 | 0 | 215 | 453 | 22 |
| 4:00 PM - 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 173 | 0 | 56 | 28 | 0 | 0 | 232 | 133 | 11 | 0 | 0 | 176 | 238 | 36 |



Ave 17

## 用［田四 畔 Metro Traftic Data Inc．

Metro Traffic Data Inc．
310 N．Irwin Street－Suite 20
Hanford，CA 93230

800－975－6938 Phone／Fax
www．metrotrafficdata．com

## Turning Movement Report

Prepared For：
Peters Engineering Group
862 Pollasky Avenue

LOCATION $\qquad$ Madera
COUNTY $\qquad$
LONGITUDE $\quad-120.1046$

COLLECTION DATE＿Wednesday，February 16， 2022
$\qquad$ WEATHER $\qquad$

| Time | Northbound Bikes |  |  | $\begin{gathered} \text { N.Leg } \\ \text { Peds } \\ \hline \end{gathered}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \end{aligned}$ | Eastbound Bikes |  |  | $\begin{aligned} & \hline \text { E.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Westbound Bikes |  |  | W．Leg Peds |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 7：00 AM－7：15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7：15 AM－7：30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |
| 7：30 AM－7：45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7：45 AM－8：00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：00 AM－8：15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：15 AM－8：30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：30 AM－8：45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：45 AM－9：00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| Time | Northbound Bikes |  |  | $\begin{gathered} \hline \text { N.Leg } \\ \text { Peds } \\ \hline \end{gathered}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Eastbound Bikes |  |  | $\begin{aligned} & \hline \text { E.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Westbound Bikes |  |  | $\begin{aligned} & \hline \text { W.Leg } \\ & \text { Peds } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 4：00 PM－4：15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：15 PM－4：30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：30 PM－4：45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：45 PM－5：00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：00 PM－5：15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：15 PM－5：30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：30 PM－5：45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：45 PM－6：00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


|  | Northbound Bikes |  |  | $\begin{gathered} \hline \text { N.Leg } \\ \text { Peds } \end{gathered}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Eastbound Bikes |  |  | $\begin{aligned} & \hline \text { E.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Westbound Bikes |  |  | W．Leg Peds |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HOUR | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 7：30 AM－8：30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：00 PM－5：00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


|  | Bikes | Peds |
| :---: | :---: | :---: |
| AM Peak Total | 0 | 0 |
| PM Peak Total | $\mathbf{0}$ | $\mathbf{0}$ |

Ave 17


Ave 17

Page 2 of 3

## "\#\#\#\# \#\# Matro Traticic Data Inc.

Metro Traffic Data Inc. 310 N. Irwin Street - Suite 20 Hanford, CA 93230

## 800-975-6938 Phone/Fax

 www.metrotrafficdata.com
## Turning Movement Report

Prepared For

| LOCATION | Ave 17 @ SR 99 SB Ramps |
| ---: | :---: |
|  | Madera |
| COUNTY | Wednesday, February 16, 2022 |
| COLLECTION DATE | N/A |


| N/S STREET | SR 99 SB Ramps / SR 99 SB Ramps |
| :--- | :---: |
| E/W STREET | Ave 17 / Ave 17 |

CYCLE TIME $\qquad$
WEATHER $\qquad$
CONTROL TYPE $\qquad$

COMMENTS

## dOIS <br> North



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax

## 24 Hour Count Report

Prepared For:
Peters Engineering Group

862 Pollasky Avenue
Clovis, CA 93612

STREET $\qquad$ SR 99 SB Ramps North of Ave 17
SEGMENT $\qquad$
COLLECTION DATE $\qquad$ Wednesday, February 16, 2022 2 South / 1 North

|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Hourly |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hour | 1st | 2nd | 3rd | 4th | Total | 1st | 2nd | 3rd | 4th | Total | Totals |
| 12:00 AM | 11 | 7 | 5 | 4 | 27 | 6 | 9 | 3 | 4 | 22 | 49 |
| 1:00 AM | 2 | 5 | 2 | 2 | 11 | 7 | 4 | 5 | 5 | 21 | 32 |
| 2:00 AM | 3 | 4 | 5 | 2 | 14 | 5 | 1 | 4 | 2 | 12 | 26 |
| 3:00 AM | 5 | 6 | 6 | 12 | 29 | 8 | 9 | 5 | 9 | 31 | 60 |
| 4:00 AM | 5 | 19 | 21 | 13 | 58 | 4 | 8 | 7 | 9 | 28 | 86 |
| 5:00 AM | 26 | 31 | 48 | 47 | 152 | 14 | 15 | 15 | 12 | 56 | 208 |
| 6:00 AM | 58 | 72 | 71 | 94 | 295 | 11 | 20 | 21 | 26 | 78 | 373 |
| 7:00 AM | 87 | 106 | 122 | 120 | 435 | 19 | 32 | 45 | 34 | 130 | 565 |
| 8:00 AM | 110 | 101 | 58 | 51 | 320 | 30 | 35 | 25 | 29 | 119 | 439 |
| 9:00 AM | 52 | 52 | 42 | 50 | 196 | 29 | 22 | 26 | 29 | 106 | 302 |
| 10:00 AM | 40 | 47 | 47 | 41 | 175 | 27 | 23 | 21 | 22 | 93 | 268 |
| 11:00 AM | 36 | 47 | 43 | 55 | 181 | 31 | 28 | 30 | 37 | 126 | 307 |
| 12:00 PM | 50 | 53 | 52 | 46 | 201 | 29 | 37 | 28 | 38 | 132 | 333 |
| 1:00 PM | 47 | 55 | 61 | 61 | 224 | 33 | 27 | 46 | 28 | 134 | 358 |
| 2:00 PM | 63 | 76 | 54 | 55 | 248 | 42 | 38 | 45 | 45 | 170 | 418 |
| 3:00 PM | 67 | 70 | 67 | 65 | 269 | 43 | 56 | 69 | 65 | 233 | 502 |
| 4:00 PM | 66 | 49 | 56 | 67 | 238 | 59 | 66 | 53 | 51 | 229 | 467 |
| 5:00 PM | 57 | 61 | 78 | 47 | 243 | 39 | 53 | 40 | 33 | 165 | 408 |
| 6:00 PM | 61 | 37 | 36 | 43 | 177 | 38 | 35 | 29 | 29 | 131 | 308 |
| 7:00 PM | 25 | 19 | 17 | 21 | 82 | 21 | 22 | 18 | 28 | 89 | 171 |
| 8:00 PM | 19 | 21 | 22 | 24 | 86 | 25 | 16 | 21 | 19 | 81 | 167 |
| 9:00 PM | 17 | 14 | 18 | 17 | 66 | 2 | 14 | 8 | 18 | 42 | 108 |
| 10:00 PM | 8 | 7 | 10 | 7 | 32 | 10 | 9 | 9 | 9 | 37 | 69 |
| 11:00 PM | 7 | 4 | 7 | 7 | 25 | 5 | 5 | 5 | 9 | 24 | 49 |
| Total | 62.3\% |  |  |  | 3784 | 37.7\% |  |  |  | 2289 |  |
|  | 6073 |  |  |  |  |  |  |  |  |  |  |
| AM\% | 44.7\% |  | Peak |  | 7:15 am | to 8: |  |  | P.H.F | 0.90 |  |
| PM\% | 55.3\% |  | Peak |  | 3:15 pm | to 4: | pm |  | P.H.F | 0.95 |  |



Mero Tratific ata inc.
310 N. Irwin Street - Suite 20

## 24 Hour Count Report

$$
\text { Hanford, CA } 93230
$$

800-975-6938 Phone/Fa
Prepared For: Peters Engineering Group 862 Pollasky Avenue
Clovis, CA 93612

STREET $\qquad$ SR 99 SB On-ramp South of Ave 17
SEGMENT $\qquad$
COLLECTION DATE $\qquad$ Wednesday, February 16, 2022
$\qquad$

|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Hourly |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hour | 1st | 2nd | 3rd | 4th | Total | 1st | 2nd | 3rd | 4th | Total | Totals |
| 12:00 AM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 2 | 7 | 7 |
| 1:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 6 | 6 |
| 2:00 AM | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 3 | 10 | 10 |
| 3:00 AM | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 3 | 9 | 9 |
| 4:00 AM | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 8 | 5 | 20 | 20 |
| 5:00 AM | 0 | 0 | 0 | 0 | 0 | 9 | 6 | 2 | 13 | 30 | 30 |
| 6:00 AM | 0 | 0 | 0 | 0 | 0 | 18 | 14 | 17 | 12 | 61 | 61 |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 15 | 16 | 17 | 36 | 84 | 84 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 20 | 18 | 15 | 10 | 63 | 63 |
| 9:00 AM | 0 | 0 | 0 | 0 | 0 | 18 | 13 | 13 | 26 | 70 | 70 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 15 | 16 | 10 | 10 | 51 | 51 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 20 | 27 | 15 | 22 | 84 | 84 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 25 | 17 | 22 | 15 | 79 | 79 |
| 1:00 PM | 0 | 0 | 0 | 0 | 0 | 13 | 16 | 20 | 26 | 75 | 75 |
| 2:00 PM | 0 | 0 | 0 | 0 | 0 | 33 | 21 | 39 | 29 | 122 | 122 |
| 3:00 PM | 0 | 0 | 0 | 0 | 0 | 19 | 39 | 33 | 33 | 124 | 124 |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 43 | 28 | 36 | 26 | 133 | 133 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 32 | 25 | 14 | 17 | 88 | 88 |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 16 | 21 | 15 | 15 | 67 | 67 |
| 7:00 PM | 0 | 0 | 0 | 0 | 0 | 14 | 6 | 12 | 15 | 47 | 47 |
| 8:00 PM | 0 | 0 | 0 | 0 | 0 | 15 | 13 | 6 | 8 | 42 | 42 |
| 9:00 PM | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 12 | 3 | 27 | 27 |
| 10:00 PM | 0 | 0 | 0 | 0 | 0 | 10 | 4 | 3 | 1 | 18 | 18 |
| 11:00 PM | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 3 | 3 | 12 | 12 |
| Total | 0.0\% |  |  |  | 0 | 100.0\% |  |  |  | 1329 |  |
|  | 1329 |  |  |  |  |  |  |  |  |  |  |
| AM\% | 37.2\% | AM Peak 91 |  |  | 7:30 am to 8:30 am |  |  | AM P.H.F. 0.63 |  |  |  |
| PM\% | 62.8\% | PM Peak 148 |  |  | 3:15 pm to 4:15 pm |  |  | PM P.H.F. |  | 0.86 |  |



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

## 24 Hour Count Report

Prepared For: Peters Engineering Group 862 Pollasky Avenue
Clovis, CA 93612

STREET $\qquad$ LATITUDE 36.9964405

SEGMENT $\qquad$ West of SR 99 SB Ramps

LONGITUDE $\qquad$
COLLECTION DATE $\qquad$ WEATHER $\qquad$

NUMBER OF LANES $\qquad$

|  | Eastbound |  |  |  |  | Westbound |  |  |  |  | Hourly Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hour | 1st | 2nd | 3rd | 4th | Total | 1st | 2nd | 3rd | 4th | Total |  |
| 12:00 AM | 5 | 8 | 5 | 3 | 21 | 3 | 12 | 2 | 5 | 22 | 43 |
| 1:00 AM | 0 | 3 | 3 | 3 | 9 | 1 | 3 | 3 | 3 | 10 | 19 |
| 2:00 AM | 7 | 1 | 9 | 4 | 21 | 3 | 4 | 3 | 5 | 15 | 36 |
| 3:00 AM | 7 | 9 | 6 | 10 | 32 | 7 | 8 | 23 | 26 | 64 | 96 |
| 4:00 AM | 10 | 6 | 14 | 11 | 41 | 7 | 20 | 19 | 32 | 78 | 119 |
| 5:00 AM | 24 | 18 | 14 | 22 | 78 | 34 | 40 | 50 | 68 | 192 | 270 |
| 6:00 AM | 33 | 39 | 38 | 25 | 135 | 54 | 63 | 64 | 53 | 234 | 369 |
| 7:00 AM | 37 | 37 | 34 | 76 | 184 | 47 | 56 | 64 | 77 | 244 | 428 |
| 8:00 AM | 67 | 34 | 41 | 40 | 182 | 58 | 65 | 64 | 53 | 240 | 422 |
| 9:00 AM | 51 | 30 | 45 | 58 | 184 | 54 | 36 | 50 | 47 | 187 | 371 |
| 10:00 AM | 36 | 42 | 38 | 37 | 153 | 44 | 49 | 29 | 48 | 170 | 323 |
| 11:00 AM | 39 | 56 | 50 | 50 | 195 | 54 | 57 | 49 | 56 | 216 | 411 |
| 12:00 PM | 51 | 49 | 56 | 47 | 203 | 39 | 50 | 48 | 57 | 194 | 397 |
| 1:00 PM | 43 | 49 | 59 | 51 | 202 | 48 | 53 | 47 | 43 | 191 | 393 |
| 2:00 PM | 68 | 62 | 90 | 81 | 301 | 57 | 53 | 54 | 62 | 226 | 527 |
| 3:00 PM | 66 | 89 | 98 | 99 | 352 | 52 | 58 | 58 | 57 | 225 | 577 |
| 4:00 PM | 100 | 92 | 97 | 76 | 365 | 64 | 65 | 43 | 60 | 232 | 597 |
| 5:00 PM | 108 | 62 | 69 | 48 | 287 | 58 | 63 | 44 | 39 | 204 | 491 |
| 6:00 PM | 54 | 55 | 38 | 39 | 186 | 48 | 37 | 28 | 46 | 159 | 345 |
| 7:00 PM | 28 | 25 | 22 | 35 | 110 | 27 | 25 | 32 | 44 | 128 | 238 |
| 8:00 PM | 41 | 28 | 16 | 14 | 99 | 38 | 22 | 27 | 27 | 114 | 213 |
| 9:00 PM | 27 | 13 | 23 | 15 | 78 | 19 | 16 | 18 | 29 | 82 | 160 |
| 10:00 PM | 26 | 14 | 7 | 8 | 55 | 13 | 11 | 6 | 8 | 38 | 93 |
| 11:00 PM | 11 | 6 | 7 | 1 | 25 | 11 | 7 | 5 | 3 | 26 | 51 |
| Total | 50.1\% |  |  |  | 3498 | 49.9\% |  |  |  | 3491 |  |
|  | 6989 |  |  |  |  |  |  |  |  |  |  |
| AM\% | 41.6\% | AM Peak 482 |  |  | 7:45 am to 8:45 am |  |  | AM P.H.F. 0.79 |  |  |  |
| PM\% | 58.4\% | PM Peak 633 |  |  | 3:30 pm to 4:30 pm |  |  | PM P.H.F. |  | 0.96 |  |



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For

Peters Engineering Group
862 Pollasky Avenue
Clovis, CA 93612

| LOCATION | Ave 17 @ SR 99 NB Ramps |
| :---: | :---: |
| COUNTY | Madera |

COLLECTION DATE $\qquad$

| LATITUDE | 36.9965 |
| ---: | :---: |
| LONGITUDE | -120.1014 |
| WEATHER | Clear |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 7:00 AM - 7:15 AM | 0 | 22 | 1 | 42 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 24 | 0 | 6 | 0 | 0 | 105 | 29 | 8 |
| 7:15 AM - 7:30 AM | 0 | 22 | 0 | 46 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 31 | 0 | 6 | 0 | 0 | 126 | 39 | 12 |
| 7:30 AM - 7:45 AM | 0 | 25 | 0 | 53 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 41 | 0 | 2 | 0 | 0 | 146 | 45 | 20 |
| 7:45 AM - 8:00 AM | 0 | 34 | 0 | 60 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 57 | 0 | 4 | 0 | 0 | 158 | 31 | 13 |
| 8:00 AM - 8:15 AM | 0 | 19 | 1 | 51 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 51 | 0 | 7 | 0 | 0 | 137 | 37 | 11 |
| 8:15 AM - 8:30 AM | 0 | 20 | 1 | 52 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 29 | 0 | 2 | 0 | 0 | 130 | 22 | 13 |
| 8:30 AM - 8:45 AM | 0 | 21 | 1 | 45 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 23 | 0 | 5 | 0 | 0 | 84 | 29 | 11 |
| 8:45 AM - 9:00 AM | 0 | 28 | 1 | 47 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 29 | 0 | 5 | 0 | 0 | 64 | 28 | 12 |
| TOTAL | 0 | 191 | 5 | 396 | 68 | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 285 | 0 | 37 | 0 | 0 | 950 | 260 | 100 |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 4:00 PM - 4:15 PM | 0 | 23 | 0 | 115 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 82 | 0 | 10 | 0 | 0 | 93 | 42 | 23 |
| 4:15 PM - 4:30 PM | 0 | 22 | 0 | 98 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 100 | 0 | 6 | 0 | 0 | 75 | 43 | 18 |
| 4:30 PM - 4:45 PM | 0 | 14 | 0 | 115 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 92 | 0 | 5 | 0 | 0 | 76 | 34 | 10 |
| 4:45 PM - 5:00 PM | 0 | 24 | 0 | 117 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 71 | 0 | 6 | 0 | 0 | 89 | 43 | 8 |
| 5:00 PM - 5:15 PM | 0 | 26 | 0 | 112 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 84 | 0 | 7 | 0 | 0 | 78 | 39 | 9 |
| 5:15 PM - 5:30 PM | 0 | 21 | 0 | 114 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 65 | 0 | 2 | 0 | 0 | 90 | 40 | 8 |
| 5:30 PM - 5:45 PM | 0 | 14 | 0 | 104 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 66 | 0 | 9 | 0 | 0 | 101 | 38 | 17 |
| 5:45 PM - 6:00 PM | 0 | 11 | 1 | 110 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 45 | 0 | 4 | 0 | 0 | 65 | 29 | 7 |
| TOTAL | 0 | 155 | 1 | 885 | 87 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 605 | 0 | 49 | 0 | 0 | 667 | 308 | 100 |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HOUR | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 7:15 AM - 8:15 AM | 0 | 100 | 1 | 210 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 180 | 0 | 19 | 0 | 0 | 567 | 152 | 56 |
| 4:00 PM - 5:00 PM | 0 | 83 | 0 | 445 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 345 | 0 | 27 | 0 | 0 | 333 | 162 | 59 |



Ave 17

##  Metro Traficic Data Inc.

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

## Turning Movement Report

Prepared For:
Peters Engineering Group
862 Pollasky Avenue

LOCATION $\qquad$

| LATITUDE | 36.9965 |
| ---: | :---: |
| LONGITUDE | -120.1014 |

COLLECTION DATE _ Wednesday, February 16, 2022
$\qquad$ WEATHER $\qquad$

| Time | Northbound Bikes |  |  | $\begin{gathered} \text { N.Leg } \\ \text { Peds } \\ \hline \end{gathered}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \end{aligned}$ | Eastbound Bikes |  |  | $\begin{aligned} & \hline \text { E.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Westbound Bikes |  |  | W.Leg Peds |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 7:00 AM - 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM - 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM - 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM - 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM - 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM - 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM - 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM - 9:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


| Time | Northbound Bikes |  |  | $\begin{gathered} \hline \text { N.Leg } \\ \text { Peds } \end{gathered}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \end{aligned}$ | Eastbound Bikes |  |  | $\begin{gathered} \hline \text { E.Leg } \\ \text { Peds } \end{gathered}$ | Westbound Bikes |  |  | $\begin{aligned} & \text { W.Leg } \\ & \text { Peds } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 4:00 PM - 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM - 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM - 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM - 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM - 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM - 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM - 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM - 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


|  | Northbound Bikes |  |  | $\begin{gathered} \hline \text { N.Leg } \\ \text { Peds } \end{gathered}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Eastbound Bikes |  |  | $\begin{aligned} & \hline \text { E.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Westbound Bikes |  |  | W.Leg Peds |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HOUR | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 7:15 AM - 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:00 PM - 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


|  |  |  |
| :---: | :---: | :---: |
| Bikes | Peds |  |
| AM Peak Total | 0 | 0 |
| PM Peak Total | $\mathbf{0}$ | $\mathbf{0}$ |

Ave 17


Ave 17

Page 2 of 3

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax www.metrotrafficdata.com

## Turning Movement Report

Prepared For

| LOCATION | Ave 17 @ SR 99 NB Ramps | N/S STREET | SR 99 NB Ramps / SR 99 NB Ramps |
| ---: | :---: | :---: | :---: |
| COUNTY | Madera | E/W STREET | Ave 17 / Ave 17 |
| COLLECTION DATE | Wednesday, February 16, 2022 | WEATHER | Clear |
| CYCLE TIME | N/A | CONTROL TYPE | One-Way Stop |

## COMMENTS

## North



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax

## 24 Hour Count Report

Prepared For:
Peters Engineering Group
862 Pollasky Avenue
Clovis, CA 93612

STREET $\qquad$ SR 99 NB On-ramp North of Ave 17
SEGMENT $\qquad$
COLLECTION DATE $\qquad$ Wednesday, February 16, 2022
$\qquad$

|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Hourly |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hour | 1st | 2nd | 3rd | 4th | Total | 1st | 2nd | 3rd | 4th | Total | Totals |
| 12:00 AM | 4 | 11 | 7 | 9 | 31 | 0 | 0 | 0 | 0 | 0 | 31 |
| 1:00 AM | 10 | 7 | 6 | 11 | 34 | 0 | 0 | 0 | 0 | 0 | 34 |
| 2:00 AM | 6 | 3 | 10 | 11 | 30 | 0 | 0 | 0 | 0 | 0 | 30 |
| 3:00 AM | 10 | 17 | 14 | 16 | 57 | 0 | 0 | 0 | 0 | 0 | 57 |
| 4:00 AM | 18 | 25 | 19 | 21 | 83 | 0 | 0 | 0 | 0 | 0 | 83 |
| 5:00 AM | 50 | 49 | 39 | 70 | 208 | 0 | 0 | 0 | 0 | 0 | 208 |
| 6:00 AM | 81 | 95 | 72 | 52 | 300 | 0 | 0 | 0 | 0 | 0 | 300 |
| 7:00 AM | 40 | 47 | 53 | 40 | 180 | 0 | 0 | 0 | 0 | 0 | 180 |
| 8:00 AM | 52 | 29 | 42 | 46 | 169 | 0 | 0 | 0 | 0 | 0 | 169 |
| 9:00 AM | 54 | 36 | 41 | 37 | 168 | 0 | 0 | 0 | 0 | 0 | 168 |
| 10:00 AM | 32 | 45 | 31 | 48 | 156 | 0 | 0 | 0 | 0 | 0 | 156 |
| 11:00 AM | 40 | 35 | 39 | 35 | 149 | 0 | 0 | 0 | 0 | 0 | 149 |
| 12:00 PM | 49 | 42 | 45 | 58 | 194 | 0 | 0 | 0 | 0 | 0 | 194 |
| 1:00 PM | 41 | 49 | 45 | 61 | 196 | 0 | 0 | 0 | 0 | 0 | 196 |
| 2:00 PM | 64 | 58 | 51 | 48 | 221 | 0 | 0 | 0 | 0 | 0 | 221 |
| 3:00 PM | 55 | 37 | 44 | 48 | 184 | 0 | 0 | 0 | 0 | 0 | 184 |
| 4:00 PM | 59 | 60 | 46 | 57 | 222 | 0 | 0 | 0 | 0 | 0 | 222 |
| 5:00 PM | 61 | 48 | 60 | 41 | 210 | 0 | 0 | 0 | 0 | 0 | 210 |
| 6:00 PM | 37 | 53 | 24 | 28 | 142 | 0 | 0 | 0 | 0 | 0 | 142 |
| 7:00 PM | 29 | 14 | 25 | 27 | 95 | 0 | 0 | 0 | 0 | 0 | 95 |
| 8:00 PM | 21 | 12 | 22 | 18 | 73 | 0 | 0 | 0 | 0 | 0 | 73 |
| 9:00 PM | 19 | 28 | 23 | 14 | 84 | 0 | 0 | 0 | 0 | 0 | 84 |
| 10:00 PM | 20 | 7 | 9 | 8 | 44 | 0 | 0 | 0 | 0 | 0 | 44 |
| 11:00 PM | 10 | 9 | 12 | 15 | 46 | 0 | 0 | 0 | 0 | 0 | 46 |
| Total | 100.0\% |  |  |  | 3276 | 0.0\% |  |  |  | 0 |  |
|  | 3276 |  |  |  |  |  |  |  |  |  |  |
| AM\% | 47.8\% |  | Peak |  | 5:45 am | o 6:4 |  |  | P.H.F | 0.84 |  |
| PM\% | 52.2\% |  | Peak |  | 4:45 pm | to 5: | pm |  | P.H.F | 0.93 |  |



Mero Tratific ata inc.
310 N. Irwin Street - Suite 20

## 24 Hour Count Report

$$
\text { Hanford, CA } 93230
$$

800-975-6938 Phone/Fax
Prepared For:
Peters Engineering Group
862 Pollasky Avenue
Clovis, CA 93612

STREET $\qquad$ SR 99 NB Off-ramp South of Ave 17

LATITUDE $\qquad$
SEGMENT $\qquad$ LONGITUDE $\qquad$
WEATHER $\qquad$

NUMBER OF LANES $\qquad$

|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Hourly Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hour | 1st | 2nd | 3rd | 4th | Total | 1st | 2nd | 3rd | 4th | Total |  |
| 12:00 AM | 10 | 11 | 15 | 11 | 47 | 0 | 0 | 0 | 0 | 0 | 47 |
| 1:00 AM | 15 | 8 | 6 | 8 | 37 | 0 | 0 | 0 | 0 | 0 | 37 |
| 2:00 AM | 9 | 10 | 8 | 9 | 36 | 0 | 0 | 0 | 0 | 0 | 36 |
| 3:00 AM | 13 | 11 | 21 | 22 | 67 | 0 | 0 | 0 | 0 | 0 | 67 |
| 4:00 AM | 14 | 18 | 15 | 30 | 77 | 0 | 0 | 0 | 0 | 0 | 77 |
| 5:00 AM | 25 | 28 | 38 | 55 | 146 | 0 | 0 | 0 | 0 | 0 | 146 |
| 6:00 AM | 44 | 52 | 50 | 56 | 202 | 0 | 0 | 0 | 0 | 0 | 202 |
| 7:00 AM | 65 | 68 | 78 | 94 | 305 | 0 | 0 | 0 | 0 | 0 | 305 |
| 8:00 AM | 71 | 73 | 67 | 76 | 287 | 0 | 0 | 0 | 0 | 0 | 287 |
| 9:00 AM | 62 | 55 | 61 | 62 | 240 | 0 | 0 | 0 | 0 | 0 | 240 |
| 10:00 AM | 67 | 55 | 64 | 60 | 246 | 0 | 0 | 0 | 0 | 0 | 246 |
| 11:00 AM | 65 | 64 | 86 | 102 | 317 | 0 | 0 | 0 | 0 | 0 | 317 |
| 12:00 PM | 82 | 80 | 94 | 75 | 331 | 0 | 0 | 0 | 0 | 0 | 331 |
| 1:00 PM | 84 | 77 | 88 | 85 | 334 | 0 | 0 | 0 | 0 | 0 | 334 |
| 2:00 PM | 93 | 96 | 104 | 78 | 371 | 0 | 0 | 0 | 0 | 0 | 371 |
| 3:00 PM | 127 | 98 | 109 | 120 | 454 | 0 | 0 | 0 | 0 | 0 | 454 |
| 4:00 PM | 138 | 120 | 129 | 141 | 528 | 0 | 0 | 0 | 0 | 0 | 528 |
| 5:00 PM | 138 | 135 | 118 | 122 | 513 | 0 | 0 | 0 | 0 | 0 | 513 |
| 6:00 PM | 127 | 87 | 80 | 84 | 378 | 0 | 0 | 0 | 0 | 0 | 378 |
| 7:00 PM | 45 | 58 | 63 | 58 | 224 | 0 | 0 | 0 | 0 | 0 | 224 |
| 8:00 PM | 58 | 53 | 60 | 60 | 231 | 0 | 0 | 0 | 0 | 0 | 231 |
| 9:00 PM | 59 | 51 | 30 | 38 | 178 | 0 | 0 | 0 | 0 | 0 | 178 |
| 10:00 PM | 31 | 27 | 24 | 28 | 110 | 0 | 0 | 0 | 0 | 0 | 110 |
| 11:00 PM | 21 | 18 | 18 | 14 | 71 | 0 | 0 | 0 | 0 | 0 | 71 |
| Total | 100.0\% |  |  |  | 5730 | 0.0\% |  |  |  | 0 |  |
|  | 5730 |  |  |  |  |  |  |  |  |  |  |
| AM\% | 35.0\% | AM Peak 317 |  |  | 11:00 am to 12:00 pm |  |  | AM P.H.F. 0.78 |  |  |  |
| PM\% | 65.0\% | PM Peak 543 |  |  | 4:30 pm to 5:30 pm |  |  | PM P.H.F. 0.96 |  |  |  |



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

## 24 Hour Count Report

Prepared For:
Peters Engineering Group 862 Pollasky Avenue
Clovis, CA 93612

| STREET | Ave 17 | LATITUDE | 36.99645171 |  |
| ---: | :---: | :---: | :---: | :---: |
| SEGMENT | East of SR 99 NB Ramps |  | LONGITUDE | -120.1006079 |
| COLLECTION DATE | Wednesday, February 16, 2022 |  |  | Clear |

NUMBER OF LANES $\qquad$

|  | Eastbound |  |  |  |  | Westbound |  |  |  |  | Hourly Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hour | 1st | 2nd | 3rd | 4th | Total | 1st | 2nd | 3rd | 4th | Total |  |
| 12:00 AM | 18 | 13 | 17 | 12 | 60 | 16 | 16 | 9 | 14 | 55 | 115 |
| 1:00 AM | 18 | 10 | 8 | 8 | 44 | 9 | 12 | 9 | 9 | 39 | 83 |
| 2:00 AM | 11 | 11 | 15 | 7 | 44 | 7 | 10 | 15 | 12 | 44 | 88 |
| 3:00 AM | 17 | 14 | 12 | 16 | 59 | 13 | 19 | 25 | 31 | 88 | 147 |
| 4:00 AM | 12 | 13 | 15 | 23 | 63 | 18 | 48 | 46 | 44 | 156 | 219 |
| 5:00 AM | 24 | 22 | 30 | 37 | 113 | 80 | 86 | 102 | 146 | 414 | 527 |
| 6:00 AM | 42 | 35 | 46 | 52 | 175 | 165 | 175 | 161 | 156 | 657 | 832 |
| 7:00 AM | 66 | 77 | 94 | 117 | 354 | 134 | 165 | 191 | 189 | 679 | 1033 |
| 8:00 AM | 102 | 81 | 68 | 76 | 327 | 174 | 152 | 113 | 92 | 531 | 858 |
| 9:00 AM | 85 | 72 | 76 | 88 | 321 | 119 | 103 | 90 | 99 | 411 | 732 |
| 10:00 AM | 73 | 71 | 89 | 79 | 312 | 73 | 104 | 84 | 109 | 370 | 682 |
| 11:00 AM | 77 | 86 | 114 | 126 | 403 | 92 | 101 | 94 | 104 | 391 | 794 |
| 12:00 PM | 105 | 111 | 121 | 99 | 436 | 104 | 109 | 113 | 115 | 441 | 877 |
| 1:00 PM | 112 | 90 | 129 | 109 | 440 | 102 | 113 | 106 | 137 | 458 | 898 |
| 2:00 PM | 114 | 132 | 156 | 131 | 533 | 127 | 147 | 118 | 117 | 509 | 1042 |
| 3:00 PM | 175 | 163 | 198 | 208 | 744 | 132 | 128 | 120 | 128 | 508 | 1252 |
| 4:00 PM | 197 | 198 | 207 | 188 | 790 | 135 | 118 | 110 | 132 | 495 | 1285 |
| 5:00 PM | 196 | 179 | 170 | 155 | 700 | 117 | 130 | 139 | 94 | 480 | 1180 |
| 6:00 PM | 173 | 126 | 109 | 108 | 516 | 116 | 100 | 68 | 84 | 368 | 884 |
| 7:00 PM | 59 | 78 | 64 | 73 | 274 | 59 | 39 | 48 | 60 | 206 | 480 |
| 8:00 PM | 75 | 66 | 65 | 65 | 271 | 44 | 40 | 45 | 49 | 178 | 449 |
| 9:00 PM | 61 | 61 | 36 | 47 | 205 | 38 | 44 | 50 | 35 | 167 | 372 |
| 10:00 PM | 40 | 40 | 32 | 37 | 149 | 26 | 16 | 20 | 18 | 80 | 229 |
| 11:00 PM | 26 | 26 | 25 | 18 | 95 | 19 | 19 | 23 | 22 | 83 | 178 |
| Total | 48.8\% |  |  |  | 7428 | 51.2\% |  |  |  | 7808 |  |

AM\% 40.1\%
PM\% 59.9\%

AM Peak 1109 7:15 am to 8:15 am
PM Peak 1302 3:30 pm to 4:30 pm

AM P.H.F. 0.91
PM P.H.F. 0.97


Mero Trattic oata inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

## 24 Hour Count Report

| STREET | Ave 17 | LATITUDE | 36.99644229 |
| ---: | :---: | :---: | :---: |
|  | West of SR 99 NB Ramps |  | -120.1020237 |
| COLLECTION DATE | Wednesday, February 16, 2022 |  | LONGITUDE |

NUMBER OF LANES $\qquad$

|  | Eastbound |  |  |  |  | Westbound |  |  |  |  | Hourly Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hour | 1st | 2nd | 3rd | 4th | Total | 1st | 2nd | 3rd | 4th | Total |  |
| 12:00 AM | 9 | 12 | 7 | 5 | 33 | 13 | 15 | 7 | 9 | 44 | 77 |
| 1:00 AM | 7 | 4 | 4 | 7 | 22 | 3 | 7 | 5 | 5 | 20 | 42 |
| 2:00 AM | 8 | 2 | 10 | 3 | 23 | 7 | 8 | 8 | 6 | 29 | 52 |
| 3:00 AM | 10 | 11 | 7 | 13 | 41 | 9 | 10 | 27 | 34 | 80 | 121 |
| 4:00 AM | 8 | 7 | 9 | 9 | 33 | 10 | 35 | 36 | 39 | 120 | 153 |
| 5:00 AM | 20 | 16 | 14 | 12 | 62 | 51 | 59 | 85 | 106 | 301 | 363 |
| 6:00 AM | 20 | 37 | 36 | 27 | 120 | 106 | 134 | 129 | 135 | 504 | 624 |
| 7:00 AM | 34 | 39 | 49 | 66 | 188 | 127 | 148 | 171 | 192 | 638 | 826 |
| 8:00 AM | 65 | 35 | 35 | 46 | 181 | 156 | 150 | 105 | 92 | 503 | 684 |
| 9:00 AM | 51 | 32 | 44 | 51 | 178 | 93 | 82 | 78 | 87 | 340 | 518 |
| 10:00 AM | 36 | 40 | 38 | 42 | 156 | 71 | 83 | 66 | 84 | 304 | 460 |
| 11:00 AM | 39 | 46 | 55 | 55 | 195 | 79 | 90 | 82 | 100 | 351 | 546 |
| 12:00 PM | 45 | 58 | 53 | 54 | 210 | 77 | 94 | 94 | 87 | 352 | 562 |
| 1:00 PM | 54 | 41 | 69 | 48 | 212 | 87 | 92 | 89 | 100 | 368 | 580 |
| 2:00 PM | 57 | 64 | 81 | 80 | 282 | 99 | 117 | 96 | 96 | 408 | 690 |
| 3:00 PM | 77 | 92 | 119 | 119 | 407 | 106 | 118 | 106 | 111 | 441 | 848 |
| 4:00 PM | 99 | 117 | 104 | 85 | 405 | 116 | 97 | 90 | 113 | 416 | 821 |
| 5:00 PM | 106 | 73 | 88 | 56 | 323 | 104 | 111 | 115 | 76 | 406 | 729 |
| 6:00 PM | 67 | 62 | 48 | 45 | 222 | 100 | 70 | 63 | 77 | 310 | 532 |
| 7:00 PM | 29 | 35 | 26 | 36 | 126 | 45 | 40 | 48 | 54 | 187 | 313 |
| 8:00 PM | 37 | 26 | 26 | 20 | 109 | 43 | 41 | 44 | 46 | 174 | 283 |
| 9:00 PM | 18 | 22 | 15 | 21 | 76 | 35 | 28 | 36 | 33 | 132 | 208 |
| 10:00 PM | 21 | 17 | 12 | 15 | 65 | 18 | 13 | 15 | 16 | 62 | 127 |
| 11:00 PM | 12 | 9 | 9 | 6 | 36 | 16 | 11 | 13 | 9 | 49 | 85 |
| Total | 36.2\% |  |  |  | 3705 | 63.8\% |  |  |  | 6539 |  |
|  | 10244 |  |  |  |  |  |  |  |  |  |  |
| AM\% | 43.6\% | AM Peak 886 |  |  | 7:15 am to 8:15 am |  |  | AM P.H.F. 0.86 |  |  |  |
| PM\% | 56.4\% | PM Peak 884 |  |  | 3:30 pm to 4:30 pm |  |  | PM P.H.F. |  | 0.96 |  |



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For

Peters Engineering Group
862 Pollasky Avenue
Clovis, CA 93612

| LOCATION | Ave $17 @$ Golden State Blvd / Airport Dr | LATITUDE | Madera |
| ---: | :---: | :---: | :---: |
| COUNTY | LONGITUDE |  |  |
| COLLECTION DATE | Wednesday, February 16, 2022 | WEATHER | -120.1062 |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 7:00 AM - 7:15 AM | 0 | 2 | 4 | 8 | 1 | 0 | 18 | 4 | 0 | 0 | 0 | 0 | 11 | 1 | 1 | 0 | 21 | 9 | 16 | 2 |
| 7:15 AM - 7:30 AM | 0 | 1 | 6 | 9 | 2 | 0 | 17 | 3 | 1 | 0 | 0 | 2 | 11 | 8 | 4 | 0 | 28 | 11 | 20 | 2 |
| 7:30 AM - 7:45 AM | 0 | 0 | 7 | 10 | 2 | 0 | 13 | 4 | 0 | 0 | 0 | 0 | 12 | 3 | 1 | 0 | 29 | 13 | 20 | 3 |
| 7:45 AM - 8:00 AM | 0 | 3 | 9 | 28 | 3 | 0 | 20 | 7 | 2 | 2 | 0 | 1 | 27 | 7 | 0 | 0 | 37 | 17 | 22 | 3 |
| 8:00 AM - 8:15 AM | 0 | 1 | 8 | 18 | 7 | 0 | 23 | 5 | 3 | 0 | 0 | 2 | 26 | 2 | 2 | 0 | 27 | 15 | 16 | 3 |
| 8:15 AM - 8:30 AM | 0 | 2 | 4 | 9 | 1 | 0 | 19 | 3 | 0 | 0 | 0 | 1 | 7 | 1 | 0 | 0 | 27 | 13 | 25 | 2 |
| 8:30 AM - 8:45 AM | 0 | 1 | 5 | 11 | 0 | 0 | 26 | 6 | 2 | 1 | 0 | 1 | 5 | 3 | 1 | 0 | 27 | 14 | 22 | 2 |
| 8:45 AM - 9:00 AM | 0 | 0 | 2 | 16 | 2 | 0 | 15 | 4 | 1 | 0 | 0 | 1 | 7 | 2 | 1 | 0 | 20 | 9 | 22 | 2 |
| TOTAL | 0 | 10 | 45 | 109 | 18 | 0 | 151 | 36 | 9 | 3 | 0 | 8 | 106 | 27 | 10 | 0 | 216 | 101 | 163 | 19 |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 4:00 PM - 4:15 PM | 0 | 8 | 7 | 36 | 4 | 0 | 38 | 8 | 1 | 2 | 0 | 5 | 27 | 6 | 1 | 0 | 21 | 16 | 27 | 6 |
| 4:15 PM - 4:30 PM | 0 | 2 | 5 | 30 | 1 | 0 | 39 | 7 | 1 | 1 | 0 | 2 | 25 | 4 | 0 | 0 | 22 | 10 | 31 | 5 |
| 4:30 PM - 4:45 PM | 0 | 9 | 8 | 45 | 2 | 0 | 23 | 5 | 2 | 1 | 0 | 3 | 29 | 5 | 1 | 0 | 12 | 9 | 21 | 1 |
| 4:45 PM - 5:00 PM | 0 | 2 | 6 | 22 | 1 | 0 | 30 | 8 | 2 | 0 | 0 | 2 | 22 | 3 | 0 | 0 | 19 | 12 | 31 | 5 |
| 5:00 PM - 5:15 PM | 0 | 2 | 4 | 48 | 0 | 0 | 32 | 4 | 2 | 0 | 1 | 3 | 30 | 4 | 1 | 1 | 11 | 13 | 34 | 2 |
| 5:15 PM - 5:30 PM | 0 | 3 | 3 | 16 | 0 | 0 | 24 | 5 | 2 | 0 | 0 | 1 | 19 | 6 | 1 | 0 | 18 | 10 | 34 | 5 |
| 5:30 PM - 5:45 PM | 0 | 4 | 4 | 13 | 2 | 0 | 21 | 2 | 4 | 4 | 0 | 3 | 21 | 6 | 0 | 0 | 14 | 9 | 21 | 3 |
| 5:45 PM - 6:00 PM | 0 | 1 | 6 | 16 | 1 | 0 | 20 | 4 | 2 | 0 | 0 | 2 | 14 | 6 | 2 | 0 | 14 | 8 | 15 | 1 |
| TOTAL | 0 | 31 | 43 | 226 | 11 | 0 | 227 | 43 | 16 | 8 | 1 | 21 | 187 | 40 | 6 | 1 | 131 | 87 | 214 | 28 |


|  | Northbound |  |  |  |  | Southbound |  |  |  |  | Eastbound |  |  |  |  | Westbound |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HOUR | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks | U-Turn | Left | Thru | Right | Trucks |
| 7:45 AM - 8:45 AM | 0 | 7 | 26 | 66 | 11 | 0 | 88 | 21 | 7 | 3 | 0 | 5 | 65 | 13 | 3 | 0 | 118 | 59 | 85 | 10 |
| 4:00 PM - 5:00 PM | 0 | 21 | 26 | 133 | 8 | 0 | 130 | 28 | 6 | 4 | 0 | 12 | 103 | 18 | 2 | 0 | 74 | 47 | 110 | 17 |



Ave 17

## 用［田四 畔 Metro Traficic Data Inc．

Metro Traffic Data Inc．
310 N．Irwin Street－Suite 20
Hanford，CA 93230

800－975－6938 Phone／Fax
www．metrotrafficdata．com

## Turning Movement Report

Prepared For：
JLB Traffic Engineering，Inc．
516 W．Shaw Ave，Suite 103

| LOCATION | Ave 17 ＠Golden State Blvd／Airport Dr | LATITUDE | 36.9965 |
| ---: | :---: | :---: | :---: |
| COUNTY | Madera | LONGITUDE | -120.1062 |
| COLLECTION DATE | Wednesday，February 16,2022 |  | Clear |


|  | Northbound Bikes |  |  | $\begin{aligned} & \hline \text { N.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \end{aligned}$ | Eastbound Bikes |  |  | $\begin{gathered} \hline \text { E.Leg } \\ \text { Peds } \end{gathered}$ | Westbound Bikes |  |  | $\begin{aligned} & \text { W.Leg } \\ & \text { Peds } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 7：00 AM－7：15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7：15 AM－7：30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7：30 AM－7：45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7：45 AM－8：00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：00 AM－8：15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：15 AM－8：30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：30 AM－8：45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8：45 AM－9：00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | ound |  | N．Leg |  | bound |  | S．Leg |  | ound |  | E．Leg |  | ound |  | W．Leg |
| Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds |
| 4：00 PM－4：15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：15 PM－4：30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：30 PM－4：45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：45 PM－5：00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：00 PM－5：15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：15 PM－5：30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：30 PM－5：45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5：45 PM－6：00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


|  | Northbound Bikes |  |  | $\begin{gathered} \hline \text { N.Leg } \\ \text { Peds } \end{gathered}$ | Southbound Bikes |  |  | $\begin{aligned} & \hline \text { S.Leg } \\ & \text { Peds } \\ & \hline \end{aligned}$ | Eastbound Bikes |  |  | $\begin{gathered} \hline \text { E.Leg } \\ \text { Peds } \end{gathered}$ | Westbound Bikes |  |  | $\begin{aligned} & \hline \text { W.Leg } \\ & \text { Peds } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PEAK HOUR | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  | Left | Thru | Right |  |
| 7：45 AM－8：45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4：00 PM－5：00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Ave 17


Ave 17

Metro Traffic Data Inc． 310 N．Irwin Street－Suite 20 Hanford，CA 93230

800－975－6938 Phone／Fax www．metrotrafficdata．com

## Turning Movement Report

| LOCATION | Ave 17 ＠Golden State Blvd／Airport Dr |  | N／S STREET |
| ---: | :---: | :---: | :---: | Golden State Blvd／Airport Dr

## COMMENTS



North
$\stackrel{\text { sTop }}{ } \mid \uparrow$

# APPENDIX B TRAFFIC SIGNAL ANALYSES 

## Traffic Signal Warrants

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)


The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume
SATISFIED* YES NO $\square$
Record hourly vehicular volumes for any four hours of an average day.


| *All plotted points fall above the applicable curve in Figure 4C-1. (URBANAREAS) | Yes $\square$ No $\square$ |
| :--- | :--- |
| OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS) | Yes $\boxtimes$ No $\square$ |


| WARRANT 3 - Peak Hour |  |  |
| :--- | :--- | :--- |
| (Part A or Part B must be satisfied) | SATISFIED YES 友 NO $\square$ |  |
| PARTA |  |  |
| SATISFIED YES $\square$ NO $\square$ |  |  |

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive $\mathbf{1 5}$-minute periods)

| 1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND | Yes $\square$ No $\square$ |
| :---: | :---: |
| 2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND | Yes $\square$ No $\square$ |
| 3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. | Yes $\square$ No $\square$ |

PARTB



| The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS) | Yes $\square$ No $\square$ |
| :--- | :--- |
| OR. The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS) | Yes $\triangle$ No $\square$ |

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70\% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



## MAJOR STREET -TOTAL OF BOTH APPROACHESVEHICLES PER HOUR (VPH)

*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

(FHWA's MUTCD 2009 Edition, including Revisions 1 \& 2, as amended for use in California)


Figure 4C-4. Warrant 3, Peak Hour (70\% Factor) (COMMUNTY LESS THAN 10,000 POPULATiON OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)


SATISFIED
YES
No

Figure 4C-5 or Figure 4C-6 SATISFIED YES $\square$ NO $\square$

Figure 4C-7 or Figure 4C-8 SATISFIED YES $\square$ NO $\square$

| Part 2 SATISFIED |
| :--- |
| YES $\square$  <br> AND. The distance to the nearest traffic signal along the major street is greater Yes $\square$ <br> than 300 ft $\quad$ No $\square$ |
| OR. The proposed traffic signal will not restrict progressive traffic flow along the major street. |



The satisfaction of a traffic signal warrant or warrants shall not in itself require the instaliation of a traffic control signal.


Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)


The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)


The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)



| The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS) | Yes $\square$ No $\square$ |
| :--- | :--- |
| OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS) | Yes $\boldsymbol{X}$ No $\square$ |

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70\% Factor)



Figure 4C-4. Warrant 3, Peak Hour (70\% Factor) (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

$$
\text { AVE } 17 / 99 \mathrm{NB}
$$

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)


Figure 4C-5 or Figure 4C-6
A.
Part 1 (Parts A or B must be satisfied)

Hours $--->$ \begin{tabular}{|l|l|l|l|}

\hline | Vehicles per hour for |
| :--- |
| any 4 hours | \& \& \& <br>


\hline | Pedestrians per hour for |
| :--- |
| any 4 hours | \& \& \& <br>

\hline
\end{tabular} SATISFIED YES $\qquad$ NO $\square$

B.


Figure 4C-7 or Figure 4C-8 SATISFIED YES SATISFIED YES $\square$ NO $\square$

Part 2
SATISFIED YES $\square$ NO $\square$

| AND, The distance to the nearest traffic signal along the major street is greater <br> than 300 ft | Yes $\square$ No $\square$ |
| :--- | :--- |
| OR, The proposed traffic signal will not restrict progressive traffic flow along the major street. | Yes $\square$ No $\square$ |



The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

| WARRANT 6 - Coordin (All Parts Must Be Satis | ignal System <br> SATISFIED | SATISFIED YES $\square$ NO X |
| :---: | :---: | :---: |
| MINIMUM REQUIREMENTS | DISTANCE TO NEAREST SIGNAL |  |
| $\geq 1000 \mathrm{ft}$ | $\mathrm{N} \ldots \ldots \ldots \mathrm{ft}, \mathrm{S} \ldots \ldots \mathrm{f}, \mathrm{E} \ldots \ldots \mathrm{ft}, \mathrm{W}$ | Yes $\square$ No $\square$ |
| On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning. |  | Yes $\square \mathrm{No} \square$ |
| OR. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation. |  |  |

WARRANT 7-Crash Experience Warrant
(All Parts Must Be Satisfied)

| Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency. |  |  | Yes $\square$ No $\square$ |
| :---: | :---: | :---: | :---: |
| REQUIREMENTS | Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash. |  | Yes $\square$ NoD |
| 5 OR MORE |  |  |  |
| REQUIREMENTS | CONDITIONS | $\checkmark$ | Yes $\square$ No $\square$ |
| ONE CONDITION SATISFIED 80\% | Warrant 1. Condition A Minimum Vehicular Volume |  |  |
|  | QR, Warrant 1, Condition B Interruption of Continuous Traffic |  |  |
|  | OR, Warrant 4, Pedestrian Volume Condition Ped Vol $\geq 80 \%$ of Figure 4C-5 through Figure 4C-8 |  |  |

WARRANT 8 -Roadway Network
SATISFIED YES 込 NO (All Parts Must Be Satisfied)

| MINIMUM VOLUME REQUIREMENTS | ENTERING VOLUMES - ALL APPROACHES |  |  | $\checkmark$ | FULFILLED |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $1000 \mathrm{Veh} / \mathrm{Hr}$ | Duning Typical Weekday Peak Hour $\qquad$ Veh/Hr and has 5 -year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday. <br> OR <br> During Each of Any 5 Hrs. of a Sat. or Sun $\qquad$ Veh/Hr |  |  | $\checkmark$ | Yes $\bar{\square}$ |
| CHARACTERISTICS OF MAJOR ROUTES |  | MAJOR ROUTE A | MA |  | Yes込 No $\square$ |
| Hwy. System Serving as Principal Network for Through Traffic |  | / |  |  |  |
| Rural or Suburban Highway Outside Of, Entering, or Traversing a City |  |  |  |  |  |
| Appears as Major Route on an Official Plan |  |  |  |  |  |
| Any Major Route Characteristics Met, Both Streets |  |  |  |  |  |

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

## Traffic Signal Operational Analyses

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations | ${ }^{7}$ | $\uparrow$ | 「 | \％ | $\uparrow$ | 「 | ${ }^{7}$ | $\uparrow$ | 「 | ${ }^{7}$ | $\hat{\beta}$ |  |
| Traffic Volume（veh／h） | 10 | 138 | 16 | 199 | 106 | 323 | 13 | 50 | 126 | 202 | 32 | 11 |
| Future Volume（veh／h） | 10 | 138 | 16 | 199 | 106 | 323 | 13 | 50 | 126 | 202 | 32 | 11 |
| Initial $Q(Q b)$ ，veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped－Bike Adj（A＿pbT） | 1.00 |  | 0.94 | 1.00 |  | 0.96 | 1.00 |  | 0.94 | 1.00 |  | 0.96 |
| Parking Bus，Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach |  | No |  |  | No |  |  | No |  |  | No |  |
| Adj Sat Flow，veh／h／ln | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 | 1826 |
| Adj Flow Rate，veh／h | 11 | 150 | 13 | 216 | 115 | 239 | 14 | 54 | 89 | 220 | 35 | 12 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh，\％ | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Cap，veh／h | 29 | 329 | 263 | 260 | 572 | 700 | 35 | 318 | 254 | 265 | 393 | 135 |
| Arrive On Green | 0.02 | 0.18 | 0.18 | 0.15 | 0.31 | 0.31 | 0.02 | 0.17 | 0.17 | 0.15 | 0.31 | 0.31 |
| Sat Flow，veh／h | 1739 | 1826 | 1459 | 1739 | 1826 | 1483 | 1739 | 1826 | 1457 | 1739 | 1284 | 440 |
| Grp Volume（v），veh／h | 11 | 150 | 13 | 216 | 115 | 239 | 14 | 54 | 89 | 220 | 0 | 47 |
| Grp Sat Flow（s），veh／h／n | 1739 | 1826 | 1459 | 1739 | 1826 | 1483 | 1739 | 1826 | 1457 | 1739 | 0 | 1724 |
| Q Serve（g＿s），s | 0.5 | 5.3 | 0.5 | 8.8 | 3.4 | 7.5 | 0.6 | 1.8 | 3.9 | 8.9 | 0.0 | 1.4 |
| Cycle Q Clear（g＿c），s | 0.5 | 5.3 | 0.5 | 8.8 | 3.4 | 7.5 | 0.6 | 1.8 | 3.9 | 8.9 | 0.0 | 1.4 |
| Prop In Lane | 1.00 |  | 1.00 | 1.00 |  | 1.00 | 1.00 |  | 1.00 | 1.00 |  | 0.26 |
| Lane Grp Cap（c），veh／h | 29 | 329 | 263 | 260 | 572 | 700 | 35 | 318 | 254 | 265 | 0 | 527 |
| V／C Ratio（X） | 0.38 | 0.46 | 0.05 | 0.83 | 0.20 | 0.34 | 0.40 | 0.17 | 0.35 | 0.83 | 0.00 | 0.09 |
| Avail Cap（c＿a），veh／h | 239 | 879 | 703 | 376 | 1023 | 1066 | 239 | 839 | 670 | 380 | 0 | 932 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter（l） | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay（d），s／veh | 35.4 | 26.6 | 24.6 | 30.0 | 18.3 | 12.4 | 35.2 | 25.5 | 26.4 | 29.9 | 0.0 | 18.0 |
| Incr Delay（d2），s／veh | 8.3 | 1.0 | 0.1 | 10.0 | 0.2 | 0.3 | 7.0 | 0.3 | 0.8 | 10.1 | 0.0 | 0.1 |
| Initial Q Delay（d3），s／veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| \％ile BackOfQ（95\％），veh／ln | 0.4 | 4.0 | 0.3 | 7.3 | 2.3 | 3.8 | 0.5 | 1.4 | 2.3 | 7.6 | 0.0 | 0.9 |
| Unsig．Movement Delay，s／veh |  |  |  |  |  |  |  |  |  |  |  |  |
| LnGrp Delay（d），s／veh | 43.6 | 27.6 | 24.7 | 40.0 | 18.5 | 12.7 | 42.2 | 25.8 | 27.2 | 40.0 | 0.0 | 18.1 |
| LnGrp LOS | D | C | C | D | B | B | D | C | C | D | A | B |
| Approach Vol，veh／h |  | 174 |  |  | 570 |  |  | 157 |  |  | 267 |  |
| Approach Delay，s／veh |  | 28.4 |  |  | 24.2 |  |  | 28.1 |  |  | 36.1 |  |
| Approach LOS |  | C |  |  | C |  |  | C |  |  | D |  |


| Timer－Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Phs Duration $(G+Y+R c), s$ | 16.8 | 19.5 | 16.6 | 19.9 | 7.2 | 29.0 | 6.9 | 29.6 |
| Change Period $(\mathrm{Y}+\mathrm{Rc}$ ），s | ${ }^{*} 5.7$ | 6.8 | $* 5.7$ | 6.8 | ${ }^{*} 5.7$ | 6.8 | ${ }^{*} 5.7$ | 6.8 |
| Max Green Setting（Gmax），s | $* 16$ | 33.4 | $* 16$ | 35.0 | $* 10$ | 39.3 | $* 10$ | 40.7 |
| Max Q Clear Time（g＿c＋11），s | 10.9 | 5.9 | 10.8 | 7.3 | 2.6 | 3.4 | 2.5 | 9.5 |
| Green Ext Time（p＿C），s | 0.3 | 0.5 | 0.2 | 0.8 | 0.0 | 0.2 | 0.0 | 1.4 |

Intersection Summary
HCM 6th Ctrl Delay 28.1
HCM 6th LOS C
Notes
＊HCM 6th computational engine requires equal clearance times for the phases crossing the barrier．


|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | :--- | :--- | :--- |

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations | ${ }^{7}$ | $\uparrow$ | 「 | \％ | $\uparrow$ | 「 | ${ }^{7}$ | $\uparrow$ | 「 | ${ }^{7}$ | $\hat{\beta}$ |  |
| Traffic Volume（veh／h） | 19 | 223 | 21 | 163 | 163 | 413 | 29 | 53 | 219 | 423 | 60 | 11 |
| Future Volume（veh／h） | 19 | 223 | 21 | 163 | 163 | 413 | 29 | 53 | 219 | 423 | 60 | 11 |
| Initial $Q(Q b)$ ，veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped－Bike Adj（A＿pbT） | 1.00 |  | 0.95 | 1.00 |  | 0.96 | 1.00 |  | 0.93 | 1.00 |  | 0.96 |
| Parking Bus，Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach |  | No |  |  | No |  |  | No |  |  | No |  |
| Adj Sat Flow，veh／h／ln | 1841 | 1841 | 1841 | 1841 | 1841 | 1841 | 1841 | 1841 | 1841 | 1841 | 1841 | 1841 |
| Adj Flow Rate，veh／h | 21 | 251 | 3 | 183 | 183 | 377 | 33 | 60 | 75 | 475 | 67 | 5 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh，\％ | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cap，veh／h | 46 | 374 | 300 | 214 | 551 | 902 | 62 | 257 | 203 | 511 | 667 | 50 |
| Arrive On Green | 0.03 | 0.20 | 0.20 | 0.12 | 0.30 | 0.30 | 0.04 | 0.14 | 0.14 | 0.29 | 0.40 | 0.40 |
| Sat Flow，veh／h | 1753 | 1841 | 1477 | 1753 | 1841 | 1494 | 1753 | 1841 | 1454 | 1753 | 1686 | 126 |
| Grp Volume（v），veh／h | 21 | 251 | 3 | 183 | 183 | 377 | 33 | 60 | 75 | 475 | 0 | 72 |
| Grp Sat Flow（s），veh／h／n | 1753 | 1841 | 1477 | 1753 | 1841 | 1494 | 1753 | 1841 | 1454 | 1753 | 0 | 1812 |
| Q Serve（g＿s），s | 1.2 | 12.9 | 0.2 | 10.5 | 7.9 | 14.2 | 1.9 | 3.0 | 4.8 | 27.0 | 0.0 | 2.6 |
| Cycle Q Clear（g＿c），s | 1.2 | 12.9 | 0.2 | 10.5 | 7.9 | 14.2 | 1.9 | 3.0 | 4.8 | 27.0 | 0.0 | 2.6 |
| Prop In Lane | 1.00 |  | 1.00 | 1.00 |  | 1.00 | 1.00 |  | 1.00 | 1.00 |  | 0.07 |
| Lane Grp Cap（c），veh／h | 46 | 374 | 300 | 214 | 551 | 902 | 62 | 257 | 203 | 511 | 0 | 716 |
| V／C Ratio（X） | 0.45 | 0.67 | 0.01 | 0.85 | 0.33 | 0.42 | 0.53 | 0.23 | 0.37 | 0.93 | 0.00 | 0.10 |
| Avail Cap（c＿a），veh／h | 171 | 627 | 503 | 261 | 722 | 1041 | 171 | 617 | 487 | 603 | 0 | 1054 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter（l） | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay（d），s／veh | 49.3 | 37.7 | 32.7 | 44.2 | 28.0 | 11.5 | 48.7 | 39.3 | 40.1 | 35.3 | 0.0 | 19.6 |
| Incr Delay（d2），s／veh | 6.8 | 2.1 | 0.0 | 19.9 | 0.4 | 0.3 | 6.8 | 0.5 | 1.1 | 19.2 | 0.0 | 0.1 |
| Initial Q Delay（d3），s／veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| \％ile BackOfQ（95\％），veh／ln | 1.1 | 9.7 | 0.1 | 9.4 | 6.1 | 7.5 | 1.7 | 2.4 | 3.1 | 20.2 | 0.0 | 2.0 |
| Unsig．Movement Delay，s／veh |  |  |  |  |  |  |  |  |  |  |  |  |
| LnGrp Delay（d），s／veh | 56.1 | 39.8 | 32.7 | 64.1 | 28.3 | 11.8 | 55.4 | 39.8 | 41.2 | 54.6 | 0.0 | 19.6 |
| LnGrp LOS | E | D | C | E | C | B | E | D | D | D | A | B |
| Approach Vol，veh／h |  | 275 |  |  | 743 |  |  | 168 |  |  | 547 |  |
| Approach Delay，s／veh |  | 41.0 |  |  | 28.8 |  |  | 43.5 |  |  | 50.0 |  |
| Approach LOS |  | D |  |  | C |  |  | D |  |  | D |  |


| Timer－Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Phs Duration $(G+Y+R c), s$ | 35.6 | 21.1 | 18.3 | 27.7 | 9.4 | 47.4 | 8.4 | 37.5 |
| Change Period（Y＋Rc），s | ${ }^{*} 5.7$ | 6.8 | $* 5.7$ | 6.8 | $* 5.7$ | 6.8 | $* 5.7$ | 6.8 |
| Max Green Setting（Gmax），s | $* 35$ | 34.4 | $* 15$ | 35.0 | $* 10$ | 59.7 | $* 10$ | 40.3 |
| Max Q Clear Time（g＿c＋11），s | 29.0 | 6.8 | 12.5 | 14.9 | 3.9 | 4.6 | 3.2 | 16.2 |
| Green Ext Time（p＿c），s | 0.9 | 0.5 | 0.1 | 1.2 | 0.0 | 0.4 | 0.0 | 2.3 |

## Intersection Summary

| HCM 6th Ctrl Delay | 38.8 |
| :--- | ---: |
| HCM 6th LOS | $D$ |

## Notes

＊HCM 6th computational engine requires equal clearance times for the phases crossing the barrier．



## Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.


# Traffic Signal Cost Estimate 

Cost Estimate: Avenue 17 and SR 99 SB Ramps, Madera, CA (Figure 4)

| No. | Item Description | Quantity | Units | Unit Cost | Cost |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Mobilization | 1 | LS | \$100,000.00 | \$100,000 |
| 2 | Water Pollution Control Program | 1 | LS | \$25,000.00 | \$25,000 |
| 3 | Traffic Control System | 1 | LS | \$100,000.00 | \$100,000 |
| 4 | Clearing and Grubbing | 1 | LS | \$25,000.00 | \$25,000 |
| 5 | Hot Mix Asphalt | 1,000 | TON | \$100.00 | \$100,000 |
| 6 | Class 2 Aggregate Base | 3,450 | TON | \$40.00 | \$138,000 |
| 7 | Concrete Curb | 232 | LF | \$35.00 | \$8,120 |
| 8 | Concrete Curb and Gutter | 115 | LF | \$35.00 | \$4,025 |
| 9 | Median Island Cap | 2,215 | SF | \$20.00 | \$44,300 |
| 10 | Roadway Excavation | 2,072 | CY | \$15.00 | \$31,080 |
| 11 | Dust Control | 1 | LS | \$10,000.00 | \$10,000 |
| 12 | Pavement Delineation \& Signage | 1 | LS | \$25,000.00 | \$25,000 |
| 13 | Traffic Signals and Lighting | 1 | LS | \$650,000 | \$650,000 |
| Subtotal= \$1,260,525 |  |  |  |  |  |
| Contigency 10\%= $\quad \$ 126,053$ |  |  |  |  |  |
| SUBTOTAL: $\quad \$ 1,386,578$ |  |  |  |  |  |
| Escalation Percentage: 3.5\% |  |  |  |  |  |
| Years to Middle of Construction: 1.0 |  |  |  |  |  |

Cost Estimate: Avenue 17 and SR 99 NB Ramps, Madera, CA (Figure 5)


## Total Amount = <br> \$1,355,128

# APPENDIX C ROUNDABOUT ANALYSES 

## Roundabout Operational Analyses

## SITE LAYOUT

© Site: 101 [Ave 17 SR 99 SB (AM) (Site Folder: General)]
Ave 17 - SR 99 SB 10-Year AM
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


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## LANE SUMMARY

## $\square$ Site: 101 [Ave 17 SR 99 SB (AM) (Site Folder: General)]

Ave 17 - SR 99 SB 10-Year AM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { ND } \\ & \text { NS } \\ & \text { HV ] } \\ & \% \\ & \hline \end{aligned}$ | Cap. <br> veh/h | Deg. Satn <br> v/c | Lane Util. $\qquad$ \% | Aver. Delay sec | Level of Service | $\begin{array}{r} 95 \% \\ \text { Q } \\ \text { [ Veh } \end{array}$ | $\begin{aligned} & \text { K OF } \\ & \text { JE } \\ & \text { Dist ] } \end{aligned}$ | Lane Config | Lane Length ft | Cap. Adj. \% | Prob. Block \% |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 600 | 5.0 | 1465 | 0.410 | 100 | 4.2 | LOS A | 3.0 | 78.1 | Full | 650 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 701 | 5.0 | 1710 | 0.410 | 100 | 4.2 | LOS A | 3.0 | 78.2 | Full | 650 | 0.0 | 0.0 |
| Approach | 1301 | 5.0 |  | 0.410 |  | 4.2 | LOS A | 3.0 | 78.2 |  |  |  |  |
| North: SR 99 SB |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 145 | 5.0 | 874 | 0.166 | 100 | 12.5 | LOS B | 0.7 | 18.7 | Full | 1600 | 0.0 | 0.0 |
| Lane 2 | 79 | 5.0 | 699 | 0.113 | 100 | 7.7 | LOS A | 0.5 | 11.8 | Full | 1600 | 0.0 | 0.0 |
| Approach | 224 | 5.0 |  | 0.166 |  | 10.8 | LOS B | 0.7 | 18.7 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 252 | 5.0 | 1180 | 0.214 | 100 | 4.4 | LOS A | 1.2 | 32.0 | Full | 300 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 279 | 5.0 | 1305 | 0.214 | 100 | 4.2 | LOS A | 1.3 | 32.6 | Full | 300 | 0.0 | 0.0 |
| Approach | 531 | 5.0 |  | 0.214 |  | 4.3 | LOS A | 1.3 | 32.6 |  |  |  |  |
| Intersection | 2057 | 5.0 |  | 0.410 |  | 5.0 | LOS A | 3.0 | 78.2 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and $\mathrm{v} / \mathrm{c}$ ratio (degree of saturation) per lane.
LOS F will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
d Dominant lane on roundabout approach

| Approach Lane Flows (veh/h) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |
| Mov. <br> From E To Exit: | T1 W | R2 N | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | Ov Lane No. |
| Lane 1 | 600 | - | 600 | 5.0 | 1465 | 0.410 | 100 | NA | NA |
| Lane 2 | 54 | 647 | 701 | 5.0 | 1710 | 0.410 | 100 | NA | NA |
| Approach | 655 | 647 | 1301 | 5.0 |  | 0.410 |  |  |  |
| North: SR 99 SB |  |  |  |  |  |  |  |  |  |
| Mov. <br> From N To Exit: | L2 E | R2 W | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | Ov Lane No. |
| Lane 1 | 145 | - | 145 | 5.0 | 874 | 0.166 | 100 | NA | NA |
| Lane 2 | - | 79 | 79 | 5.0 | 699 | 0.113 | 100 | NA | NA |


| Approach | 145 | 79 | 224 | 5.0 | 0.166 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| West: Ave 17 |  |  |  |  |  |  |  |  |
| Mov. <br> From W To Exit: | L2 N | T1 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Prob. <br> Util. SL Ov. $\% \quad \%$ | Ov. Lane No. |
| Lane 1 | 1 | 251 | 252 | 5.0 | 1180 | 0.214 | 100 NA | NA |
| Lane 2 | - | 279 | 279 | 5.0 | 1305 | 0.214 | 100 NA | NA |
| Approach | 1 | 530 | 531 | 5.0 |  | 0.214 |  |  |
| Total \%HV Deg.Satn (v/c) |  |  |  |  |  |  |  |  |
| Intersection | 2057 | 5.0 |  | 0.410 |  |  |  |  |

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

| Merge Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \text { Exit } \\ \text { Lane } \\ \text { Number } \end{array}$ | Short Percent Opposing Lane Opng in Flow Rate Length Lane $\mathrm{ft} \quad \%$ veh/h pcu/h | Critical Gap sec | Follow-up Lane Headway Flow Rate sec veh/h | Capacity <br> veh/h | Deg. Satn v/c |  | Merge Delay <br> sec |
| East Exit: Ave 17 <br> Merge Type: Not Applied |  |  |  |  |  |  |  |
| Full Length Lane 1 <br> Full Length Lane 2 | Merge Analysis not applied. <br> Merge Analysis not applied. |  |  |  |  |  |  |
| North Exit: SR 99 SB Merge Type: Not Applied |  |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |  |
| West Exit: Ave 17 <br> Merge Type: Not Applied |  |  |  |  |  |  |  |
| Full Length Lane 1 <br> Full Length Lane 2 | Merge Analysis not applied. <br> Merge Analysis not applied. |  |  |  |  |  |  |

## SITE LAYOUT

-7 Site: 101 [Ave 17 SR 99 SB (PM) (Site Folder: General)]
Ave 17 - SR 99 SB 10-Year PM
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


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## LANE SUMMARY

## ® Site: 101 [Ave 17 SR 99 SB (PM) (Site Folder: General)]

Ave 17 - SR 99 SB 10-Year PM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | DEMAND FLOWS |  | Cap. <br> veh/h | Deg. Satn <br> v/c | Lane Util. \% | Aver. Delay <br> sec | Level of Service | 95\% BACK OF QUEUE |  | Lane Config | Lane Length ft | Cap. Adj. \% | Prob. <br> Block. \% |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 539 | 7.0 | 1435 | 0.375 | 100 | 4.2 | LOS A | 2.8 | 74.8 | Full | 650 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 630 | 7.0 | 1678 | 0.375 | 100 | 4.3 | LOS A | 2.9 | 76.1 | Full | 650 | 0.0 | 0.0 |
| Approach | 1169 | 7.0 |  | 0.375 |  | 4.2 | LOS A | 2.9 | 76.1 |  |  |  |  |
| North: SR 99 SB |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 276 | 7.0 | 853 | 0.324 | 100 | 12.9 | LOS B | 1.4 | 38.2 | Full | 1600 | 0.0 | 0.0 |
| Lane 2 | 83 | 7.0 | 526 | 0.157 | 100 | 9.2 | LOS A | 0.6 | 15.5 | Full | 1600 | 0.0 | 0.0 |
| Approach | 359 | 7.0 |  | 0.324 |  | 12.1 | LOS B | 1.4 | 38.2 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 433 | 7.0 | 1002 | 0.432 | 100 | 5.6 | LOS A | 3.0 | 78.6 | Full | 300 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 491 | 7.0 | 1136 | 0.432 | 100 | 5.2 | LOS A | 3.1 | 81.1 | Full | 300 | 0.0 | 0.0 |
| Approach | 924 | 7.0 |  | 0.432 |  | 5.4 | LOS A | 3.1 | 81.1 |  |  |  |  |
| Intersection | 2452 | 7.0 |  | 0.432 |  | 5.8 | LOS A | 3.1 | 81.1 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and $\mathrm{v} / \mathrm{c}$ ratio (degree of saturation) per lane.
LOS F will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
d Dominant lane on roundabout approach

| Approach Lane Flows (veh/h) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |
| Mov. <br> From E <br> To Exit: | T1 W | R2 N | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob SL Ov. \% | Ov. Lane No. |
| Lane 1 | 539 | - | 539 | 7.0 | 1435 | 0.375 | 100 | NA | NA |
| Lane 2 | 174 | 456 | 630 | 7.0 | 1678 | 0.375 | 100 | NA | NA |
| Approach | 713 | 456 | 1169 | 7.0 |  | 0.375 |  |  |  |
| North: SR 99 SB |  |  |  |  |  |  |  |  |  |
| Mov. <br> From N To Exit: | L2 E | R2 W | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | Ov. Lane No. |
| Lane 1 | 276 | - |  | 7.0 | 853 | 0.324 | 100 | NA | NA |
| Lane 2 | - | 83 | 83 | 7.0 | 526 | 0.157 | 100 | NA | NA |



Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.


## SITE LAYOUT

© Site: 101 [Ave 17 SR 99 NB (AM) (Site Folder: General)]
Ave 17 - SR 99 NB 10-Year AM
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


## LANE SUMMARY

## ® Site: 101 [Ave 17 SR 99 NB (AM) (Site Folder: General)]

Ave 17 - SR 99 NB 10-Year AM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { ND } \\ & \text { NS } \\ & \text { HV ] } \\ & \% \end{aligned}$ | Cap. veh/h | Deg. Satn <br> v/c | Lane Util. \% | Aver. Delay sec | Level of Service | $\begin{gathered} 95 \% \\ \text { Q } \\ \text { [ Veh } \end{gathered}$ | K OF JE Dist ] ft | Lane Config | Lane Length ft | Cap. Adj. \% | Prob. Block. <br> \% |
| South: SR 99 NB Off |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 394 | 9.0 | 1078 | 0.366 | 100 | 12.2 | LOS B | 2.2 | 57.8 | Full | 1600 | 0.0 | 0.0 |
| Lane 2 | 311 | 9.0 | 907 | 0.343 | 100 | 7.0 | LOS A | 1.9 | 51.2 | Full | 1600 | 0.0 | 0.0 |
| Approach | 706 | 9.0 |  | 0.366 |  | 9.9 | LOS A | 2.2 | 57.8 |  |  |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 499 | 9.0 | 810 | 0.616 | 100 | 10.5 | LOS B | 5.8 | 154.5 | Full | 1600 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 582 | 9.0 | 946 | 0.616 | 100 | 9.5 | LOS A | 6.0 | 160.3 | Full | 1600 | 0.0 | 0.0 |
| Approach | 1081 | 9.0 |  | 0.616 |  | 9.9 | LOS A | 6.0 | 160.3 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane ${ }^{\text {d }}$ | 402 | 9.0 | 1562 | 0.258 | 100 | 4.8 | LOS A | 0.0 | 0.0 | Full | 650 | 0.0 | 0.0 |
| Approach | 402 | 9.0 |  | 0.258 |  | 4.8 | LOS A | 0.0 | 0.0 |  |  |  |  |
| Intersection | 2189 | 9.0 |  | 0.616 |  | 9.0 | LOS A | 6.0 | 160.3 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
d Dominant lane on roundabout approach

| Approach Lane Flows (veh/h) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| South: SR 99 NB Off |  |  |  |  |  |  |  |  |  |  |
| Mov. <br> From S <br> To Exit: | L2 W | T1 N | R2 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 393 | 1 | - | 394 | 9.0 | 1078 | 0.366 | 100 | NA | NA |
| Lane 2 | - | - | 311 | 311 | 9.0 | 907 | 0.343 | 100 | NA | NA |
| Approach | 393 | 1 | 311 | 706 | 9.0 |  | 0.366 |  |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |
| Mov. <br> From E <br> To Exit: | T1 W | R2 N | Total | \%HV |  | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | Ov Lane No. |
| Lane 1 | 499 | - | 499 | 9.0 |  | 810 | 0.616 | 100 | NA | NA |
| Lane 2 | 349 | 233 | 582 | 9.0 |  | 946 | 0.616 | 100 | NA | NA |
| Approach | 848 | 233 | 1081 | 9.0 |  |  | 0.616 |  |  |  |


| West: Ave 17 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mov. <br> From W To Exit: | L2 N | T1 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SLOv. \% | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 61 | 341 | 402 | 9.0 | 1562 | 0.258 | 100 | NA | NA |
| Approach | 61 | 341 | 402 | 9.0 |  | 0.258 |  |  |  |
| Total \%HV Deg.Satn (v/c) |  |  |  |  |  |  |  |  |  |
| Intersection | 2189 | 9.0 |  | 0.616 |  |  |  |  |  |

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

| Merge Analysis |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \text { Exit } \\ \text { Lane } \\ \text { Number } \end{array}$ | Short Percent Opposing Lane Opng in Flow Rate Length Lane $\mathrm{ft} \quad \%$ veh/h pcu/h | Critical Gap sec | Follow-up Lane Headway Flow Rate sec veh/h | Capacity <br> veh/h | Deg. Min. Satn Delay v/c sec | Merge Delay <br> sec |
| East Exit: Ave 17 <br> Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| North Exit: SR 99 NB On Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| West Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 <br> Full Length Lane 2 | Merge Analysis not applied. <br> Merge Analysis not applied. |  |  |  |  |  |

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## SITE LAYOUT

© Site: 101 [Ave 17 SR 99 NB (PM) (Site Folder: General)]
Ave 17 - SR 99 NB 10-Year PM
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


## LANE SUMMARY

## ® Site: 101 [Ave 17 SR 99 NB (PM) (Site Folder: General)]

Ave 17 - SR 99 NB 10-Year PM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { ND } \\ & \text { NS } \\ & \text { HV ] } \\ & \% \end{aligned}$ | Cap. <br> veh/h | Deg. Satn <br> v/c | Lane Util. $\qquad$ \% | Aver. Delay sec | Level of Service | $\begin{gathered} 95 \% \\ \text { Q } \\ \text { [ Veh } \end{gathered}$ | $\begin{gathered} \text { CK OF } \\ \text { UE } \\ \text { Dist ] } \\ \text { ft } \end{gathered}$ | Lane Config | Lane Length ft | Cap. Adj. $\qquad$ \% | Prob. Block. \% |
| South: SR 99 NB Off |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 399 | 9.0 | 661 | 0.603 | 100 | 21.3 | LOS C | 5.4 | 145.6 | Full | 1600 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 659 | 9.0 | 860 | 0.767 | 100 | 19.0 | LOS C | 11.1 | 297.8 | Full | 1600 | 0.0 | 0.0 |
| Approach | 1058 | 9.0 |  | 0.767 |  | 19.8 | LOS C | 11.1 | 297.8 |  |  |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 430 | 9.0 | 762 | 0.564 | 100 | 10.0 | LOS B | 4.9 | 131.8 | Full | 1600 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 504 | 9.0 | 894 | 0.564 | 100 | 9.0 | LOS A | 5.1 | 137.4 | Full | 1600 | 0.0 | 0.0 |
| Approach | 934 | 9.0 |  | 0.564 |  | 9.5 | LOS A | 5.1 | 137.4 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 730 | 9.0 | 1562 | 0.468 | 100 | 4.6 | LOS A | 0.0 | 0.0 | Full | 650 | 0.0 | 0.0 |
| Approach | 730 | 9.0 |  | 0.468 |  | 4.6 | LOS A | 0.0 | 0.0 |  |  |  |  |
| Intersection | 2723 | 9.0 |  | 0.767 |  | 12.2 | LOS B | 11.1 | 297.8 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS $F$ will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
d Dominant lane on roundabout approach

| Approach Lane Flows (veh/h) |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| South: SR 99 NB Off |  |  |  |  |  |  |  |  |  |  |
| Mov. <br> From S To Exit: | L2 W | T1 N | R2 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | $\begin{gathered} \text { Prob. } \\ \text { SL Ov. } \\ \% \end{gathered}$ | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 398 | 1 | - | 399 | 9.0 | 661 | 0.603 | 100 | NA | NA |
| Lane 2 | - | - | 659 | 659 | 9.0 | 860 | 0.767 | 100 | NA | NA |
| Approach | 398 | 1 | 659 | 1058 | 9.0 |  | 0.767 |  |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |
| Mov. <br> From E <br> To Exit: | T1 W | R2 N | Total | \%HV |  | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | $\begin{gathered} \text { Prob. } \\ \text { SL Ov. } \\ \% \end{gathered}$ | $\begin{array}{r} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{array}$ |
| Lane 1 | 430 | - | 430 | 9.0 |  | 762 | 0.564 | 100 | NA | NA |
| Lane 2 | 264 | 241 | 504 | 9.0 |  | 894 | 0.564 | 100 | NA | NA |
| Approach | 694 | 241 | 934 | 9.0 |  |  | 0.564 |  |  |  |


| West: Ave 17 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mov. <br> From W To Exit: | L2 N | T1 | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SLOv. \% | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 84 | 646 | 730 | 9.0 | 1562 | 0.468 | 100 | NA | NA |
| Approach | 84 | 646 | 730 | 9.0 |  | 0.468 |  |  |  |
| Total \%HV Deg.Satn (v/c) |  |  |  |  |  |  |  |  |  |
| Intersection | 2723 | 9.0 |  | 0.767 |  |  |  |  |  |

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

| Merge Analysis |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \text { Exit } \\ \text { Lane } \\ \text { Number } \end{array}$ | Short Percent Opposing Lane Opng in Flow Rate Length Lane $\mathrm{ft} \quad \%$ veh/h pcu/h | Critical Gap sec | Follow-up Lane Headway Flow Rate sec veh/h | Capacity <br> veh/h | Deg. Min. Satn Delay v/c sec | Merge Delay <br> sec |
| East Exit: Ave 17 <br> Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| North Exit: SR 99 NB On Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| West Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 <br> Full Length Lane 2 | Merge Analysis not applied. <br> Merge Analysis not applied. |  |  |  |  |  |

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## SITE LAYOUT

$\nabla$ Site: 101 [Ave 17-Golden St (AM) (Site Folder: General)]
Ave 17 - Golden St - Airport 10-Year AM
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


## LANE SUMMARY

## $\nabla$ Site: 101 [Ave 17-Golden St (AM) (Site Folder: General)]

Ave 17 - Golden St - Airport 10-Year AM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { ND } \\ & \text { NS } \\ & \text { HV ] } \\ & \% \end{aligned}$ | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Aver. Delay <br> sec | Level of Service | $\begin{gathered} 95 \% \text { \| } \\ \text { Q } \end{gathered}$ | $\begin{gathered} \mathrm{K} \text { OF } \\ \mathrm{JE} \\ \text { Dist ] } \\ \mathrm{ft} \end{gathered}$ | Lane Config | Lane Length | Cap Adj. \% | Prob. <br> Block. <br> \% |
| South: Airport Dr |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 242 | 5.0 | 807 | 0.300 | 100 | 7.8 | LOS A | 1.8 | 47.7 | Full | 1600 | 0.0 | 0.0 |
| Approach | 242 | 5.0 |  | 0.300 |  | 7.8 | LOS A | 1.8 | 47.7 |  |  |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 391 | 5.0 | 1256 | 0.311 | 100 | 7.8 | LOS A | 2.1 | 53.7 | Full | 300 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 414 | 5.0 | 1398 | 0.296 | 100 | 4.2 | LOS A | 2.0 | 51.2 | Full | 300 | 0.0 | 0.0 |
| Approach | 805 | 5.0 |  | 0.311 |  | 5.9 | LOS A | 2.1 | 53.7 |  |  |  |  |
| North: Golden State |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 314 | 5.0 | 843 | 0.373 | 100 | 12.0 | LOS B | 2.4 | 61.4 | Full | 1600 | 0.0 | 0.0 |
| Approach | 314 | 5.0 |  | 0.373 |  | 12.0 | LOS B | 2.4 | 61.4 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 190 | 5.0 | 940 | 0.202 | 100 | 7.4 | LOS A | 1.2 | 32.2 | Full | 1600 | 0.0 | 0.0 |
| Lane 2 | 21 | 5.0 | 576 | 0.036 | 100 | 8.7 | LOS A | 0.2 | 4.5 | Full | 1600 | 0.0 | 0.0 |
| Approach | 210 | 5.0 |  | 0.202 |  | 7.5 | LOS A | 1.2 | 32.2 |  |  |  |  |
| Intersection | 1572 | 5.0 |  | 0.373 |  | 7.6 | LOS A | 2.4 | 61.4 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and $\mathrm{v} / \mathrm{c}$ ratio (degree of saturation) per lane.
LOS F will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
d Dominant lane on roundabout approach

| Approach Lane Flows (veh/h) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| South: Airport Dr |  |  |  |  |  |  |  |  |  |
| Mov. <br> From S <br> To Exit: | L2 W | T1 N | R2 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Prob. Util. SL Ov. \% \% | Ov. Lane No. |
| Lane 1 | 17 | 64 | 162 | 242 | 5.0 | 807 | 0.300 | 100 NA | NA |
| Approach | 17 | 64 | 162 | 242 | 5.0 |  | 0.300 |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |
| Mov. <br> From E <br> To Exit: | L2 S | T1 W | R2 N | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Prob. Util. SL Ov. \% \% | Ov. Lane No. |
| Lane 1 | 255 | 136 | - | 391 | 5.0 | 1256 | 0.311 | 100 NA | NA |


| Lane 2 | - | - | 414 | 414 | 5.0 | 1398 | 0.296 | 100 | NA | NA |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Approach | 255 | 136 | 414 | 805 | 5.0 |  | 0.311 |  |  |  |
| North: Golden State |  |  |  |  |  |  |  |  |  |  |
| Mov. <br> From N To Exit: | L2 E | T1 S | R2 W | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | Ov Lane No. |
| Lane 1 | 259 | 41 | 14 | 314 | 5.0 | 843 | 0.373 | 100 | NA | NA |
| Approach | 259 | 41 | 14 | 314 | 5.0 |  | 0.373 |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |
| Mov. From W To Exit: | L2 N | T1 E | R2 S | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | Ov Lane No. |
| Lane 1 | 13 | 177 | - | 190 | 5.0 | 940 | 0.202 | 100 | NA | NA |
| Lane 2 | - | - | 21 | 21 | 5.0 | 576 | 0.036 | 100 | NA | NA |
| Approach | 13 | 177 | 21 | 210 | 5.0 |  | 0.202 |  |  |  |
| Total \%HV Deg.Satn (v/c) |  | \%HV Deg.Satn (v/c) |  |  |  |  |  |  |  |  |
| Intersection | 1572 | 5.0 |  | 0.373 |  |  |  |  |  |  |

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

| Merge Analysis |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \text { Exit } \\ \text { Lane } \\ \text { Number } \end{array}$ | Short Percent Opposing Lane Opng in Flow Rate Length Lane ft $\%$ veh/h pcu/h | Critical Gap sec | Follow-up Lane Headway Flow Rate sec veh/h | Capacity <br> veh/h | Deg. Min. Satn Delay v/c sec | Merge Delay <br> sec |
| South Exit: Airport Dr Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| East Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| North Exit: Golden State Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| West Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |

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Project: S:|2016|16-007\ICEIAnalysis|SidralAve 17117-Golden State.sip9

## LANE SUMMARY

## $\nabla$ Site: 101 [Ave 17-Golden St (PM) (Site Folder: General)]

Ave 17 - Golden St - Airport 10-Year PM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { ND } \\ & \text { NS } \\ & \text { HV ] } \\ & \% \end{aligned}$ | Cap. <br> veh/h | Deg. Satn v/c | Lane Util. \% | Aver. Delay <br> sec | Level of Service | 95\% BACK OF QUEUE |  | Lane Config | Lane Length ft | Cap. Adj. \% | Prob. Block. <br> \% |
| South: Airport Dr |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 338 | 4.0 | 584 | 0.579 | 100 | 15.4 | LOS C | 5.3 | 136.6 | Full | 1600 | 0.0 | 0.0 |
| Approach | 338 | 4.0 |  | 0.579 |  | 15.4 | LOS C | 5.3 | 136.6 |  |  |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 366 | 4.0 | 1199 | 0.305 | 100 | 7.1 | LOS A | 2.1 | 53.5 | Full | 300 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 464 | 4.0 | 1374 | 0.338 | 100 | 4.3 | LOS A | 2.4 | 62.9 | Full | 300 | 0.0 | 0.0 |
| Approach | 830 | 4.0 |  | 0.338 |  | 5.5 | LOS A | 2.4 | 62.9 |  |  |  |  |
| North: Golden State |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 555 | 4.0 | 866 | 0.641 | 100 | 14.9 | LOS B | 6.5 | 166.8 | Full | 1600 | 0.0 | 0.0 |
| Approach | 555 | 4.0 |  | 0.641 |  | 14.9 | LOS B | 6.5 | 166.8 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 272 | 4.0 | 763 | 0.357 | 100 | 9.1 | LOS A | 2.6 | 68.0 | Full | 1600 | 0.0 | 0.0 |
| Lane 2 | 24 | 4.0 | 470 | 0.050 | 100 | 10.3 | LOS B | 0.3 | 7.0 | Full | 1600 | 0.0 | 0.0 |
| Approach | 296 | 4.0 |  | 0.357 |  | 9.2 | LOS A | 2.6 | 68.0 |  |  |  |  |
| Intersection | 2019 | 4.0 |  | 0.641 |  | 10.3 | LOS B | 6.5 | 166.8 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and $\mathrm{v} / \mathrm{c}$ ratio (degree of saturation) per lane.
LOS F will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
d Dominant lane on roundabout approach

| Approach Lane Flows (veh/h) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| South: Airport Dr |  |  |  |  |  |  |  |  |  |
| Mov. <br> From S <br> To Exit: | L2 W | T1 N | R2 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Prob. Util. SL Ov. \% \% | $\begin{aligned} & \text { Ov. } \\ & \text { Lane } \\ & \text { No. } \end{aligned}$ |
| Lane 1 | 33 | 60 | 246 | 338 | 4.0 | 584 | 0.579 | 100 NA | NA |
| Approach | 33 | 60 | 246 | 338 | 4.0 |  | 0.579 |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |
| Mov. <br> From E <br> To Exit: | L2 S | T1 W | R2 N | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Prob. Util. SL Ov. \% \% | $\begin{aligned} & \text { Ov. } \\ & \text { Lane } \\ & \text { No. } \end{aligned}$ |
| Lane 1 | 183 | 183 | - | 366 | 4.0 | 1199 | 0.305 | 100 NA | NA |


| Lane 2 | - | - | 464 | 464 | 4.0 | 1374 | 0.338 | 100 | NA | NA |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Approach | 183 | 183 | 464 | 830 | 4.0 |  | 0.338 |  |  |  |
| North: Golden State |  |  |  |  |  |  |  |  |  |  |
| Mov. <br> From N To Exit: | L2 E | T1 S | R2 W | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SLOv. \% | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 475 | 67 | 12 | 555 | 4.0 | 866 | 0.641 | 100 | NA | NA |
| Approach | 475 | 67 | 12 | 555 | 4.0 |  | 0.641 |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |
| Mov. <br> From W To Exit: | L2 N | T1 E | R2 S | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 21 | 251 | - | 272 | 4.0 | 763 | 0.357 | 100 | NA | NA |
| Lane 2 | - | - | 24 | 24 | 4.0 | 470 | 0.050 | 100 | NA | NA |
| Approach | 21 | 251 | 24 | 296 | 4.0 |  | 0.357 |  |  |  |
| Total \%HV Deg.Satn (v/c) |  |  |  |  |  |  |  |  |  |  |
| Intersection | 2019 | 4.0 |  | 0.641 |  |  |  |  |  |  |

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

| Merge Analysis |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \text { Exit } \\ \text { Lane } \\ \text { Number } \end{array}$ | Short Percent Opposing Lane Opng in Flow Rate Length Lane ft $\%$ veh/h pcu/h | Critical Gap sec | Follow-up Lane Headway Flow Rate sec veh/h | Capacity <br> veh/h | Deg. Min. Satn Delay v/c sec | Merge Delay <br> sec |
| South Exit: Airport Dr Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| East Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| North Exit: Golden State Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| West Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |

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## Roundabout Cost Estimate

Cost Estimate: Avenue 17 \& SR 99 SB, Madera, CA


Cost Estimate: Avenue 17 \& SR 99 NB, Madera, CA


# APPENDIX D SWITRS CRASH RECORDS 




Include State Highways cases







Include State Highways cases


Include State Highways cases













This report is accepted subject to the Terms of Use. Due to collision records processing backlogs, SWITRS data is typically seven months behind. Data requested for dates seven months prior to the current date will be incomplete.




[^0]
# APPENDIX E BENEFIT / COST ANALYSES 

## SR 99 SB Ramps / Avenue 17

10/8/2021

$$
\begin{array}{rlr}
\text { Cost of Delay in veh } / \mathrm{hr}(\text { cars })= & \$ & 14.38 \\
\text { Cost of Delay in veh } / \mathrm{hr}(\text { Trucks }) & =\$ & 28.70 \\
\text { Percent Truck } & = & \\
\text { Avg Cost of Delay per veh-hr } & =\$ & 15.38
\end{array}
$$

10 Year Delay cost Calculation
(PM Peak Hour)

|  | Exist. Intersection |  | Signalize |  | Roundabout |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Existing Volume | 10-Year volume | Existing Volume | 10-Year volume | Existing Volume | 10-Year volume |
| (A)Average Intersection Delay* (sec/veh) | 4.7 | 110.2 | 10.1 | 14.4 | 5.5 | 5.8 |
| (B)Peak Hour Volume Entering Intesection (veh) | 1,008 | 1,855 | 1,008 | 2,279 | 1,008 | 2,279 |
| (C)Peak Hour Delay (hrs/day) = AxBx2*/3600 | 2.6 | 113.6 | 5.7 | 18.2 | 3.1 | 7.3 |
| (D) Peak Hour Delay (hrs/yr) = 250 days x C | 658 | 28,392 | 1,414 | 4,558 | 770 | 1,836 |
| (E)Total Delay (hours) $=10$ years x (D1+D2)/2 | 145,249 |  | 29,860 |  | 13,029 |  |
| Total Delay Cost (10-yr) $=(\mathrm{E}) \mathrm{x}$ Avg Cost of Delay per veh-hr | \$ | 2,234,279 | \$ | 459,318 | \$ | 200,422 |
| TOTAL 10-YEAR SAVINGS | \$ | - | \$ | 1,774,960 | \$ | 2,033,857 |
| Estimated Project Cost | \$ | - | \$ | 1,435,107 | \$ | 1,837,936 |
| Operational Benefit/Cost (B/C) Ratio | - |  |  | 1.24 |  | 1.11 |
| Safety Benefit/Cost (B/C) Ratio | - |  | 0.65 |  | 1.36 |  |
| Total Benefit/Cost (B/C) Ratio |  |  | 1.89 |  | 2.47 |  |


| Intersection Control Evaluation Collision Cost Analysis and B/C |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -- Fill in tan boxes along with 'Area' -- |  |  |  |  |  |  |  |  |
| County | Rte | Postmile | Location Description |  |  |  <br> Rural <br> Suburban Urban | Intersection Types:F- Four-leggedM - MulticegedS - Offteset -TeeY - "Y WyeZ - Others |  |
| Mad | 99 | R14.213 | SR 99 SB ramps \& Ave 17 |  |  |  |  |  |
| Existing Condition |  |  |  | Years for nnalysis | Rate Group |  |  |  |
| Stop Control (Minor Leg), Type T, Y or Z |  |  |  | 10 | 117 |  |  |  |
| Existing ADT (x1000) |  | Future ADT (x1000) |  |  |  |  |  |  |
| Mainline | Cross St | Mainline |  | Cross St | Average ADT | VCF |  |  |
| 6.9 | 1.5 | 19.5 |  | 4.0 | 16.0 | 1.90 |  |  |
| Est. Capital Cost (x1000) for Desired Improvement |  |  |  |  | Existing Collision Data |  |  |  |
| Desired Improvement | Const | R/W |  | Total | Number of Years | 5 | Total Collisions | 3 |
| Yield Control (Roundabout 1-Lane) | \$ 1,838 | \$ |  | 1,838 | Injury | 2 | PDO | 1 |
| Yield Control (Roundabout 2-Lane) | \$ | \$ - | \$ | - | Fatal | 0 | Fat + Inj | 2 |
| Traffic Signal, Type F, | \$ 1,435 | \$ |  | 1,435 |  |  |  |  |
| All Way Stop, Type F, M or S | \$ | \$ | \$ | - |  |  |  |  |


|  | Collision Cost (x1000) |  |  |  |  | B/C |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Existing Condition |  | Desired Improvement |  | Projected Savings |  |
| 1 | Stop Control (Minor Leg), Type T, Y or Z | \$2,971 | Yield Control (Roundabout 1-Lane) | \$465 | \$2,506 | 1.36 |
| 2 | Stop Control (Minor Leg), Type T, Y or Z | \$2,971 | Yield Control (Roundabout 2-Lane) | \$1,146 | \$1,826 | 0.00 |
| 3 | Stop Control (Minor Leg), Type T, Y or Z | \$2,971 | Traffic Signal, Type T, Y or Z | \$2,036 | \$935 | 0.65 |
| 4 | Stop Control (Minor Leg), Type T, Y or Z | \$2,971 | All Way Stop, Type T,, or Z | \$11,696 | $(\$ 8,725)$ | 0.00 |

NOTE: Only average collision costs are used for calculation purposes.

## SR 99 NB Ramps / Avenue 17

10/8/2021

$$
\begin{array}{rlr}
\text { Cost of Delay in veh } / \mathrm{hr} \text { (cars) }= & \begin{array}{l}
\text { cas }
\end{array} & 14.38 \\
\text { Cost of Delay in veh } / \mathrm{hr}(\text { Trucks }) & =\$ & 28.70 \\
\text { Percent Truck } & = & 9 \% \\
\text { Avg Cost of Delay per veh-hr } & =\$ & 15.67
\end{array}
$$

## 10 Year Delay cost Calculation

(PM Peak Hour)

|  | Exist. Intersection |  | Signalize |  | Roundabout |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Existing Volume | 10-Year volume | Existing Volume | 10-Year volume | Existing Volume | 10-Year volume |
| (A)Average Intersection Delay* (sec/veh) | 8.5 | 279.7 | 14.1 | 35.7 | 6.1 | 12.2 |
| (B)Peak Hour Volume Entering Intesection (veh) | 770 | 2,613 | 1,428 | 2,613 | 1,428 | 2,613 |
| (C)Peak Hour Delay (hrs/day) = AxBx2*/3600 | 3.6 | 406.0 | 11.2 | 51.8 | 4.8 | 17.7 |
| $\begin{aligned} & \text { (D) Peak Hour Delay (hrs/yr) = } \\ & 250 \text { days } \times \text { C } \end{aligned}$ | 909 | 101,508 | 2,797 | 12,956 | 1,210 | 4,428 |
| (E)Total Delay (hours) $=10$ years x (D1+D2)/2 | 512,084 |  | 78,763 |  | 28,187 |  |
| Total Delay Cost (10-yr) = (E) x <br> Avg Cost of Delay per veh-hr | \$ | 8,023,743 | \$ | 1,234,124 | \$ | 441,658 |
| TOTAL 10-YEAR SAVINGS | \$ | - | \$ | 6,789,620 | \$ | 7,582,086 |
| Estimated Project Cost | \$ | - | \$ | 1,355,128 | \$ | 2,289,721 |
| Operational Benefit/Cost (B/C) <br> Ratio | - |  |  | 5.01 |  | 3.31 |
| Safety Benefit/Cost (B/C) Ratio | - |  | 6.16 |  | 6.70 |  |
| Total Benefit/Cost (B/C) Ratio |  |  | 11.17 |  | 10.01 |  |


| Intersection Control Evaluation Collision Cost Analysis and B/C |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -- Fill in tan boxes along with 'Area' -- |  |  |  |  |  |  |  |
| County | Rte | Postmile | Location Description |  |  | Intersection Types: <br> - Four-Legged <br> M - Multi-Legged <br> S - Offsett -Tee <br> Y - "Y" Wye <br> Z - Others |  |
| Mad | 99 | R14.213 | SR 99 NB ramps \& Ave 17 |  |  |  |  |
| Existing Condition |  |  | \# of Years for Analysis | Rate Group |  |  |  |
| Stop Control (Minor Leg), Type F, M or S |  |  | 10 | 12 |  |  |  |
| Existing ADT (x1000) |  | Future ADT (x1000) |  |  |  |  |  |
| Mainline | Cross St | Mainline | Cross St | Average ADT | VCF |  |  |
| 7.0 | 4.0 | 19.7 | 10.1 | 20.4 | 1.85 |  |  |
| Est. Capital Cost (x1000) for Desired Improvement |  |  |  | Existing Collision Data |  |  |  |
| $\begin{aligned} & \text { Desired } \\ & \text { Improvement } \end{aligned}$ | Const | R/W | Total | Number of Years | 5 | Total Collisions | 12 |
| Yield Control (Roundabout 1-Lane) | \$ 2,290 | \$ | \$ 2,290 | Injury | 3 | PDO | 8 |
| Yield Control (Roundabout 2-Lane) | \$ | \$ | \$ | Fatal | 1 | Fat + Inj | 4 |
| Traffic Signal, Type F, M ors | \$ 1,355 | \$ | \$ 1,355 |  |  |  |  |
| All Way Stop, Type F, M or S | \$ | \$ | \$ |  |  |  |  |


|  | Collision Cost (x1000) |  |  |  |  | B/C |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Existing Condition |  | Desired Improvement |  | Projected Savings |  |
| 1 | Stop Control (Minor Leg), Type F, M or S | \$15,912 | Yield Control (Roundabout 1-Lane) | \$573 | \$15,339 | 6.70 |
| 2 | Stop Control (Minor Leg), Type F, M or S | \$15,912 | Yield Control (Roundabout 2-Lane) | \$1,468 | \$14,444 | 0.00 |
| 3 | Stop Control (Minor Leg), Type F, M or S | \$15,912 | Traffic Signal, Type F, M or S | \$7,568 | \$8,344 | 6.16 |
| 4 | Stop Control (Minor Leg), Type F, M or S | \$15,912 | All Way Stop, Type F, M or S | \$6,039 | \$9,873 | 0.00 |

NOTE: Only average collision costs are used for calculation purposes.




| Major/Minor | Major1 | Major2 |  |  |  |  |  |  |  | Minor1 |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 516 | 0 | - | - | - | 0 | 917 | - |  |  |  |  |  |  |  |  |
| $\quad$ Stage 1 | - | - | - | - | - | - | 485 | - |  |  |  |  |  |  |  |  |
| $\quad$ Stage 2 | - | - | - | - | - | - | 432 | - |  |  |  |  |  |  |  |  |


| Approach | EB | WB | NB |
| :--- | :--- | ---: | ---: |
| HCM Control Delay, s | 1.3 | 0 | 21.9 |
| HCM LOS |  |  | C |


| Minor Lane/Major Mvmt | NBLn1 NBLn2 |  | EBL | EBT | WBT | WBR |
| :--- | ---: | ---: | ---: | ---: | :---: | ---: |
| Capacity (veh/h) | 275 | 670 | 1015 | - | - | - |
| HCM Lane V/C Ratio | 0.314 | 0.692 | 0.062 | - | - | - |
| HCM Control Delay (s) | 24 | 21.5 | 8.8 | - | - | - |
| HCM Lane LOS | C | C | A | - | - | - |
| HCM 95th \%tile Q(veh) | 1.3 | 5.5 | 0.2 | - | - | - |



|  | $\rangle$ |  |  |  | $\leftarrow$ |  | 4 | $\dagger$ | $p$ |  |  | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | \% | 个 |  |  | $\uparrow$ | $\stackrel{7}{ }$ | ${ }^{7}$ |  | \# |  |  |  |
| Traffic Volume (veh/h) | 60 | 345 | 0 | 0 | 333 | 162 | 83 | 0 | 445 | 0 | 0 | 0 |
| Future Volume (veh/h) | 60 | 345 | 0 | 0 | 333 | 162 | 83 | 0 | 445 | 0 | 0 | 0 |
| Initial $Q(Q b)$, veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |
| Ped-Bike Adj(A_pbT) | 1.00 |  | 1.00 | 1.00 |  | 1.00 | 1.00 |  | 1.00 |  |  |  |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |  |  |
| Work Zone On Approach |  | No |  |  | No |  |  | No |  |  |  |  |
| Adj Sat Flow, veh/h/ln | 1767 | 1767 | 0 | 0 | 1767 | 1767 | 1767 | 0 | 1767 |  |  |  |
| Adj Flow Rate, veh/h | 62 | 359 | 0 | 0 | 347 | 84 | 86 | 0 | 263 |  |  |  |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |  |  |  |
| Percent Heavy Veh, \% | 9 | 9 | 0 | 0 | 9 | 9 | 9 | 0 | 9 |  |  |  |
| Cap, veh/h | 122 | 845 | 0 | 0 | 484 | 410 | 393 | 0 | 350 |  |  |  |
| Arrive On Green | 0.07 | 0.48 | 0.00 | 0.00 | 0.27 | 0.27 | 0.23 | 0.00 | 0.23 |  |  |  |
| Sat Flow, veh/h | 1682 | 1767 | 0 | 0 | 1767 | 1497 | 1682 | 0 | 1497 |  |  |  |
| Grp Volume(v), veh/h | 62 | 359 | 0 | 0 | 347 | 84 | 86 | 0 | 263 |  |  |  |
| Grp Sat Flow(s),veh/h/n | 1682 | 1767 | 0 | 0 | 1767 | 1497 | 1682 | 0 | 1497 |  |  |  |
| Q Serve(g_s), s | 1.5 | 5.8 | 0.0 | 0.0 | 7.7 | 1.9 | 1.8 | 0.0 | 7.1 |  |  |  |
| Cycle Q Clear(g_c), s | 1.5 | 5.8 | 0.0 | 0.0 | 7.7 | 1.9 | 1.8 | 0.0 | 7.1 |  |  |  |
| Prop In Lane | 1.00 |  | 0.00 | 0.00 |  | 1.00 | 1.00 |  | 1.00 |  |  |  |
| Lane Grp Cap (c), veh/h | 122 | 845 | 0 | 0 | 484 | 410 | 393 | 0 | 350 |  |  |  |
| V/C Ratio(X) | 0.51 | 0.42 | 0.00 | 0.00 | 0.72 | 0.20 | 0.22 | 0.00 | 0.75 |  |  |  |
| Avail Cap(c_a), veh/h | 438 | 2207 | 0 | 0 | 1515 | 1284 | 1680 | 0 | 1494 |  |  |  |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |  |  |  |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |  |  |  |
| Uniform Delay (d), s/veh | 19.4 | 7.4 | 0.0 | 0.0 | 14.2 | 12.1 | 13.4 | 0.0 | 15.5 |  |  |  |
| Incr Delay (d2), s/veh | 3.2 | 0.3 | 0.0 | 0.0 | 2.0 | 0.2 | 0.3 | 0.0 | 3.3 |  |  |  |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  |  |  |
| \%ile BackOfQ(95\%),veh/ln | 1.1 | 2.4 | 0.0 | 0.0 | 4.5 | 0.9 | 1.1 | 0.0 | 4.2 |  |  |  |
| Unsig. Movement Delay, s/veh |  |  |  |  |  |  |  |  |  |  |  |  |
| LnGrp Delay (d),s/veh | 22.6 | 7.7 | 0.0 | 0.0 | 16.2 | 12.4 | 13.7 | 0.0 | 18.7 |  |  |  |
| LnGrp LOS | C | A | A | A | B | B | B | A | B |  |  |  |
| Approach Vol, veh/h |  | 421 |  |  | 431 |  |  | 349 |  |  |  |  |
| Approach Delay, s/veh |  | 9.9 |  |  | 15.5 |  |  | 17.5 |  |  |  |  |
| Approach LOS |  | A |  |  | B |  |  | B |  |  |  |  |
| Timer - Assigned Phs |  | 2 |  | 4 |  |  | 7 | 8 |  |  |  |  |
| Phs Duration ( $G+Y+R \mathrm{c}$ ), $s$ |  | 15.8 |  | 27.5 |  |  | 8.9 | 18.7 |  |  |  |  |
| Change Period ( $Y+\mathrm{Rc}$ ), s |  | *5.7 |  | 6.8 |  |  | * 5.7 | 6.8 |  |  |  |  |
| Max Green Setting (Gmax), s |  | * 43 |  | 54.2 |  |  | *11 | 37.2 |  |  |  |  |
| Max Q Clear Time (g_c+11), s |  | 9.1 |  | 7.8 |  |  | 3.5 | 9.7 |  |  |  |  |
| Green Ext Time (p_c), s |  | 1.2 |  | 2.1 |  |  | 0.1 | 2.2 |  |  |  |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| HCM 6th Ctrr Delay |  |  | 14.1 |  |  |  |  |  |  |  |  |  |
| HCM 6th LOS |  |  | B |  |  |  |  |  |  |  |  |  |

## Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



|  | EB | WB | SB |
| :--- | ---: | ---: | ---: |
| Approach | 0 | $\$ 612.1$ |  |
| HCM Control Delay, s | 0 | 0 | F |


| Minor Lane/Major Mvmt | EBT | WBT SBLn1 SBLn2 |  |
| :--- | ---: | ---: | ---: |
| Capacity (veh/h) | - | - | 108 |
| 424 |  |  |  |
| HCM Lane V/C Ratio | - | -2.559 | 0.195 |
| HCM Control Delay (s) | - | $-\$ 790.8$ | 15.5 |
| HCM Lane LOS | - | - | F | C

## Notes

$\sim$ : Volume exceeds capacity $\quad \$$ : Delay exceeds $300 \mathrm{~s} \quad+$ : Computation Not Defined $\quad$ : All major volume in platoon



| Major/Minor | Major1 |  | Major2 |  |  | Minor1 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 935 | 0 | - | - | - | 0 | 1629 | - | 646 |
| Stage 1 | - | - |  |  | - |  | 814 |  | - |
| Stage 2 | - | - | - | - | - | - | 815 |  |  |
| Critical Hdwy | 4.19 | - | - | - | - | - | 6.49 | - | 6.29 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.49 | - |  |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.49 | - | - |
| Follow-up Hdwy | 2.281 | - | - | - | - |  | 3.581 |  | 3.381 |
| Pot Cap-1 Maneuver | 704 | - | 0 | 0 | - |  | ~ 108 | 0 | $\sim 459$ |
| Stage 1 | - | - | 0 | 0 | - | - | 424 | 0 | - |
| Stage 2 | - | - | 0 | 0 | - | - | 423 | 0 | - |
| Platoon blocked, \% |  | - |  |  | - | - |  |  |  |
| Mov Cap-1 Maneuver | 704 | - | - | - | - | - | ~ 95 | 0 | $\sim 459$ |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | ~95 | 0 | - |
| Stage 1 | - | - | - | - | - |  | ~374 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 423 | 0 | - |


| Approach | EB | WB | NB |
| :--- | ---: | ---: | ---: |
| HCM Control Delay, s | 1.2 | 0 | $\$ 719.2$ |
| HCM LOS |  |  | F |


| Minor Lane/Major Mvmt | NBLn1 NBLn2 |  | EBL | EBT | WBT | WBR |
| :--- | ---: | ---: | ---: | ---: | :---: | :--- |
| Capacity (veh/h) | 95 | 459 | 704 | - | - | - |
| HCM Lane V/C Ratio | 4.189 | 1.437 | 0.12 | - | - | - |
| HCM Control Delay (s) | $\$ 1525.9$ | 232.4 | 10.8 | - | - | - |
| HCM Lane LOS | F | F | B | - | - | - |
| HCM 95th \%tile Q(veh) | 41.5 | 32.6 | 0.4 | - | - | - |

## Notes

$\sim$ : Volume exceeds capacity $\quad \$$ : Delay exceeds $300 \mathrm{~s} \quad+$ : Computation Not Defined $\quad$ : All major volume in platoon

## SITE LAYOUT

© Site: 101 [Ave 17 SR 99 SB (Existing PM volumes (Site Folder:
General)]
Ave 17 - SR 99 SB Existing PM
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


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## LANE SUMMARY

## © Site: 101 [Ave 17 SR 99 SB (Existing PM volumes (Site Folder: General)]

Ave 17 - SR 99 SB Existing PM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | DEMAND FLOWS |  | Cap. <br> veh/h | Deg. Satn <br> v/c | Lane Util. \% | Aver. Delay <br> sec | Level of Service | 95\% BACK OF QUEUE |  | Lane Config | Lane Length ft | Cap. Adj. \% | Prob. Block. |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 189 | 7.0 | 1413 | 0.134 | $88^{5}$ | 4.2 | LOS A | 0.7 | 18.6 | Full | 650 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 256 | 7.0 | 1673 | 0.153 | 100 | 4.3 | LOS A | 0.8 | 22.1 | Full | 650 | 0.0 | 0.0 |
| Approach | 445 | 7.0 |  | 0.153 |  | 4.2 | LOS A | 0.8 | 22.1 |  |  |  |  |
| North: SR 99 SB |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 186 | 7.0 | 1104 | 0.169 | 100 | 10.6 | LOS B | 0.7 | 19.1 | Full | 1600 | 0.0 | 0.0 |
| Lane 2 | 60 | 7.0 | 761 | 0.079 | 100 | 5.7 | LOS A | 0.3 | 8.0 | Full | 1600 | 0.0 | 0.0 |
| Approach | 246 | 7.0 |  | 0.169 |  | 9.4 | LOS A | 0.7 | 19.1 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 187 | 7.0 | 1109 | 0.169 | 100 | 4.6 | LOS A | 0.9 | 23.2 | Full | 300 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 206 | 7.0 | 1223 | 0.169 | 100 | 4.4 | LOS A | 0.9 | 23.5 | Full | 300 | 0.0 | 0.0 |
| Approach | 394 | 7.0 |  | 0.169 |  | 4.5 | LOS A | 0.9 | 23.5 |  |  |  |  |
| Intersection | 1085 | 7.0 |  | 0.169 |  | 5.5 | LOS A | 0.9 | 23.5 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

## Approach Lane Flows (veh/h)

East: Ave 17

| Mov. <br> From E To Exit: | T1 W | R2 N | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | Ov. No. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane 1 | 189 | - | 189 | 7.0 | 1413 | 0.134 | $88^{5}$ | NA | NA |
| Lane 2 | - | 256 | 256 | 7.0 | 1673 | 0.153 | 100 | NA | NA |
| Approach | 189 | 256 | 445 | 7.0 |  | 0.153 |  |  |  |
| North: SR 99 SB |  |  |  |  |  |  |  |  |  |
| Mov. <br> From N To Exit: | L2 E | R2 W | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 186 | - | 186 | 7.0 | 1104 | 0.169 | 100 | NA | NA |


| Lane 2 | - | 60 | 60 | 7.0 | 761 | 0.079 | 100 | NA | NA |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Approach | 186 | 60 | 246 | 7.0 |  | 0.169 |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |
| Mov. <br> From W To Exit: | L2 N | T1 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Util. \% | Prob. SL Ov. \% | $\begin{gathered} \text { Ov. } \\ \text { Lane } \\ \text { No. } \end{gathered}$ |
| Lane 1 | 1 | 186 | 187 | 7.0 | 1109 | 0.169 | 100 | NA | NA |
| Lane 2 | - | 206 | 206 | 7.0 | 1223 | 0.169 | 100 | NA | NA |
| Approach | 1 | 392 | 394 | 7.0 |  | 0.169 |  |  |  |
| Total \%HV Deg.Satn (v/c) |  |  |  |  |  |  |  |  |  |
| Intersection | 1085 | 7.0 |  | 0.169 |  |  |  |  |  |

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.
5 Lane under-utilisation found by the program

| Merge Analysis |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \text { Exit } \\ \text { Lane } \\ \text { Number } \end{array}$ |  | Critical Gap sec | Follow-up Lane Headway Flow Rate sec veh/h | Capacity <br> veh/h | Deg. Min. Satn Delay v/c sec | Merge Delay sec |
| East Exit: Ave 17 <br> Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 <br> Full Length Lane 2 | Merge Analysis not applied. Merge Analysis not applied. |  |  |  |  |  |
| North Exit: SR 99 SB Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |
| West Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |
| Full Length Lane 1 <br> Full Length Lane 2 | Merge Analysis not applied. <br> Merge Analysis not applied. |  |  |  |  |  |

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## SITE LAYOUT

$\forall$ Site: 101 [Ave 17 SR 99 NB (Existing PM volume (Site Folder:
General)]
Ave 17 - SR 99 NB Existing PM
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


## LANE SUMMARY

## Site: 101 [Ave 17 SR 99 NB (Existing PM volume (Site Folder: General)]

Ave 17 - SR 99 NB Existing PM
Site Category: (None)
Roundabout

| Lane Use and Performance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | DEMAND FLOWS |  | Cap. <br> veh/h | Deg. Satn v/c | Lane Util. \% | Aver. Delay <br> sec | Level of Service | 95\% BACK OF QUEUE |  | Lane Config | Lane Length <br> ft | Cap Adj. \% | Prob. Block. $\qquad$ |
| South: SR 99 NB Off |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 90 | 9.0 | 661 | 0.137 | 100 | 13.4 | LOS B | 0.6 | 16.8 | Full | 1600 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 478 | 9.0 | 1055 | 0.453 | 100 | 7.0 | LOS A | 2.9 | 77.3 | Full | 1600 | 0.0 | 0.0 |
| Approach | 569 | 9.0 |  | 0.453 |  | 8.0 | LOS A | 2.9 | 77.3 |  |  |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane 1 | 252 | 9.0 | 1121 | 0.225 | 100 | 5.3 | LOS A | 1.2 | 33.0 | Full | 1600 | 0.0 | 0.0 |
| Lane $2^{\text {d }}$ | 280 | 9.0 | 1243 | 0.225 | 100 | 5.1 | LOS A | 1.2 | 33.4 | Full | 1600 | 0.0 | 0.0 |
| Approach | 532 | 9.0 |  | 0.225 |  | 5.2 | LOS A | 1.2 | 33.4 |  |  |  |  |
| West: Ave 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane $1^{\text {d }}$ | 435 | 9.0 | 1562 | 0.279 | 100 | 4.8 | LOS A | 0.0 | 0.0 | Full | 650 | 0.0 | 0.0 |
| Approach | 435 | 9.0 |  | 0.279 |  | 4.8 | LOS A | 0.0 | 0.0 |  |  |  |  |
| Intersection | 1537 | 9.0 |  | 0.453 |  | 6.1 | LOS A | 2.9 | 77.3 |  |  |  |  |

Site Level of Service (LOS) Method: Delay \& v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab). Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and $\mathrm{v} / \mathrm{c}$ ratio (degree of saturation) per lane.
LOS $F$ will result if $\mathrm{v} / \mathrm{c}>1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
d Dominant lane on roundabout approach

| Approach Lane Flows (veh/h) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| South: SR 99 NB Off |  |  |  |  |  |  |  |  |  |
| Mov. <br> From S To Exit: | L2 W | T1 N | R2 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | Lane Prob. $\underset{\%}{\text { Util. SL Ov. }}$ \% \% | Ov. Lane No. |
| Lane 1 | 89 | 1 | - | 90 | 9.0 | 661 | 0.137 | 100 NA | NA |
| Lane 2 | - | - | 478 | 478 | 9.0 | 1055 | 0.453 | 100 NA | NA |
| Approach | 89 | 1 | 478 | 569 | 9.0 |  | 0.453 |  |  |
| East: Ave 17 |  |  |  |  |  |  |  |  |  |
| Mov. <br> From E <br> To Exit: | T1 W | R2 N | Total | \%HV |  | Cap. veh/h | Deg. Satn v/c | Lane Prob. Util. SL Ov. \% \% | $\begin{aligned} & \text { Ov. } \\ & \text { Lane } \\ & \text { No. } \end{aligned}$ |
| Lane 1 | 252 | - | 252 | 9.0 |  | 1121 | 0.225 | 100 NA | NA |
| Lane 2 | 106 | 174 | 280 | 9.0 |  | 1243 | 0.225 | 100 NA | NA |


| Approach | 358 | 174 | 532 | 9.0 | 0.225 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| West: Ave 17 |  |  |  |  |  |  |  |  |
| Mov. <br> From W To Exit | L2 N | T1 E | Total | \%HV | Cap. veh/h | Deg. Satn v/c | $\begin{array}{cr} \text { Lane } & \text { Prob. } \\ \text { Util. SL Ov. } \\ \% & \% \end{array}$ | $\begin{aligned} & \text { Ov. } \\ & \text { Lane } \\ & \text { No. } \end{aligned}$ |
| Lane 1 | 65 | 371 | 435 | 9.0 | 1562 | 0.279 | 100 NA | NA |
| Approach | 65 | 371 | 435 | 9.0 |  | 0.279 |  |  |
| Total \%HV Deg.Satn (v/c) |  |  |  |  |  |  |  |  |
| Intersection | 1537 | 9.0 |  | 0.453 |  |  |  |  |

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

| Merge Analysis |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \text { Exit } \\ \text { Lane } \\ \text { Number } \end{array}$ | Short Percent Opposing Lane Opng in Flow Rate Length Lane $\mathrm{ft} \quad \%$ veh/h pcu/h | Critical Gap sec | Follow-up Lane Headway Flow Rate sec veh/h | pacity <br> veh/h | Deg. Satn v/c |  | Merge Delay <br> sec |
| East Exit: Ave 17 Merge Type: Not Applied |  |  |  |  |  |  |  |
| Full Length Lane 1 | Merge Analysis not applied. |  |  |  |  |  |  |
| North Exit: SR 99 NB On Merge Type: Not Applied |  |  |  |  |  |  |  |
| Full Length Lane | Merge Analysis not applied. |  |  |  |  |  |  |
| West Exit: Ave 17 <br> Merge Type: Not Applied |  |  |  |  |  |  |  |
| Full Length Lane | Merge Analysis not applied. |  |  |  |  |  |  |
| Full Length Lane 2 | Merge Analysis not applied. |  |  |  |  |  |  |

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[^0]:    Page 426
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