TRAFFIC IMPACT ANALYSIS

FOR

LOCKEFORD COMMERCIAL CANNABIS PARK PROJECT
PA-2000007

Lockeford, San Joaquin County, CA

Prepared For:

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INTRODUCTION

This traffic impact study report summarizes an analysis of the traffic-related effects of the proposed mixed-use Cannabis Business Park project proposed at 12470 East Locke Road in the unincorporated town of Lockeford east of the City of Lodi in San Joaquin County (i.e., Land Development Permit #PA-2000007 (APN 051-320-12). The proposed project is a mixed-use Cannabis facility. The project includes commercial cultivation, production, and distribution of cannabis products. The project site is located along East Locke Road, about midway between Brandt Road and State Route (SR) 12/88, as illustrated in Figure 1.

The project site covers approximately 23 acres on the south side of East Locke Road. The site has three existing buildings which make up the Tuscan Wine Village. The project will keep the three buildings and will repurpose a portion of them. The existing winery, restaurants and retail on-site uses will remain. The project includes two phases described below:

Phase 1:

- Building #1 – 19,872 square foot (sf) building for processing, product testing, storage, distribution, security office and employee facilities; 3,726 sf of the building will remain in use with an existing winery;
- Building #2 – 13,226 square foot building for drying, cold storage, distribution services and employee facilities; the existing 8,072 sf of the building will remain in use with an existing winery;
- Construction of 8 - 6,600 square foot greenhouses for indoor cultivation;
- Construction of a 1,000 square foot guard house.

Phase 2:

- Construction of 37 - 6,600 SF greenhouses.

The site is projected to have the following employees on site on a typical day in four shifts:

- Shift 1 – 7:00 a.m. to 4:00 p.m.
  - 24 employees, daily
- Shift 2 – 9:00 a.m. to 5:00 p.m.
  - 4 employees, Monday through Friday
- Shift 3 – 5:00 p.m. to 7:00 a.m.
  - 1 employee, Monday through Friday

- Shift 4 – 5:00 p.m. to 7:00 a.m.
  - 1 employee, Saturday and Sunday
- Security – 24 hours daily in 2 shifts (1 employee per shift)

There are no retail sales at the site as the County prohibits this practice.

Figure 2 illustrates the proposed site plan.

The current zoning is IG (Industrial General) and there are existing uses on the site that include a wine production facility, wine tasting rooms, food service and a venue for concerts. Surrounding property to the north includes agricultural vineyards, to the east is garden product production while to the west is a concrete precast facility; vacant land is to the south.

Analysis Approach

This analysis considers the project's traffic impacts and evaluates the adequacy of site access under both near term and long-term conditions. Analysis of traffic operating conditions under the following six scenarios is presented in this traffic impact study:

- Existing Conditions,
- Existing Proposed Project,
- Near-Term Existing Plus Approved Projects (EPAP),
- EPAP Plus Project,
- Cumulative (Year 2035), and
- Cumulative Plus Project.

Existing conditions are based on the current circulation system and traffic volumes. Local traffic counts at the study intersections were conducted in August 2020. A truck classification count along East Locke Road and daily count along SR 12/88 were also conducted. Data along SR 12/88 was reviewed and compared to historic data along the route, and the count data was adjusted to Pre-Covid19 levels.

Existing Plus Approved Projects (EPAP) conditions are a background condition which includes existing traffic levels plus traffic associated with approved land use development projects in the area of the project.

Cumulative Conditions (Year 2035) are a long-term background condition which includes future year forecasts of traffic volumes based on regional development and completion of long-term circulation system improvements. The 3-County travel demand model represents the best available information regarding future conditions in the study area.

The analysis follows San Joaquin County traffic study guidelines and addresses a study approach suggested by County staff. The analysis study area includes the SR 12 / Tretheway Road intersection to the south as well as the SR 12/88 / East Locke Road intersection to the north. Additionally, the East Locke Road segment between SR 12/88 and Tretheway Road was evaluated. Synchro 11 was used to evaluate the intersections.

Summary Conclusions:

- ***Existing Conditions.*** Current traffic conditions in the area of the project are acceptable based on satisfaction of minimum San Joaquin County standards for intersection Levels of Service. Current peak hour queues are less than one vehicle and can be contained within available left turn lanes, where available.

- ***Project Characteristics.*** Based on information provided by the applicant, the Lockeford Cannabis Park project is expected to generate roughly 78 trips in and out on a daily basis. On a worst case basis, the project will generate 39 trips in the a.m. peak hour and 39 trips in the p.m. peak hour.

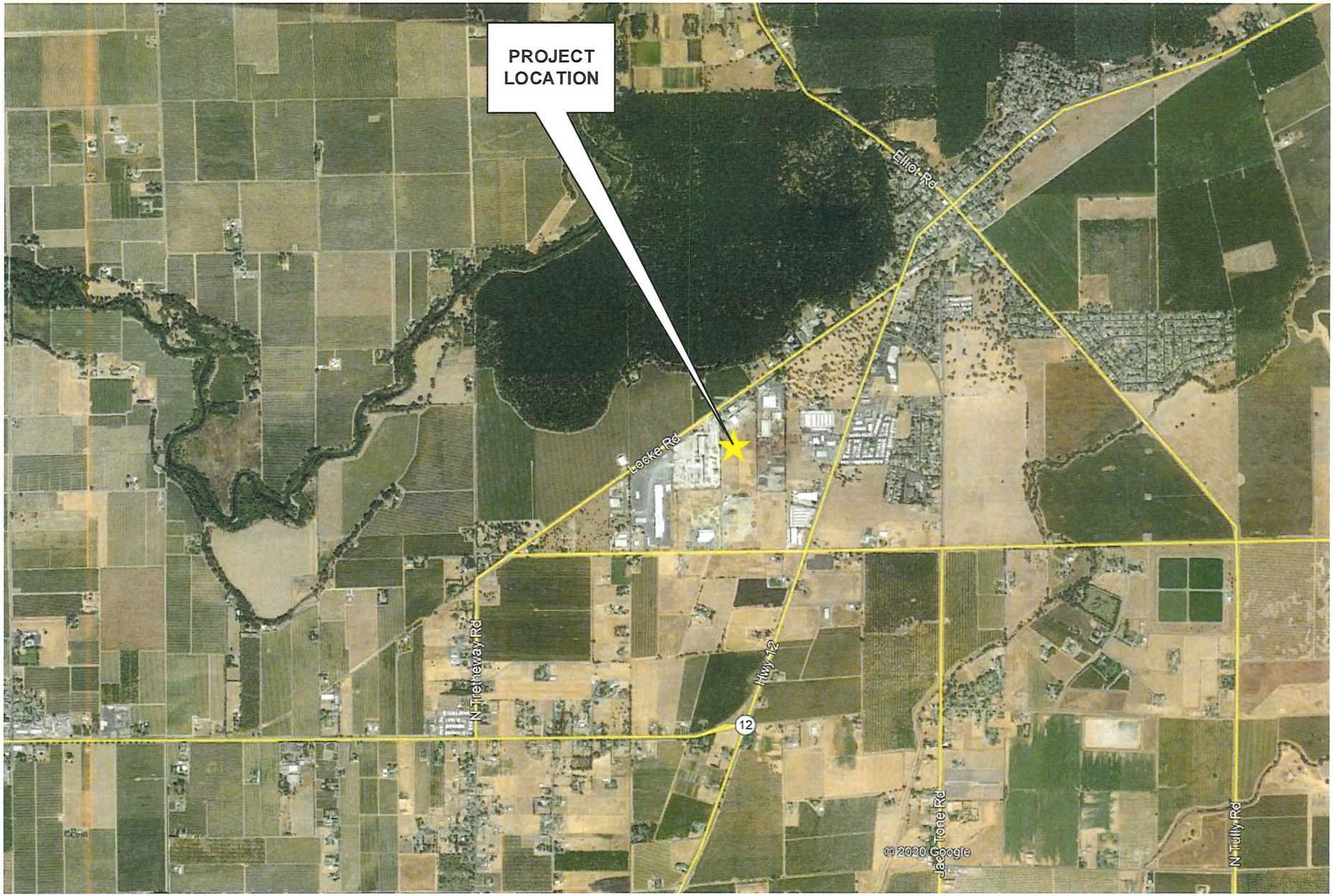
- ***Project Traffic Impacts.*** The project is projected to generate 78 daily trips. Based on the State of California Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* screening thresholds for small projects, the project will generate less than 110 trips per day. For VMT analyses, this is generally assumed to cause a less-than-significant transportation impact. With regard to the General Plan, the study intersections will remain consistent with the San Joaquin County General Plan policies with the addition of project trips as resulting intersection Levels of Service (LOS) remain within minimum standards. Queues developed with the project will continue to be one vehicle or less. The project should contribute its fair share to the cost of regional improvements by paying adopted traffic impacts fees.

- ***Site Access / Internal Circulation.*** Project site access and internal circulation has been assessed. The volume of traffic turning left into the site from East Locke Road is expected to be minimal. There are three existing driveways into the project along East Locke Road, each equidistant from one another, with about 240' separation. The main entry driveway provides access to the existing winery about midway along the East Locke Road frontage. The remaining driveways are located at the east and west ends of the site and provide access to the parking field. The east driveway will provide access for emergency vehicles to the back side of the site while access to the greenhouses and production facilities will be from a secured gated access on the west side of the site. The throats for the three driveways range from 30 feet at the east driveway to 35 feet at both main entry and west driveway. The distance from East Locke Road to the north side of the parking aisle about 35 feet and will provide storage for about two vehicles at each driveway; the queuing analysis indicates that a single vehicle will be queued at the 95th percentile.

  As mentioned above, there are three existing driveways providing access to the site. Parking is provided for public access from all driveways. Parking will also be provided within the secure area of the site. The site layout allows two-way circulation occurring from each driveway. Access to the secure area will be limited to the west driveway with a perimeter roadway around the site, allowing access to the greenhouses; an internal north-south drive aisle between the greenhouses is also proposed. Access to parking on the east side of the site will occur drive aisles between buildings.

- ***Existing Plus Approved Projects (EPAP) Impacts.*** San Joaquin County staff identified two approved projects in the Lockeford area that would add background traffic to background roadway conditions. Minimum Level of Service (LOS) standards will continue to be satisfied under EPAP conditions with and without the proposed Lockeford Cannabis Park project. 95th percentile queues will continue to be one vehicle or less.

- ***Year 2035 Long Term Cumulative Impacts.*** The 3-County travel demand model was used as the basis to project future conditions. The study approaches were balanced using the difference method with intersection turning movements calculated using the Transportation Research Board's (TRB's) National Cooperative Highway Research Program (NCHRP) 255 methodology. The San Joaquin Council of Governments (SJCOG) has identified one improvement project in their Measure K program affecting this project. In their 'First 20-Years' program SR 12/88 is projected to be widened to four lanes in the joint corridor between Lockeford and Clements. The LOS standards will continue to be satisfied under Cumulative conditions with and without the proposed project. 95th percentile queues will be two vehicles or less.



VICINITY MAP

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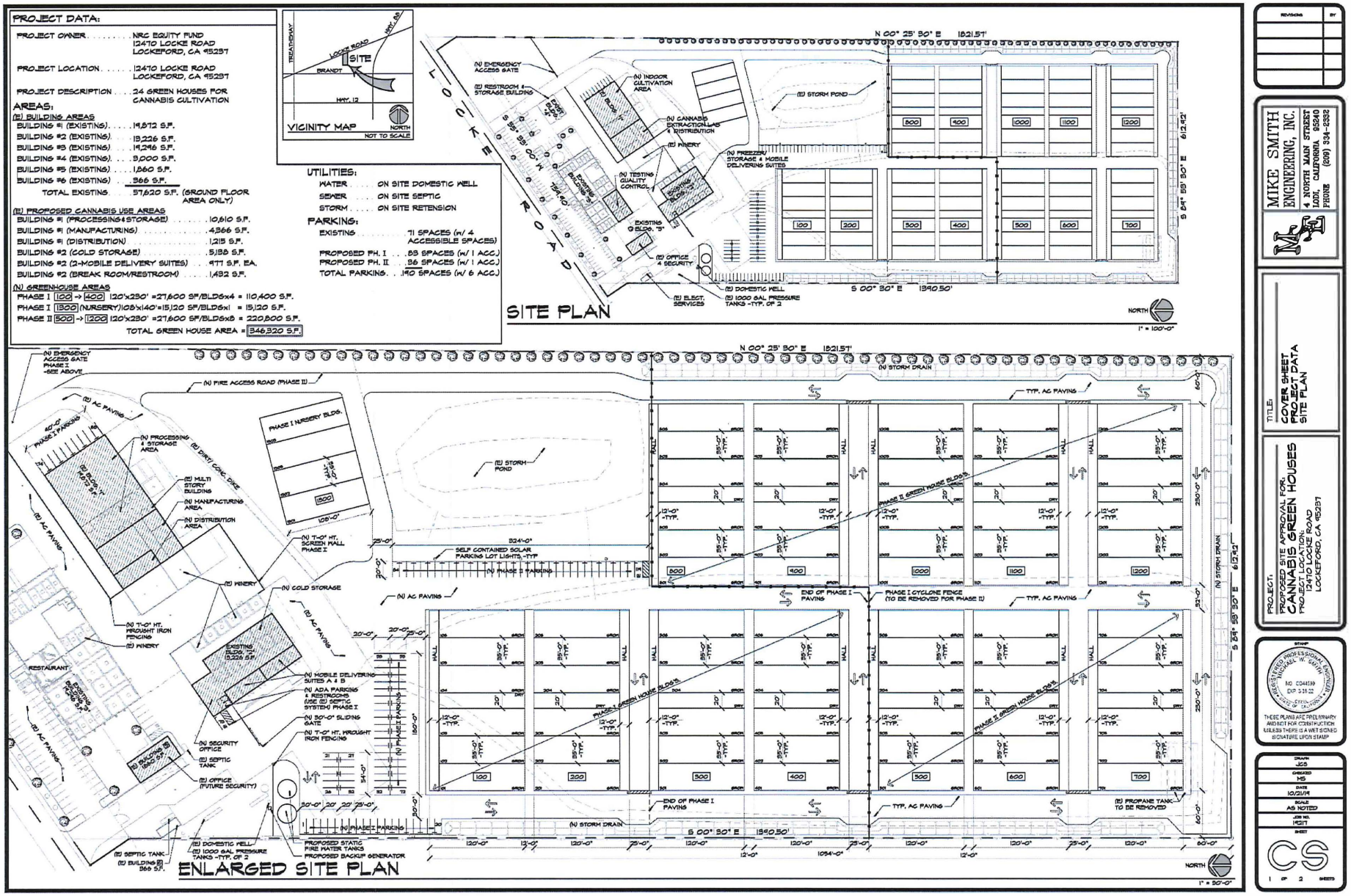
figure 1



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SITE PLAN

figure 2

EXISTING SETTING

This section of the study presents a description of existing conditions in the study area. Information presented in this section of the study is based on on-site field observations, current traffic count data and other data available from local and state agencies. This section of the traffic impact study also describes analysis methods applied for this study as well as the evaluation criteria used to determine the significance of project-related effects.

Circulation System

This traffic impact study presents analyses of traffic operating conditions at intersections near the project that may be affected by the proposed project. The limits of the study area were identified through discussions with county staff.

The following is a description of roadways that provide access to the proposed project site.

State Route 12 (SR 12) is an east-west route beginning in Sebastopol in Sonoma County and terminating in San Andreas in Calaveras County. About 4 miles east of Lodi the route overlaps with SR 88 in Lockeford and continues as a joint route to just east of Clements where the routes separate. In the vicinity of the Tretheway Road intersection SR 12 is a two-lane roadway. The most recent daily traffic volumes reported by the California Departments of Transportation (Caltrans) indicated that SR 12 carried an *Average Annual Daily Traffic (AADT)* volume of 8,700 vehicles per day between Bruella Road and Tretheway Road and about 5,750 AADT between Tretheway Road and SR 88. Trucks comprise about 5% of the daily volume in this area.

State Route 88 (SR 88) is an east-west route across San Joaquin County. SR 88 originates at SR 99 in Stockton and continues east to Alpine County and the Nevada state line. As noted above SR 88 and SR 12 overlap through Lockeford and Clements. Beginning at Brandt Road and heading east through Lockeford SR 12/88 is a two lane with a continuous left turn lane (CLTL). The most recent daily traffic volumes reported by indicated that the combined SR 12/88 corridor carried an AADT volume of 14,600 vehicles per day south of Jack Tone Road and 15,600 AADT north of Jack Tone Road. Trucks comprise about 5% of the daily volume in this area.

East Locke Road is a 2-lane road that runs on a diagonal northeast to southwest from SR 12/88 to Tretheway Road just southwest of Brandt Road. The posted speed limit is 35 mph. Daily traffic along Locke Avenue is about 900 vehicles per day, with trucks traffic comprising about 17% of the total traffic.

Study Area Intersections

This analysis focusses on the operation of two intersections in the area of the project.

The **SR 12 / Tretheway Road intersection** is a minor leg stop controlled intersection. The SR 12 approaches are a single lane in each direction with 8-foot paved shoulders. The posted speed is 55 mph. The Tretheway Road approaches are also single lane; however, the shoulders are unpaved. The posted speed is 45 mph. There are no crosswalks or bike lanes.

The **SR 12/88 / East Locke Road intersection** is a skewed intersection with two minor leg stop controlled intersections offset by about 200 feet. In this section of road SR 12/88 is oriented north-south. The west leg of the intersection was studied for this analysis. The SR 12/88 approaches are single lane with paved shoulders. A 150-foot left turn lane that transitions into a CLTL is present for northbound traffic. The southbound approach consists of a through-right lane. The eastbound East Locke Road approach is a single lane with a 60-foot right turn lane at the intersection; the shoulders are unpaved. The posted speed along both roadways is 35 mph, and there are no crosswalks or bike lanes.

Public Transportation

The San Joaquin Regional Transit District (SJRTD) is the primary provider of public transportation service in San Joaquin County. SJRTD provides fixed-route, flexible fixed-route, and dial-a-ride services in the County. In rural areas each service is described in more detail below.

- **RTD Van Go! Service** is an on-demand rideshare service for rural communities within San Joaquin County including Lockeford. RTD Van Go! allows transferring between service zones and transfers to fixed-route bus service. Weekend and holiday service is available. Advance reservations are recommended although bookings can be made on the same of travel.

- **Dial-a-Ride** provides curb-to-curb transportation to persons who qualify under the Americans with Disabilities Act. The program is specifically designed for individuals who, due to their disability, are unable to use the fixed-route services in San Joaquin County. This service is available 365 days a year by appointment only during Stockton Metropolitan Area (SMA) service hours and within ¾ mile of an SMA fixed route.

Bicycle and Pedestrian Circulation Systems

Bicycles. San Joaquin County is developing a Bicycle Master Plan Update to identify gaps in the existing bicycle network, propose ways to create a more connected network and develop supporting facilities. The SJCOG *Regional Bicycle, Pedestrian and Safe Routes to School Master Plan (2012)* notes the current status and planned improvements to facilities countywide. Caltrans guidelines, bicycle facilities are generally divided into four categories:

- **Class I Bikeway (Bike Path).** A completely separate facility from the roadway designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

- **Class II Bikeway (Bike Lane).** A striped lane designated for the use of bicycles on a street or highway. Vehicle parking and vehicle/pedestrian cross-flow are permitted at designated locations.

- **Class III Bikeway (Bike Route).** A route designated by signs or pavement markings for bicyclists within the vehicular travel lane (i.e., shared use) of a roadway.

- **Class IV Bikeway (Separated Bikeway):** A Class IV bikeway (separated bikeway) is a bikeway for the exclusive use of bicycles and includes a separation required between the separated bikeway and the through vehicular traffic.

The SJCOG plan notes that there are no current dedicated bicycle facilities in the area; however Caltrans notes that SR 12/88 is a Class III bike route through Lockeford. The plan identifies "vision projects" that were developed with guidance from adopted planning documents including the San Joaquin County Bicycle Master Plan (2010). The following projects are identified in the project vicinity:

- East Locke Road between Tretheway Road and SR 12/88 (Class III bike route)
- Tretheway Road between East Locke Road and SR 12 (Class III bike route)
- Brandt Road between SR 12 and Tully Road (Class III bike route)

Sidewalks. Sidewalks do not exist along East Locke Road, Tretheway Road or SR 12/88 in the vicinity of the project.

METHODOLOGY

The following is a description of the methods used in the analysis presented in this traffic impact study.

Vehicle Miles Traveled

In the *San Joaquin County Traffic Impact Study Guidelines*, the impact of a project on LOS is an important factor in determining whether a project has a significant impact. However, recent changes to CEQA have changed how lead agencies use LOS in determining whether a project has a significant impact on transportation. As noted in the California Governor's Office of Planning and Research (OPR) document *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018),

> "Senate Bill 743 (Steinberg, 2013), which was codified in Public Resources Code section 21099, required changes to the guidelines implementing CEQA (CEQA Guidelines) (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. . . OPR has proposed, and the California Natural Resources Agency (Agency) has certified and adopted, changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. With the California Natural Resources Agency's certification and adoption of the changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA. (Pub. Resources Code, § 21099, subd. (b)(3).)"

Notably, the *San Joaquin County Traffic Impact Study Guidelines* was prepared before the recent changes to CEQA due to Senate Bill 743 (Steinberg 2013). As a result, the County guidelines specify use of LOS in determining whether a project has a significant impact. Consistent with the approach described in the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA*, LOS will not be used in this traffic impact study as a basis for identifying significant impacts. Rather, the methods, assumptions and significance thresholds presented in the County guideline will be used to determine whether the project is consistent or inconsistent with General Plan policies on LOS, and whether the magnitude of inconsistency should be considered significant or less than significant.

Certain types of projects as identified in statute, the CEQA Guidelines, or in OPR's Technical Advisory are presumed to have a less than significant impact on VMT and therefore a less than significant impact on transportation. Generally, the identified projects contribute to efficient land use patterns enabling higher levels of walking, cycling, and transit as well as lower average trip length. These projects include, for example, projects in transit priority areas, projects consisting of residential infill or those located in low VMT areas.

Caltrans references OPR's December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which identifies projects and areas presumed to have a less than significant transportation impact. Those include:

1. Residential, office, or retail projects within a Transit Priority Area, where a project is within a ½ mile of an existing or planned major transit stop or an existing stop along a high-quality transit corridor.

    a. A major transit stop is defined as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (Pub. Resources Code, § 21064.3).

    b. A high-quality transit corridor is defined as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours (Pub. Resources Code, § 21155).

2. An area pre-screened by an agency as having low residential or office VMT:

    a. An area where existing residential projects exhibit VMT per capita 15 percent or more below city or regional average.

    b. An area where existing office projects exhibit VMT per capita 15 percent or more below regional average.

3. Residential projects composed of 100 percent or near-100 percent affordable housing located in any infill location. Additionally, per OPR's Technical Advisory, "Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed use projects) containing a particular amount of affordable housing, based on local circumstances and evidence. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units."

4. A locally-serving retail project (such a project typically reduces vehicle travel by providing a more proximate shopping destination, i.e., better accessibility).

5. Mixed-use projects composed entirely of the above low-VMT project types.

6. In any area of the state, absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact.

However, a land use project near transit may have a significant impact on VMT if it:

1. Has a floor area ratio less than 0.75.
2. Includes more parking than required by the local permitting agency.

3. Is inconsistent with the region's Sustainable Communities Strategy (i.e., development is outside region's development footprint, or in area specified as open space).
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

In very limited situations, analysis or mitigation may be appropriate in low VMT areas to address specific multimodal access management issues directly caused by the project such as issues related to line of sight caused by the placement of a driveway. These situations are to be determined based on the details of development proposals and their setting and will be addressed in future guidance.

Should a project not meet the minimum screening thresholds, a VMT analysis should be conducted. The OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018) identifies a threshold of 15 percent below the baseline for determining the significance of VMT impacts associated with residential and office land use developments. Locally-serving retail projects, such as a project that reduces vehicle travel by providing a more proximate shopping destination, i.e., better accessibility is considered to have a less than significant transportation impact.

General Plan Policy Consistency Criteria

The significance of the proposed project's inconsistency with General Plan policies is based on a determination of whether resulting LOS is considered acceptable. A project's inconsistency with General Plan policies is considered significant if implementation of the project would result in LOS changing from levels considered acceptable to levels considered unacceptable, or if the project would substantially worsen already unacceptable LOS.

LOS analysis provides a basis for describing existing traffic conditions and for evaluating the significance of project-related traffic impacts. LOS measures the quality of traffic flow and is represented by letter designations from A to F, with a grade of A referring to the best conditions, and F representing the worst conditions. The characteristics associated with the various LOS for intersections are presented in Table 1.

For State highways that are designated as part of SJCOG's Congestion Management Plan (CMP), both the Caltrans and CMP LOS standards shall apply. Where County roadways are designated as part of SJCOG's CMP, both the County and CMP LOS standards shall apply. (RDR/PSP). SR 12/88 is identified as a route of regional significance.

Caltrans District 10 prepared a Transportation Concept Report (TCR) for SR 12 in 2012. The TCR notes that within District 10, SR 12 is on the Interregional Road System (IRRS), but is not a High Emphasis or Focus Route, and the concept LOS standard for facilities with this designation is 'C' for rural and 'D' for urban.

The analysis makes use of the methods prescribed by Caltrans District 10. The methods contained in the 6th Edition of the Highway Capacity Manual (HCM) were used with Synchro software employed to assess each intersection.

TABLE 1 INTERSECTION LEVEL OF SERVICE DEFINITIONS		
Level of Service	**Signalized Intersection**	**Unsignalized Intersection**
A	Uncongested operations, all queues clear in a single-signal cycle. Delay $\leq$ 10.0 sec	Little or no delay. Delay $\leq$ 10 sec/vehicle
B	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and $\leq$ 20.0 sec	Short traffic delays. Delay > 10 sec/vehicle and $\leq$ 15 sec/vehicle
C	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and $\leq$ 35.0 sec	Average traffic delays. Delay > 15 sec/vehicle and $\leq$ 25 sec/vehicle
D	Significant congestion of critical approaches, but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and $\leq$ 55.0 sec	Long traffic delays. Delay > 25 sec/vehicle and $\leq$ 35 sec/vehicle
E	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and $\leq$ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/vehicle and $\leq$ 50 sec/vehicle
F	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/vehicle
Source: HCM, 6th Edition.		

Level of Service Significance Thresholds

The significance of the proposed project's impact on traffic operating conditions is based on a determination of whether resulting LOS is considered acceptable under applicable standards. These standards are adopted by the agencies with jurisdiction for each facility. In this case, SR 12 and SR 88 are under Caltrans jurisdiction. East Locke Road is under San Joaquin County jurisdiction.

San Joaquin County. The significance of the project's impact on traffic operating conditions is based on a determination of whether resulting intersection LOS is considered acceptable. A project's impact on traffic conditions is considered significant if implementation of the project would result in LOS changing from levels considered acceptable to levels considered unacceptable, or if the project would worsen already unacceptable LOS.

Policy TM-3.1, Roadway Provision, of the *San Joaquin County General Plan Policy Document* (County of San Joaquin 2016) states, in part:

> "The County shall maintain Level of Service (LOS) standards consistent with the San Joaquin Council of Governments (SJCOG) Congestion Management Program (CMP) for State highways and designated County roadways and intersections of regional significance. Per the CMP, all designated CMP roadways and

intersections shall operate at a LOS D or better except for roadways with "grandfathered" LOS. LOS for State highways shall be maintained in cooperation with Caltrans. The County LOS standard for intersections is LOS "D" or better on Minor Arterials and roadways of higher classification and LOS "C" or better on all other non-CMP designated County roadways and intersections. The County shall also maintain the following:

- on State highways, LOS D or Caltrans standards whichever is stricter.
- within a city's sphere of influence, LOS D, or the city planned standards for that level of service.
- on Mountain House Gateways, as defined in the Mountain House Master Plan, LOS D, on all other Mountain House roads, LOS C."

The *San Joaquin County 2035 General Plan Environmental Impact Report* (County of San Joaquin 2014) states,

> "For any Regional Congestion Management Program (RCMP) designated roadway or intersection currently operating or expected to operate at LOS D or better under No Project conditions, the project would result in a significant impact if the project-added traffic would result in LOS E or F operating conditions. For RCMP intersections or roadways currently operating or expected to operate at LOS E or F under No Project conditions, the project would result in a significant impact if it would increase:
>
> - Average delay by 4 seconds or more (intersections); or
> - The volume-to-capacity (v/c) ratio by 1.0 or more."

State Routes 12 and 88 are designated RCMP roadways. Therefore, based on the *San Joaquin County General Plan Policy Document* and the *San Joaquin County 2035 General Plan Environmental Impact Report*, LOS D is considered acceptable for study facilities.

If the Lockeford Cannabis Business Park Project would result in LOS at the study facility changing from acceptable LOS or better to unacceptable LOS or worse, the impact will be considered inconsistent with the General Plan. Recommended measures which would result in acceptable LOS at the study facility will be considered to reduce the impact to a less-than-significant level.

Consistent with the *San Joaquin County 2035 General Plan Environmental Impact Report*, if an RCMP study facility is already operating at an unacceptable LOS E or F under Existing conditions, or under Cumulative No Project conditions, increasing delay at an intersection by four seconds or more will be considered inconsistent with the General Plan.

Travel Forecasting

For this analysis alternative sources for information regarding future traffic volumes in this area of San Joaquin County were reviewed and considered. Traffic volumes were developed for two scenarios:

- Existing Plus Approved Projects (EPAP), and
- Cumulative (Year 2035).

The EPAP scenario assumes completion of approved development projects in San Joaquin County. San Joaquin County planning staff was contacted, and identified two approved projects in the Lockeford area that would add background traffic to the existing roadway conditions.

Long Term cumulative traffic volumes were developed based on the volumes contained in the 3-County travel demand model. The differential method was used to develop peak hour segment volumes throughout the project area. This method adds the difference between the cumulative 2035 and baseline 2020 model results to the existing traffic conditions. The study intersection turning movements were then balanced using the techniques described in the NCHRP Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*. The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes.

EXISTING CONDITIONS

Intersection Traffic Volumes

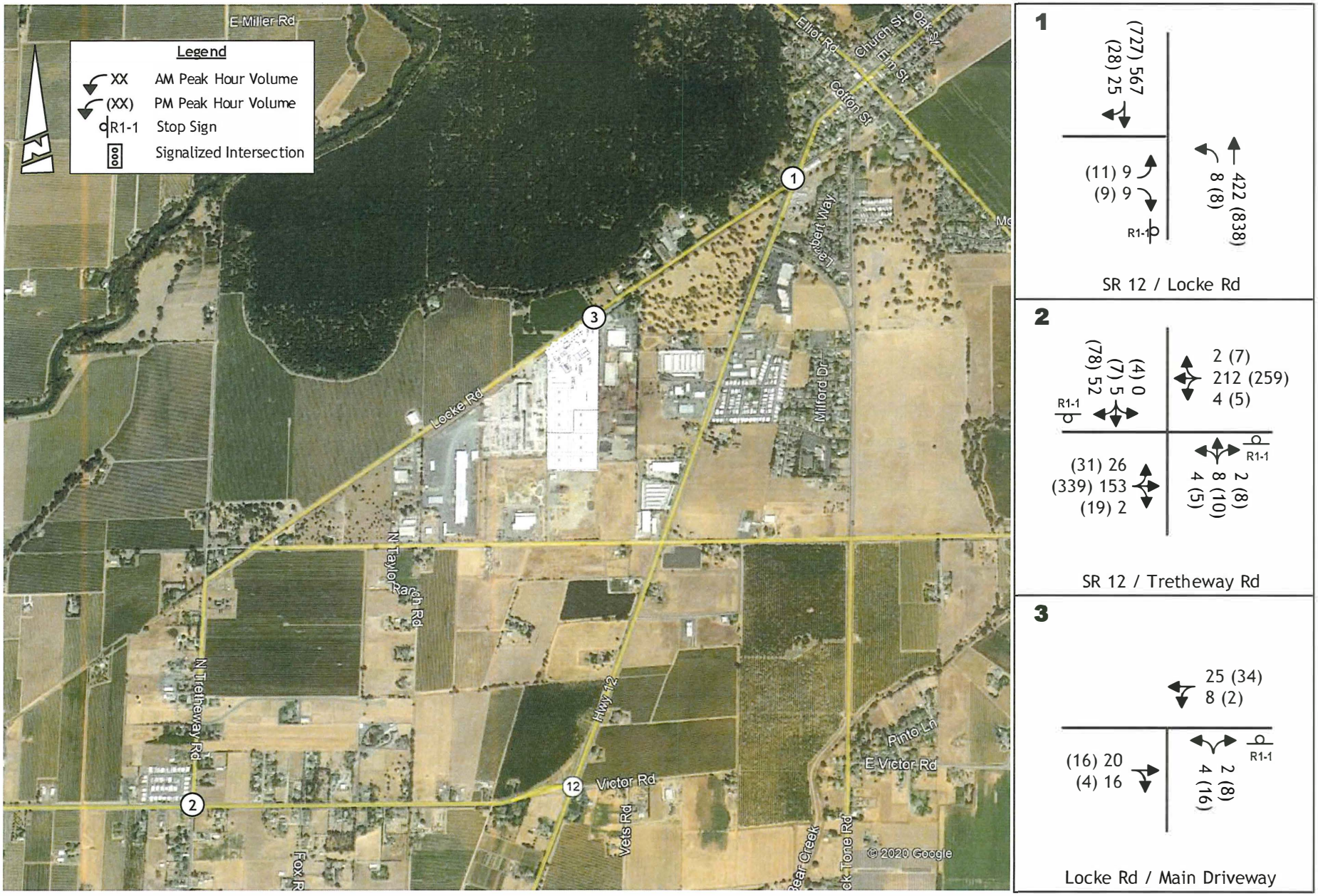
Figure 3 presents current a.m. and p.m. peak hour traffic volumes and geometry at study intersections. Data at the study intersections along SR 12 and SR 12/88 are based on counts collected in August 2020. These counts were compared to available Caltrans Traffic Census Program data along SR 12/88 and adjusted to pre-Covid19 volumes. Traffic volumes at the project entrance were based on the counts conducted along the state highways and projected trips based on the existing winery uses. A summary of the traffic count data is presented in the technical appendix.

Intersection Levels of Service

Table 2 presents existing a.m. peak hour and p.m. peak hour Level of Service at the study locations. The worksheets presenting the calculation of LOS are included in the technical appendix. As indicated, all study intersections operate with Levels of Service that satisfy the minimum LOS D standard.

TABLE 2
EXISTING INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service
1. SR 12/88 / Locke Rd	EB stop				
NB left turn		8.9	A	9.5	A
EB left		13.5	B	18.0	C
EB right		12.6	B	14.7	B
2. SR 12 / Tretheway Rd	NB/SB Stop				
NB approach		12.4	B	15.3	C
SB approach		10.1	B	11.6	B
EB left turn		7.8	A	7.9	A
WB left turn		7.6	A	8.1	A
3. Locke Rd / Project Driveway (Existing)	NB stop				
NB		8.8	A	8.8	A
WB left		7.3	A	7.3	A



EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 3

95th Percentile Queues

The length of left turn lane queues was determined from the Synchro LOS results. Table 3 indicates that current left turn queues are less than one vehicle at all intersections.

TABLE 3
EXISTING PEAK HOUR QUEUES

Intersection	Lane	Storage (feet)	AM Peak Hour Volume (vph)	AM Peak Hour 95th % Queue (feet)	PM Peak Hour Volume (vph)	PM Peak Hour 95th % Queue (feet)
SR 12/88 / Locke Rd	NB left[1]	140	8	<25	8	<25
	EB left[2]	n/a	9	<25	11	<25
	EB right	60	9	<25	9	<25
SR 12 / Tretheway Rd	NB[3]	n/a	14	<25	23	<25
	SB[3]	n/a	57	<25	89	<25
	EB[4]	n/a	26	<25	31	<25
	WB[4]	n/a	4	<25	5	<25
Locke Rd / Project Access (Existing)	NB	n/a	6	<25	24	<25
	WB	n/a	8	<25	2	<25

[1] lane continues as TWLT lane
[2] through lane becomes left turn at intersection
[3] volume is sum of all movements on minor approach
[4] volume is left turn movements in through lane

Sight Distance

Sight distance at the existing project driveways on East Locke Road and at the two study intersections, along SR 12 and SR 12/88 was compared to the requirements of the Caltrans *Highway Design Manual*, Chapters 2 and 4. All roadways are generally level and straight, and the sight distances looking left or right from southbound Tretheway Road, eastbound East Locke Road and the project driveway appear unrestricted. At the SR 12 / Tretheway Road intersection, the posted speed on SR 12 is 55 mph and the required sight distance for a right turning truck is about 850 feet. The available sight distance looking west from Tretheway Road appears to be at least 900 feet. At the SR 12/88 / East Locke Road intersection, the posted speed on SR 12/88 is 35 mph. The required sight distance for a left turning truck is about 600 feet, and the available sight distance looking north and south from East Locke Road appears to be at least 650 feet. There are three project driveways along East Locke Road, a 35 mph roadway. Each appears to have at least 650 feet of sight distance.

PROJECT CHARACTERISTICS

The development of the project would result in vehicle traffic to and from the project site. The amount of additional traffic on a particular section of the street network is dependent upon three factors:

- Trip Generation, the number of new trips generated by the project,
- Trip Distribution, the direction of travel for the new traffic, and
- Trip Assignment, the specific routes used by the new traffic.

Trip Generation

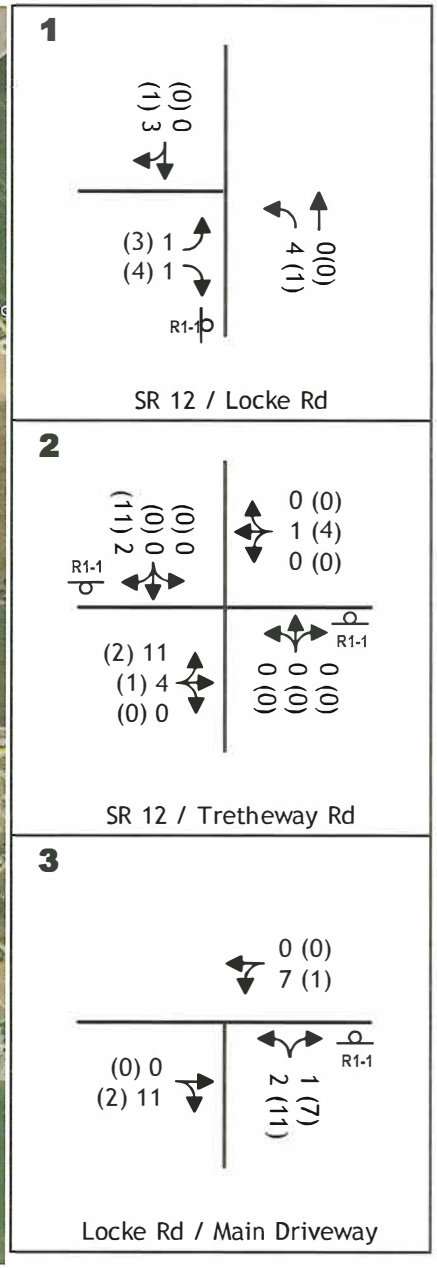
Typically, the Institute of Transportation Engineers (ITE) publication *Trip Generation Manual, 10th Edition* is the most recognized source for trip generation rates. However, the Manual provides only information specific to retail cannabis sales (Marijuana Dispensary, Land Use Code 882); San Joaquin County does not allow retail sales of cannabis products. Therefore, project trip generation was developed based on projected employment and commercial project traffic information provided by the applicant.

Trip Generation Forecast. The Lockeford Commercial Cannabis project anticipates employing approximately 29 direct employees with two security personnel during full operations. At full operation, approximately 24 employees will work within the greenhouses in regular 8-hour days, 7 days per week; the projected work schedule is from 7 a.m. to 4 p.m. Four additional employees will work in regular 8-hour days, 5 days per week in the Processing / Distribution facilities, between 9 a.m. and 5 p.m. One employee will be on-site overnight every day of the week, from 5 p.m. to 7 a.m. Security personnel will be on-site working 12-hour shifts daily. Finally, it is anticipated that the site will have 10 truck shipments per week, split evenly during the midweek. Four new truck trips per day will be added along East Locke Road. To provide a conservative estimate of peak hour traffic the truck traffic was presumed to arrive and depart during either of the peak hours. Table 4 details the projected trip generation assumptions for the site. Additionally, it is assumed that additional trips may occur with employees leaving and returning to the site during the day as well as ancillary trips for mail, deliveries, etc. to occur. The project is expected to generate a total of 78 daily trips (trucks and passenger cars) and 39 a.m. and p.m. peak hour trips.

TABLE 4 OPERATIONS WORKFORCE & HOURS OF OPERATION					
Workforce	**Shift**	**Total Employees**	**Daily Trips**	**AM Trips In/Out**	**PM Trips In/Out**
Greenhouse Personnel	8 hours a day, 7 days a week 7:00 a.m. – 4:00 p.m.	24	58[1]	24 / 3	3 / 24
Processing / Distribution Operations	8 hours a day, 5 days a week 9:00 a.m. – 5:00 p.m.	4	12[2]	4 / 0	0 / 4
Nighttime Operations	14 hours a day, 7 days per week 5:00 p.m. – 7:00 a.m.	1	2	0 / 1	1 / 0
Security	24 hours a day,7 days a week 12 hour shifts	2	4	1 / 1	1 / 1
Truck Delivery / Shipping	10 trucks per week		4	2 /2[3]	2 / 2[3]
TOTAL WORKFORCE / TRIPS		**31**	**80**	**31 / 7**	**7 / 31**

[1]Includes 20% additional daily trips for deliveries, mail, etc. and employee off-site trips; assumed 10% staff dropped off and picked up
[2] includes 50% additional employee trips throughout day
[3] Trucks assumed to arrive / depart during either peak hour

Trip Distribution and Assignment. The distribution of project trips was estimated based on existing traffic patterns in the Lockeford area, where employees may be expected to live and where product may be shipped. The assignment of project trips to the local roadways will reflect the least time path between origin and destination along alternative routes, and the quickest path may vary over the course of the day. Trips heading south toward Stockton and SR 99 are expected to use SR 88 while trips heading west to Lodi or north on SR 99 are expected to use SR 12. Trips to and from the east will use SR 12/88. Figure 4 presents the projected trip distribution and project trip assignment.



PROJECT ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 4

EXISTING PLUS PROJECT IMPACTS

Vehicle Miles Traveled

As identified in Table 4, the proposed project is projected to generate 78 daily trips. Based on The *Technical Advisory on Evaluating Transportation Impacts in CEQA* screening thresholds, the project is assumed to cause a less than significant transportation impact as it will generate less than 110 trips per day.

Intersection Levels of Service

Figure 5 displays the resulting a.m. peak hour and p.m. peak hour Existing Plus Project traffic volumes and intersection lane geometrics for each study intersection. Table 5 compares current and Plus Project Levels of Service. As indicated all LOS will continue to satisfy the County's minimum LOS D standard, and the project's impact is not significant.

95th Percentile Queues

The length of left turn lane 95th percentile queues was determined from the Synchro analysis. As indicated in Table 6, all queues are less than one vehicle.

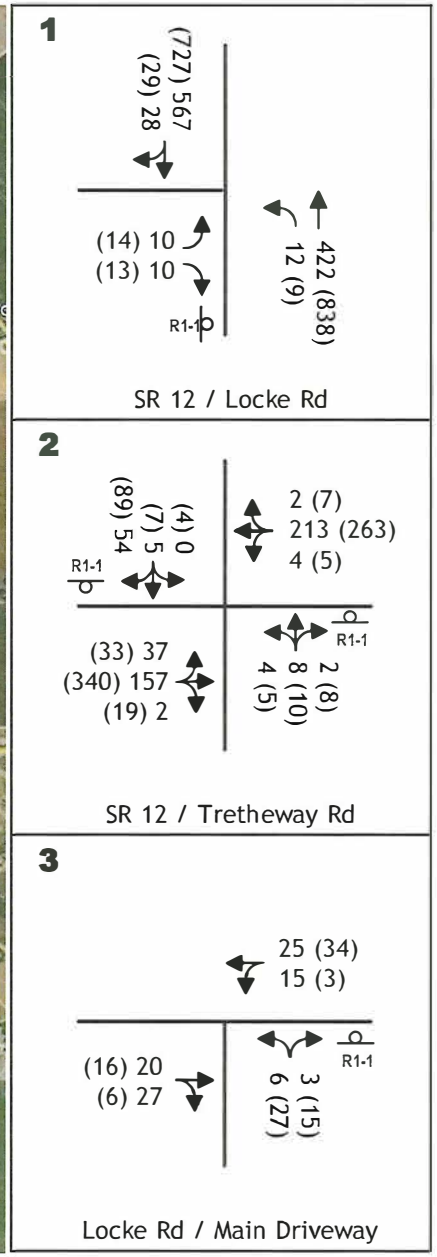
Other Transportation Modes

Pedestrians. As noted in the San Joaquin Council of Governments *Regional Bicycle, Pedestrian, and Safe Routes to School Master Plan,* September 2012, the County has a mixture of urban and rural pedestrian environments. The project is unlikely to generate appreciable pedestrian activity as East Locke Road is a rural two-lane road with a minimal paved shoulder; the adjacent land uses include farming and commercial/industrial land uses with residential limited to near the SR 12/88 intersection. The project is unlikely to generate pedestrian traffic to the point that new facilities are needed in an area where no improvements are suggested by the Master Plan.

Bicycles. Depending on where employees reside the project is unlikely to generate significant bicycle traffic to the point that new facilities are needed. However, the *Regional Bicycle, Pedestrian, and Safe Routes to School Master Plan* identifies two 'Vision Network Projects' that were based on adopted planning documents. The projects include installation of Class III Bike Route facilities that would connect SR 12 at Tretheway Road to East Locke Road at SR 12/88.

Transit. The project's employees are unlikely to generate an appreciable demand for transit service that would justify changes to current transit routes in the Lockeford area.

The project's impact to alternative transportation modes is not significant.



EXISTING PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 5

TABLE 5
EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		Existing		Existing Plus Project		Existing		Existing Plus Project	
		Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service
1. SR 12/88 / Locke Rd	EB stop								
NB left turn		8.9	A	8.9	A	9.5	A	9.5	A
EB left		13.5	B	13.7	B	18.0	C	18.2	C
EB right		12.6	B	12.7	B	14.7	B	14.8	B
2. SR 12 / Tretheway Rd	NB/SB Stop								
NB approach		12.4	B	12.8	B	15.3	C	15.6	C
SB approach		10.1	B	10.2	B	11.6	B	11.7	B
EB left turn		7.8	A	7.8	A	7.9	A	7.9	A
WB left turn		7.6	A	7.6	A	8.1	A	8.1	A
3. Locke Rd / Project Driveway (Existing)	NB stop								
NB		8.8	A	8.9	A	8.8	A	8.9	A
WB left		7.3	A	7.3	A	7.3	A	7.3	A

TABLE 6
EXISTING PLUS PROJECT PEAK HOUR QUEUES

Intersection	Lane	Storage (feet)	AM Peak Hour					PM Peak Hour				
			Existing		Ex Plus Project			Existing		Ex Plus Project		
			Volume (vph)	95th % Queue (feet)	Volume (vph)		95th % Queue (feet)	Volume (vph)	95th % Queue (feet)	Volume (vph)		95th % Queue (feet)
					Project	Total				Project	Total	
SR 12/88 / Locke Rd	NB left[1]	140	8	<25	4	12	<25	8	<25	1	9	<25
	EB left[2]	n/a	9	<25	1	10	<25	11	<25	3	14	<25
	EB right	60	9	<25	1	10	<25	9	<25	4	13	<25
SR 12 / Tretheway Rd	NB[3]	n/a	14	<25	0	14	<25	23	<25	0	23	<25
	SB[3]	n/a	57	<25	2	59	<25	89	<25	11	100	<25
	EB[4]	n/a	26	<25	11	37	<25	31	<25	2	33	<25
	WB[4]	n/a	4	<25	0	4	<25	5	<25	0	5	<25
Locke Rd / Project Access (Existing)	NB	n/a	6	<25	3	9	<25	24	<25	18	42	<25
	WB	n/a	8	<25	7	15	<25	2	<25	1	3	<25

[1] lane continues as TWLT lane
[2] through lane becomes left turn at intersection
[3] volume is sum of all movements on minor approach
[4] volume is left turn movements in through lane

Site Access and Internal Circulation

The project site plan has been reviewed with regards to key issues such as proximity to other driveways and driveway throat depth.

Driveway Access. There are three existing driveways into the project along East Locke Road, each equidistant from each other, with about 240' separation. A residential driveway is present directly across the street from the center driveway while driveways to adjacent industrial sites east and west of the project are about 270 feet from the outer project driveways

The main entry driveway provides access to the existing winery about midway along the East Locke Road frontage. The remaining driveways are located at the east and west ends of the site and while providing access to the parking field, also provide access to the portion of the site behind the existing buildings. On the east side of the site, a security gate will be installed to prevent access to the project greenhouses but will continue to allow access to the parking field; this gate will be used for emergency vehicle access only. The west driveway will allow project vehicles to access the greenhouses and the secure areas of the buildings. Similar to the east driveway, the security gate will be installed to allow public access to the parking field. Access to this area will be controlled with a security office adjacent to the gate.

Discounting the 'curb' returns the driveway throats range from 30 feet at the east driveway to 35 feet at both main entry and west driveway. The driveway throats are similar, with the distance from East Locke Road to the north side of the parking aisle about 35 feet. This will provide storage for about two vehicles; the queuing analysis indicates that a single vehicle will be queued at the 95th percentile.

Internal Circulation. As previously mentioned, there are three existing driveways providing access to the site. Parking is provided for public access from all driveways. Parking will also be provided within the secure area of the site. The site layout allows two-way circulation occurring from each driveway. Access to the secure area will be limited to the west driveway with a perimeter roadway around the site, allowing access to the greenhouses; an internal north-south drive aisle between the greenhouses is also proposed. Access to parking on the east side of the site will occur drive aisles between buildings.

Left Turn Lane Channelization. The need to widen SR 12 at Tretheway Road to provide a separate eastbound left turn lane was evaluated on a qualitative basis due to the small number of project trips. Currently, the SR 12 / Tretheway Road intersection has single lanes along all approaches. In the four-mile segment between east Lodi and the SR 88 intersection two locations were identified where left turn lanes are present. The first is the Bruella Road intersection in the town of Victor. Bruella Road is a north-south roadway from about Liberty Road to northern San Joaquin County and is the only access route across the Mokelumne River between Lodi and Lockeford. The second left turn lane occurs on the east side of Victor where PG&E has a service center with a constant volume of service vehicles entering and exiting the site each day. The Tretheway Road intersection averages up to about 260 vehicles per hour in the westbound direction, consistent with other minor intersections along SR 12. Adequate gaps are available as indicated in the queuing analysis that shows a single vehicle queue.

A left turn lane is present at the SR 12/88 / East Locke Road intersection and was therefore not evaluated.

The need to widen East Locke Road at the main site access was evaluated. Left turn lanes are typically justified in order to limit the effects of waiting vehicles on through traffic, both from the standpoint of traffic flow and access safety. In this area of East Locke Road, the roadway is a two-lane facility and provides access to adjacent farming and industrial land uses in the project vicinity without a turn lane. Traffic volumes along East Locke Road are low, and adequate gaps will continue to be present for project traffic to enter any of the driveways.

EXISTING PLUS APPROVED PROJECTS (EPAP) CONDITIONS

Existing Plus Approved Project (EPAP) conditions represent San Joaquin County's estimate of future background conditions with development of land uses that can proceed without additional entitlement. San Joaquin County Planning staff was contacted for a list of approved projects to include in the EPAP analysis. County planning identified four projects that are either currently in the application process or have time extensions applied. Of the four projects, two would add traffic to SR 12, SR 12/88 or Tretheway Road. These include the Lockeford Vista Subdivision project (PA-0500509) and the 12505 Brandt Road, LLC project (PA-1800204).

Intersection Traffic Volumes

The trips associated with the Lockeford Vista project, a 165-unit subdivision, were identified from the traffic study conducted in 2006 by Dowling Associates, Inc. The trips associated with the 12505 Brandt Road, LLC a truck parking facility were developed based on the project description and the expected trips generated by on-site staff and truck traffic. The traffic from both projects was assigned to the study area intersections. Resulting a.m. peak hour and p.m. peak hour intersection traffic volumes are presented in Figure 6 (No Project). Project trips were superimposed onto the background volumes to create Figure 7 (Plus Project) volumes.

Intersection Levels of Service

EPAP No Project Conditions. Table 7 presents the a.m. peak hour and p.m. peak hour LOS at the study locations under EPAP conditions. Under the EPAP scenario, all project study intersections will continue meet the minimum LOS D standard.

Intersection Queue Lengths

Table 8 presents a summary of the peak hour volumes resulting 95th percentile queues at the study intersections for either left turn lanes or along minor leg stop controlled approaches. Queues will continue to be one vehicle or less.

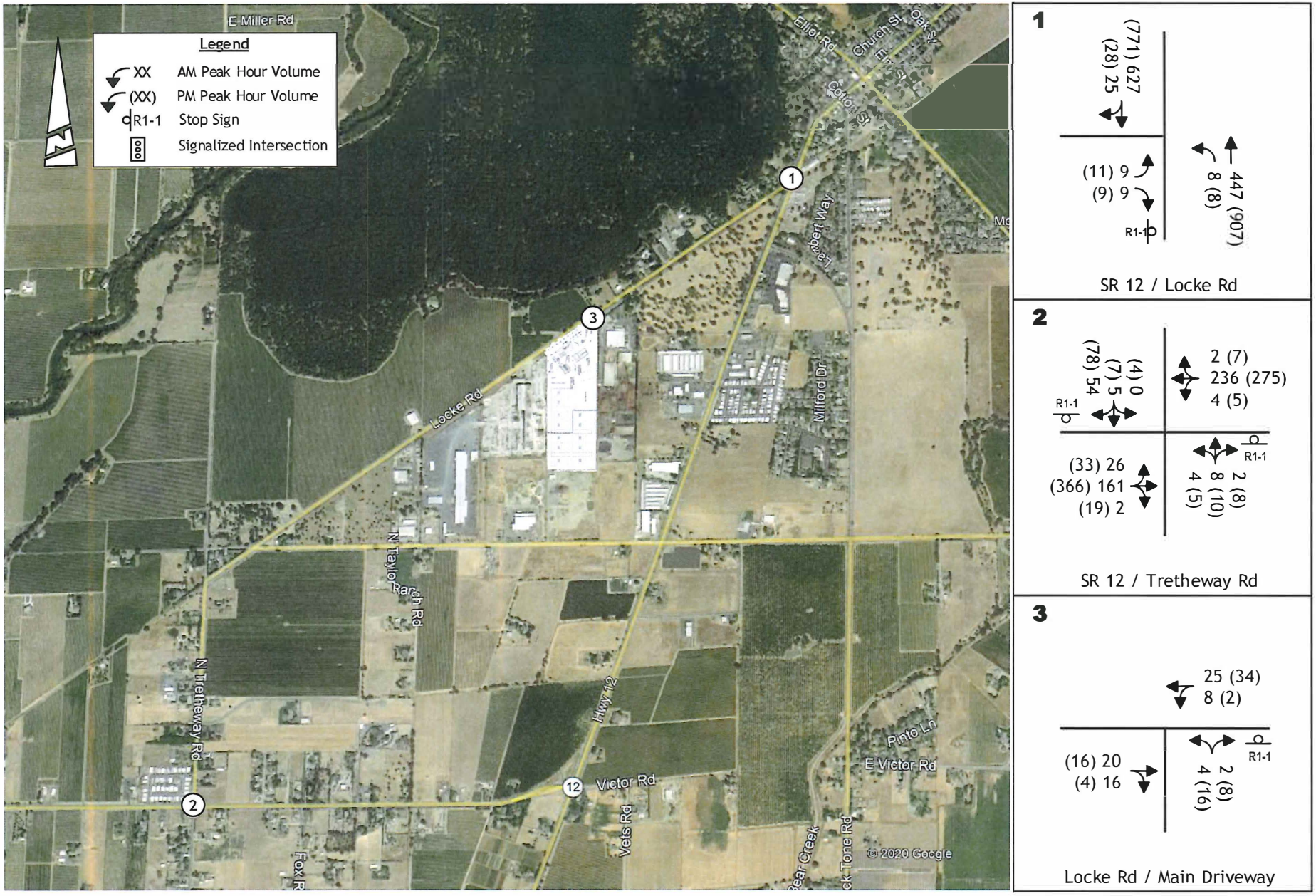
EPAP PLUS PROJECT CONDITIONS

Intersection Levels of Service

The addition of project trips will increase the length of delays at study intersections slightly. Table 7 presents the EPAP plus Project LOS conditions. The resulting Levels of Service will continue to meet the minimum LOS D standard.

95th Percentile Queues

The length of left turn lane 95th percentile queues was determined from the Synchro analysis. Table 8 presents the EPAP plus Project scenario, and all queues will continue to be one vehicle or less.



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EXISTING PLUS APPROVED PROJECTS TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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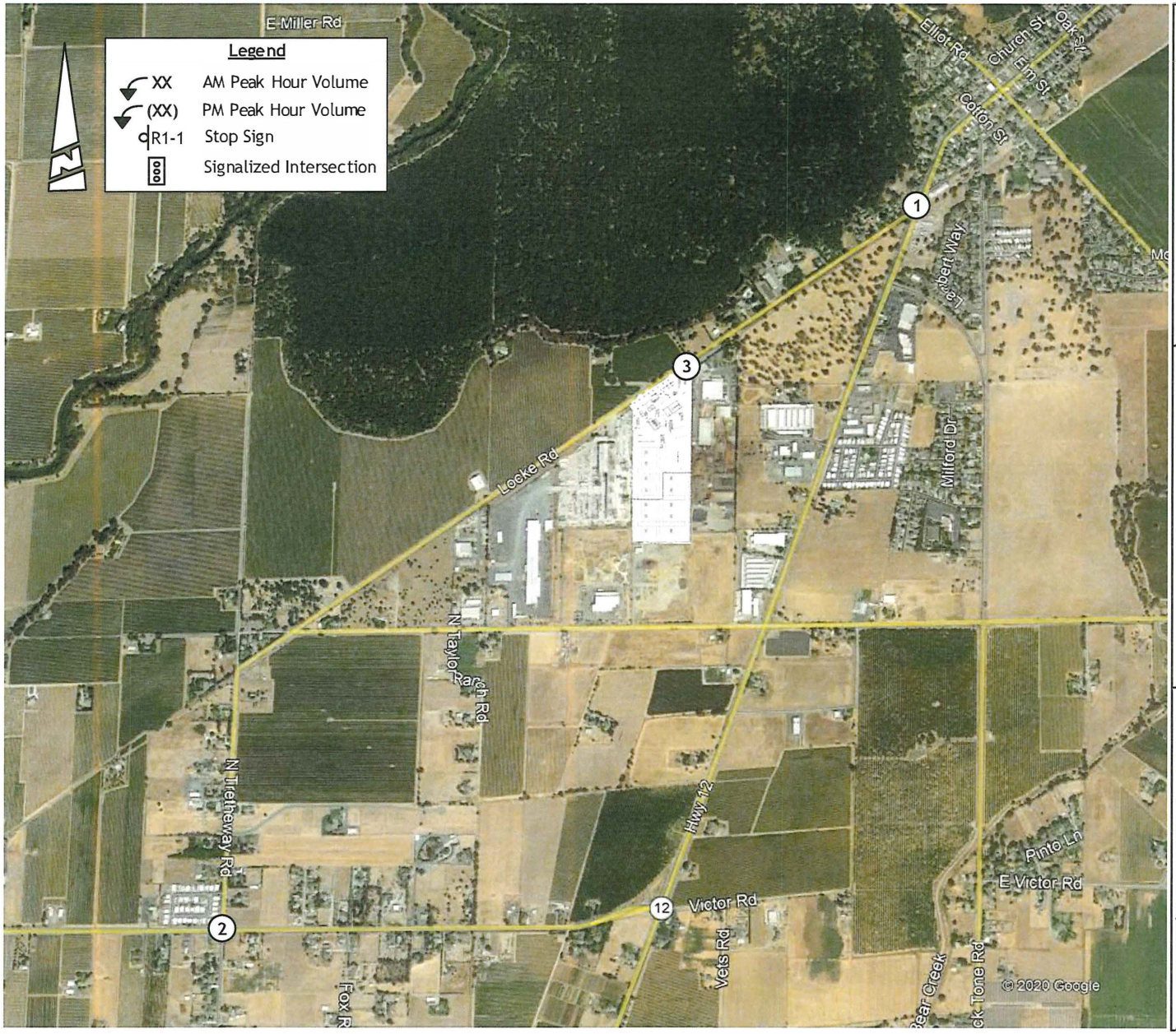
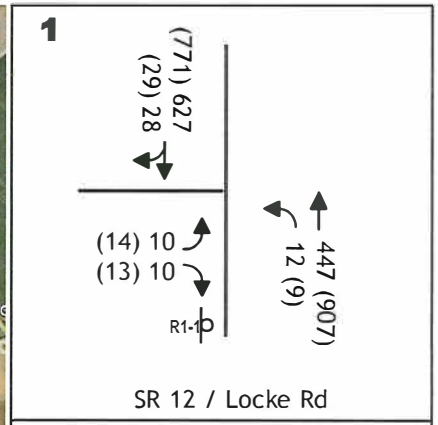
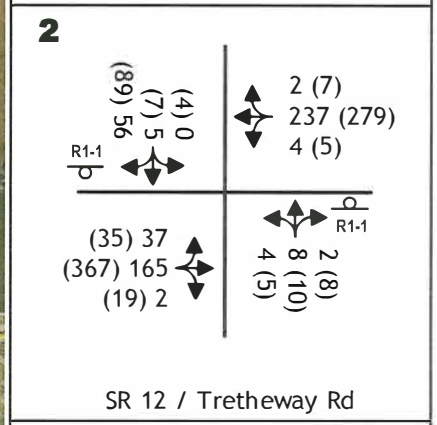
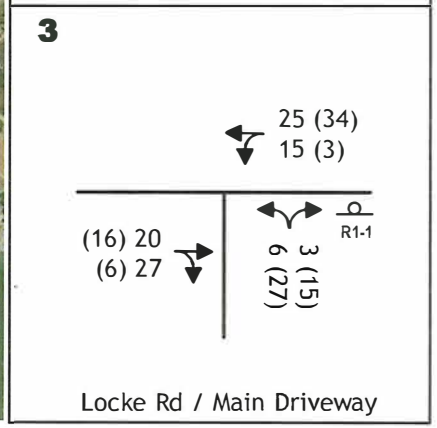
figure 6









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EPAP PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 7

TABLE 7
EPAP PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		EPAP		EPAP Plus Project		EPAP		EPAP Plus Project	
		Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service
1. SR 12/88 / Locke Rd									
NB left turn	EB stop	9.1	A	9.1	A	9.7	A	9.7	A
EB left		14.2	B	14.3	B	19.2	C	19.4	C
EB right		13.3	B	13.4	B	15.3	C	15.5	C
2. SR 12 / Tretheway Rd									
NB approach		12.8	B	13.2	B	16.1	C	16.4	C
SB approach	NB/SB Stop	10.4	B	10.4	B	11.9	B	11.9	B
EB left turn		7.8	A	7.8	A	8.0	A	8.0	A
WB left turn		7.6	A	7.6	A	8.2	A	8.2	A
3. Locke Rd / Project Driveway									
SB approach	NB/SB Stop	8.8	A	8.9	A	8.8	A	8.9	A
NB approach		7.3	A	7.3	A	7.3	A	7.3	A

TABLE 8
EPAP PLUS PROJECT PEAK HOUR QUEUES

Intersection	Lane	Storage (feet)	AM Peak Hour					PM Peak Hour				
			EPAP		EPAP Plus Project			EPAP		EPAP Plus Project		
			Volume (vph)	95th % Queue (feet)	Volume (vph)		95th % Queue (feet)	Volume (vph)	95th % Queue (feet)	Volume (vph)		95th % Queue (feet)
					Project	Total				Project	Total	
SR 12/88 / Locke Rd	NB left[1]	140	8	<25	4	12	<25	8	<25	1	9	<25
	EB left[2]	n/a	9	<25	1	10	<25	11	<25	3	14	<25
	EB right	60	9	<25	1	10	<25	9	<25	4	13	<25
SR 12 / Tretheway Rd	NB[3]	n/a	14	<25	0	14	<25	23	<25	0	23	<25
	SB[3]	n/a	59	<25	2	61	<25	89	<25	11	100	<25
	EB[4]	n/a	26	<25	11	37	<25	33	<25	2	35	<25
	WB[4]	n/a	4	<25	0	4	<25	5	<25	0	5	<25
Locke Rd / Project Access (Existing)	NB	n/a	6	<25	3	9	<25	24	<25	18	42	<25
	WB	n/a	8	<25	7	15	<25	2	<25	1	3	<25

[1] lane continues as TWLT lane

[2] through lane becomes left turn at intersection

[3] volume is sum of all movements on minor approach

[4] volume is left turn movements in through lane

CUMULATIVE YEAR 2035 CONDITIONS

The traffic impacts associated with the Lockeford Cannabis Park project was also evaluated within the context of future traffic conditions occurring in this area of San Joaquin County. Cumulative traffic was based upon the "3-County travel demand model", a macroscopic model including San Joaquin, Stanislaus and Merced counties. Future volumes along roadway segments within the county were developed using this model. This represents the best available information regarding future conditions in the study area.

Year 2035 Forecasts

The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection "balance". To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The "balancing" of future year intersection turning movement traffic volumes was conducted using methods described in the TRB's NCHRP 255. The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes.

The study intersection approaches were balanced using the difference method. The method adds the difference between the cumulative and baseline model conditions to existing approach and departure traffic volumes. Intersection turning movements were then calculated based on the NCHRP 255 methodology described above. Figure 8 presents the projected turning movements during both a.m. and p.m. peak hours under the Cumulative No Project conditions.

Future Roadway Improvements

The SJCOG administers Measure K, providing transportation improvements throughout San Joaquin County. The *2017* and *2019 Measure K Renewal SJCOG Strategic Plans* identify all projects to be funded through 2030/31. The Strategic Plan identifies one project in the project vicinity as part of the "First 20-Years". This includes widening of the SR 12/88 joint corridor between Lockeford and Clements from two to four lanes (Project Number SH08). The analysis of cumulative conditions assumes the joint corridor project is completed. No other improvements in the immediate study area are identified.

Intersection Levels of Service

Table 9 presents the a.m. peak hour and p.m. peak hour LOS at each study intersection under 2035 conditions. The eastbound left turn approach of the SR 12/88 / East Locke Road intersection is projected to decline to LOS E conditions. The remaining movements and intersections will operate within the County's General Plan significance thresholds, at LOS D or better. Traffic along the East Locke Road approach is below the level that would satisfy peak hour traffic volume warrants, therefore, a traffic signal would not be warranted.

Queue Lengths

Table 10 presents 95th percentile queues at study area intersections under Year 2035 conditions. All forecasted queue lengths remain within available storage areas, with the longest queues fewer than two vehicles, 50 feet.

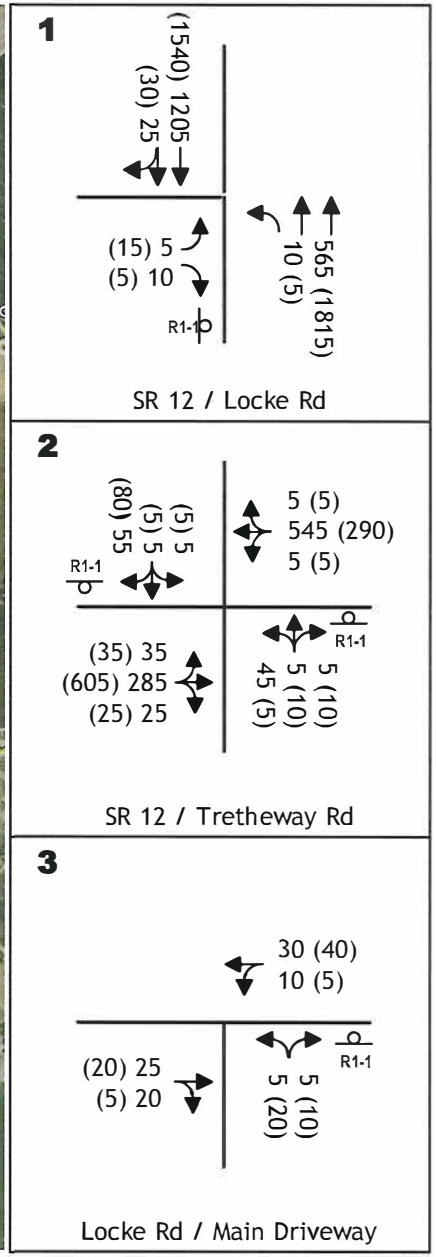
CUMULATIVE YEAR 2035 PLUS PROJECT CONDITIONS

Intersection Levels of Service

The addition of project trips will increase the length of delays at study intersections slightly. Figure 9 presents the projected turning movements during both a.m. and p.m. peak hours under the Cumulative Plus Project conditions. Table 9 presents the LOS results. The eastbound left turn lane will continue to operate at LOS E, with an increase in delay to 42.6 seconds per vehicle. This is within the County's 4-second threshold for intersections operating below LOS D conditions and is consistent with the County's General Plan policy. The remaining intersections will continue to meet the minimum LOS D standard.

95th Percentile Queues

The length of left turn lane 95th percentile queues was determined from the Synchro analysis. Table 10 presents the Cumulative Year 2035 plus Project scenario. All forecasted queue lengths remain within available storage areas, with the longest queues fewer than two vehicles, 50 feet.



CUMULATIVE TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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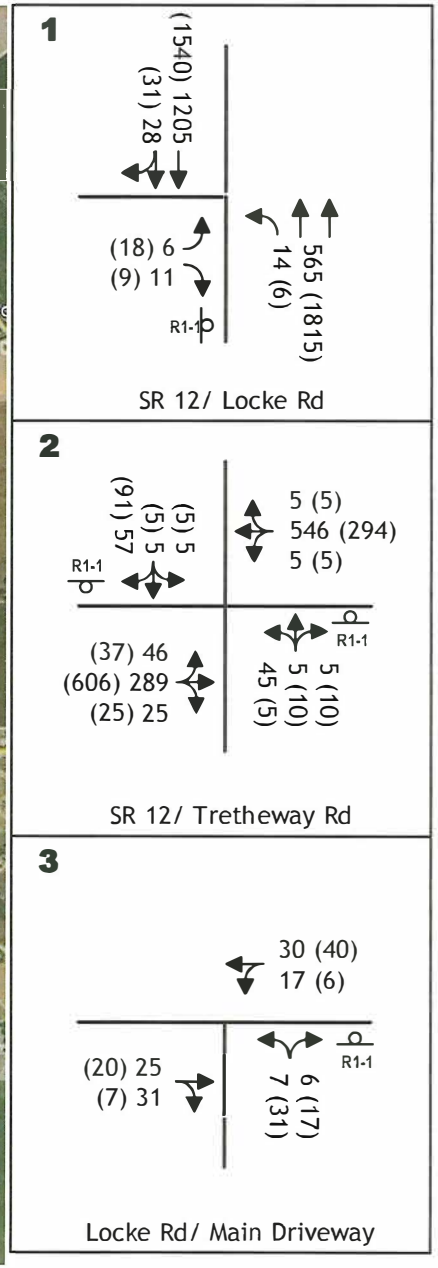
figure 8



CUM PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

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figure 9

TABLE 9
CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection	Control	AM Peak Hour				PM Peak Hour			
		Cumulative		Cumulative Plus Project		Cumulative		Cumulative Plus Project	
		Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service
1. SR 12/88 / Locke Rd									
NB left turn	EB stop	12.2	B	12.3	B	14.9	B	15.0	B
EB left		24.0	C	24.3	C	41.0	E	42.6	E
EB right		14.3	B	14.3	B	17.1	C	17.3	C
2. SR 12 / Tretheway Rd									
NB approach	NB/SB Stop	32.4	D	34.6	D	21.7	C	22.2	C
SB approach		15.4	C	15.6	C	13.0	B	13.0	B
EB left turn		8.8	A	8.9	A	8.0	A	8.0	A
WB left turn		8.0	A	8.0	A	9.0	A	9.0	A
3. Locke Rd / Project Driveway									
SB approach	NB/SB Stop	8.8	A	8.9	A	8.9	A	9.0	A
NB approach		7.3	A	7.4	A	7.3	A	7.3	A

XX –below General Plan LOS consistency threshold

TABLE 10
CUMULATIVE PLUS PROJECT PEAK HOUR QUEUES

Intersection	Lane	Storage (feet)	AM Peak Hour					PM Peak Hour				
			Cumulative		Cumulative Plus Project			Cumulative		Cumulative Plus Project		
			Volume (vph)	95th % Queue (feet)	Volume (vph)		95th % Queue (feet)	Volume (vph)	95th % Queue (feet)	Volume (vph)		95th % Queue (feet)
					Project	Total				Project	Total	
SR 12/88 / Locke Rd	NB left[1]	140	10	<25	4	14	<25	5	<25	1	6	<25
	EB left[2]	n/a	5	<25	1	6	<25	15	<25	3	18	<25
	EB right	60	10	<25	1	11	<25	5	<25	4	9	<25
SR 12 / Tretheway Rd	NB[3]	n/a	55	33	0	55	35	25	<25	0	25	<25
	SB[3]	n/a	65	<25	2	67	<25	90	<25	11	101	<25
	EB[4]	n/a	35	<25	11	46	<25	35	<25	2	37	<25
	WB[4]	n/a	5	<25	0	5	<25	5	<25	0	5	<25
Locke Rd / Project Access (Existing)	NB	n/a	10	<25	3	13	<25	30	<25	18	48	<25
	WB[4]	n/a	10	<25	7	17	<25	5	<25	1	6	<25

[1] lane continues as TWLT lane

[2] through lane becomes left turn at intersection

[3] volume is sum of all movements on minor approach

[4] volume is left turn movements in through lane

APPENDICES

(under separate cover)