

TRAFFIC IMPACT STUDY
FOR
BRIDGE STREET LEVEL OF SERVICE POLICY GPA
Yuba City, CA

Prepared For:

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Bridge Street LOS Policy GPA

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Transportation Engineers

**TRAFFIC IMPACT STUDY FOR
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TRAFFIC IMPACT ANALYSIS FOR BRIDGE STREET LEVEL OF SERVICE POLICY GPA

INTRODUCTION / SUMMARY

Study Purpose and Project Description

Project Description. The proposed project is amending Policy 5.2-I-12 of the Yuba City General Plan Transportation Element to add a portion of Bridge Street to the list of streets where exceptions to the City's General minimum LOS D policy are granted, as indicated below.

Traffic Level of Service

5.2-I-12 Develop and manage the roadway system to obtain LOS D or better for all major roadways and intersections in the City. This policy does not extend to residential streets (i.e., streets with direct driveway access to homes) or bridges across the Feather River nor does the policy apply to state highways and their intersections, where Caltrans policies apply. Exceptions to LOS D policy may be allowed by the City Council in areas, such as downtown, where allowing a lower LOS would result in clear public benefits. Specific exceptions granted by the Council shall be added to the list of exceptions below:

- SR 20 (SR 99 to Feather River Bridge) – LOS F is acceptable;
- SR 20 (Feather River Bridge) – LOS F is acceptable;
- Bridge Street (Twin Cities Bridge) – LOS F is acceptable;
- Lincoln Road (New Bridge across the Feather River) – LOS F is acceptable;
- **Bridge Street from North Palora Avenue to Second Street – LOS F is acceptable.**

No new development will be approved unless it can be shown that required level of service can be maintained on the affected roadways.

Location. This traffic impact study presents an analysis of the traffic-related impacts associated with implementing the proposed Bridge Street Level of Service Policy General Plan Amendment (GPA) in Yuba City. Figure 1 presents the regional location of the facilities that would be affected by General Plan policy along Bridge Street in the area from but not including State Route 99 to Second Street.

Land Use. The proposed policy does not change any land use designation in the City of Yuba City General Plan.

Circulation System Improvements. The Bridge Street corridor is currently being improved over the Feather River, and other improvements are part of an overall improvement program.

- The Fifth Street Bridge Replacement Project is currently under construction (refer to Figure 2). This project will deliver a four-lane structure over the Feather River, and adjoining intersections will be improved.

- The Fifth Street Bridge Replacement Project is part of the overall Bridge Street Corridor Improvement Plan, a four-phase project to deliver a four-lane facility from SR 99 to the Feather River.

Overall Analysis Approach

This traffic impact study presents an analysis of traffic operations under the following five (5) scenarios:

- Existing a.m. and p.m. peak hour conditions under current General Plan Policies
- Existing conditions with proposed LOS policy
- Year 2035 a.m. and p.m. peak hour conditions with current General Plan Policies
- Year 2035 conditions with proposed LOS policy

Study Area Intersections. The quality of traffic flow is typically governed by the operation of intersections along an arterial street system. To quantitatively evaluate traffic conditions and provide a basis for comparison of operating conditions with and without the proposed policy change, traffic operations at the following seven (7) study area intersections were evaluated:

- Bridge Street / Gray Avenue
- Bridge Street / Clark Avenue
- Bridge Street / Plumas Street,
- Bridge Street / Shasta Street
- Bridge Street / EB on-ramp to Fifth Street bridge (LOS F already accepted)
- Bridge Street / Second Street
- Second Street / WB Fifth Street bridge ramps (LOS F Already accepted)

Summary Conclusions

Existing Conditions. With one exception all study area intersections operate with Levels of Service that satisfy the City's minimum LOS D standard. However, the Bridge Street / EB Fifth Street bridge on-ramp intersection currently operates at LOS F in the evening. LOS F is accepted at this location under current General Plan policy, and this location is also being addressed by the City's pending Fifth Street Bridge Replacement Project.

Queueing in turn lanes at signalized intersections is a second measure of traffic operations employed by the City of Yuba City, but it is not an issue addressed by General Plan policy. Today, two locations at study intersections experience peak period queues where the 95th percentile queue length exceeds the available storage.

The Bridge Street Corridor study area has facilities for alternative transportation modes. The corridor has sidewalks. Bike lane facilities are limited along Bridge Street. Between Gray Avenue and Cooper Avenue, after the widening, there will be a shared path along the north side of the street. There will be no bike lanes along Bridge Street between Cooper and the Fifth Street Bridge. Instead the bicyclists will need to move south (navigating any of the side streets between Gray Avenue and Cooper Avenue) to B Street, then utilize the existing bike lane along

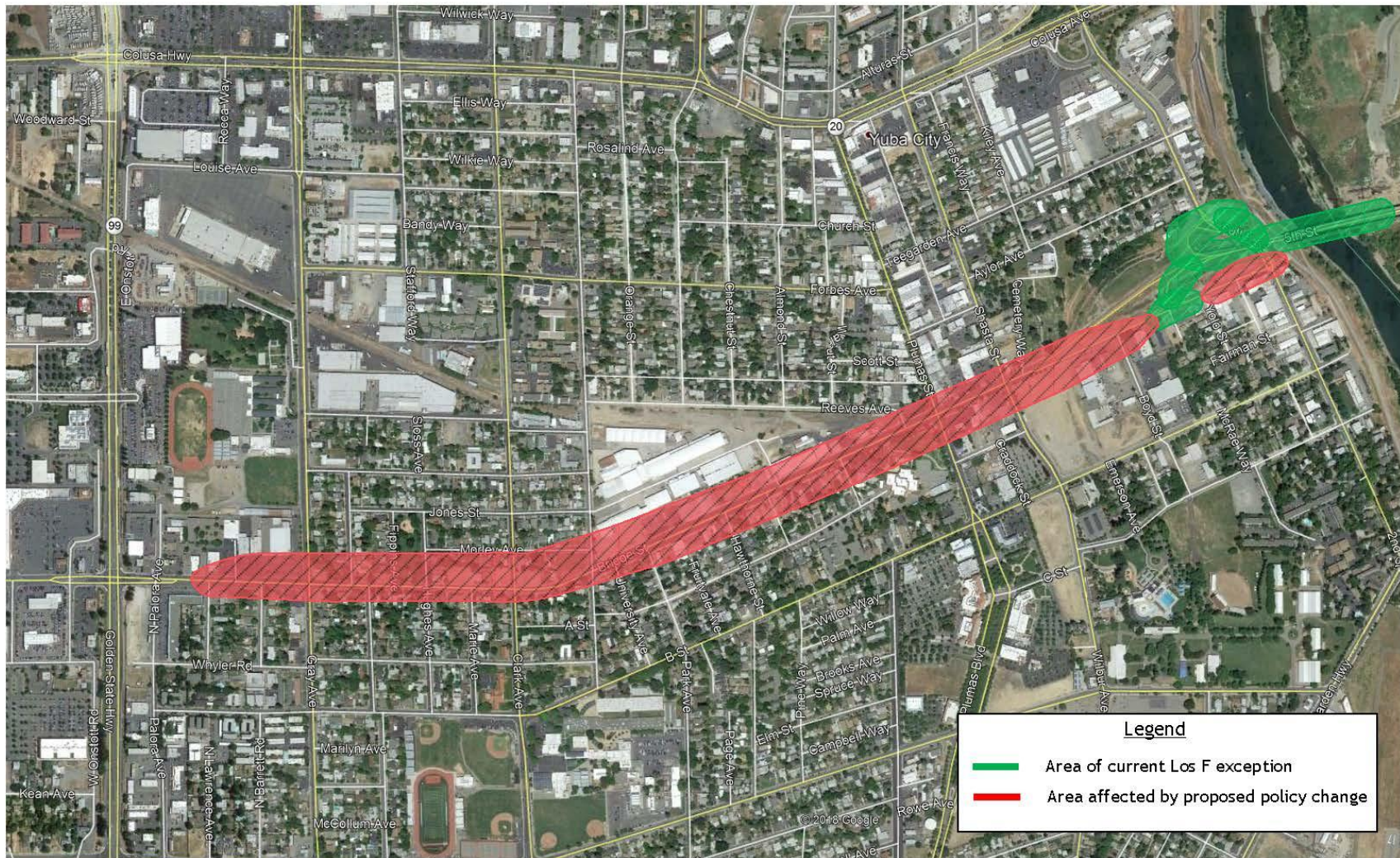
B Street [Note: this bike lane goes from Gray Ave to Second St.] At the very easterly end of B Street (about 300' east of Second Street) there is an existing bike ramp to access the levee. Once on the levee, the bicyclist can go north until she/he reaches the Fifth Street Bridge. The bridge will be accessible from the levee.

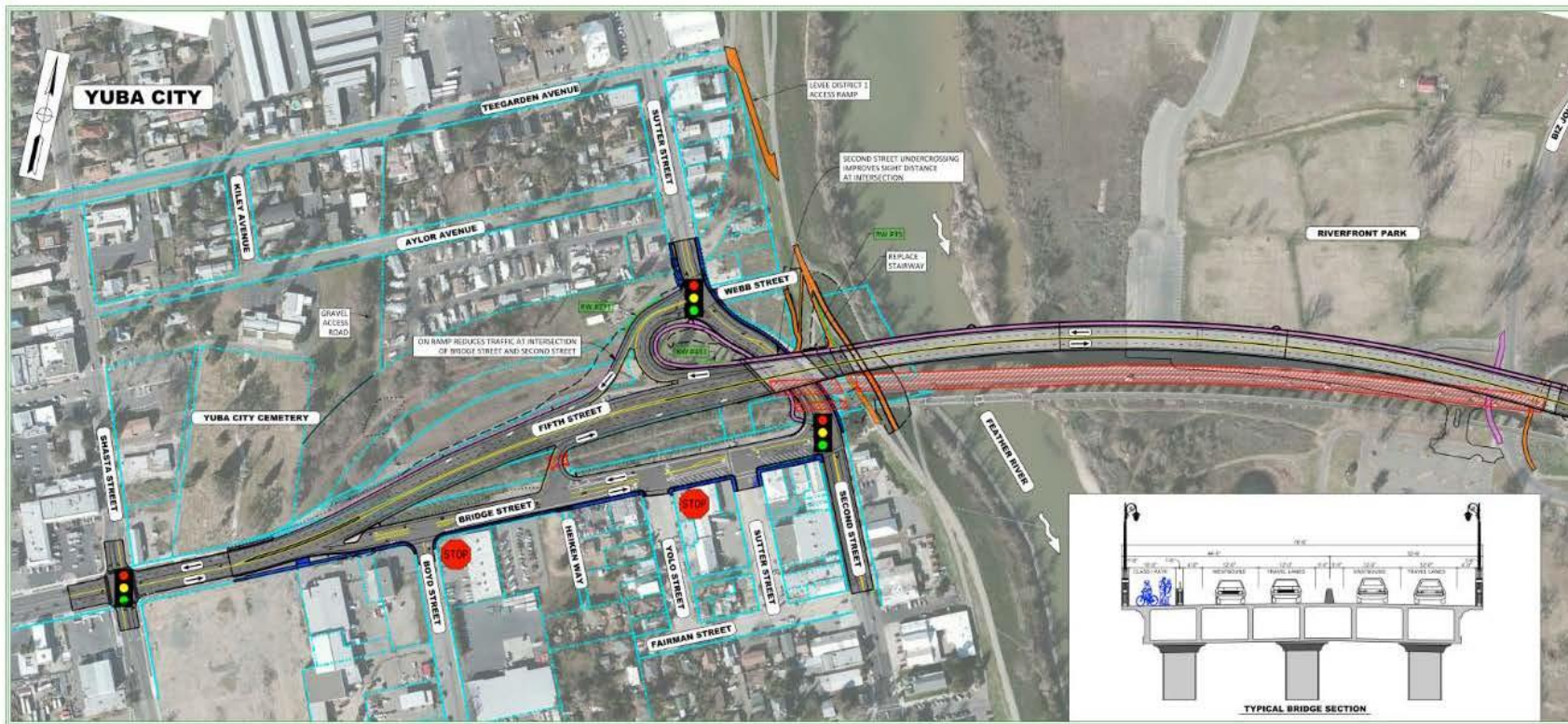
Project Impacts. Because the project itself will not cause additional traffic, implementing the GPA will not result in any additional study location operating at a deficient condition based on Level of Service whether under the current policy (i.e., LOS D) or the proposed policy (i.e., LOS F). The amendment does not result in direct impacts to pedestrians, bicyclists, or transit riders and does not interfere with the implementation for future plans for these transportation modes. The policy change does not create any new safety issue or exacerbate current safety issues.

Cumulative Impacts – No Project. Under long-term conditions the background traffic volumes on Bridge Street will increase dramatically based on future traffic volume forecasts created using the current citywide travel demand forecasting model. Even though the Fifth Street Bridge Replacement Project and the balance of the City's Bridge Street Corridor Project will result in a four-lane facility from SR 99 to the Feather River crossing, the signalized intersections at Gray Avenue, Plumas Street, Shasta Street, and Second Street will operate at LOS F. In general, these conditions result from the absence of a 3rd bridge over the Feather River and the resulting concentration of both future traffic generated by development in Yuba City and Marysville and regional traffic growth on the two existing crossings (i.e., 10th Street and 5th Street bridges).

As the area along Bridge Street is for the most part built out, the feasibility of further improvements beyond the work already included in the Bridge Street Corridor Plan is limited. Review of the area indicates that at the Plumas Street intersection it could be possible to create an eastbound right turn lane by eliminating on-street parking, but this improvement would not improve conditions to less than LOS F and would affect use of the adjoining park.

Cumulative Plus Project Impacts. Because the amendment does not create additional traffic future cumulative Levels of Service at study intersections would not change. The change in General Plan policy does not alter the feasibility of future corridor improvements beyond those already expected. The change in policy does not change the level of commitment to alternative transportation modes (i.e., pedestrian, bicycle and transit) already anticipated for the Bridge Street Corridor.





EXISTING SETTING

Study Area

This traffic impact study presents analyses of traffic operating conditions at seven (7) intersections within the area that may be affected by the proposed General Plan policy change. The limits of the study area were identified through discussions with Yuba City staff based on their knowledge of the community and the results of previous traffic studies conducted for development in central Yuba City.

Roadways. The following information is a description of area roadways that provide vehicular access to the project site.

- **Bridge Street** is an east-west arterial that extends from an intersection with Tharp Street in western Yuba City, across SR 99 thru the policy area and then becomes Fifth Street as it crosses the Feather River into Marysville and continues as Fifth Street to SR 70. Today, Bridge Street is a four-lane facility in the area of SR 99 west of Gray Avenue. A two-lane roadway exists from Gray Avenue to Cooper Avenue. The road widens to four lanes in the area from Cooper Avenue easterly through the Shasta Street intersection. The road narrows to two lanes east of Shasta Avenue over the Feather River where the Fifth Street Bridge project is under construction. Bridge Street continues as a two-lane street below the Fifth Street Bridge approach to an intersection on 2nd Street. Bridge Street has separated sidewalks in the study area, and on-street parking is prohibited. The posted speed limit on Bridge Street in the study area is 35 mph.
- **State Route 99 (SR 99)** provides regional access to the project site and serves as the primary north-south travel corridor through Yuba City. In the study area, SR 99 is a four-lane highway. The posted speed limit on SR 99 is 45 mph north of Franklin Road and 50 mph south of Franklin Road. The most recent traffic volume information available from the California Department of Transportation indicates that in 2015 SR 99 carries an *Annual Average Daily Traffic (AADT)* volume of 34,000 vehicles per day in the area south of Franklin Road, 34,900 between Franklin Road and Bridge Street and 34,500 north of Bridge Street. Trucks comprise roughly 10% of the daily traffic volume on SR 99 in this area.
- **Gray Avenue** is a north-south arterial that runs parallel to and about ¼ mile east of SR 99. Gray Avenue extends north for three miles from Franklin Road across SR 20 to its terminus near Pease Road. In the area of the project, Gray Avenue is two-lane road with auxiliary turn lanes. The posted speed limit on Gray Avenue is 25 mph.
- **Clark Avenue** is a north-south arterial that runs parallel to and about ½ mile east of SR 99. Clark Avenue extends north for three miles from Richland Road across SR 20 to its terminus near Pease Road. In the area of the project, Clark Avenue is two-lane road with auxiliary turn lanes. The posted speed limit on Clark Avenue is 25 mph.
- **Plumas Street** is a north-south collector street that originates at an intersection with Morton Street / Percy Street in the south and extends northerly across B Street and Bridge Street through SR 20 to its northern terminus on Queens Avenue. Plumas Street is a two-lane roadway, and the City has implemented major streetscape projects in various

locations to improve pedestrian access and to enhance the Downtown core area. Sidewalks exist in most areas. A prima facie 25 mph speed limit is in effect.

- **Shasta Street** is a north-south collector street that extends from B Street north across Bridge Street and SR 20. The route extends to the south as Wilbur Avenue to Garden Highway. In the immediate area of the project Shasta Street is a two-lane facility with a continuous center Two-Way Left-Turn (TWLT) lane. Sidewalks exist and on-street parking is permitted. The speed limit is posted at 25 mph.
- **Second Street – Sutter Street** are two-lane local streets that run parallel to and adjoining the Feather River. Second Street begins near the Sutter County Airport and continues north to a crossing beneath the Fifth Street Bridge. At that point, the route continues northerly as Sutter Street to an interchange on SR 20 and ultimately to an intersection on Market Street. It has a posted speed limit of 25 mph.

Bicycle and Pedestrian Facilities, Transit

Sidewalks are provided in nearly all areas of Bridge Street west of the Shasta Street intersection and are included in the Fifth Street Bridge Replacement Project. Crosswalks are marked at signalized and all-way stop controlled intersections, and button pedestrian activation is provided at each of the signalized study intersections.

Bicycle facilities are limited along Bridge Street. Class II bike lanes exist in the area from Cooper Avenue easterly to a spot 250 feet west of the Plumas Street intersection. At the very easterly end of B Street (about 300' east of Second Street) there is an existing bike ramp to access the levee.

Yuba-Sutter Transit provides fixed route bus service in the study area. As shown in the system map, https://www.yubasuttertransit.com/files/5f0e5ecf9/YST_Ride+Guide_07-01-2019+Searchable.pdf Route 2 (Yuba City Loop) provides service on thirty-minute headways in both directions along Plumas Street with stops at the Bridge Street intersection. Route 2 also returns to Bridge Street at Gray Avenue and follows Bridge Street across SR 99. Route 2 has timed transfers to Routes 1 and 5 at the Walton terminal. Route 5 (north Yuba City to South Yuba City) travels through the Bridge Street / SR 99 intersection. Today, Route 1 crosses the Feather River via the 10th Street bridge. Completion of the Fifth Street Bridge Replacement Project would allow Yuba Sutter Transit to consider route changes that take advantage of the new capacity and reduced travel times along this route.

Evaluation Methodologies

The following text is a description of the methods used in this impact study to analyze intersection operations. Operating Level of Service and turn-lane queueing are the two key issues typically addressed by the City.

Level of Service Analysis Procedures. Level of Service (LOS) analysis provides a basis for describing existing traffic conditions and for evaluating the significance of project-related traffic impacts. Level of Service 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 and further discussed below.

Signalized intersections have been analyzed using methods presented in the *Highway Capacity Manual (6th Edition)*. The analysis of existing conditions utilizes observed cycle-length timing at the signalized study intersections. These cycle-length parameters have also been held constant for analysis of Existing plus Project conditions. The calculations utilize a 2% heavy vehicle percentage and observed peak hour factors (PHF).

Non-signalized intersections with side-street stop-sign control would also be evaluated using *Highway Capacity Manual* procedures. At side-street stop-sign-controlled intersections, the LOS would be presented for turning movements experiencing the most delay. This is typically a left turn made from the minor street stop-sign-controlled approach onto the major street.

TABLE 1 LEVEL OF SERVICE DEFINITIONS		
Level of Service	Signalized Intersections	Unsignalized Intersection
“A”	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh
“B”	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh
“C”	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh
“D”	Significant congestions 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 ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh
“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 ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh
“F”	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh
Source: <i>Highway Capacity Manual (6th Edition)</i>		

Standards of Significance / Level of Service Thresholds. In this traffic impact study, the significance of the proposed GPA's impact on traffic operating conditions is based on a determination of whether implementing the GPA results in an intersection operating with conditions that fall below acceptable standards, as defined by the governing agency. 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 significantly worsen an already unacceptable LOS without the project. Relevant policies for the study area consist of the following.

Yuba City General Plan (Adopted April 2004)

Implementing Policy 5.2-1-12 (*Traffic Level of Service*) of the General Plan's Transportation section states the following:

- Develop and manage the roadway system to obtain LOS D or better for all major roadways and intersections in the City. This policy does not extend to residential streets (i.e., streets with direct driveway access to homes) ***or bridges across the Feather River*** nor does the policy apply to state highways and their intersections, where Caltrans policies apply. Exceptions to LOS D policy may be allowed by the City Council in areas, such as downtown, where allowing a lower LOS would result in clear public benefits.
- No new development will be approved unless it can be shown that the required level of service can be maintained on the affected roadways.

Based upon the above, the following standards and significance criteria have been used for this analysis to identify a significant impact under current policies.

- Cause Level of Service at a study intersection to degrade from LOS D or better to LOS E or F.
- Exacerbate the No-project Level of Service at a study intersection operating at LOS E or F. Based upon direction provided by City staff for past studies in this area, exacerbation of unacceptable operations at a City signalized intersection is considered an impact if:
 - The proposed project causes an increase in the average vehicle delay of 5 seconds or more, or
 - The proposed project adds ten or more peak hour trips to an intersection.

Queueing. Poor traffic conditions can result in traffic delays which in turn can lead to queues of waiting vehicles. While not a General Plan policy issue, the City considers the effects of peak period queueing to determine whether waiting vehicles will extend beyond the limits of turn lanes and cause a safety issue for through traffic. The same HCM techniques employed to evaluate Levels of Service also identify the queue lengths within a statistical probability. Traffic engineers commonly employ the 95th percentile queue length (i.e., queue length exceeded only 5% of the time) for this evaluation and consider lengths in excess of available storage to be a potential safety issue.

Existing Traffic Conditions

The following is a description of existing traffic operating conditions in the study area.

Existing Traffic Volumes. The traffic volume data used for this report makes use of the best available data, recognizing that ongoing Fifth Street Bridge construction detours have a varying effect on traffic conditions at the eastern end of the study area. This data is included in Figure 3. Traffic counts were conducted at six of the seven intersections in 2019 for the City of Yuba City. Because local schools were not in session as the analysis was being prepared and the Fifth Street Bridge project detours cause unusual traffic conditions, traffic counts conducted for the City's Fifth Street Bridge Replacement Project¹ were employed at the Sutter Street / WB Ramps intersection.

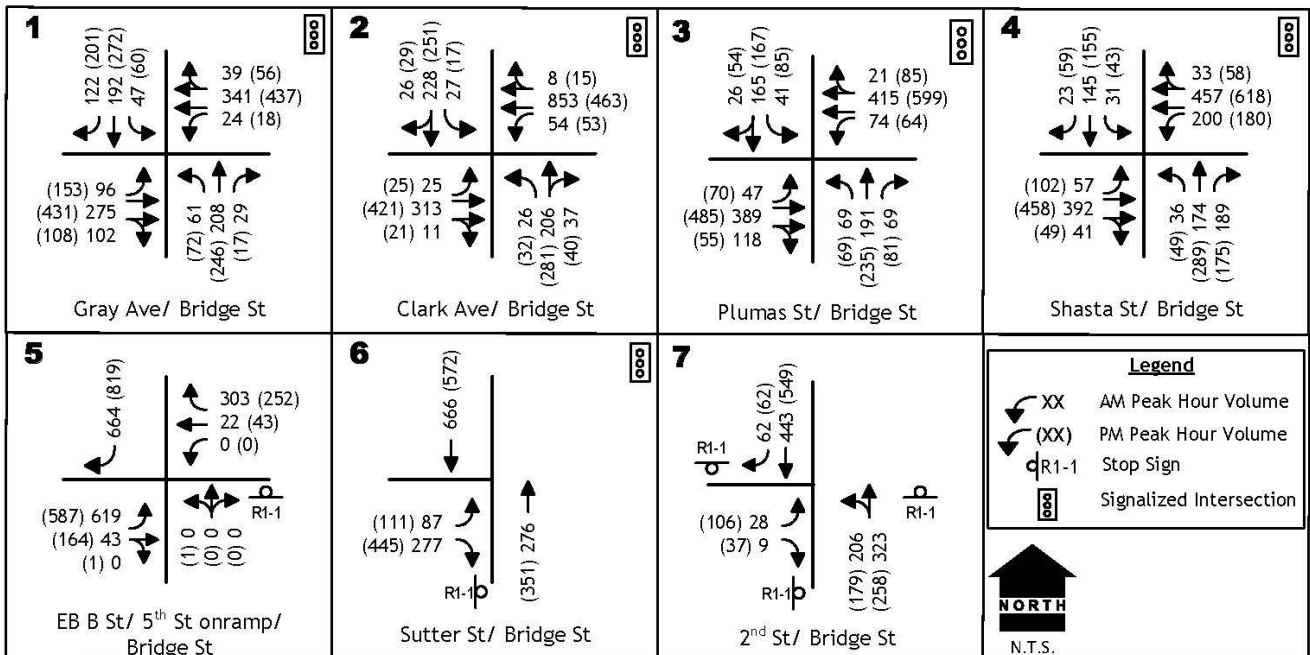
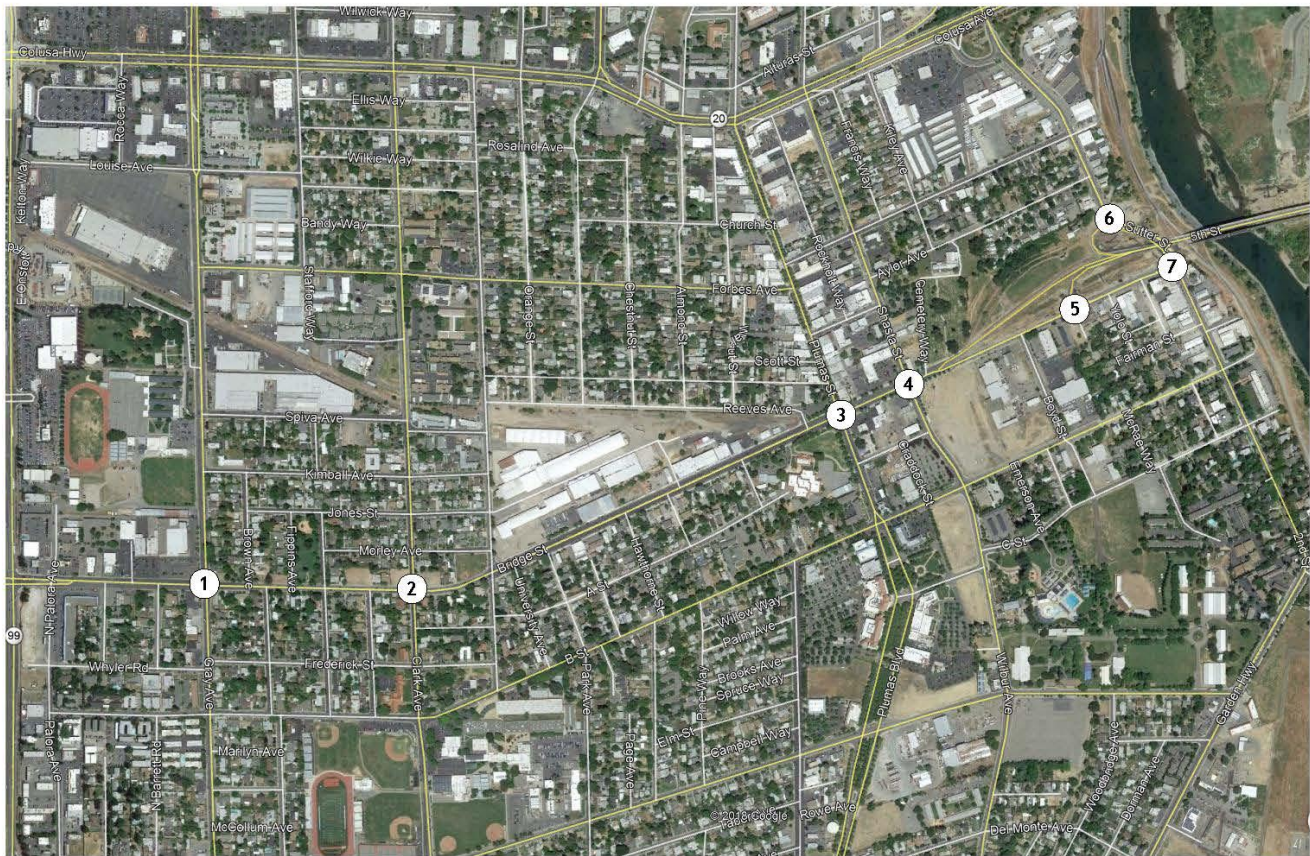
In each case, data was collected in 15-minute increments from 7:00 – 9:00 a.m. and 4:00 – 6:00 p.m. The contiguous one-hour periods with the highest volumes within the two-hour data collection period were used in this traffic impact study as the a.m. and p.m. peak hour. Figure 3 presents the existing lane configurations and existing peak hour traffic volumes at the seven study intersections.

Existing Intersection Levels of Service. Table 2 presents a summary of existing peak hour LOS at the seven (7) study intersections. Level of Service calculations are provided in the Appendix. As shown in Table 2, with one exception, all study intersections currently operate satisfactorily within the general minimum LOS D standard for Level of Service established by the City of Yuba City. The *Sutter Street / WB Fifth Street ramps intersection* operates at LOS E. While current City General Plan policy allows LOS F at this location, conditions at this location will be altered with the completion of the City's pending Fifth Street Bridge Replacement Project.

Intersection Queue Lengths. At signalized intersections, the relationship between peak period traffic queues and the available turn-lane storage is a factor in evaluating the quality of traffic flow. While not a significance criterion under current General Plan policy, understanding queue length is a safety consideration because queue lengths can increase as Level of Service deteriorate.

Projected peak period queue lengths are estimate as a byproduct of Level of Service analysis, and current peak period queue are noted in Table 3. The projected 95th percentile queue length exceeds available storage at the two locations noted. At other locations the peak queue reaches beyond the striped left turn lane but is not necessarily an issue due to the presence of an adjoining TWLT lane.

¹ Final Traffic Report for Fifth Street Bridge Replacement Project Study Report / Project Report, Fehr & Peers, September 15, 2011



EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS

**TABLE 2
EXISTING CONDITIONS
INTERSECTION LEVELS OF SERVICE**

Intersection	Control	Existing				
		AM Peak Hour		PM Peak Hour		Traffic Signal Warrants Satisfied?
		LOS	Average Delay (veh/sec)	LOS	Average Delay (veh/sec)	
Bridge Street / Gray Avenue	Signal	B	18.2	B	19.1	n.a.
Bridge Street / Clark Avenue	Signal	B	18.2	B	19.5	n.a.
Bridge Street / Plumas Street	Signal	B	17.9	C	20.7	n.a.
Bridge Street / Shasta Street	Signal	B	19.3	C	22.8	n.a.
Bridge Street / EB Fifth St Ramps ¹	Signal	C	27.9	D	39.4	n.a
Sutter Street / WB Ramps ¹ EB off ramp	Stop	E	36.0	E	43.7	Yes ²
Bridge Street / Second Street	Signal	C	28.9	C	30.6	n.a.

BOLD values exceed the minimum LOS D standard.

¹ LOS F accepted under current City policy

² traffic signal included in Fifth Street Bridge Project

**TABLE 3
EXISTING CONDITIONS
INTERSECTION QUEUE LENGTHS**

Intersection	Lane	Storage (feet)	Existing				
			AM Peak Hour		PM Peak Hour		Storage Exceeded?
			Volume	95 th % Queue (feet)	Volume	95 th % Queue	
Bridge Street / Gray Avenue	NB left	90 ¹	61	65	72	70	No
	SB left	100 ¹	47	50	17	25	No
	EB left	110	96	110	153	145	Yes
	WB left	70 ¹	24	35	18	25	No
Bridge Street / Clark Avenue	NB left	40	26	35	32	40	No
	SB left	50	27	35	17	25	No
	EB left	50 ¹	25	35	25	35	No
	WB left	50 ¹	54	60	53	55	No
Bridge Street / Plumas Street	NB left	100	69	65	69	85	No
	SB left	140	41	45	85	95	No
	EB left	100 ¹	47	50	70	85	No
	WB left	100 ¹	74	70	64	65	No
Bridge Street / Shasta Street	NB left	100	36	45	49	55	No
	SB left	100	31	40	43	50	No
	EB left	100 ¹	57	60	102	120	No ¹
	WB left	100	200	195	180	205	Yes
Bridge Street / Second Street	NB approach	n.a.	529	375	437	295	No
	EB left	50	28	30	106	75	Yes
¹ lane continues a TWLT lane At HIGHLIGHTED location queue is at least 25 feet longer than available storage							

REGULATORY SETTING

State of California

Complete Streets. In 2008, the State of California enacted the Complete Streets Act of 2008. The new law requires cities and counties, when updating their general plans, to ensure that local streets and roads meet the needs of all users, including bicyclists, pedestrians, transit riders, children, seniors, persons with disabilities, and motorists. The law took effect in January 2011, when the Governor's OPR issued new general plan update guidelines that reflect Complete Streets planning principles. Ensuring convenient access to jobs, school, entertainment, recreation, and critical services such as banking, medical care, and shopping requires a transportation system of roads, transit, bikeways, and sidewalks to manage our diverse needs.

State Route 99 Transportation Concept Report (SR 99 TCR). While the proposed GPA does not change current City policies regarding Levels of Service on SR 99, Caltrans plans for and policies regarding its facilities are documented in Transportation Concept Reports (TCR). TCR's note the ultimate improvement concept planned for each facility as well as the quality of traffic flow anticipated with those improvements (i.e., Concept Level of Service). The SR 99 TCR notes that the segment of the state highway which includes the Bridge Street intersection (i.e., south of SR 20) has an ultimate concept facility of six-lane conventional highway. Under long-term conditions that facility is expected to deliver a concept Level of Service of LOS E along the corridor.

Senate Bill 743. Conventional approaches to transportation impact analysis use vehicle LOS related to vehicle delay. This focus explains how land use and transportation projects affect driving instead of how those projects change the amount of driving that will occur. While changes to driving conditions that increase travel times are an important consideration for traffic operations and management, these changes do not fully describe environmental effects associated with fuel consumption, emissions, and public health. SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change is being made by replacing LOS and delay to drivers with Vehicle Miles of Travel (VMT) and by providing streamlined review of land-use and transportation projects that will theoretically help reduce future VMT growth. This shift in transportation impact focus is expected to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines changes were approved by the Office of Administrative Law and are now in effect. Specific to SB 743, Section 15064.3(c) states, "A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide."

Regional

Metropolitan Transportation Plan/Sustainable Communities Strategy. The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the Sacramento region proactively links land use, air quality, and transportation needs. The MTP/SCS supports the Sacramento Region Blueprint, which implements smart growth principles, including housing choice, compact development, mixed-use development, natural resource conservation, use of existing assets, quality design and transportation choice. It also provides increased transportation options while reducing congestion, shortening commute times, and improving air quality.

SACOG is designated by the state and federal governments as the Metropolitan Planning Organization (MPO) for the region and is responsible for developing a regional transportation plan (MTP) in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado, and Placer counties and the 22 cities within those counties (excluding the Tahoe Basin). The plan incorporates countywide transportation planning developed by the Placer County Transportation Planning Agency and the El Dorado County Transportation Commission, under memoranda of understanding (MOUs) between those agencies and SACOG. The law further requires the long-range MTP to cover at least a 20-year planning horizon and be updated at least every four years.

Local

Yuba City General Plan. The Transportation Element is intended to provide guidance and specific actions to ensure the continued safe and efficient operation of Yuba City's circulation system. The Element is based on a fundamental philosophy that traffic conditions in the City can be managed through a comprehensive program of transportation planning, land-use planning, and growth-management strategies. This Element includes provisions for roadway, transit, airport, pedestrian, and bicycle transportation modes, as well as parking.

The Transportation Element responds directly to the Government Code, which requires "a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan." State law recognizes that circulation and land use are closely related and requires that policies in this Element and the Land Use Element be tied together. Careful integration of the City's traffic and circulation policies with its land-use policies will ensure that there is sufficient roadway capacity to accommodate traffic generated by planned future development. The City is committed to designing a system of regional routes, local roads, public transit, and bicycle and pedestrian pathways that will enhance the community and protect the environment.

GUIDING POLICIES

Circulation and Street System

- 5.2-G-1 Promote safe and efficient vehicle circulation.
- 5.2-G-2 Make efficient use of existing transportation facilities, and, through the arrangement of land uses, improved alternate transportation modes, and provision of more direct routes for pedestrians and bicyclists, strive to reduce the total vehicle-miles traveled per household.
- 5.2-G-3 Provide fair and equitable means for paying for future street improvements.
- 5.2-G-4 Coordinate local actions with state and County agencies to ensure consistency.

Traffic Level of Service

- 5.2-G-5 Maintain acceptable levels of service and ensure that future development and the circulation system are in balance.

Arterial Roadways

- 5.2-G-6 Design arterial roadways to carry high-volume, higher-speed traffic, thereby minimizing through traffic residential streets. Develop a system of arterial roadways in the form of a grid of four-lane arterials that will distribute traffic evenly and will avoid excessive concentrations of traffic in any given area.
- 5.2-G-7 Maximize the carrying capacity of arterial roadways by controlling the number of intersections and driveways, prohibiting residential access, and requiring sufficient off-street parking to meet the needs of each project.
- 5.2-G-8 Provide center turn lanes in areas with existing “front-on” development. Planted medians are preferred in areas without existing front-on development.

Parkways

- 5.2-G-9 Design parkways to provide attractive, higher-speed, tree-lined roadways with limited access between residential and commercial areas.

Collector and Local Roadways

- 5.2-G-10 Design and reconfigure collector and local roadways to improve circulation and to connect residential and commercial areas of the City.

IMPLEMENTING POLICIES

Circulation and Street System

- 5.2-I-1 Locate arterials and collectors according to the general alignments shown in Figure 5-1. Minor variations from the depicted alignments will not require a General Plan amendment.
- 5.2-I-2 Establish precise alignments and cross-sections based on the General Plan Diagram and Figure 5-1 in order to identify future right-of-way needs. *This can be done by adjusting an “official map” that delineates future right-of-way lines.*
- 5.2-I-3 Adopt street standards that provide flexibility in design, especially in residential neighborhoods. Revise right of way and pavement standards to reflect adjacent land use and/or anticipated traffic, and permit reduced right of way dimensions where necessary to maintain neighborhood character.

- 5.2-I-4 Require all new developments to provide right-of-way and improvements consistent with street designations on Figure 5-1 and City street section standards.
- 5.2-I-5 Continue to require that new development pays a fair share of the costs of street and other traffic and transportation improvements based on traffic generated and impacts on service levels.
- 5.2-I-6 Require city-wide traffic impact fees on all new development to ensure that transportation improvements keep pace with new development. *The objective of this policy is to establish a secure funding source to enable timely construction of traffic improvements. Citywide impact fees have been an extremely successful way of accomplishing infrastructure improvements throughout California. The City intends to ensure that no additional development is approved without a concurrent commitment by the City and/or the developer to construct commensurate transportation improvements, as needed, or to pay appropriate fees in lieu of, to serve the development and maintain acceptable levels of service on roadways and intersections*
- 5.2-I-7 When constructing or modifying roadways, plan for usage of the roadway space by all users, including motor vehicles, transit vehicles, bicyclists, and pedestrians.
- 5.2-I-8 Continue to work with Caltrans to achieve timely construction of programmed freeway and interchange improvements and state highway improvements.
- 5.2-I-9 Work with Caltrans and regional authorities to develop a minimum of four additional traffic lanes of cross-river capacity by the end of the General Plan period. *This would be accomplished by a 3rd bridge.*
- 5.2-I-10 Work with SACOG to ensure that General Plan amendments are incorporated in the regional traffic model and incorporated into analysis required for Metropolitan Transportation Improvement Plan updates.
- 5.2-I-11 Maintain the street network through a regular maintenance program, repave streets on a regular basis, and require that any pavement that has been damaged or dug up be returned to its original condition, with no bumps or ruts. *Street maintenance and repaving programs should be based on current technology and accepted practices to maximize available revenues and improvements.*

Traffic Level of Service

- 5.2-I-12 Develop and manage the roadway system to obtain LOS D or better for all major roadways and intersections in the City. This policy does not extend to residential streets (i.e., streets with direct driveway access to homes) or bridges across the Feather River nor does the policy apply to state highways and their intersections, where Caltrans policies apply. Exceptions to LOS D policy may be allowed by the City Council in areas, such as downtown, where allowing a lower LOS would result in clear public benefits. Specific exceptions granted by the Council shall be added to the list of exceptions below:

- SR 20 (SR 99 to Feather River Bridge) – LOS F is acceptable;
- SR 20 (Feather River Bridge) – LOS F is acceptable;
- Bridge Street (Twin Cities Bridge) – LOS F is acceptable;
- Lincoln Road (New Bridge across the Feather River) – LOS F is acceptable.

No new development will be approved unless it can be shown that required level of service can be maintained on the affected roadways.

- 5.2-I-13 Develop and manage residential streets (i.e., streets with direct driveway access to homes) to limit average daily vehicle traffic volumes to 2,500 or less and 85th percentile speeds to 25 miles per hour or less.

- 5.2-I-14 Require traffic impact studies for all proposed new developments that will generate significant amounts of traffic. *Specific thresholds will be based on location and project type, and exceptions may be granted where traffic studies have been completed for adjacent development.*
- 5.2-I-15 Improve intersections as needed to maintain LOS standards and safety on major arterials.
- 5.2-I-16 Establish and implement additional programs to maintain adequate levels of service at intersections and along roadway segments as circumstances warrant, including the following actions:
- Collect and analyze traffic volume data on a regular basis and monitor current intersection and roadway segment levels of service on a regular basis. Use this information to update and refine the City's travel forecasting model so that estimates of future conditions are more strongly based upon local travel behavior and trends.
 - Consider, on a case by case basis, how to shift travel demand away from the peak period, especially in those situations where peak traffic problems result from a few major generators (e.g. outlying employment locations), and how major roadway capital investments can be deferred and/or reallocated to more pressing needs.
 - Perform routine, ongoing evaluation of the efficiency of the urban street traffic control system, with emphasis on traffic signal timing, phasing and coordination to optimize traffic flow along arterial corridors. Use traffic control systems to balance arterial street utilization (e.g., timing and phasing for turn movements, peak period and off-peak signal timing plans).
- 5.2-I-17 Monitor regional/arterial street LOS at regular intervals to determine if the LOS standard is being met, and provide information needed to maintain a calibrated citywide traffic model.

Parkways

- 5.2-I-18 Develop two parkways along the alignments shown in Figure 5-1. *These parkways should have four travel lanes, a planted median, turn pockets where appropriate, Class I or II bicycle lanes, detached sidewalks, and generous planting strips.*
- 5.2-I-19 Prohibit on-street parking along parkways where there is “front-on” development.
- 5.2-I-20 Require a minimum average distance of one quarter mile between parkway intersections, except in commercial areas or other high-volume traffic areas. *See also Chapter 4: Community Design policies on parkways.*

Collectors and Neighborhood Streets

- 5.2-I-21 Implement traffic calming measures to slow traffic on local and collector residential streets and prioritize these measures over congestion management. Include roundabouts, traffic circles, and other traffic calming devices among these measures.
- 5.2-I-22 Provide for greater street connectivity by:
- Incorporating in subdivision regulations requirements for a minimum number of access points to existing local or collector streets for each development (e.g. at least two access points for every 10 acres of development);
 - Encouraging circles and roundabouts over signals.
 - Requiring the bicycle and pedestrian connections from cul-de-sacs to nearby public areas and main streets.
 - Requiring new residential communities undeveloped land planned for urban uses to provide stubs for future connections to the edge of the property line. Where stubs exist on adjacent properties, new streets within the development should connect to these stubs.

PROJECT TRAFFIC IMPACTS

Traffic volume / Intersection Level of Service. Implementing the proposed General Plan policy change would not in itself cause additional traffic on study area streets, as no land-use entitlement is involved. As the project itself will not cause additional traffic, implementing the GPA will not result in any additional study location operating at a deficient condition based on Level of Service whether under the current policy (i.e., LOS D) or the proposed policy (i.e. LOS F).

Alternative Transportation Modes. The amendment does not result in direct impacts to pedestrians, bicyclists, or transit riders and does not interfere with the implementation for future plans for these transportation modes.

Safety. As it does not change current traffic volumes or create new facilities, the policy change does not create any new safety issues on the corridor or exacerbate current safety issues.

CUMULATIVE IMPACTS

The effects of the policy change under long-term cumulative conditions were evaluated.

Long Term Cumulative Traffic Forecasts

Basis for Long Term Projections. The long-term cumulative analysis compares two conditions:

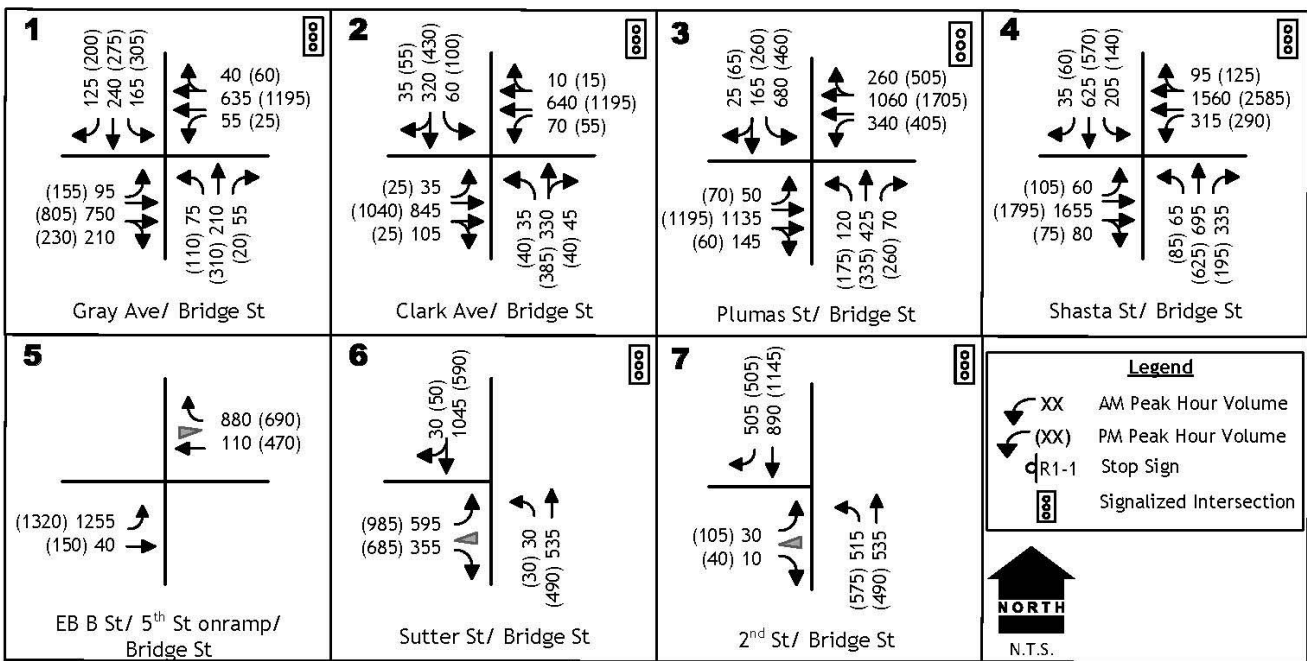
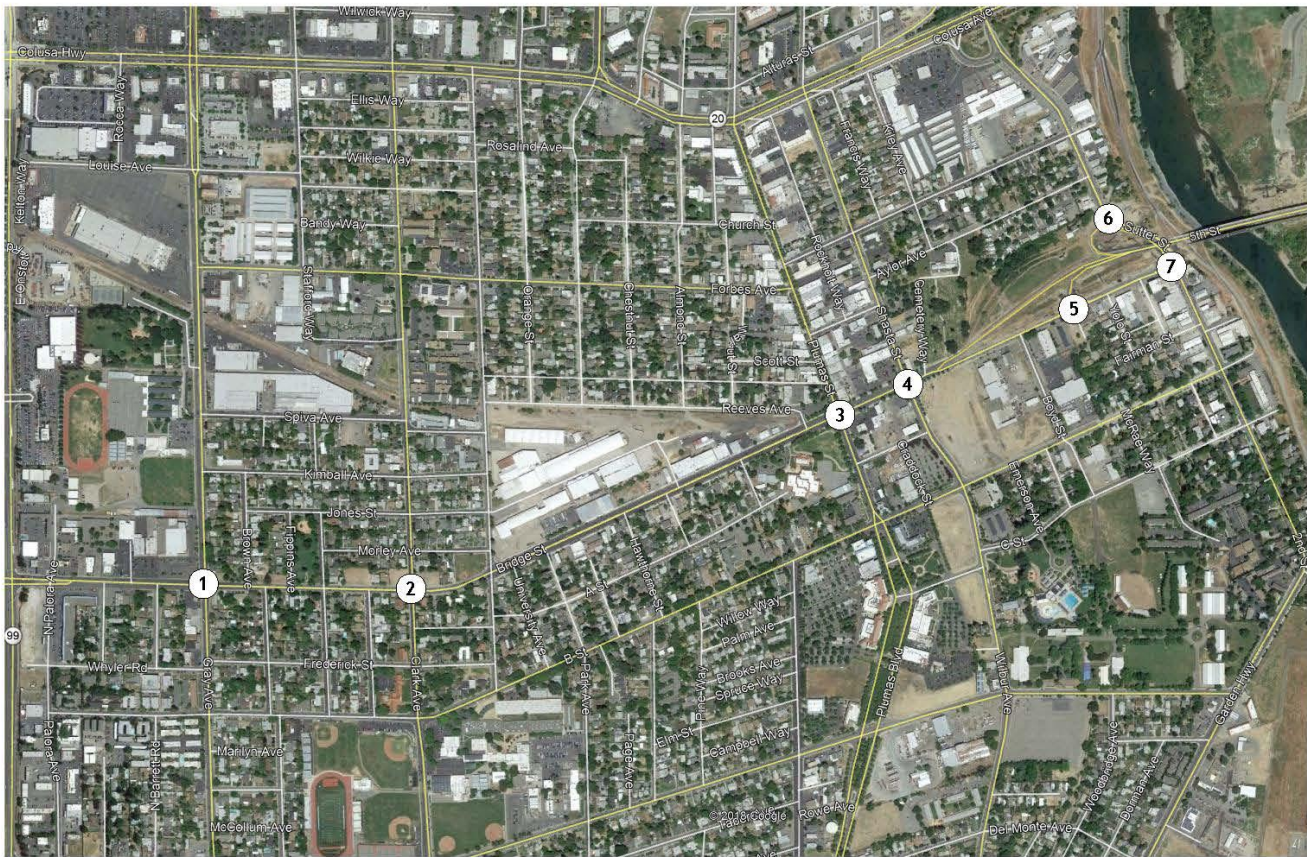
- Future Year 2035 Cumulative with General Plan development under current General Plan policy, and
- Future Year 2035 Cumulative with General Plan development and proposed policy change.

The travel demand forecasting model originally used for the City of Yuba City General Plan Update EIR and subsequently updated for various traffic studies was the basis for the cumulative impact analysis. An earlier version of this tool was employed in the Fifth Street Bridge Replacement Project Report traffic study to produce future traffic volume forecasts for design of the facility and its environmental review. The current model version was modified to reflect circulation system assumptions (i.e., SR 99 remains a four-lane roadway south of SR 20), and new peak-hour traffic model runs were created. These forecasts represent Year 2035 conditions and were the basis for updated turning movement forecasts for study area intersections.

The technical approach employed to use model results to create intersection turning movements for study area intersections mimics the approach used for the GPU EIR. Resulting a.m. and p.m. future turning movement forecasts were compared to the model's Baseline Year forecasts, and the net difference in volume on each turning movement was determined. These net changes were then added or subtracted from the current peak hour volumes observed in 2019 to create the adjusted cumulative volumes.

Circulation System Assumptions. The traffic volume forecasts made for this analysis include those city-wide circulation system improvements incorporated into the General Plan traffic model and Capital Improvement Program (CIP). In addition to the Fifth Street Bridge Replacement Project, these include completion of Lincoln Road as a four-lane facility between SR 99 and Garden Highway.

Traffic Volume Forecasts. Figure 4 identifies cumulative weekday a.m. and p.m. peak hour traffic volumes at study intersections. This figure also notes the intersection geometry that will be available with completion of the Fifth Street Bridge Replacement project and completion of the final phases of the Bridge Street Corridor project.



CUMULATIVE BASE TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

9550-13 RA 8/8/2019

figure 4

Long-Term Traffic Conditions

Long-Term Cumulative Levels of Service. Table 4 identifies a.m. and p.m. peak hour Levels of Service under future conditions. As indicated, of the seven intersections addressed in this analysis, two locations are projected to operate at LOS F, and the General Plan's current policy allows the LOF exception as they are ramps associated with the Fifth Street Bridge. However, four additional intersections are projected to operate at LOS F during either the a.m. or p.m. peak hour and would be considered unacceptable under current policy.

TABLE 4 CUMULATIVE CONDITIONS INTERSECTION LEVELS OF SERVICE					
Intersection	Control	Cumulative			
		AM Peak Hour		PM Peak Hour	
		LOS	Average Delay (veh/sec)	LOS	Average Delay (veh/sec)
Bridge Street / Gray Avenue	Signal	D	36	F	99
Bridge Street / Clark Avenue	Signal	C	33	D	40
Bridge Street / Plumas Street	Signal	F	543	F	460
Mitigated: create Eastbound Right Turn Lane		F		F	
Bridge Street / Shasta Street	Signal	F	351	F	484
Bridge Street / EB Fifth St ramps ¹ EB Left Turn	none	F	504	F	599
Sutter Street / WB Ramps ¹	Signal	F	113	F	92
Bridge Street / Second Street	Signal	E	55	F	96
BOLD values exceed the minimum LOS D standard					
¹ LOS F accepted by current City policy					

Potential Improvements / Mitigation. The extent to which any additional local or regional circulation improvements might be pursued that would improve conditions on the Bridge Street corridor was considered.

In general, as the area along Bridge Street is for the most part developed, opportunities for further circulation system improvements are limited in the corridor. Developing additional auxiliary lanes at intersections or further widening of Bridge Street from four to six-lanes does not appear feasible and is not consistent with the General Plan Circulation Element. One possible improvement could occur at the Bridge Street / Plumas Street intersection where on-street parking could be eliminated to allow an eastbound right turn lane to be constructed.

However, as noted in Table 4, this change would not result in appreciably improved conditions, and LOS F would remain.

Regionally, reducing the volume of traffic on Bridge Street would require providing additional capacity over the Feather River. The “Third Bridge” would redistribute traffic from the Fifth Street and 10th Street crossings and theoretically improve Level of Service at Bridge Street intersections. However, it is important to note that the General Plan EIR revealed that LOS F conditions would remain on the Fifth Street and 10th Street crossings even if the Third Bridge was available, and current General Plan LOS F exceptions for SR 20 and for Lincoln Road reflect the presence of the Third Bridge.

Intersection Queue Lengths. While not a significance criterion under current General Plan policy, queue lengths can increase as Level of Service deteriorate, understanding queue length is a safety consideration. Projected future peak-period queue lengths are noted in Table 5. These queues are anticipated whether the policy change is enacted or not. The projected 95th percentile queue length exceeds available storage at the nine locations noted. At other locations the peak queue reaches beyond the striped left turn lane but is not necessarily an issue due to the presence of an adjoining TWLT lane. Two of the locations where queue lengths exceed storage occur at intersections where LOS F is already accepted by current GP policy.

**TABLE 5
CUMULATIVE CONDITIONS
INTERSECTION QUEUE LENGTHS**

Intersection	Lane	Storage (feet)	Cumulative				Storage Exceeded by more than 25 feet?
			AM Peak Hour		PM Peak Hour		
			Volume (vph)	95 th % Queue (feet)	Volume (vph)	95 th % Queue	
Bridge Street / Gray Avenue	NB left	90 ¹	75	75	110	110	No
	SB left	100 ¹	165	205	305	360	No ¹
	EB left	110	95	110	155	145	Yes
	WB left	70 ¹	55	60	25	35	No
Bridge Street / Clark Avenue	NB left	40	35	45	40	45	No
	SB left	50	60	85	95	125	Yes
	EB left	50 ¹	30	40	25	35	No
	WB left	50 ¹	70	70	55	55	No
Bridge Street / Plumas Street	NB left	100	120	150	175	235	Yes
	SB left	140	680	825	465	575	Yes
	EB left	100 ¹	50	55	70	90	No
	WB left	100 ¹	340	410	350	435	No ¹
Bridge Street / Shasta Street	NB left	100	65	65	85	110	No
	SB left	100	205	255	60	70	No
	EB left	100 ¹	60	65	105	125	No ¹
	WB left	100	315	335	350	415	Yes
Bridge Street / EB 5 th Street ramps	EB left	225	1,225	>1,000	1,320	>1000	Yes ²
Sutter Street / WB 5 th Street ramps	NB left	125	30	60	30	60	No
	EB left	750	595	875	985	>1,000	Yes ²
Bridge Street / Second Street	NB left	300	515	630	575	770	Yes
	EB left	175	30	55	105	220	Yes

¹ lane continues a TWLT lane

² LOS F accepted by current General Plan policy

APPENDIX