



-FINAL-

**TRAFFIC IMPACT FEE
NEXUS STUDY**

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1. INTRODUCTION

The following is an analysis supporting the update of development impact mitigation fees for transportation improvements in the City of American Canyon. The purpose of this Traffic Impact Mitigation Fee Nexus Study (TIF Study) is to determine the cost of improvements needed to accommodate the additional traffic generated by future development and the appropriate share of those costs to be borne by new development within the City.

The City adopted its current Traffic Impact Fee (TIF) program in 1999. The TIF was last increased in 2006 for single family and multi-family residential development and last increased in August 2011 for non-residential development¹. These increases were intended to account for the cost of inflation; the list of improvements and the share of those costs to be borne by new development within the City remained unchanged.

Over the last 15 years that the TIF program has been in place, much has changed. The City's population has doubled, commercial retail development along the highway and industrial development in the Green Island area has occurred. Many of the improvements required to accommodate the additional traffic generated by that development were completed. In addition, there have been numerous changes in state law related to transportation planning and the City's relationship with the State Department of Transportation (CalTrans) - especially in regards to the operation of State Route 29 (SR-29) - has evolved.

This TIF Study is intended to supersede its predecessor. It contains an updated list of improvements needed to accommodate the additional traffic generated by new development over the next 20 years. It is a "nexus study" and provides the following information to clearly satisfy the requirements of the Mitigation Fee Act²:

- The Introduction section identifies the purpose of the TIF and outlines the findings required by the Act. It also describes the relationship between a mitigation fee program and the City's evaluation of potential environmental impacts pursuant to California Environmental Quality Act
- The Growth Projections section includes a discussion of traffic growth assumptions. These assumptions are used to calculate the growth in different land use categories and to calculate the increase in annual average daily vehicle trips (AADT) anticipated by the year 2035. Using these vehicle trip rates establishes a reasonable relationship between the need for the TIF and the type of development paying the TIF.
- The Traffic Impact Analysis section analyzes impact of the projected growth in traffic. Assessing the impact of average number of daily vehicle trips generated by each land use category is the link between new development

¹ Ordinances 99-18, 2006-10, 2011-05; American Canyon Municipal Code Chapter 15.12

² California Government Code Section 66000 et seq.,

and the direct impacts on the city's road network caused by the various land uses.

- The Future Improvements section describes the estimated cost of improvements to be funded by TIF revenue. Moreover, it identifies the fair share percentage of those costs of the improvements that are attributable to new development in American Canyon.
- The Fee Schedule calculates the TIF on a per "net new daily vehicle trip" basis. This fee is calculated by dividing the cost of the improvements to be funded by the TIF program by the number of vehicle trips generated by new development. The result is a uniform TIF (\$/trip) across all land uses.

General Plan Circulation Element

The City's General Plan covers 10 elements which generally prescribe how new development will occur. The Circulation Element, last updated in 2013, specifically addresses transportation issues in the context of new development. Its key objectives include:

- Providing a guide to prioritize the City's transportation infrastructure growth over the next 22 years (through 2035).
- Policies that foster safe and easy travel within and through the city for pedestrians, bicyclists, and motor vehicles by achieving an acceptable multi-modal level of service at most intersections and roadway segments.
- Providing a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, often referred to as planning for "complete streets."
- Promoting local planning and foster cooperation between jurisdictional partners such as the Napa County Transportation and Planning Agency (NCTPA), Bay Area Metropolitan Transportation Commission (MTC), Association of Bay Area Government (ABAG), and Caltrans.
- Coordinating planning for land use, transportation, and housing to further meet the requirements of Senate Bill (SB) 375, the Sustainable Communities and Climate Protection Act of 2008.

The Circulation Element analyzes current and future roadway configurations. It also describes how the City's major road segments and intersections currently operate and how they will operate in the future. Analysis about future conditions is based on land use assumptions and regional travel behavior modeling contained in the Napa-Solano Travel Demand Model (Napa-Solano TDM).

The Napa-Solano TDM indicates that by the Year 2035, several major arterials and intersections along State Route 29 (SR-29) would operate below the thresholds established in the General Plan. The projected increase in traffic volume is due to both local growth and regional growth. Regional growth is shown to impact SR-29 in particular.

State Route 29 Gateway Corridor Improvement Plan

The *State Route 29 Gateway Corridor Improvement Plan* (SR-29 Corridor Plan) was completed in 2014 by NCTPA, with significant input from Caltrans and the City. Its purpose was to develop a community-driven vision for the southern portion of SR-

29, including those segments located within the City. The SR-29 Corridor Plan process brought together diverse interests and addresses the needs and desires of residents, commuters, business owners, visitors and stakeholders, to improve mobility, safety, and community character along the corridor. It also considers the role played by all transportation modes including auto, truck, bus, rail, bicycle and pedestrian. During the SR-29 Corridor Plan process, a new, highly sophisticated computer model (SR-29 VISSIM Model) was developed as an extension of the Napa-Solano TDM to analyze future travel demand behavior and traffic congestion.

Consistent with the Circulation Element, the SR-29 Corridor Plan recommends widening the highway to 6-lanes and making certain intersection improvements over the next 20+ years. The design of these improvements is referred to as a "Modified Boulevard.

Public Facilities Financing In California

The changing fiscal landscape in California during the past three decades has steadily undercut the financial capacity of local governments to fund infrastructure needed for growth. Three dominant trends and events stand out:

- The passage of a string of tax limitation measures, starting with Proposition 13 in 1978 and continuing through the passage of Proposition 218 in 1996.
- Declining popular support for bond measures to finance infrastructure for the next generation of residents and businesses.
- Steep reductions in federal and state assistance.

Faced with these events, the City has shifted the burden of funding infrastructure expansion from existing taxpayers to new development. This funding shift has been partly accomplished by the imposition of development impact fees such as the TIF. A majority vote of the City Council is required for adoption of such fees.

As a result of the changing landscape, most local agencies have implemented impact fee programs. It is important that the fee amounts collected cover the full cost of the improvements required to maintain the existing level of service standards as growth occurs. When local agencies do not collect the full amount, the effect is often a decline in facility standards unless, other revenue sources such as the City's General Fund must be allocated to make up the shortfall.

Authority to Impose Impact Fees and Mitigation Fee Act Compliance

The authority for the City to impose fees to mitigate impacts generated by new development is rooted in its fundamental police powers under Article XI Section 7 of the California Constitution. In general, this authority provides that the City may make and enforce ordinances which are not in conflict with state law. The City, under its broad authority to protect the public's health and safety and the natural environment, may regulate new development, including the right to impose conditions on development which may require direct provision of public improvements, land dedications, and in-lieu fees.

As a result of the ever-growing use of impact fees following the passage of Proposition 13, the State Legislature passed the Mitigation Fee Act in 1988. The

Act established ground rules for the imposition and ongoing administration of impact fee programs. The Act requires local governments to document the following when adopting an impact fee such as the TIF:

- Identify the purpose of the fee.
- Identify the use of fee revenues.
- Determine a reasonable relationship between the fee's use and the type of development paying the fee.
- Determine a reasonable relationship between the need for the fee and the type of development paying the fee.
- Determine a reasonable relationship between the amount of the fee and the cost of the facility attributable to development paying the fee.

Together these items above constitute a "nexus study". This TIF Study is the "nexus study" and it complies with the Act by providing the required documentation for the above findings. It is important to note that while the City is not required to establish the TIF as documented in the Study (and it may elect to adopt a lower fee levels), it may not establish TIF higher than what is identified in the Study.

Additionally, the aggregate of the TIF collected cannot total more than the actual cost of the improvements needed to serve the development paying the fee. As proposed, the amount of TIF collected will fund only 40% of the cost of the improvements.

Moreover, any existing deficiencies must be remedied using funds other than TIF, and new development shall not be required to pay for an increase in the level of service for the benefit of existing development, unless existing development is committed to paying its share of the cost. In recognition of this standard, the TIF program allocates only that proportionate share of impacts attributable to development within American Canyon. Funding to address the deficiency (especially along Sr-29) is anticipated to be State and Federal grants, etc.

Lastly, the Act prohibits impact fee revenues from being used for staffing, operations, and maintenance of either existing or new facilities. This TIF Study does not consider the projected operational and/or maintenance costs of any of these facilities, which, over their life cycle, will be quite substantial. In order to comply with the Act, the City proposes to use revenues other than TIF (such as its General Fund) for staffing, operations, and maintenance of the existing and/or new facilities.

The Act has specific accounting and reporting requirements both annually and after every five-year period for the use of fee revenues. It is the practice of the City to provide regular updates to the Council (as prescribed by the Act) as to the amounts and planned uses of the TIF collected.

California Environmental Quality Act

Properly administered impact fee programs such as the TIF can streamline environmental review of development projects under the California Environmental Quality Act. (CEQA)³. At the same time, impact fee programs which are not implemented in accordance with the original expectations or which are founded upon unrealistic assumptions may not suffice alone to act as mitigation measures for cumulative traffic impacts.

Significant case law over the last fifteen years demonstrates how and when a fee program such as the TIF may be used as an environmental mitigation. In one example, (*Anderson First Coalition*⁴), the court held that "paying a mitigation fee" is permissible as effective mitigation if the fees are "part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." The court held that a fee program would be permissible as long the mitigation measure specified the amount of the fee and the percentage of future improvements for which this developer would be responsible. The court also emphasized that the fees must be a reasonable, enforceable part of an improvement plan that will actually mitigate the cumulative effects.

The enactment of this TIF program and the City's subsequent implementation of the policies, programs and projects identified in the Circulation Element is intended to serve as substantial evidence that the collection of this fee may act adequately act as a standalone mitigation measure(s) for the potentially cumulative traffic impacts that may occur as a result of future development projects.

³ Public Resources Code Section 21000 et seq.

⁴ *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173

2. GROWTH PROJECTIONS

The estimate of existing population, housing units, and employment establishes a baseline for determining impacts to the road network from future land development. Measuring the traffic impacts of growth requires an estimate of future development within different land use categories. The general land use types used in this analysis are defined below. These categories represent a wide range of possible uses for land. Since it is not possible to predict what types of land uses will be developed with more specificity, these broad categories are defined in order to facilitate the calculation of a reasonable estimate of the total number of new vehicle trips:

- Single-family: Detached and attached (townhomes and condominiums) one-family dwelling units, and mobile homes.
- Multi-family: Dwelling units such as duplexes and apartments.
- Mobile Homes: Includes modular homes and units in model home parks.
- Retail/Commercial: Includes but is not limited to: service commercial, retail, retail-warehouse, educational, food service, and hotel/motel development.
- Office: All general, professional, and medical office development.
- Industrial/Warehouse: All manufacturing, fabrication, food processing, warehousing, truck yards, terminals, and distribution centers. This category may also encompass business parks and research and development space.

Some developments may include more than one land use category, such as mixed-use development with both residential and commercial uses. In these cases the impact fee would be calculated separately for each land use category contained within the project.

New Development Trip Generation

The trip generation rates vary considerably by land use type, meaning that the impact of the different land uses also varies widely depending not only on the size of the project by the type of use. In this TIF Study, the total number of new trips by the year 2035 is estimated from the projected growth in all land uses.

Figure 1 below provides an estimate of AADT generation and an estimate of trip generation from anticipated new development. The number of existing and proposed units is based upon various sources including the Napa-Solano TDM, and the City's 2010 Urban Water Management Plan, 2013 Circulation Element, and 2014 Housing Element updates. The trip generation rates are from latest edition of the ITE Trip Generation Manual.

Currently, the AADT in the City is estimated to be 98,716 trips per day. By 2035, the AADT in the City is forecast to grow by approximately 89,672 trips per day. This growth in traffic forms the basis for the TIF collected on a per "daily trip" basis.

Figure 1 - New Development Trip Generation (2014-2035)

Land Use	Existing Units (2014)	AADT Per Unit	Existing AADT (2014)
Residential (DU)			
Single Family	4,965	9.6	47,664
Multi-family	257	6.7	1,722
Mobile Home	849	5	4,245
Existing Residential Subtotal	6,071		53,631
Non-residential (KSF)			
Office	30	11	330
Commercial/Retail	450	43	19,350
Industrial/Warehouse	5,081	5	25,405
Existing Non-Residential Subtotal	5,561		45,085
Existing Average Annual Daily Trips Total			98,716

Land Use	New Develop. (2014-2035)	AADT per Unit	New Develop. AADT
Residential (DU)			
Single Family	1,300	9.6	12,480
Multi-family	2,000	6.7	13,400
Mobile Home	-	5	-
New Dev. Residential Subtotal	3,300		25,880
Non-residential (KSF)			
Office	200	11	2,200
Commercial/Retail	834	43	35,862
Industrial/Warehouse	5,146	5	25,730
New Dev. Non-Residential Subtotal	6,180		63,792
New Development Average Annual Daily Trips Total			89,672

Land Use	Cumulative (2035)	AADT per Unit	Cumulative AADT
Residential (DU)			
Single Family	6,265	9.6	60,144
Multi-family	2,257	6.7	15,122
Mobile Home	849	5	4,245
Cumulative Residential Subtotal	9,371		79,511
Non-residential (KSF)			
Office	230	11	2,530
Commercial/Retail	1,284	43	55,212
Industrial/Warehouse	10,227	5	51,135
Cumulative Non-Residential Subtotal	11,741		108,877
Cumulative Average Annual Daily Trips Total			188,388

3. Traffic Impact Analysis

This section analyzes the impacts of the projected growth identified in Section 2. Assessing the impact of the average number of daily trips generated by each land use category is the link between new development and the direct impacts on the City's road network caused by the various land uses.

The operational performance of a roadway network is commonly described with the term "level of service" or LOS. LOS is a qualitative description of operating conditions, ranging from LOS A (free flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The methods for calculating LOS are described in Chapter 16 of the 2000 Highway Capacity Manual. An intersection's LOS is based on the weighted average control delay measured in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time (if multiple cycles are needed to clear the intersection), stopped delay, and final acceleration. While the Circulation Element specifies an LOS D during the peak periods as the minimally acceptable standard for most intersections in the City, it recognizes that lesser LOS are permissible for SR-29.

Figure 2 - Intersection LOS Criteria

Level of Service	Description	Average Control Delay (Seconds)
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 to 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 to 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55 to 80
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80

The Circulation Element and the *SR-29 Corridor Plan* identify traffic improvements needed to accommodate new development. These determinations are based upon

a LOS analysis that involves the modeling of traffic operations on existing roadways and intersections throughout the City. The recommended improvements are based on an inventory of transportation needs. This TIF Study identifies a reasonable relationship between impact fees on new development and the demand for new or upgraded facilities generated by the new development paying the TIF. For traffic facilities this relationship is shown by comparing the current LOS of specific roadways with the LOS that would result by adding the trips associated with the projected new development.

This “before and after” comparison indicates where improvements are needed to mitigate the impacts of the projected development. In the traffic modeling process, impact mitigation measures in the form of road widening, intersection improvements, or new road segments are then added to the network to achieve the an acceptable LOS during peak periods. This procedure ensures that the measures result in the adopted LOS standard and the LOS that the City generally experiences today. By identifying these specific mitigation measures, and basing the impact fee on the cost of these measures, this procedure also maintains the relationship between the impact fee and the purpose of the fee revenues.

For many of the improvements analyzed in the Circulation Element, the Synchro software package is used to model traffic conditions. Synchro is a macrosimulation tool that uses deterministic equations to evaluate operations at an intersection.

However, in conjunction with the *SR-29 Corridor Plan*, due to the existing congestion on the SR-29 corridor, the VISSIM software package was used to model the effects of closely spaced intersections and queue spillback from one intersection to another. VISSIM is a stochastic microsimulation software that analyzes the traffic operations by simulating the movement of individual cars, trucks, transit vehicles, pedestrians, and bicycles. Different random seed numbers generate different driver behaviors and system results. The model is run multiple times to account for the randomness of the simulations and to ensure that the results are reasonable. VISSIM allows the user to control vehicle inputs, vehicle routes, vehicle fleet composition, desired speeds throughout the network, conflict areas to determine yielding behavior, driver behavior, parking areas and behavior, and pedestrian and bicycle volumes and behavior. VISSIM also reflects that conditions at one location can affect conditions at another (i.e. queue spillback from one signalized intersection to another, or “starvation” at a signalized intersection because of poor operations at an upstream location). The software uses random seed values to generate vehicle entry time and vehicle characteristics. The results are an average of ten runs with different random seeds. Using the intersection delay results, the intersection LOS was assigned.

Current and Forecasted Level of Service

The Circulation Element and the *SR-29 Corridor Plan* identify locations that will be significantly impacted by new vehicle trips and that will exceed the LOS standard thresholds for vehicle/capacity and intersection delay. The following are the current and forecasted LOS at key locations in the City:

Figure 3 – Level of Service (PM Peak Hour)

Location	Existing (2014)	Future (2035)
SR-29, North of Green Island Road	E	F
SR-29, South of Green Island Road	E	F
Napa Junction Road / SR-29 intersection	F	F
Eucalyptus Drive/ SR-29 intersection	B	F
Rio Del Mar / SR-29 intersection	B	D
SR-29, North of South Napa Junction Road	F	F
South Napa Junction Road / SR-29 intersection	B	F
SR-29, North of Donaldson Way	F	F
Donaldson Way / SR-29 intersection	D	F
SR-29, North of American Canyon Road	F	F
American Canyon Road / SR-29 intersection	D	F
American Canyon Road / Newell Drive intersection	D	F
American Canyon Road / Silver Oaks Trail intersection	D	F

4. Future Improvements

Future Improvements

The Circulation Element and SR-29 Corridor Plan identify various improvements that will be necessary to accommodate the increase in traffic volumes that will occur as a result of development proposed within the City. Both the Circulation Element and the SR-29 Corridor Plan anticipate a future highway design (Modified Boulevard) that includes six (6) through lanes, a landscaped central median and a Class I shared use path for bicycles and pedestrians on both sides of the highway, separated from the roadway with landscaped planter strips. This TIF Study also includes bicycle and pedestrian improvements in addition to the roadway improvements identified in the Circulation Element.

The road improvements needed to mitigate the impacts from this development are directly related to the increased travel on the City's road network. Each project includes sidewalk, landscaping, and bike lanes - all in conformance to the roadway standards for the given street classification, i.e. major arterial, collector, etc.

General locations and descriptions of these future improvements are shown in Figures 4a-4d below. Complete descriptions and construction cost estimates are presented in Appendix A.

Figure 4a - Map of Future Improvements (Southern and Central American Canyon)

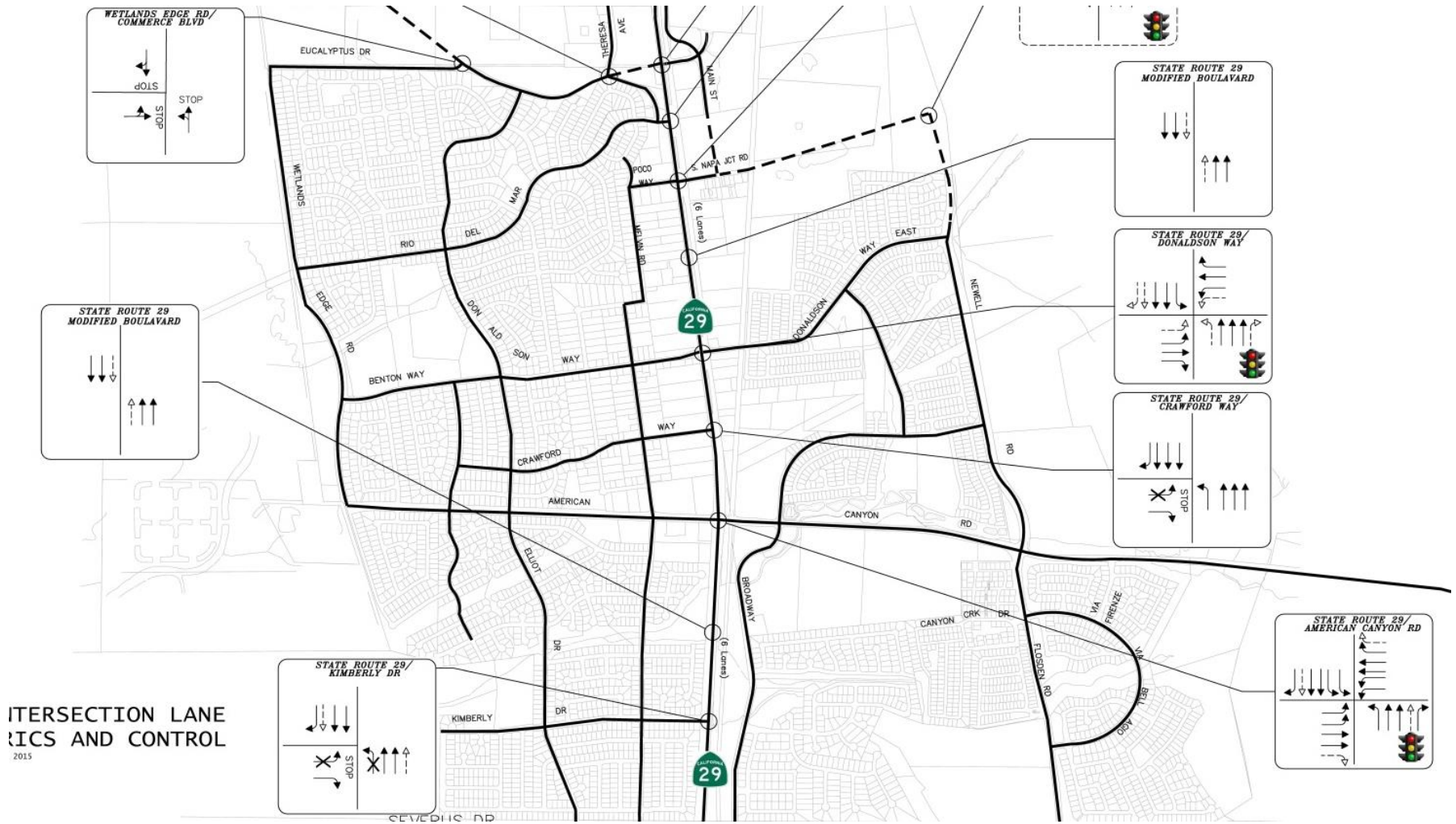


Figure 4b - Map of Future Improvements (Northern American Canyon)

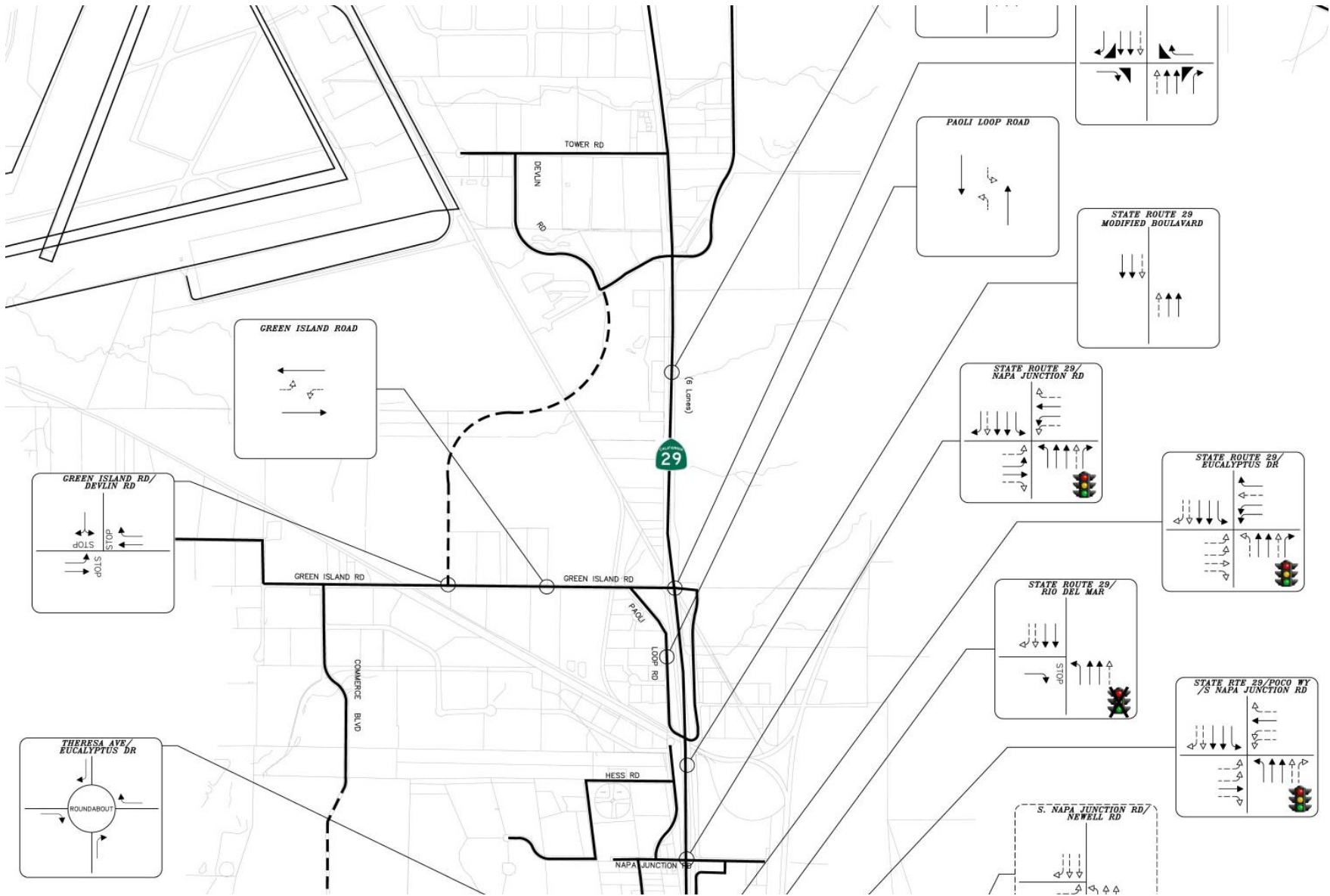


Figure 4c - Description of Future SR-29 Improvements

State Route 29 - Southern City Limit to Northern City Limits

- Widen from four (4) through lanes to six (6) through lanes (including Paoli Loop Overcrossing) and Class I bikeways and landscaping (Modified Boulevard).

SR 29/Kimberly Drive Intersection

- Restrict northbound left-turn and eastbound left-turn lanes.

SR 29/American Canyon Road Intersection

- Add 2nd exclusive westbound right-turn and 2nd exclusive eastbound left-turns lanes
- Relocate traffic signal.

SR 29/Crawford Way Intersection

- Restrict eastbound left-turn lane

SR 29/Donaldson Way Intersection

- Add 2nd exclusive eastbound left-turn and exclusive eastbound right-turn lanes.
- Add 2nd exclusive westbound left-turn.
- Add exclusive northbound and southbound right-turn lanes.
- Relocate traffic signal.

SR 29/Poco Way/South Napa Junction Intersection

- Add dual eastbound left-turn lanes and eastbound right-turn lane
- Add dual westbound left-turn lanes and westbound right-turn lane
- Add exclusive northbound left-turn and right-turn lanes and an exclusive southbound right-turn lane.
- New traffic signal.

SR 29/Eucalyptus Drive Intersection

- New eastbound approach to include single through, dual eastbound left-turn, exclusive eastbound right-turn lanes and single westbound receiving lane.
- Add west-bound through lane.
- Remove Rio Del Mar traffic signal.
- Add exclusive northbound left-turn and southbound right-turn lanes.
- Relocate traffic signal

SR 29/Napa Junction Road Intersection

- Phase 1 Improvements
- Add 2nd exclusive westbound left-turn and exclusive westbound right-turn lanes
- Add 2nd exclusive eastbound left-turn and exclusive eastbound right-turn lanes
- Relocate traffic signal

SR 29/Green Island Rd

- Add 500-foot long northbound and southbound acceleration lanes

Figure 4d - Description of Future Local Improvements

Green Island Road

- Widen road from SR 29 to Commerce Blvd. and add two-way turn lane
- Widen railroad crossing

Newell Drive

- New 4-lane arterial from Donaldson Way to So. Napa Junction Road
- New signalized intersection at So. Napa Junction Road with exclusive northbound left-turn and southbound right-turn lanes.

South Napa Junction Road

- New 3-lane and 2-lane collector from SR 29 to extension of Newell Drive

Main Street

- New 3-lane collector from Eucalyptus Drive to South Napa Junction Road

Devlin Road Segment H

- New 3-lane collector from railroad overcrossing to Green Island Road

Eucalyptus Drive

- Widen to 2-lane collector from Wetlands Edge Road to SR 29.
- New roundabout at Theresa Avenue Intersection

Commerce Drive

- New 2-lane collector from southern terminus to Eucalyptus Drive
- New all-way stop controlled intersection at Eucalyptus Drive

Class I Bikeways

- River to Ridge Trail
- Eucalyptus: Main Street to Teresa
- San Francisco Bay Trail
- Vine Trail
- Railroad Path
- Silver Oak Trail
- Entrada Trail
- Entrada Circle to Flosden Avenue
- Hwy 29 Pedestrian Overcrossing

Class II Bikeways

- Melvin Rd.
- Hess Road
- Donaldson Way
- Elliot Drive
- Eucalyptus Drive
- Rio Del Mar

Cost of Future Improvements

Below is summary of the costs of improvements. A more detailed cost estimate for each City improvement is shown in Attachment A.

Figure 5 – Future Project Costs

State Route 29	Cost Estimate
Southern American Canyon	\$ 6,782,782
Central American Canyon	\$ 24,907,339
Northern American Canyon	\$ 28,116,835
SR-29 Subtotal	\$ 59,806,956
Local Streets	\$ 46,677,867
Bicycle and Pedestrian Facilities	\$ 12,098,458
Project Cost Total	\$ 118,583,280

Cost Allocation

The cost of the improvements that are allocated to new development—in other words, the cost that is recoverable through the traffic impact fee—is shown in Figure 6 below. The allocation for improvements on SR-29 is approximately 21% of the total cost, which is the percentage of the projected increase in traffic on SR-29 that is attributed to growth in traffic volume due to development within American Canyon. This percentage is derived by dividing the total amount of trips anticipated to be generated by new development within American Canyon by the total amount of regional volume (including but not limited to the volumes generated by development in American Canyon). It is assumed that development in American Canyon occurs according to the highest and best uses as per the zoning prescribed in the City’s General Plan. It is also assumed that regional traffic volumes are based on the 2035 Napa- Solano Transportation Demand Model.

Cost allocations for local streets vary depending on the extent to which the improvement benefits existing versus future development; a 100 percent allocation to the impact fee indicates the improvement would provide a benefit to only new development, such as a street extension that provides access to a development project. The overall allocation for improvements on City Streets is approximately 74% of the total cost, which is the percentage of the projected increase in traffic on SR-29 that is attributed to growth in traffic volume due to development within American Canyon.

All told, the overall allocation for all improvements is approximately \$49.5 million or 40% of the total project cost (\$122 million). The percentage of TIF allocations for each project is shown in Appendix A.

Traffic Impact fee Program Cost per Unit

Using a uniform cost per trip approach ensures that the various types of land development will pay the traffic impact fee in direct proportion to each land use’s relative impact on the road. As shown in Figure 6 below, the total estimated cost of

all transportation system improvements, including bicycle facilities, is approximately \$122 million, and the cost allocated to the new development is \$49.5 million.

Figure 6 –Summary of Cost Allocation

TIF Program Project Cost	\$118,583,280
Other Funding Sources	<\$69,061,711>
TIF Program Total	\$49,521,570

As noted in Section 3, the future growth in AADT by new development in American Canyon is anticipate to be 89,672 trips per day. The TIF per AADT is calculated by dividing the cost allocated to new development (49.5 million) by the amount of AADT growth (89,672). The result is a uniform TIF across all land uses of \$552/trip.

Example TIF Schedule

The amount of the TIF is calculated prior to the approval of the project and it is paid in conjunction with the issuance of a building permit. The amount is based on the number of net new daily vehicle trips to be generated by the project. The trip generation table published by the Institute of Transportation Engineers (ITE) lists the trip rates per unit of development of nearly 200 specific uses. These rates may be combined with the cost per trip noted above to calculate the TIF for any given development project.

For comparative purposes, an example fee schedule is shown Figure 7 below. This example includes proposed fees on the two predominant residential types and the typical nonresidential uses in American Canyon.

Figure 7 –Schedule of Example TIF for Common Land Uses

Land Use	Units	AADT per Unit	Current Fee Per Unit	Proposed Fee per Unit
Residential				
Single Family	DU	9.6	\$3,954	\$5,299
Multi-Family	DU	6.7	\$2,600	\$3,698
Non-residential				
Office	1,000 SF	11.0	\$7,020	\$6,072
Commercial/Retail	1,000 SF	43.0	\$7,020	\$23,736
Industrial/Warehouse	1,000 SF	5.0	\$2,020	\$2,760

Other Funding Sources

Figure 6 shows a substantial amount of funding (\$69 million) required from sources other than the TIF program. The Act requires that other funding sources necessary for the completion of projects shall be identified at the time of the required five-year annual impact fee report. It also requires that the City designate the

approximate dates on which the funding necessary to complete financing of those improvements will be deposited into the appropriate account of the fund. Several individual improvement projects may be funded exclusively by the fee, such as an extension required for a specific development project. Many of the Circulation Element improvements have an "other funding component" indicating that the benefits of the improvement project accrue to more parties than just new citywide land development; the 79 percent regional share for SR-29 is one example. The benefitting parties may also be adjacent properties needing the project for frontage improvements, or access in order to develop. Existing development in the city may also benefit from the traffic improvements by the reduction in traffic delay, in which case the current residents and business are obligated to contribute to the improvement. A few potential sources of funding to complete projects are described below.

General Fund

The General Fund is primarily allocated to maintenance and operational expenses for all the municipal services provided by the City. Other financing mechanisms are needed to initially construct public improvements, and then general fund monies would be expected to finance the ongoing maintenance costs once the improvements are accepted by the City. Road maintenance and reconstruction costs are substantial; over the life of a roadway they can be expected to exceed the initial acquisition cost. General Fund monies have typically not been available for major road improvements, but have been used for local improvements such as traffic signals, turn-pockets, and pedestrian ramps.

Regional, State and Federal Funding

The *SR-29 Corridor Plan* contemplates that state and federal funds will be used to complete substantial portions of the SR-29 improvements. This TIF Study assumes that 79 percent of the cost of widening SR-29 to a six-lane arterial will be from state and/or federal funding programs such as the State Transportation Improvement Program (STIP) and State Highway Operations and Protection Program (SHOPP). It is anticipated that the City may use TIF to cover the local match fund typically required on state highway projects. State and federal financial assistance programs are often available for major Circulation Element improvements that have a regional benefit. These programs typically do not fund entire projects and would not fund local improvements needed exclusively for new development.

Project Exactions, Dedications, and Mitigations

Land developers are obligated to provide traffic impact mitigation improvements corresponding to three levels of impacts: 1) project frontage and access requirements; 2) direct impacts; and 3) cumulative impacts. Frontage improvements and provisions for project access, and direct traffic impact mitigations identified in a development project's EIR and/or traffic impact study, are imposed requirements that would not necessarily require reimbursement from the impact fee. While it is not a hard and fast rule, impact mitigation fee programs are typically designed to fund the cumulative impact mitigation measures required of all citywide development, while direct impact measures, including frontage and access, are to be constructed by the development project. A reimbursement out of impact

fee funds may in some cases be granted if the developer-constructed improvements are determined to exceed the direct impact mitigation requirements. The use of impact fees as a reimbursement facilitation mechanism is described further below.

Developer Reimbursement Agreements

Road improvements that are off-site of a project and/or provide benefits beyond the project may be constructed in conjunction with the development of a project, such as when a road extension is required to provide access and other properties may be served by the same improvement in the future. In such instances, developer reimbursement agreements may be executed to provide for a future payback to the developer for the additional cost of these facilities. Future developments are required to pay back their fair share of the costs for the shared facility when development occurs. The impact fee can act as a mechanism for such reimbursements if the reimbursed amounts are clearly identified as payback for improvements in excess of the cost of both direct impacts (including frontage and access) and the impact fee obligation itself.

APPENDIX A

PROJECT COST ALLOCATION AND FEE CALCUALTION



- FINAL -

TRAFFIC IMPACT FEE NEXUS STUDY

PROJECT COST ALLOCATION AND FEE CALCULATION

Prepared by Jason B. Holley, P.E.
Public Works Director

Revised February 3, 2015

TRAFFIC IMPACT FEE PROGRAM - FINAL
- LIST OF PROJECTS -

State Route 29

From South City Limits to North City Limits (Widening)
SR 29/Kimberly Drive Intersection (Modifications)
SR 29/American Canyon Road Intersection (Widening)
SR 29/Crawford Way Intersection
SR 29/Donaldson Way Intersection (Widening)
SR 29/Poco Way/South Napa Junction Intersection (New Signal)
SR 29/Rio Del Mar Intersection (Signal Removal)
SR 29/Eucalyptus Drive Intersection (Realignment)
SR 29/Napa Junction Road Intersection (Widening)
SR 29/Green Island Rd/Newell Drive Intersection (Widening)

Local Streets

Green Island Road (Widening)
Paoili Loop (Widening)
South Napa Junction Road (New Extension)
Newell Drive (New Extension)
Main Street (New Extension)
Eucalyptus Drive (Widening)
Devlin Road Segment H (New Extension)
Commerce Drive (New Extension)

Local Intersections

Newell Drive/So. Napa Junction Intersection (New)
Eucalyptus Drive/Theresa Avenue Intersection (Roundabout)
Eucalyptus Dr/Commerce Blvd. Intersection (New)

Class I Bikeways (New)

River to Ridge Trail
Eucalyptus: Main Street to Teresa
San Francisco Bay Trail
Vine Trail
Railroad Path
Silver Oak Trail
Entrada Trail
Entrada Circle to Flosden Avenue
Hwy 29 Pedestrian Overcrossing

Class II Bikeways (New)

Melvin Rd.
Hess Road
Donaldson Way
Elliot Drive
Eucalyptus Drive
Rio Del Mar

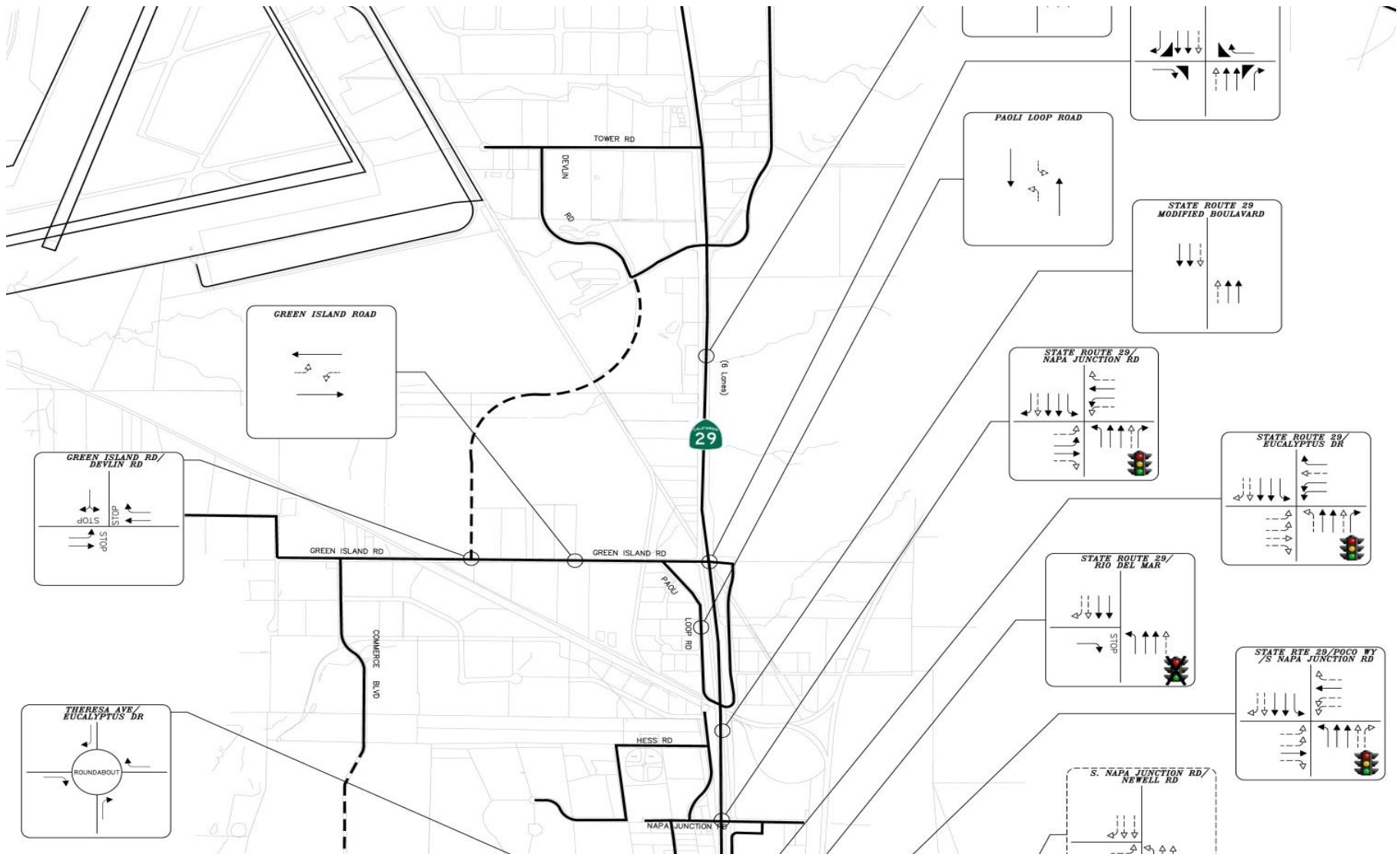
TRAFFIC IMPACT FEE PROGRAM - FINAL

- MAP OF PROJECTS -

Southern and Central American Canyon



TRAFFIC IMPACT FEE PROGRAM - FINAL
- MAP OF PROJECTS -
Northern American Canyon



TRAFFIC IMPACT FEE PROGRAM - FINAL
- SR-29 PROJECT COSTS -

Facility	Existing					Description of Improvement	Proposed					Length (LF)	Width (LF)	Area (SF) or No. of Units (EA)	Unit Cost (\$/SF)	Cost
	N/S Through	N/S Turn Lanes	E/W Through	E/W Turn Lanes	Intersection Control		N/S Through	N/S Turn Lanes	E/W Through	E/W Turn Lanes	Intersection Control					
City Limit to American Canyon Road	4	-	-	-	N/A	6-lane Modified Boulevard (Segment 2)	6	-	-	-	N/A	3,400	54	183,600	\$36	\$6,682,782
Kimberly Drive Intersection	-	1	0	2	TWSC	Prohibit EBL movement	-	0	0	1	TWSC	0	0	1	\$100,000	\$100,000
American Canyon Road Intersection	4	5	4	3		Add 2nd excl. WBR & EBL	6	5	4	5		350	44	15,400	\$41	\$634,211
						6-lane Modified Boulevard						1,000	54	54,000	\$36	\$1,965,524
	-	-	-	-	Signal	Traffic signal modification	-	-	-	-	Signal	0	0	1	\$100,000	\$100,000
American Canyon Road Intersection Subtotal																\$2,699,735
American Canyon Road to Donaldson Way	4	-	-	-	N/A	6-lane Modified Boulevard (Segment 3.1)	6	-	-	-	N/A	1,100	54	59,400	\$36	\$2,162,076
Crawford Way Intersection	-	1	0	1	TWSC	Prohibit EBL movement	-	1	0	1	TWSC	0	0	1	\$100,000	\$100,000
Donaldson Way Intersection	-	-	2	3		Add 2nd excl. EBL & excl. EBR	-	-	2	6		350	44	15,400	\$41	\$634,211
						Add 2nd excl. WBL and modify excl. WBR	-	-	2	6		350	44	15,400	\$41	\$634,211
	-	2	-	-		Add excl. NBR & SBR	6	4	-	-		350	24	8,400	\$36	\$305,748
						6-lane Modified Boulevard						1,000	54	54,000	\$36	\$1,965,524
	-	-	-	-	Signal	Traffic signal relocation	-	-	-	-	Signal	0	0	1	\$200,000	\$200,000
Donaldson Way Intersection Subtotal																\$3,739,694
Donaldson Way to Poco Way/South Napa Junction	4	-	-	-	N/A	6-lane Modified Boulevard (Segment 3.2)	6	-	-	-	N/A	1,150	54	62,100	\$36	\$2,260,353
Poco Way/South Napa Junction Intersection	-	-	2	0		Add excl. dual EBL and single EBR	-	-	2	6		350	44	15,400	\$41	\$634,211
						Add excl. dual WBL and single WBR lane	-	-	2	6		350	44	15,400	\$41	\$634,211
	-	2	-	-		Add excl. NBR & SBR	6	4	-	-		350	24	8,400	\$36	\$305,748
						6-lane Modified Boulevard						1,000	54	54,000	\$36	\$1,965,524
	-	-	-	-	TWSC	New traffic signal	-	-	-	-		0	0	1	\$300,000	\$300,000
Poco Way/South Napa Junction Road Intersection Subtotal																\$3,839,694
Poco Way/So. Napa Junction to Eucalyptus Dr	4	-	-	-		6-lane Modified Boulevard (Segment 3.3)	6	-	-	-		500	54	27,000	\$36	\$982,762
Eucalyptus Drive Intersection	-	-	0	3		Add single EBT, excl. dual EBL and excl. single EBR	-	-	2	6		350	66	23,100	\$41	\$951,317
						Remove Rio Del Mar traffic signal and prohibit EBL	-	-	2	6		0	0	1	\$50,000	\$50,000
	-	2	-	-		Add excl. NBR, NBL & SBR	6	4	-	-		350	36	12,600	\$36	\$458,622
						6-lane Modified Boulevard						1,000	54	54,000	\$36	\$1,965,524
	-	-	-	-	Signal	Traffic signal modification	-	-	-	-	Signal	0	0	1	\$200,000	\$200,000
Eucalyptus Drive Intersection Subtotal																\$3,625,463

TRAFFIC IMPACT FEE PROGRAM - FINAL
- SR-29 PROJECT COSTS -

Facility	Existing					Description of Improvement	Proposed					Length (LF)	Width (LF)	Area (SF) or No. of Units (EA)	Unit Cost (\$/SF)	Cost
	N/S Through	N/S Turn Lanes	E/W Through	E/W Turn Lanes	Intersection Control		N/S Through	N/S Turn Lanes	E/W Through	E/W Turn Lanes	Intersection Control					
Eucalyptus Drive to Napa Junction Road	4	-	-	-		6-lane Modified Boulevard (Segment 3.4)	6	-	-	-		400	44	17,600	\$36	\$640,615
Napa Junction Road Intersection	-	2	2	-	TWSC	Phase 1 Improvements	-	4	2			0	0	1	\$1,423,000	\$1,423,000
	-	4	2	2		Add 2nd excl. WBL and excl. WBR	-	4	2	4		350	44	15,400	\$41	\$634,211
	-	4	2	4		Add 2nd excl. EBL and excl. EBR	-	4	2	6		350	44	15,400	\$41	\$634,211
	4	2	-	-		6-lane Modified Boulevard	6	2	-	-		1,000	54	54,000	\$36	\$1,965,524
	-	-	-	-	Signal	Traffic signal relocation	-	-	-	-	Signal	0	0	1	\$200,000	\$200,000
Napa Junction Road Intersection Subtotal																\$4,856,946
Napa Junction Road to Green Island Road/Newell Extension	4	-	-	-	N/A	6-lane Modified Boulevard (Segment 4.1)	6	-	-	-	N/A	2,800	54	151,200	\$36	\$5,503,467
	4	-	-	-		Paoli Loop Overcrossing Structure	6	-	-	-		0	0	1	\$12,480,000	\$12,480,000
Napa Junction Road to Green Island Road/Newell Extension Subtotal																\$17,983,467
Green Island Rd/Newell Extension Intersection	4	-	-	-	TWSC	Lengthen NB and SB acceleration lanes	6	-	-	-	TWSC	350	24	8,400	\$36	\$305,748
						6-lane Modified Boulevard						1,000	54	54,000	\$36	\$1,965,524
Green Island Road/Paoli Loop Road Intersection Subtotal																\$2,271,272
Green Island Rd./Newell Ext to So. Kelly Road	4	-	-	-		6-lane Modified Boulevard (Segment 4.2)	6	-	-	-		4,000	54	216,000	\$36	\$7,862,096

STATE ROUTE 29 PROJECT COST TOTAL

\$59,806,956

TRAFFIC IMPACT FEE PROGRAM - FINAL
- LOCAL PROJECT COSTS -

Facility	Existing					Description of Improvement	Proposed					Length (LF)	Width (LF)	Area (SF) or No. of Units (EA)	Unit Cost (\$/SF)	Cost
	N/S Through Lanes	N/S Turn Lanes	EW Through Lanes	EW Turn Lanes	Intersection Control		N/S Through Lanes	N/S Turn Lanes	EW Through Lanes	EW Turn Lanes	Intersection Control					
Green Island Road	-	-	2	0	N/A	Widen road from SR 29 to Commerce Blvd. to Industrial Collector standards	-	-	2	1	N/A	4,765	20	95,300	\$34	3,198,149
						Widen railroad crossing to three lanes						0	0	2	\$100,000	200,000
Green Island Road Subtotal																3,398,149
Paoli Loop Road	2	0	-	-		Widen road from Green Island to Newell Extension Industrial Collector standards	2	1	-	-	N/A	4,500	38	171,000	\$34	5,738,546
Newell Drive	0	0	-	-		New 4-lane arterial from Donaldson Way to South Napa Junction Rd	4	1	-	-	N/A	1,600	100	160,000	\$34	5,369,400
Newell Drive/So. Napa Junction Intersection	-	-	-	-		Add excl. NBL & SBR	-	4	-	-		150	112	16,800	\$34	563,787
	-	-	-	-		Add exclusive EBL and EBR	-	-	1	2		150	80	12,000	\$34	402,705
	-	-	-	-	TWSC	New traffic signal	-	-	-	-	Signal	0	0	1	\$200,000	200,000
Newell Drive/South Napa Junction Intersection Subtotal																1,166,492
South Napa Junction Road	-	-	0	0	N/A	New Major Collector from SR 29 to extension of Newell Drive	-	-	2	1	N/A	3,200	80	256,000	\$34	8,591,040
Main Street	0	0	-	-		New Minor Collector from Euclayptus to South Napa Junction	2	0	-	-	N/A	785	74	58,090	\$34	1,949,428
Devlin Road Segment H	0	0	-	-	N/A	New Industrial Collector from railroad overcrossing to Green Island Rd.	2	0	-	-	N/A	2,800	80	224,000	\$34	7,517,160
Eucalyptus Drive	-	-	2	0	N/A	Widen to 2-lane collector from Wetlands Edge Rd. to SR 29	-	-	2	0	N/A	4,000	28	112,000	\$34	3,758,580
Eucalyptus Drive/Theresa Avenue Intersection	2	0	2	0	TWSC	Install roundabout	Roundabout					-	-	17,671	\$34	593,032
Commerce Drive	0	0	-	-	N/A	New Industrial Collector from southern terminis to Eucalyptus Drive	2	0	-	-	N/A	2,900	80	232,000	\$34	7,785,630
Eucalyptus Dr/Commerce Blvd. Intersection	-	-	-	-		Add excl. NBL & SBL	2	2	-	-		150	80	12,000	\$34	402,705
	-	-	2	0		Add exclusive EBL and WBL	-	-	2	2		150	80	12,000	\$34	402,705
	-	-	-	-	TWSC	Add new sign	-	-	-	-		0	0	1	\$5,000	5,000
Eucalyptus Dr/Commerce Blvd. Intersection Subtotal																810,410

LOCAL PROJECT COST TOTAL

46,677,867

**TRAFFIC IMPACT FEE PROGRAM - FINAL
- BIKE & PEDESTRIAN PROJECT COSTS -**

Facility	Description of Improvement	Length (LF)	Width (LF)	Area (SF) or No. of Units (EA)	Unit Cost (\$/SF)	Cost
River to Ridge Trail						
South Napa Junction	Class I	Included as part of South Napa Junction Road				
Main Street	Class I	Included as part of Main Street				
Eucalyptus	Class I	Included as part of Eucalyptus Drive				
San Francisco Bay Trail						
Eucalyptus to Mezzetta	Class I	3,168	12	38,016	\$9	\$330,739
Kimberly to Kensington	Class I	1,690	12	20,280	\$10	\$196,716
Catalina to Kimberly	Class I	1,584	12	19,008	\$11	\$203,386
Vine Trail						
Devlin Road	Class I	Included as part of Devlin Road Segment H				
Green Island Road	Class I	Included as part of Green Island Road				
Paoli Loop to Watson	Class I	4,600	12	55,200	\$9	\$480,240
Watson: Paoli Loop to Newell	Class I	2,300	12	27,600	\$9	\$240,120
Railroad Path						
Lombard to Green Island Road	Class I	2,535	12	30,420	\$9	\$264,654
Lombard to Watson	Class I	2,798	12	33,576	\$9	\$292,111
So. City Limits to No. City Limits	Class I	Included as part of Hwy 29 Modified Boulevard				
Silver Oak Trail						
American Canyon to Silver Oak Park	Class I	1,908	12	22,896	\$9	\$199,195
American Canyon to Shenandoah	Class I	2,604	12	31,248	\$9	\$271,858
Entrada Trail						
Entrada Circle to Flosden Avenue	Class I	2,122	12	25,464	\$9	\$221,537
Highway 29 Overcrossing						
TBD	Class I			3	\$3,000,000	\$9,000,000
Class II Bikeways						
Melvin Rd.	Eucalyptus Drive to Lombard Road	4,805			\$17	\$81,685
Hess Road	Hess Rd. to Commerce Blvd	2,815			\$17	\$47,855
Donaldson Way	Elliot to Eucalyptus	4,276			\$17	\$72,692
Donaldson Way	Andrew to Newell	4,963			\$17	\$84,371
Elliot Drive	Kimberly Drive to Knightsbridge	1,267			\$17	\$21,539
Eucalyptus Drive	Wetlands Edge to Donaldson	Included as part of Eucalyptus Drive				
Rio Del Mar	Wetlands Edge to SR29	5,280			\$17	\$89,760

BICYCLE AND PEDESTRIAN PROJECT COST TOTAL

\$12,098,458

TRAFFIC IMPACT FEE PROGRAM - FINAL
- ASSUMED UNIT COSTS -

STATE ROUTE 29 WIDENING (6-LANE MODIFIED BOULEVARD)

ASSUMPTIONS

Roadway includes (3) 12' lanes each direction, 8' outer shoulders, 4' left-side shoulders.
 (E) ROW 140-ft +/- . Does not include costs to widen to 151-ft
 Assumes no sewer, water upgrades or modifications
 Assumes existing roadway is structurally sound for new traffic index.
 Existing paving is sawcut as necessary to widen or shift lanes for new section requirements.
 The existing shoulder is assumed to be required to be removed.
 Assumes constant cross-section for entire length of road
 Stormwater treatment for all pavement within landscaped areas (median and/or shoulders)

DIMENSIONS

48-ft	(E) Pavement
48-ft	(N) Pavement
14-ft	(N) Planter Strip
26-ft	(N) Class I Path
15-ft	(N) Landscaped Median
151-ft	(N) ROW

DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST (\$/LF)	COMMENTS
Storm Drain Catch Basin	EA	\$ 3,700	0.013	\$ 49	BMP overflow drain spacing every 75-ft
Joint Trench - Gas, Tel., CATV, Electric	LF	\$ 200	1.000	\$ 200	Undergrounding of overhead lines
Street lights and pull box assemblies	EA	\$ 6,000	0.040	\$ 240	(1) each side of street, 50-ft spacing
Pedestrian lighting	EA	\$ 500	0.080	\$ 40	(1) each side of street, 25-spacing
Landscape and Irrigation	SF	\$ 8	29.000	\$ 232	
Street Trees	EA	\$ 1,000	0.060	\$ 60	(1) trees in median and (1) each side, every 50-ft
Sidewalk (including rock)	SF	\$ 10	26.000	\$ 260	
Curb & Gutter	LF	\$ 50	4.000	\$ 200	
Subgrade Preparation	SF	\$ 0.75	74.000	\$ 56	
Asphalt Concrete (AC)	TONS	\$ 170	1.950	\$ 332	6.5-in section
Aggregate Base (AB)	TONS	\$ 60	5.000	\$ 300	20-in section
Asphalt Pavement Overlay	TONS	\$ 170	1.200	\$ 204	2-in top lift
Striping	LF	\$ 2.50	7.000	\$ 18	
Signage	EA	\$ 350	0.033	\$ 12	
Storm Water BMP's (Biofiltration)	SF	\$ 100	4.880	\$ 488	Within landscaped areas
36-in Class V RCP Stormdrain	LF	\$ 250	2.000	\$ 500	
Existing Pavement Removal	LF	\$ 2.50	27.000	\$ 68	

CONSTRUCTION SUBTOTAL \$ 3,257

PRELIMINARY ENGINEERING (20% of CONST) \$ 651

RIGHT OF WAY ACQUISITION (\$10/SF) \$ -

CONSTRUCTION MANAGEMENT/INSPECTION (15% of CONST) \$ 489

SUBTOTAL \$ 4,397

CONTINGENCY -- 25% \$ 1,099

TOTAL \$5,496 per LF

TOTAL \$36 per SF

TRAFFIC IMPACT FEE PROGRAM - FINAL
- ASSUMED UNIT COSTS -

STATE ROUTE 29 INTERSECTIONS

ASSUMPTIONS

Intersections include 12' lanes and can accommodate STAA-sized Vehicle
 Ultimate lane configuration: dual left turn lanes, single through lane and exclusive right-turn lane
 Does not include costs to widen right-of-way
 Assumes no sewer, water upgrades or modifications
 Assumes existing roadway is structurally sound for new traffic index.
 Existing paving is sawcut as necessary to widen or shift lanes for new section requirements.
 The existing shoulder is assumed to be required to be removed.
 5-ft Class II bike lane between through lane and right-turn lane

DIMENSIONS

12-ft Lane width
 350-ft Turn pocket
 10-ft Sidewalk
 5 Number of lanes
 70-ft Roadway width
 90-ft R/W width

DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST (\$/LF)	COMMENTS
Storm Drain Catch Basin	EA	\$ 3,700	2	\$ 7,400	(1) each side
Joint Trench - Gas, Tel., CATV, Electric	LF	\$ 200	350	\$ 70,000	Undergrounding of overhead lines
Street lights and pull box assemblies	EA	\$ 6,000	14	\$ 84,000	(1) each side of street, 50-ft spacing
Street Trees	EA	\$ 1,000	14	\$ 14,000	(1) each side every 50-ft
Sidewalk (including rock)	SF	\$ 10	7000	\$ 70,000	
Curb & Gutter	LF	\$ 50	700	\$ 35,000	
Subgrade Preparation	SF	\$ 0.75	7700	\$ 5,775	
Asphalt Concrete (AC)	TONS	\$ 170	171	\$ 29,006	6.5-in section
Aggregate Base (AB)	TONS	\$ 60	802	\$ 48,125	20-in section
Asphalt Pavement Overlay	TONS	\$ 170	306	\$ 52,063	2-in top lift
Striping	LF	\$ 2.50	2450	\$ 6,125	
Signage	EA	\$ 350	10	\$ 3,500	
36-in Class V RCP Stormdrain	LF	\$ 250	350	\$ 87,500	

CONSTRUCTION SUBTOTAL \$ 512,494

PRELIMINARY ENGINEERING (20% of CONST) \$ 102,499

RIGHT OF WAY ACQUISITION (\$50/SF) \$ -

CONSTRUCTION MANAGEMENT/INSPECTION (15% of CONST) \$ 76,874

SUBTOTAL \$ 691,867

CONTINGENCY -- 25% \$ 172,967

TOTAL \$ 864,833 per approach

TOTAL \$41 per SF

TRAFFIC IMPACT FEE PROGRAM - FINAL
- ASSUMED UNIT COSTS -

LOCAL STREET - COLLECTOR/ARTERIAL

ASSUMPTIONS

Includes 12-ft lanes and 4-ft bike lanes each direction, 8-ft sidewalk, 8-ft landscade strip and 16-ft median
 Does not include costs to acquire R/W
 Assumes no sewer, water upgrades or modifications
 Assumes existing roadway is structurally sound for new traffic index.
 Existing paving is sawcut as necessary to widen or shift lanes for new section requirements.
 The existing shoulder is assumed to be required to be removed.
 Assumes constant cross-section for entire length of road
 Stormwater treatment for all pavement within landscaped areas (median and/or shoulders)

DIMENSIONS

0-ft	(E) Pavement
48-ft	(N) Pavement
0-ft	(N) Planter Strip
16-ft	(N) Sidewalk
16-ft	(N) Landscaped Median
80-ft	(N) ROW

DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST (\$/LF)	COMMENTS
Storm Drain Catch Basin	EA	\$ 3,700	0.013	\$ 49	BMP overflow drain spacing every 75-ft
Joint Trench - Gas, Tel., CATV, Electric	LF	\$ 200	1.000	\$ 200	Undergrounding of overhead lines
Street lights and pull box assemblies	EA	\$ 6,000	0.040	\$ 240	(1) each side of street, 50-ft spacing
Landscape and Irrigation	SF	\$ 8	16.000	\$ 128	
Street Trees	EA	\$ 1,000	0.040	\$ 40	(1) each side, every 50-ft
Sidewalk (including rock)	SF	\$ 10	16.000	\$ 160	
Curb & Gutter	LF	\$ 50	2.000	\$ 100	
Subgrade Preparation	SF	\$ 0.75	64.000	\$ 48	
Asphalt Concrete (AC)	TONS	\$ 170	1.200	\$ 204	4-in section
Aggregate Base (AB)	TONS	\$ 60	3.000	\$ 180	12-in section
Striping	LF	\$ 2.50	5.000	\$ 13	
Signage	EA	\$ 350	0.010	\$ 4	(1) each side, every 200-ft
Storm Water BMP's (Biofiltration)	SF	\$ 10	2.560	\$ 26	Within landscaped areas
24-in Class V RCP Stormdrain	LF	\$ 200	1.000	\$ 200	

CONSTRUCTION SUBTOTAL \$ 1,591

PRELIMINARY ENGINEERING (20% of CONST) \$ 318

CONSTRUCTION MANAGEMENT/INSPECTION (15% of CONST) \$ 239

SUBTOTAL \$ 2,148

CONTINGENCY -- 25% \$ 537

TOTAL \$2,685 per LF

TOTAL \$34 per SF

TRAFFIC IMPACT FEE PROGRAM - FINAL
- NEW DEVELOPMENT TRIP GENERATION -

Land Use	Existing Units (2014)	Annual Average Daily Trips Per Unit	Existing Annual Average Daily Trips
Residential (DU)			
Single Family	4,965	9.6	47,664
Multi-family	257	6.7	1,722
Mobile Home	849	5	4,245
Existing Residential Subtotal	6,071		53,631
Non-residential (KSF)			
Office	30	11	330
Commercial/Retail	450	43	19,350
Industrial/Warehouse	5,081	5	25,405
Existing Non-Residential Subtotal	5,561		45,085

Existing Average Annual Daily Trips

98,716

Land Use	New Development (2014-2035)	Annual Average Daily Trips per Unit	New Development Annual Average Daily Trips
Residential (DU)			
Single Family	1,300	9.6	12,480
Multi-family	2,000	6.7	13,400
Mobile Home	-	5	-
New Development Residential Subtotal	3,300		25,880
Non-residential (KSF)			
Office	200	11	2,200
Commercial/Retail	834	43	35,862
Industrial/Warehouse	5,146	5	25,730
New Development Non-Residential Subtotal	6,180		63,792

New Development Average Annual Daily Trips

89,672

Land Use	Cummulative (2035)	Annual Average Daily Trips per Unit	Cummulative Annual Average Daily Trips
Residential (DU)			
Single Family	6,265	9.6	60,144
Multi-family	2,257	6.7	15,122
Mobile Home	849	5	4,245
Cummulative Residential Subtotal	9,371		79,511
Non-residential (KSF)			
Office	230	11	2,530
Commercial/Retail	1,284	43	55,212
Industrial/Warehouse	10,227	5	51,135
Cummulative Non-Residential Subtotal	11,741		108,877

Cummulative Average Annual Daily Trips

188,388

TRAFFIC IMPACT FEE PROGRAM - FINAL
- SR-29 PROJECT COST ALLOCATION -

Facility	Description of Improvement	TIF %	TIF (\$)	Other (%)	Other (\$)
City Limit to American Canyon Road	6-lane Modified Boulevard (Segment 2)	13%	\$868,762	87%	\$5,814,020
Kimberly Drive Intersection	Prohibit EBL movement	13%	\$13,000	87%	\$87,000
American Canyon Road Intersection	Add 2nd excl. WBR & EBL	63%	\$398,358	37%	\$235,853
	6-lane Modified Boulevard	16%	\$314,484	84%	\$1,651,040
	Traffic signal modification	39%	\$39,406	61%	\$60,594
	Subtotal	28%	\$752,248	72%	\$1,947,487
American Canyon Road to Donaldson Way	6-lane Modified Boulevard (Segment 3.1)	16%	\$345,932	84%	\$1,816,144
Crawford Way Intersection	Prohibit EBL movement	16%	\$16,000	84%	\$84,000
Donaldson Way Intersection	Add 2nd excl. EBL & excl. EBR	60%	\$382,229	40%	\$251,982
	Add 2nd excl. WBL and modify excl. WBR	52%	\$332,788	48%	\$301,423
	Add excl. NBR & SBR	18%	\$55,035	82%	\$250,714
	6-lane Modified Boulevard	18%	\$353,794	82%	\$1,611,730
	Traffic signal relocation	37%	\$74,371	63%	\$125,629
	Subtotal	32%	\$1,198,217	68%	\$2,541,477
Donaldson Way to Poco Way/South Napa Junction	6-lane Modified Boulevard (Segment 3.2)	18%	\$406,863	82%	\$1,853,489
Poco Way/South Napa Junction Intersection	Add excl. dual EBL and single EBR	76%	\$483,895	24%	\$150,316
	Add excl. dual WBL and single WBR lane	98%	\$622,804	2%	\$11,407
	Add excl. NBR & SBR	13%	\$39,747	87%	\$266,001
	6-lane Modified Boulevard	13%	\$255,518	87%	\$1,710,006
	New traffic signal	50%	\$150,375	50%	\$149,625
	Subtotal	40%	\$1,552,340	60%	\$2,287,355
Poco Way/So. Napa Junction to Eucalyptus Dr	6-lane Modified Boulevard (Segment 3.3)	18%	\$176,897	82%	\$805,865
Eucalyptus Drive Intersection	Add single EBT, excl. dual EBL and excl. single EBR	77%	\$730,721	23%	\$220,595
	Remove Rio Del Mar traffic signal and prohibit EBL	18%	\$9,000	82%	\$41,000
	Add excl. NBR, NBL & SBR	13%	\$59,621	87%	\$399,001
	6-lane Modified Boulevard	13%	\$255,518	87%	\$1,710,006
	Traffic signal modification	30%	\$60,406	70%	\$139,594
	Subtotal	31%	\$1,115,266	69%	\$2,510,197
Eucalyptus Drive to Napa Junction Road	6-lane Modified Boulevard (Segment 3.4)	13%	\$83,280	87%	\$557,335
Napa Junction Road Intersection	Phase 1 Improvements	100%	\$1,423,000	0%	\$0
	Add 2nd excl. WBL and excl. WBR	71%	\$452,279	29%	\$181,932
	Add 2nd excl. EBL and excl. EBR	44%	\$276,405	56%	\$357,806
	6-lane Modified Boulevard	13%	\$255,518	87%	\$1,710,006
	Traffic signal relocation	43%	\$85,264	57%	\$114,736
	Subtotal	51%	\$2,492,466	49%	\$2,364,480
Napa Junction Road to Green Island Road/Newell Extension	6-lane Modified Boulevard (Segment 4.1)	13%	\$715,451	87%	\$4,788,016
	Paoli Loop Overcrossing Structure	13%	\$1,622,400	87%	\$10,857,600
	Subtotal	13%	\$2,337,851	87%	\$15,645,616
Green Island Rd/Newell Extension Intersection	Lengthen NB and SB acceleration lanes	13%	\$39,747	87%	\$266,001
	6-lane Modified Boulevard	13%	\$255,518	87%	\$1,710,006
	Subtotal	13%	\$295,265	87%	\$1,976,007
Green Island Rd./Newell Ext to So. Kelly Road	6-lane Modified Boulevard (Segment 4.2)	13%	\$1,022,072	87%	\$6,840,024
STATE ROUTE 29 PROJECTS		21%	\$12,676,460	79%	\$47,130,495

TRAFFIC IMPACT FEE PROGRAM - FINAL
- LOCAL PROJECT COST ALLOCATION -

Facility	Description of Improvement	TIF %	TIF (\$)	Other (%)	Other (\$)
Green Island Road	Widen road from SR 29 to Commerce Blvd. to Industrial Collector standards	100%	\$3,198,149	0%	\$0
	Widen railroad crossing to three lanes	100%	\$200,000	0%	\$0
Subtotal		100%	\$3,398,149	0%	\$0
Paoli Loop Road	Widen road from Green Island to Newell Extension Industrial Collector standards	34%	\$1,972,162	66%	\$3,766,384
Newell Drive	New 4-lane arterial from Donaldson Way to South Napa Junction Rd	83%	\$4,443,106	17%	\$926,294
Newell Drive/So. Napa Junction Intersection	Add excl. NBL & SBR	83%	\$466,526	17%	\$97,261
	Add exclusive EBL and EBR	98%	\$395,462	2%	\$7,243
	New traffic signal	90%	\$180,950	10%	\$19,050
Subtotal		89%	\$1,042,938	11%	\$123,554
South Napa Junction Road	New Major Collector from SR 29 to extension of Newell Drive	98%	\$8,436,525	2%	\$154,515
Main Street	New Minor Collector from Euclayptus to South Napa Junction	100%	\$1,949,428	0%	\$0
Devlin Road Segment H	New Industrial Collector from railroad overcrossing to Green Island Rd.	50%	\$3,758,580	50%	\$3,758,580
Eucalyptus Drive	Widen to 2-lane collector from Wetlands Edge Rd. to SR 29	77%	\$2,887,025	23%	\$871,555
Eucalyptus Drive/Theresa Avenue Intersection	Install roundabout	77%	\$455,517	23%	\$137,515
Commerce Drive	New Industrial Collector from southern terminis to Eucalyptus Drive	100%	\$7,785,630	0%	\$0
Eucalyptus Dr/Commerce Blvd. Intersection	Add excl. NBL & SBL	100%	\$402,705	0%	\$0
	Add exclusive EBL and WBL	77%	\$309,324	23%	\$93,381
	Add new sign	88%	\$4,420	12%	\$580
Subtotal		88%	\$716,449	12%	\$93,961
CITY STREET PROJECTS		79%	\$36,845,509	21%	\$9,832,358

TRAFFIC IMPACT FEE PROGRAM - FINAL
- TIF ALLOCATION -

Southbound PM Peak Hour (Future Conditions - 2035)			
SR 29 (6-lane Widening, Modified Boulevard)	LocalTrips	RegionalTrips	TIF %
South of Napa Junction Road	430	2870	13%
North of Donaldson Way	546	2414	18%
South of Donaldson Way	415	2355	15%
North of American Canyon Road	449	2301	16%
South of American Canyon Road	261	1799	13%

Sources: Highway 29 Corridor Study Fehr & Peers 2014

Local Road	Location	Existing Conditions				Future Conditions (2035)				TIF %
		Facility Type	Volume / Capacity	Existing Peak Hour Count	LOS	Facility Type	Volume / Capacity	Future Peak Hour Count	LOS	
Paoli Loop Road	Throughout	Two-Lane Collector	0.34	508	C	Two-Lane Collector	18%	266	C	34%
Napa Junction Road	west of SR 29	Two-Lane Collector	0.27	400	C	Two-Lane Collector	21%	309	C	44%
Napa Junction Road	east of SR 29	Two-Lane Collector	0.22	321	C	Two-Lane Collector	54%	798	C	71%
Eucalyptus Drive	west of SR 29	Two-Lane Collector	0.12	176	B	Two-Lane Collector	39%	583	C	77%
Rio Del Mar	west of SR 29	Two-Lane Collector	0.19	283	C	Two-Lane Collector	24%	350	C	55%
Poco Way	west of SR 29	Two-Lane Collector	0.05	73	B	Two-Lane Collector	16%	235	C	76%
South Napa Junction Road	east of SR 29	Two-Lane Collector	0.01	15	A	Two-Lane Collector	55%	819	C	98%
Donaldson Way	west of SR 29	Two-Lane Collector	0.2	296	C	Two-Lane Collector	30%	449	C	60%
Donaldson Way	east of SR 29	Two-Lane Collector	0.38	567	C	Two-Lane Collector	42%	626	C	52%
Crawford Way	west of SR 29	Two-Lane Collector	0.07	101	B	Two-Lane Collector	20%	289	C	74%
American Canyon Road	west of SR 29	Four-Lane Arterial	0.34	1,125	C	Four-Lane Arterial	53%	1,746	C	61%
American Canyon Road	east of SR 29	Four-Lane Arterial	0.54	1,780	C	Four-Lane Arterial	100%	3,278	F	65%
Newell Drive	north of American Canyon Road	Four-Lane Arterial	0.15	477	C	Four-Lane Arterial	70%	2,288	C	83%
Newell Drive	east of Paoli Loop Road	Two-Lane Arterial	0	0	N/A	Two-Lane Arterial	65%	1,011	C	100%

Sources: Circulation Element Update DEIR Omni-Means, 2012

TRAFFIC IMPACT FEE PROGRAM - FINAL
- SUMMARY -

Project Costs

<u>State Route 29</u>	<u>Cost Estimate</u>
Southern American Canyon	\$ 6,782,782
Central American Canyon	\$ 24,907,339
Northern American Canyon	\$ 28,116,835
	\$ 59,806,956

Local Streets \$ 46,677,867

Bicycle and Pedestrian Facilities \$ 12,098,458

Project Cost Total \$ 118,583,280

TIF Program

Project Cost	\$ 118,583,280
Other Funding Sources	\$ (69,061,311)
	TIF Program Total \$ 49,521,970

Fee Calculation

TIF Program	\$ 49,521,970
New Daily Trips (AADT)	89,672
	Cost per Daily Trip \$552

Example Fee Schedule

Land Use	Current Fee Per Daily Trip	Proposed Fee per Daily Trip	Current Fee Per Unit	Proposed Fee per Unit	Daily Trips per Unit
Residential (DU)					
Single Family	\$412	\$552	\$3,954	\$5,299	9.6
Multi-family	\$388	\$552	\$2,600	\$3,698	6.7
Non-residential (KSF)					
Office	\$638	\$552	\$7,020	\$6,072	11.0
Commercial/Retail	\$163	\$552	\$7,020	\$23,736	43.0
Industrial/Warehouse	\$404	\$552	\$2,020	\$2,760	5.0