

## Final Report

# City of Calistoga Development Impact Fee Study

*The Economics of Land Use*



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City of Calistoga

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# 1. INTRODUCTION AND RESULTS

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This Development Impact Fee Study provides the City of Calistoga (the City) with the necessary technical documentation to support the adoption of a new Citywide Development Impact Fee Program (Fee Program) that will generate funding for capital facilities and equipment investments associated with the police, fire, cultural/recreation, City administration, and transportation functions. Impact fees are one-time charges on new development collected and used by the City to cover the cost of capital equipment and facilities that are required to serve new growth. The fees are typically collected upon issuance of a building permit, though in some cases on issuance of a certificate of occupancy or final inspection. This new Fee Program will replace existing City fees for public safety and quality of life (cultural/recreational) facilities, as well as its traffic signal mitigation fee. This technical study has been prepared by Economic & Planning Systems, Inc. (EPS) in association with W-Trans, Inc., with direction and input from City staff in the Administration, Planning, Fire, Police, and Public Works Departments.<sup>1</sup> At the same time, but in separate technical documents, EPS has prepared updates to the City's parking in-lieu and affordable housing fees.

The Fee Program described in this Report is based on the identification of the required investment in new and life cycle replacement of capital facilities by City staff based on existing operations and growth expectations. The Fee Program focuses on a time frame of 20 years and, as such, uses forecasts of growth and development and expected capital facilities needs over this period. In some cases, specific capital facility project investments have been identified; these individual projects may be altered or replaced over time (with other qualifying projects) as the City administers the Fee Program and funds capital equipment and facilities needed to serve new development. Development impact fee estimates are consistent with the most recent relevant case law and the principles of AB 1600 (the Mitigation Fee Act) and Government Code Section 66000 et seq ("Fees for Development Projects;" except where specific citations are provided, this statute will be referred to in this Report as AB 1600).

The City has recently approved a number of projects that are under construction or are expected to be in the next few years. They include:

- Calistoga Hills Resort (formerly Enchanted Resorts)
- Silver Rose Resort
- Indian Springs Expansion
- Brian Arden Winery
- Calistoga Family Apartments

The first three of these projects have related development agreements that specify the amounts and timing of fees to be paid, which has already resulted in the collection of several millions of dollars in fees by the City. The other two projects are under construction and are subject to current impact fees. As a result, any new impact fees will not apply to these projects.

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<sup>1</sup> W-Trans prepared the transportation development impact fee analysis, fully documented in **Appendices A and B.**

This Report provides the nexus findings, underlying analysis, and the associated calculations of the maximum supportable citywide fees that could be charged. The City may elect to adopt fees below the maximum supportable level based on economic or policy considerations. Such fee reductions could either occur through a formal reduction in the maximum fee estimates (by reducing facilities standards or planned investments) or by maintaining the same capital facilities program and backfilling the reduced fee revenues with alternative sources of capital funding.

## Report Background and Legal Context

This Report is designed to provide the necessary technical analysis supporting a schedule of fees to be established by an Impact Fee Ordinance and Resolution. The Mitigation Fee Act allows the City to adopt, by resolution, the Capital Facilities and Equipment Fee Schedule consistent with the supporting technical analysis and findings provided in this Report. This schedule is shown in **Table 1** of this report. The Resolution approach to setting the fee allows periodic adjustments of the fee amount that may be necessary over time, without amending the enabling ordinance.

The Fee Program developed in this Report is designed to fund a portion of the capital facilities costs associated with police, fire, cultural/recreational, City administration, and transportation facility needs. The key requirements that determine the structure, scope, and amount of the proposed Fee Program as required by State Law are as follows:

- **Collected for Capital Facility and Infrastructure Improvements.** Development impact fee revenue can be collected and used to cover the cost of capital facilities and infrastructure required to serve new development and growth in the City. However, impact fee revenue cannot be used to cover the operation and maintenance costs of these or any other facilities and infrastructure.
- **Cannot Fund Existing Needs.** Impact fee revenue cannot be collected or used to cover deficiencies in existing City capital equipment and facilities. The portion of capital costs required to meet the needs of the City's existing population must be funded through other sources. The costs associated with improvements that serve the needs of both new development and the existing development are split on a "fair share" basis according to the proportion attributable to each. Thus, development impact fee funding will need to be augmented by other revenue sources to meet overall funding requirements.
- **Must Be Based on a Rational Nexus.** An impact fee must be based on a reasonable nexus, or connection, between new growth and development and the need for a new facility or improvement. As such, an impact fee must be supported by specific findings that explain or demonstrate this nexus. In addition, the impact fee amount must be structured such that the revenue generated does not exceed the cost of providing the facility or improvement for which the fee is imposed.

This Report and the technical information it contains should be maintained and reviewed periodically by the City as necessary to ensure Impact Fee accuracy and to enable the adequate programming of funding sources. To the extent that improvement requirements, costs, population, employment, visitors or development potential changes over time, the Fee Program will need to be updated.

## Maximum Fee Schedule

**Table 1** shows the City's maximum capital facility and equipment impact fee schedule for the facility types evaluated based on the nexus findings and analysis contained in this Report. These development impact fees apply to new residential and nonresidential development to fund a fair share portion of capital facility and equipment costs. The maximum fee estimates include a 2 percent fee program administration fee, consistent with other Mitigation Fee Act program administrative costs in many other California jurisdictions.<sup>2</sup> Fees apply to new development inside the City limits and in the unincorporated area adjacent to Calistoga as conditioned by Napa County.

The fees shown in **Table 1** represent the maximum fees that the City may levy, as calculated in this analysis. As noted above, the City can adopt fees at levels below these maximum, nexus-supported levels based on policy considerations.

**Table 1 Summary of Maximum Capital Facility and Equipment Development Impact Fees**

Item	Residential Development (per unit)		Non-Residential Development			
	Single Family	Multi-Family	Tourist Accommodations per room	Winery per winery	Commercial per sq.ft.	Restaurant per sq.ft.
Fire	\$2,145	\$1,827	\$981	\$1,589	\$0.92	\$1.13
Police	\$566	\$482	\$259	\$419	\$0.24	\$0.30
Quality of Life						
Cultural / Recreation	\$5,832	\$4,968	\$750	\$1,728	\$1.00	\$1.23
City Administration	\$2,527	\$2,152	\$1,156	\$1,872	\$1.09	\$1.34
Transportation Fee (1)	<u>\$9,276</u>	<u>\$5,751</u>	<u>\$2,226</u>	<u>\$74,207</u>	<u>\$5.03</u>	<u>\$11.12</u>
Total	\$20,345	\$15,181	\$5,371	\$79,814	\$8.29	\$15.12
Admin Cost (2)	\$407	\$304	\$107	\$1,596	\$0.17	\$0.30
<b>Total with Admin Cost</b>	<b>\$20,752</b>	<b>\$15,484</b>	<b>\$5,479</b>	<b>\$81,411</b>	<b>\$8.45</b>	<b>\$15.42</b>

(1) Based on PM peak trips.

(2) Set at 2% consistent with many development fee programs set in California.

Source: Economic & Planning Systems, Inc.

When adopted, the new fees will replace the City's existing fee schedule charged to new development (exclusive of existing development agreements), for public safety improvements, quality of life (cultural/recreational/city administration facilities), and transportation improvements.

By comparison, the City's existing impact fee schedule is shown below:

- Public safety fee : 4 percent of construction value

<sup>2</sup> The 2 percent administration cost is designed to cover expenses for preparation of the development impact fee and subsequent updates as well as the required reporting, auditing, collection and other annual administrative costs involved in overseeing the program. Development impact fee programs throughout California have applied similar administrative charges.

- Quality of life (per unit): \$3,000 for residential, \$1,500 for tourist accommodations, and \$1,500 for new commercial uses
- Traffic signal mitigation (per trip): \$6.30 to \$88.06 per trip depending on location

## Key Assumptions and Sources

The results of this analysis are based on a variety of conditions and assumptions regarding the need for and cost of new and replacement capital facilities, vehicles, and capital equipment and development capacity/growth projections provided by the City. Assumptions are covered in detail in later chapters, though some of the key factors are summarized below:

- **Capital Facilities and Equipment.** The Fire and Police Department provided a comprehensive list of existing capital equipment, vehicles, and communications technology and the associated replacement schedule necessary over the next 20 years. The public safety items included in the fee program all have a replacement life of five years or more and are considered to be capital items. The City also provided a list of existing park acreage and facility square footage that inform the existing service standard for application to new growth. In addition, the City provided an estimate of the size of the new City Hall and Community Center required to serve the City as a whole.
- **Cost Estimates.** Public safety capital item cost estimates were provided by the Fire and Police Departments based on their extensive knowledge of capital equipment unit costs. Land and facility construction costs for both City administrative and cultural/recreation improvements were based on EPS's independent research, interviews with local market professionals, and costs of similar facilities in other cities. Transportation costs are based on W-Trans planning level estimates based on other comparable projects. All figures are provided in constant 2013 dollars.
- **Capital Demands and Cost Allocation.** With the exception of the cultural/recreation category, capital costs are allocated between new and existing development as well as between different land uses based on service demand and associated capital use and needs. Specifically, a service population approach is used for capital facilities demand/need that incorporates the relative demand from the full service population, including residents, employees, and visitors. City expectations concerning persons per household and employment densities for nonresidential development and available data on visitors associated with overnight lodging are used to translate between development types and capital facility needs. Distinctly for cultural/recreation facilities, capital facilities investments and costs were limited to those required to maintain existing service standards when new development occurs with costs thereby falling only on new development; costs were allocated between land uses based on relative demands from different types of new development.<sup>3</sup>

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<sup>3</sup> As explained in subsequent chapters, the relative demands for cultural/recreational facilities between residents, employees, and visitors tend to be different than for other facilities (such as public safety). As a result, different service population ratios are used.

- **Growth and Development.** The development impact fee calculations are based on estimates of new and existing development, population, employment, and visitors over the next 20 years. Key sources for the baseline estimates are the 2013 Department of Finance (DOF) data, Association of Bay Area Governments 2013 Sustainable Community Strategy (SCS), 2012 Napa Valley Tourist Profile Survey, and City data. The new development forecast is based on an evaluation of land capacity and potential development by Planning Department staff.

## **Fee Program Implementation and Administration**

### ***Annual Reporting***

State Law (at Govt. Code. §§ 66001(c), 66006(b)(1)) stipulates that each local agency that requires payment of a fee make specific information available to the public annually within 180 days of the last day of the fiscal year. This information includes the following:

- A description of the type of fee in the account
- The amount of the fee
- The beginning and ending balance of the fund
- The amount of fees collected and interest earned
- Identification of the improvements constructed
- The total cost of the improvements constructed
- The fees expended to construct the improvement
- The percentage of total costs funded by the fee

If sufficient fees have been collected to fund specific improvements, the agency must specify the approximate date for the development of that improvement. Because of the dynamic nature of growth and capital equipment requirements, the City should monitor inventory activity, the need for infrastructure improvements, and the adequacy of the fee revenues and other available funding. Formal annual review of the Fee Program should occur, at which time adjustments should be made. Costs associated with this monitoring and updating effort are included in the Impact Fee and are assumed at 2 percent of fee program capital costs.

### ***Credits, Reimbursement, and Exemptions***

Under certain and limited circumstances, as determined by the City, the Impact Fee Resolution could allow developers subject to the fee to obtain credits, reimbursements, or exemptions. In cases of redevelopment, the City could consider providing a fee credit/discount associated with the amount of fee the existing, demolished development would pay under the new fee schedule. All other fee credits, reimbursements, and/or exemptions should not be allowed by right but rather should be subject to review by City staff and the City Council to ensure that such credits or reimbursements are warranted and appropriate. Exemptions where the City elects not to impose fees for certain categories of development are an option, though alternative funding sources to offset a loss in fee revenue would need to be provided.

### ***Surplus Funds***

State Law also requires that if any portion of a fee remains unexpended or uncommitted in an account for five years or more after deposit of the fee, the City Council shall make findings once each year: (1) to identify the purpose to which the fee is to be put, (2) to demonstrate a reasonable relationship between the fee and the purpose for which it was charged, (3) to identify



all sources and amounts of funding anticipated to complete financing of incomplete improvements, and (4) to designate the approximate dates on which the funding identified in (3) is expected to be deposited into the appropriate fund (§66001(d)).

If adequate funding has been collected for planned improvements, an approximate date must be specified as to when the cost of the improvement will be incurred. If the findings show no need for the unspent funds, or if the conditions discussed above are not met, and the administrative costs of the refund do not exceed the refund itself, the local agency that has collected the funds must refund them (Govt. Code §66001(e)(f)).

### ***Periodic Updates***

It is recommended that the Impact Fee Ordinance allow for an automatic annual adjustment to the fees based on the Consumer Price Index (CPI), Construction Cost Index (CCI), or a similar inflation factor. Over time, development forecasts, capital equipment and facility needs, and costs will change and evolve, making periodic technical updates prudent. This fee program is based on current forecasts of future development in the City as well as the capital equipment needs developed by the City, including a listing of development impact fee eligible projects. These individual projects may be altered or replaced over time (with other qualifying projects) as the City administers the Development Impact Fee Program and funds capital equipment and facilities needed to serve new development.

### ***Securing Supplemental Funding***

The imposition of impact fees on new development is not appropriate for funding the full amount of all capital and facility costs identified in this report. As shown in **Table 2** (and discussed in more detail in **Chapter 4**), of the estimated \$30.4 million in required capital improvement investments in the specified capital types, impact fees charged to new development over the next 20 years could fund a maximum of \$6.9 million, about 23 percent of the total.

Approximately \$23.4 million of the total capital costs or 77 percent are associated with the portion of improvements allocated either to existing development or to approved projects covered under development agreements or subject to the existing fee schedule.

As a result, the City will have to identify other funding to pay for the portion of improvements not covered by the development impact fee revenues (as well as for any exemptions/discounts to new development enacted based on City policy considerations). As part of adoption of the fee, the City is likely to adopt a finding that it will obtain and allocate funding from various other sources for the fair share of the costs of improvements identified in this report that are not funded by the Fee Program. Examples of such sources include the following:

- **State or Federal Funds.** The City might seek and obtain grants of matching funds from State and Federal sources. As part of its funding effort, the City should research and monitor these outside revenue sources and apply for funds as appropriate.
- **Development Agreements.** There are a number of approved Projects with negotiated exactions. Some of these exactions can be used to fund infrastructure and other capital improvements in the City.
- **General Fund Revenues.** The City may need to allocate funding from its General Fund.

**Table 2 Non-Fee Revenue Required For Capital Facility and Equipment Costs**

Item	Maximum Funding by Fee (1)	Total Capital Improvement Cost (2)	Other Funding Required	
			#	% of Total Cost
Fire	\$840,985	\$6,694,967	\$5,853,982	87%
Police	\$221,918	\$1,778,471	\$1,556,553	88%
Quality of Life				
Cultural / Recreation	\$1,474,098	\$2,330,013	\$855,916	37%
City Administrative	\$990,756	\$7,940,000	\$6,949,244	88%
Transportation Fee	<u>\$3,419,327</u>	<u>11,638,000</u>	<u>\$8,218,673</u>	<u>71%</u>
<b>Total/Average</b>	<b>\$6,947,084</b>	<b>\$30,381,451</b>	<b>\$23,434,367</b>	<b>77%</b>

(1) Includes potential development net of approved projects covered under existing development agreements.

(2) Reflects capital improvement items potentially covered by the fee program.

Source: Economic & Planning Systems, Inc.

## Report Organization

Following this chapter, **Chapter 2** discusses the development capacity and growth estimates and forecasts used in this analysis. **Chapter 3** outlines the nexus findings for each of the capital improvement categories and the associated cost allocation method and outcome. **Chapter 4** presents the resulting maximum fee by land use. Detailed transportation impact fee methodology and calculations conducted by W-Trans is provided in **Appendices A** and **B**.

## 2. DEVELOPMENT FORECASTS AND SERVICE POPULATION

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This chapter presents estimates of existing and future development in the City of Calistoga, and the associated demographic, job, and visitor growth forecasts that support the appropriate allocation of capital costs. This includes the appropriate allocations between new and existing development as well as between different land uses. Estimates of existing and new development were provided by City staff after careful consideration of development capacity and the potential for development over the 20-year study timeframe. Forecasts of new development were converted into population, visitor, and job estimates based on established sources. Finally, different allocation factors (percentages) were derived based on different service population metrics; these service population metrics establish relative levels of capital facilities demand from different demand drivers (i.e., residents, employees, and visitors) for different capital types (e.g., police vs. parks and recreation).

### Residential Development and Population Growth

**Table 3** shows estimates of existing and new population associated with the forecasts of new residential development over the next 20 years. As shown, population in the City is expected to increase from about 5,200 to nearly 6,000 over the next 20 years, representing a 14 percent increase over the existing baseline. This increase in residents is expected to be driven by the development of 302 residential units, including 131 single-family and 171 multifamily units, as shown in **Table 4**. Detailed growth projections by location within the City, used for the transportation analysis, are provided in the **Appendices**.

Approximately one-third of these units (105 units) are included in approved projects. Based on this forecast, the City is expected to incur a shift towards higher density uses relative to the existing housing composition, with 25 percent of the new multifamily units expected to be affordable.<sup>4</sup> Household size assumptions are based on the City's existing average and are shown in **Table 5**. It is recognized that the population forecast utilized in this analysis is higher than ABAG's 2012 Adopted Draft SCS population projections for the City of Calistoga through 2040.

### Nonresidential Development and Employment and Visitor Growth

As shown in **Table 3**, total current jobs in the City are estimated at 2,220. An increase of about 1,300 jobs to about 3,500 total jobs is forecast in the City over the next 20 years, an increase of 58 percent over the existing baseline. Most of the job growth is expected to be generated by new tourist accommodations and other commercial development, primarily through the forecasted addition of 512 guest rooms and about 320,000 square feet of new commercial and restaurant space (see **Tables 4** and **5**). Similar to residential uses, commercial growth projections by location within the City, used for the transportation analysis, are provided in the **Appendices**. These nonresidential development forecasts were converted into job growth based on the employment density assumptions (i.e., square feet per employee) and are shown in **Table 5**.

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<sup>4</sup> Based on 56 approved affordable units and the City's inclusionary housing requirement.

**Table 3**  
**Service Population Estimates and Allocations**

Item	Weight (1)	Existing	New Growth			Forecast Year (20 Yrs)	New as a % of Existing		
			Approved	Potential	New Total		Approved	Potential	New Total
<b>Residents</b>	<b>100%</b>	<b>5,200</b>	<b>261</b>	<b>486</b>	<b>747</b>	<b>5,947</b>	<b>5%</b>	<b>9%</b>	<b>14%</b>
% of Buildout		87%	4%	8%	13%	100%			
% of New Total		-	35%	65%	100%	-			
<b>Jobs</b>	<b>50%</b>	<b>2,220</b>	<b>463</b>	<b>819</b>	<b>1,282</b>	<b>3,502</b>	<b>21%</b>	<b>37%</b>	<b>58%</b>
% of Buildout		63%	13%	23%	37%	100%			
% of New Total		-	36%	64%	100%	-			
<b>Overnight Visitors (2)</b>	<b>50%</b>	<b>822</b>	<b>426</b>	<b>326</b>	<b>753</b>	<b>1,574</b>	<b>52%</b>	<b>40%</b>	<b>92%</b>
% of Buildout		52%	27%	21%	48%	100%			
% of New Total		-	57%	43%	100%	-			
<b>Service Population</b> (weighted mix )		<b>6,721</b>	<b>706</b>	<b>1,059</b>	<b>1,764</b>	<b>8,485</b>	<b>10%</b>	<b>16%</b>	<b>26%</b>
% of Buildout		79%	8%	12%	21%	100%			
% of New Total		-	40%	60%	100%	-			
<b>Modified Service Population (3)</b> (weighted mix )		<b>5,726</b>	<b>396</b>	<b>682</b>	<b>1,079</b>	<b>6,805</b>	<b>7%</b>	<b>12%</b>	<b>19%</b>
% of Buildout		84%	6%	10%	16%	100%			
% of New Total		-	37%	63%	100%	-			

(1) Based on the EPS assumption as a proxy for relative contribution to facilities and equipment demand for public safety and City administration uses.

(2) Day visitors are not attributed to any particular land use and are excluded from this analysis given their short-term stay.

(3) A service measure designed for park demand; reflects residential uses having a factor of 1, while commercial uses having a factor of 0.2 and tourist accommodation of 0.1.

Sources: Economic & Planning Systems, Inc.

**Table 4**  
**City of Calistoga Development Pipeline**

<b>Land Use</b>	<b>Approved Projects (1)</b>	<b>Potential Development</b>	<b>Total Potential New Development</b>
<b>Commercial</b>			
Tourist Accommodations	290 rooms	222 rooms	512 rooms
Wineries	1 winery	3 wineries	4 wineries
Commercial	60,830 sq.ft.	248,000 sq.ft.	308,830 sq.ft.
Restaurant	9,500 sq.ft.	3,000 sq.ft.	12,500 sq.ft.
<b>Residential</b>			
Single Family	49 units	82 units	131 units
Multi-Family	56 units	115 units	171 units
<b>Residential Total</b>	<b>105 units</b>	<b>197 units</b>	<b>302 units</b>

(1) Includes Calistoga Hills Resort (formerly Enchanted Resorts), Silver Rose Resort, Indian Springs Expansion, Brian Arden Winery, and Calistoga Family Apartments.

Sources: City of Calistoga, and Economic & Planning Systems, Inc.

**Table 5**  
**Future Daily Population, Employment, and Visitor Forecast**

Item	Forecasting Factor (2)	Approved Projects			Potential Development			Total Potential New Growth		
		Residents	Employees	Visitors	Residents	Employees	Visitors	Residents	Employees	Visitors
<b>Commercial</b>										
Tourist Accommodations (1)	1.5 visitors per room	--	--	426	--	--	326	--	--	753
	1.0 employee per room	--	290	--	--	222	--	--	512	--
Winery	4.0 employees per winery	--	4	--	--	12	--	--	16	--
Commercial	430 sq.ft. per empl.	--	141	--	--	577	--	--	718	--
Restaurant	350 sq.ft. per empl.	--	27	--	--	9	--	--	36	--
<b>Residential</b>										
Single Family	2.7 people per hh	132	--	--	221	--	--	354	--	--
Multi-Family	2.3 people per hh	129	--	--	265	--	--	393	--	--
<b>Totals</b>		<b>261</b>	<b>463</b>	<b>426</b>	<b>486</b>	<b>819</b>	<b>326</b>	<b>747</b>	<b>1,282</b>	<b>753</b>

- ↳ (1) Based on average of 2.1 visitors per occupied room and 70% occupancy based on the normalized hospitality trends.  
 (2) Assumed by EPS based on the citywide averages, City documents, and experience in other comparable jurisdictions.

Sources: City of Calistoga, and Economic & Planning Systems, Inc.

The majority of new tourist accommodation job growth is associated with existing Development Agreements, while the majority of other new job growth is associated with potential development outside existing Development Agreements. Actual employment growth will depend on a wide range of factors, including broader economic cycles, pace of development activity, and regulatory framework in the City. It is recognized that employment forecast utilized in this analysis is higher than ABAG's 2013 SCS job projections for the City of Calistoga through 2040.

Given Calistoga's orientation towards tourism, this analysis considers overnight visitors and visitor-generating uses an important component of the demand for capital improvements. Based on the data from the 2012 Napa Valley Tourist Profile Survey, EPS estimated a current annual average of 822 daily overnight visitors in Calistoga. The development of 512 guest rooms would support the growth of about 750 overnight visitors over the next 20 years. The growth estimate is based on the forecast for new tourist accommodation development and average visitors per room assumption shown in **Tables 4** and **5**. About 55 percent of this growth is associated with new tourist accommodations under existing Development Agreements.

## Service Population and Allocation Factors

Service population is a measure commonly used to incorporate job, and sometimes visitor growth, as well as resident growth into allocations of capital facilities demand and associated costs. An employee or visitor tends to place a lower level of demand on a City's capital facilities, vehicles, and equipment than a resident. As a result, the capital facilities demand weighting is typically discounted for employees and visitors. The appropriate weighting can also vary for different capital improvement groups (e.g., police vs. parks and recreation).

Based on capital improvements included in this analysis, typical approaches to relative demand in other nexus studies, as well as recent research by EPS into relative demand by visitors for parks and recreation facilities, two different service population estimates were developed. Service population estimates for public safety (police and fire) and City administration capital improvements are derived based on a weighting of 1.0 for residents and 0.5 for employees and visitors.<sup>5</sup> A modified service population was developed for cultural/recreation land and facilities based on recent EPS research. This allocation reflects a lower level of demand from employees and visitors for parks and recreation facilities and includes a weighting of 1.0 for residents, 0.2 for employees, and 0.1 for visitors.

**Table 3** shows the current service population is about 6,720 with a forecast increase of about 1,770 associated with new residents, jobs, and visitors. This represents a 26 percent increase over existing service population which is used as a measure of the demand increase from new development for capital improvements. For the modified service population, the current service population is about 5,725 with a forecast increase of about 19 percent associated with new residents, jobs, and visitors. These service population proportional increases as well as the relative service population growth by different land uses ensure an appropriate and proportional allocation of capital costs between existing and new development and between different new land uses in the subsequent chapters.

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<sup>5</sup> Service population is a commonly used measure that estimates service needs based on relative demand generated by residents, employees, and visitors.

### 3. NEXUS FINDINGS AND CAPITAL COST ESTIMATES

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This chapter describes the necessary "nexus" between new development in Calistoga and the proposed capital equipment and facilities investments, as required under Government Code Section 66000 (also referred to as AB1600). In addition, the methodology and technical calculations for determining the total public safety (police and fire) and quality of life (cultural/recreational and City administration) capital costs and capital replacement costs (as appropriate) over the next 20 years are provided. This chapter is divided into five sections corresponding to the following capital facilities categories:

- Police
- Fire
- Cultural/Recreation
- City Administration
- Transportation

For each development impact fee category, the necessary "nexus" between new development in Calistoga and the proposed capital facilities is described. Nexus findings address:

1) the **purpose** of the fee and a related description of the facility for which fee revenue will be used, 2) the specific **use** of fee revenue, 3) the **relationship** between the facility and the type of development, 4) the relationship between the **need** for the facility and the type of development, and 5) the relationship between the amount of the fee and the **proportionality** of cost specifically attributable to new development. In addition, the methodology and technical calculations for determining existing deficiencies and future needs and the associated "fair share" allocation of costs to new development are provided. The subsections below describe the nexus findings for the proposed Development Impact fee. **Chapter 4** builds from these findings and analyses to estimate maximum supportable development impact fees.

#### Police

The Police development impact fees will cover new development's share of the costs associated with the replacement of capital equipment and vehicles. Capital items will depreciate more quickly as new development occurs and the City's service population grows. The subsections below describe the nexus findings and the technical cost allocation analysis for the proposed Police fee.

#### Nexus Findings

##### **Purpose**

The fee will help ensure adequate replacement intervals for Police Department equipment and vehicles in the City of Calistoga, including patrol vehicles, protective equipment, and communications technology utilized by the Police Department.

##### **Use of Fee**

Fee revenue will be used to replace capital equipment, such as acquisition of new vehicles and information technology equipment after a period of use.



### **Relationship**

New development in Calistoga will increase the use of police equipment and vehicles utilized for citywide service provision. Fee revenue will be used to help fund capital replacement of equipment and vehicles.

### **Need**

Each new development project will add to the incremental use of existing police equipment and vehicles. The City's existing set of equipment and vehicles will require more frequent replacement due to the greater use levels associated with new development (and associated service population) in the City.

### **Proportionality**

The replacement costs of police equipment and vehicles are allocated proportionately between new and existing development based on their relative share of demand (as measured by their relative share of service population over the next 20-year period). Replacement costs associated with new development are similarly allocated between land uses proportional to their relative generation of demand, as measured by service population.

### **Capital Cost Estimates**

The need for police-related equipment is shown in **Table 6** along with replacement life cycles and associated cost estimates. As shown, an average annual replacement cost of about \$89,000 is projected to be required by the Police Department, totaling to about \$1.8 million over 20 years. These cost estimates are described in more detail below.

- **Safety Gear and Equipment.** The Police Department provides specialized gear and equipment to its police staff, including protective gear and firearms. The replacement cost for these items is estimated at about \$7,900 annually with the total cost of about \$157,000 over 20 years.
- **Communications.** The Police Department utilizes specialized communication equipment and technology for emergency response, including radios and computers. The replacement cost for these items is estimated at about \$28,000 annually or about \$568,000 over 20 years.
- **Vehicles and Equipment.** The cost of police vehicles and associated equipment replacement is based on existing vehicle inventory. The City currently has 8 units of vehicles, motorcycles, and associated equipment, as shown on **Table 6**. Based on the replacement life and market cost of new vehicles and associated equipment, an annual replacement cost of about \$53,000 annually is required to maintain the existing fleet. This cost estimate does not reflect items funded through other sources, such as grants.

### **Fire**

The Fire development impact fees will cover new development's share of the costs associated with the replacement of capital equipment and vehicles. Capital items will depreciate more quickly as new development occurs and the city's service population grows. The subsections below describe the nexus findings and the technical cost allocation analysis for the proposed Fire fee.

**Table 6**  
**Calistoga Police Department Infrastructure Cost Estimates\***

Item	Count	Per Unit Cost	Total Replacement Cost	Replacement Life	Average Annual Cost	Total Cost Through 20 Yrs
<b>Safety Gear and Equipment</b>						
Bullet Proof Vests	12	\$1,000	\$12,000	5	\$2,400	\$48,000
Tasers	11	\$1,000	\$11,000	5	\$2,200	\$44,000
Sig Sauer P229 handguns	13	\$800	\$10,400	10	\$1,040	\$20,800
Remm. 870 Shotguns	9	\$900	\$8,100	10	\$810	\$16,200
Radar Gun	2	\$2,000	\$4,000	5	\$800	\$16,000
AR15 rifles	5	<u>\$1,200</u>	<u>\$6,000</u>	10	<u>\$600</u>	<u>\$12,000</u>
Subtotal		\$6,900	\$51,500		\$7,850	\$157,000
<b>Communications</b>						
Radio Mobile	6	\$3,000	\$18,000	10	\$1,800	\$36,000
Radio Portable	15	\$2,000	\$30,000	8	\$3,750	\$75,000
Radio Dispatch Console	1	\$152,000	\$152,000	10	\$15,200	\$304,000
Dept. Security CCTV	1	\$4,000	\$4,000	5	\$800	\$16,000
Interview Room Video	1	\$1,850	\$1,850	5	\$370	\$7,400
Radio/Phone Recorder	1	\$3,500	\$3,500	5	\$700	\$14,000
Radio, Base Station	1	\$2,000	\$2,000	10	\$200	\$4,000
Radio Repeater	1	\$30,000	\$30,000	20	\$1,500	\$30,000
Computer Servers	3	\$6,000	\$18,000	5	\$3,600	\$72,000
Computer Hub	2	\$800	\$1,600	7	\$229	\$4,571
Computer Router	2	<u>\$800</u>	<u>\$1,600</u>	7	<u>\$229</u>	<u>\$4,571</u>
Subtotal		\$205,950	\$262,550		\$28,377	\$567,543
<b>Vehicles and Equipment</b>						
Patrol Vehicles	5	\$35,000	\$175,000	5	\$35,000	\$700,000
Light Bar system	5	\$4,995	\$24,975	7	\$3,568	\$71,357
Striping/decals/paint	5	\$1,200	\$6,000	5	\$1,200	\$24,000
Back seat system	5	\$2,100	\$10,500	5	\$2,100	\$42,000
Patrol Car Video	4	\$5,000	\$20,000	7	\$2,857	\$57,143
Alternative vehicle (Golf Cart)	1	\$18,000	\$18,000	7	\$2,571	\$51,429
Unmark vehicle	1	\$35,000	\$35,000	7	\$5,000	\$100,000
Patrol Bicycle	2	<u>\$1,000</u>	<u>\$2,000</u>	5	<u>\$400</u>	<u>\$8,000</u>
Subtotal		\$102,295	\$291,475		\$52,696	\$1,053,929
<b>TOTAL</b>			<b>\$605,525</b>		<b>\$88,924</b>	<b>\$1,778,471</b>

\*Note: all items are necessary to serve total service population rather than new service population only.

Sources: City of Calistoga Police Department and EPS.

## Nexus Findings

### ***Purpose***

The fee will help ensure adequate replacement intervals for Fire Department equipment and vehicles in the City of Calistoga, including the vehicles and equipment utilized by the Fire Department.

### ***Use of Fee***

Fee revenue will be used to replace capital equipment, such as acquisition of new fire engines and other vehicles after a period of use.

### ***Relationship***

New development in Calistoga will increase the use of fire equipment and vehicles utilized for citywide service provision. Fee revenue will be used to help fund capital replacement of equipment and vehicles.

### ***Need***

Each new development project will add to the incremental use of existing fire equipment and vehicles. The existing set of equipment and vehicles will require more frequent replacement due to the greater use levels associated with new development (and associated service population) in the city.

### ***Proportionality***

The replacement costs of equipment are allocated proportionately between new and existing development based on their relative share of demand (as measured by their relative share of service population over the next 20-year period). Replacement costs associated with new development are similarly allocated between land uses proportional to their relative generation of demand, as measured by service population.

## Capital Cost Estimates

The need for fire-related equipment and vehicles is shown in **Table 7**, along with replacement life cycles and associated cost estimates. As shown, an average annual replacement cost of \$334,700 is projected to be required, totaling to a cost of \$6.7 million over the next 20 years. These cost estimates are described in more detail below.

- **Vehicles.** The Fire Department uses vehicles to meet its citywide service goals, and as new development takes place, it will contribute to replacement costs based on the additional use of these items. Based on the market cost of new vehicles estimated by the Fire Department, these items will result in a replacement cost of about \$259,000 a year or about \$5.2 million over the next 20 years. Replacement of fire engines and trucks comprises the largest cost share for the Fire Department.
- **Fire Station Upgrade.** The Fire Department plans to make improvements to its existing fire station facility. These improvements are envisioned to accommodate additional fire fighters and add a bathroom facility and are estimated at \$50,000 over the next 20 years.

**Table 7**  
**Calistoga Fire Department Infrastructure Cost Estimates\***

Item	Count	Replacement Cost		Replacement Life	Average Annual Cost	Total Replacement Through 20 Yrs
		Per Unit	Total			
<b>Vehicles</b>						
Fire Engine Type 1	2	\$700,000	\$1,400,000	15	\$93,333	\$1,866,667
Equipment	2	\$300,000	\$600,000	15	\$40,000	\$800,000
Water Tender	1	\$600,000	\$600,000	15	\$40,000	\$800,000
Equipment	1	\$200,000	\$200,000	15	\$13,333	\$266,667
Fire Engine Type 3	1	\$550,000	\$550,000	15	\$36,667	\$733,333
Equipment	1	\$125,000	\$125,000	15	\$8,333	\$166,667
Patrol 19	1	\$250,000	\$250,000	15	\$16,667	\$333,333
Utility Pickups	2	\$55,000	\$110,000	10	\$11,000	\$220,000
Subtotal		\$2,780,000	\$3,835,000		\$259,333	\$5,186,667
<b>Fire Station Upgrade (1)</b>	na	na	\$50,000	20	\$2,500	\$50,000
<b>Equipment</b>						
Hose						
1 3/4"	3,800	\$5.00	\$19,000	6	\$3,167	\$63,333
2"	1,200	\$6.00	\$7,200	6	\$1,200	\$24,000
3"	3,000	\$7.00	\$21,000	6	\$3,500	\$70,000
5"	3,200	\$8.00	\$25,600	6	\$4,267	\$85,333
K12 Circular Saw	3	\$3,500	\$10,500	8	\$1,313	\$26,250
Chainsaws	7	\$500	\$3,500	5	\$700	\$14,000
Multi-gas Detector	1	\$2,500	\$2,500	8	\$313	\$6,250
Airbag Equipment	1	\$15,000	\$15,000	15	\$1,000	\$20,000
SCBA Packs	23	\$2,000	\$46,000	10	\$4,600	\$92,000
SCBA Bottles	45	\$300	\$13,500	10	\$1,350	\$27,000
AEDs	5	\$2,500	\$12,500	10	\$1,250	\$25,000
BK Handheld Radios	26	\$1,200	\$31,200	5	\$6,240	\$124,800
Thermal Imaging Camera	1	\$15,000	\$15,000	10	\$1,500	\$30,000
Auto Extrication Equipment	1	\$65,000	\$65,000	15	\$4,333	\$86,667
Come-along Winches	2	\$1,300	\$2,600	20	\$130	\$2,600
Turbo Draft	1	\$3,000	\$3,000	10	\$300	\$6,000
Portable Pump	1	\$3,800	\$3,800	6	\$633	\$12,667
Float-a-Pump	1	\$2,500	\$2,500	6	\$417	\$8,333
Portable Water Tanks						
-1000 Gallons	1	\$1,800	\$1,800	5	\$360	\$7,200
-3000 Gallons	1	\$5,000	\$5,000	5	\$1,000	\$20,000
Generators	4	\$3,000	\$12,000	8	\$1,500	\$30,000
Smoke Ejector Blower	2	\$3,000	\$6,000	6	\$1,000	\$20,000
Large Exhaust Fans	2	\$2,200	\$4,400	8	\$550	\$11,000
Structure Turnouts	43	\$2,100	\$90,300	5	\$18,060	\$361,200
Structure Boots	30	\$400	\$12,000	5	\$2,400	\$48,000
Structure Helmets	22	\$500	\$11,000	10	\$1,100	\$22,000
Nozzles						
-Structure	20	\$1,200	\$24,000	5	\$4,800	\$96,000
-Blitz	2	\$4,000	\$8,000	5	\$1,600	\$32,000
Bauer SCBA Compressor	1	\$65,000	\$65,000	15	\$4,333	\$86,667
Subtotal		\$206,326	\$538,900		\$72,915	\$1,458,300
<b>Total</b>			<b>\$4,423,900</b>		<b>\$334,748</b>	<b>\$6,694,967</b>

\*Note: all costs are necessary to serve existing and new service population; exclude items with the capital replacement life of less than 5 years.

(1) Internal modification needed to accommodate more fire fighters and/or a female hire.

Sources: City of Calistoga Fire Department and EPS.

- **Equipment.** The Fire Department equips all firefighters with specialized gear and equipment, including boots and helmets. In addition, the Department uses specialized equipment like pumps, blowers, and exhaust fans for emergency incidents. Annual replacement costs for these items are estimated at \$73,000 with the total cost at \$1.5 million over a 20-year period.

## **Cultural/Recreational**

The Cultural/Recreation impact fee is designed to cover the costs associated with new parks and recreation facilities required to serve future growth in Calistoga. It covers the appropriate share of the costs of developing new parks and associated facilities. New capital facilities will be required as the City's population increases. The subsections below describe the nexus findings and the technical cost allocation analysis for the proposed Cultural/Recreational fee.

### **Nexus Findings**

#### ***Purpose***

The fee will fund the provision of an adequate level of parks and recreation facilities to maintain an existing service standard.

#### ***Use of Fee***

Fee revenue will contribute funding towards parks and recreational facilities.

#### ***Relationship***

New development in Calistoga will increase the City's demand for park and recreation facilities. Fee revenue will be used to increase the availability of parks and recreation facilities in order to maintain the existing service standard of parks and recreation provision.

#### ***Need***

Each new development project will add to the incremental need for park and recreation facilities. As a result, improvements considered in this study are estimated to be necessary to maintain the City's existing service provision goals without adversely affecting the existing level of service.

#### ***Proportionality***

The new cultural/recreation facilities and costs allocated to new development are based on the existing ratio between existing capital facilities (parkland and parks/recreation facilities) and existing service population. The scale of the capital facilities and associated costs are directly proportional to the expected levels of new development. As a result, the costs of these facilities are applied to new development based on the existing service standard for modified service population. This standard is primarily based on population but also captures employee- and visitor-demand as discussed in **Chapter 2**.

### **Capital Cost Estimates**

The inventory of the existing cultural/recreation facilities and the associated existing service standard are shown in **Table 8** with cost estimates associated with new growth shown in **Table 9**. New growth will result in park costs of \$1.1 million and facility costs of \$1.2 million. These cost estimates are described in more detail below.

**Table 8  
Existing Cultural/Recreational Facilities**

<b>Item</b>	<b>Land (acres)</b>	<b>Facilities (sq.ft.)</b>
Community Center	na	2,000
Monhoff Center	0.25	4,320
Logvy Park and Pool	10.24	3,075
Pioneer Park	1.80	450
Heather Oaks Park	1.64	0
Fireman's Park	0.13	0
Little League Field	0.72	1,315
Myrtle Street Pocket Park	<u>0.12</u>	<u>0</u>
Subtotal	14.9	11,160
Sharpsteen Museum	na	4,863
<b>TOTAL</b>	<b>14.90 acres</b>	<b>16,023 sq.ft.</b>
Modified Service Population (1)	5,726	5,726
Standard per 1,000 MSP (1)	2.60 acres	2,798 sq.ft.

(1) A service measure designed for park demand; reflects residential uses having a factor of 1, while commercial uses having a factor of 0.2 and tourist accommodation of 0.1.

Sources: Calistoga General Plan Open Space and Conservation Element, and EPS.

**Table 9**  
**Cultural / Recreation Facilities and Cost Required to Maintain Existing Service Level**

Item	Approved Projects		Potential Development		Total Required	
	Parks (acres)	Facilities (Sq.Ft.)	Parks (acres)	Facilities (Sq.Ft.)	Parks (acres)	Facilities (Sq.Ft.)
Parks and Facilities (1)	1.03	1,109	1.78	1,909	2.81	3,018
Estimated Cost	\$412,434	\$443,518	\$710,265	\$763,797	\$1,122,698	\$1,207,315

Sources: Calistoga General Plan Open Space and Conservation Element, and EPS.

(1) Derived by applying the service standards shown in Table 8 to the modified service population estimates shown in Table 3.

Cost assumptions:

Per Land Acre                      \$400,000  
Per Facility Sq. Ft.                      \$400

- **Parkland.** The City owns and maintains a number of parks of various sizes and uses, comprising 14.9 acres. Based on the existing service standard, 2.6 acres of parkland would be needed to serve new growth. This represents an estimated land acquisition cost of \$1.1 million.
- **Park Facilities.** The City has 16,000 square feet of park facilities that serve existing residents, employees, and visitors. New park facility space will be required to maintain service standards as new development occurs in the city. Based on the existing service ratio, about 3,000 square feet of new facility space would be needed to serve new growth. This growth represents a cost of \$1.2 million based on typical facility development costs.

## City Administration

The City Administration Facilities development impact fee will cover new development's share of the costs associated with a new City Hall and Community Center facility, including land acquisition. This facility will serve citywide needs, with new growth comprising a portion of the overall demand. The subsections below describe the nexus findings and the technical cost allocation analysis for the proposed City Administration capital facilities fee category.

### Nexus Findings

#### *Purpose*

The fee will help maintain adequate levels of City administration facilities service in Calistoga, including an adequate City Hall and Community Center space as well as associated land needs.

#### *Use of Fee*

Fee revenue will be used to help fund land acquisition and construction of a new City Hall and Community Center.

#### *Relationship*

New development in Calistoga will increase the City's demand for City Hall and Community Center space and associated land needs. Fee revenue will be used to fund a portion of the expansion of these facilities.

#### *Need*

Each new development project will add to the incremental need for City administration facilities (City Hall and Community Center).

#### *Proportionality*

The cost of new City administration capital facilities is allocated proportionately between new and existing development based on their relative share of demand (as measured by their relative share of service population) after a 20-year period. The cost share associated with new development is similarly allocated between land uses proportional to their relative generation of demand, as measured by service population.

### Cost Allocation Analysis

The expected demand for additional City administration facilities and land is shown in **Table 10**, along with associated cost estimates and cost allocations to new development. As shown, of the total estimated cost of \$7.9 million, a total of about \$1.7 million in costs can be allocated to new



**Table 10**  
**Administrative Facilities and Cost Required to Maintain Existing Service Level**

Item	Sq.Ft./ Acres (1)	Price per sq.ft./acre (1)	Total Cost	Cost Allocations to New Development (2)		
				Approved Projects	Potential Development	Total
New City Hall/Community Center	15,000	\$500	\$7,500,000	\$623,643	\$935,816	\$1,559,459
Land	1.1	\$400,000	\$440,000	\$36,587	\$54,901	\$91,488
<b>TOTAL</b>			<b>\$7,940,000</b>	<b>\$660,230</b>	<b>\$990,717</b>	<b>\$1,650,947</b>

(1) Based on case studies of recently constructed city halls as shown in the Appendix; reflects a 10,000 square foot city hall and 5,000 square foot community center.

(2) Based on the new service population as a share of buildout; the City would be responsible for the existing daytime population cost share estimated at \$6.3 million.

2 Sources: Calistoga General Plan Open Space and Conservation Element, and EPS.

development in the City. Approximately \$6.3 million will be required through other funding sources to address existing facility deficiencies.

- **Facilities.** A new City Hall and Community Center facility is needed to meet the citywide needs. It is assumed that demand for new space will be proportional to service population growth that will comprise 21 percent of the total after a 20-year period, based on the allocation shown in **Table 3**. The development cost for new facility space is based on comparable jurisdictions and is around \$500 per square foot, resulting in the new facility cost of \$7.5 million.
- **Land Acquisition.** In addition to development of new facilities, the City will need to acquire land for these uses. This analysis assumes that new space would have an average density of 0.3 floor-to-area ratio (FAR), resulting in the need for an additional 1.1 acres of land.<sup>6</sup> Based on an average nonresidential land value of approximately \$400,000 per acre, this approach results in a land acquisition cost of \$440,000 with \$91,000 attributable to new development.

## Transportation

The Transportation Impact Fee will cover new development's share of the costs associated with providing infrastructure improvements necessary to accommodate the increase in traffic and bicycle-associated improvements associated with new development. The subsections below describe the nexus findings and the technical cost allocation analysis for the proposed Traffic Impact Fee. Refer to Appendix A for additional information on this fee.

### Nexus Findings

#### *Purpose*

The fee will help maintain acceptable transportation operation in Calistoga, including for users of alternative modes.

#### *Use of Fee*

In combination with funds derived from numerous other sources, fee revenue will be used to fund infrastructure improvements needed to maintain acceptable traffic operation and provide adequate access for users of alternative modes.

#### *Relationship*

New development in Calistoga will have a direct contribution to the deterioration of traffic operation and increased need for facilities for alternatives modes. Fee revenue will be used to fund a portion of the construction of these improvements.

#### *Need*

Each development project will incrementally add to the need for the identified improvements.

#### *Proportionality*

The cost of infrastructure improvements is allocated proportionately to PM trips that would be generated by new development. The cost share associated with new development is based on

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<sup>6</sup> While FAR's vary, an FAR of 0.3 reflects a typical nonresidential building density average.

the allocation that assigns a majority of the total cost to existing residents through other funding sources, many of which are funded through local taxes.

### Capital Cost Estimates

The need for transportation-related improvements is summarized in **Table 11**. As shown, a total cost of \$11.6 million is projected to be required over the next 20 years. About \$8.2 million or 71 percent of the cost is assumed to be covered by funding sources other than development impact fees. The costs are described below with additional detail provided in the **Appendix B**.

- **Vehicular Capacity Improvements.** These costs total \$5.1 million and are comprised of street improvements along Foothill Boulevard and Lincoln Avenue. The costs are based on planning-level estimates based on other comparable projects.
- **Pedestrian and Bicycle Improvements.** These items include sidewalk improvements, bike paths, and pedestrian warning systems at various locations and comprise \$6.5 million in costs over a 20-year period. These costs are based on planning-level estimates based on other comparable projects.

**Table 11**  
**Transportation Capital Facilities Cost and Allocation**

Item	Total Cost
<b>Vehicular Capacity Improvements</b>	
Foothill Boulevard/Petrified Forest Road	\$650,000
Foothill Boulevard/Berry Street	\$750,000
Foothill Boulevard/Lincoln Avenue	\$1,925,000
Lincoln Avenue/Fair Way	\$950,000
Lincoln Avenue/Silverado Trail-Lake Street	<u>\$853,000</u>
Subtotal	\$5,128,000
<b>Pedestrian and Bicycle Improvements</b>	
Lincoln Avenue/Cedar Street Pedestrian Warning System	\$100,000
Lincoln Avenue/Brannan Street Pedestrian Warning System	\$100,000
Pioneer Park – Pedestrian/Bike Bridge over Napa River	\$850,000
Bike Paths – Various Locations	\$3,603,000
Sidewalk Gap Closure – Various Locations	<u>\$1,857,000</u>
Subtotal	\$6,510,000
<b>Total Capital Facilities Cost</b>	<b>\$11,638,000</b>
<b>(less) Funding Sources</b>	
Measure T Funds	\$1,765,000
STIP/RTIP	\$2,510,000
HSIP	\$630,000
SR 2S	\$850,000
CMAQ	\$944,000
Pedestrian/Bicycle	\$500,000
SHOP	\$750,000
Existing Traffic Signal Fee Balance	<u>\$270,000</u>
Subtotal	\$8,219,000
<b>Net New Cost</b>	<b>\$3,419,000</b>

Sources: W-Trans, and Economic & Planning Systems, Inc.

## 4. DEVELOPMENT IMPACT FEE CALCULATION BY LAND USE

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This chapter provides estimates of maximum development impact fees by land use for fire, police, and quality of life fees. Transportation fee estimates and supporting analysis are provided in the **Appendix A** with underlying improvement cost estimates provided in **Appendix B**. Total citywide capital equipment and facilities costs (for the facility types evaluated) in the City of Calistoga are estimated at \$18.7 million for the next 20 years, as shown in **Table 12**. This includes a \$6.7 million investment in replacing fire capital items, a \$1.8 million investment in replacing police capital items, a \$2.3 million investment in parks and recreation facilities, and a \$7.9 million investment in City administration facilities.

New development's share of the cost, based on the preceding analysis and nexus principles, is \$5.7 million, or 31 percent of the total cost. However, because a substantial amount of the expected new development is covered by existing Development Agreements, development impact fees can only be applied to a subset of new development. As a result, a total of \$3.5 million, about 19 percent, of total costs is eligible to be funded through development impact fees. About \$13.0 million in costs are associated with demand from existing development and, therefore, cannot be funded through development impact fees. The City will need to find alternative funding mechanisms to fund this portion of the costs.

Maximum development impact fees are calculated by allocating the costs attributable to new growth (excluding approved development) among residential and commercial uses, as shown in **Table 13**. This allocation is based on future service population growth for public safety and City administration facilities and modified service population for cultural/recreation. These costs are then divided by the respective levels of new projected development, as shown in **Table 14**. Based on this methodology, 56.5 percent of these costs are allocated to new residential development (single-family and multifamily combined), while 43.5 percent is allocated to nonresidential development, primarily tourist accommodation and commercial development.

**Table 15** shows the resulting maximum development impact fees by land use (before considering the administration cost) including \$11,069 per single-family unit and \$9,430 per multifamily unit. For nonresidential uses, the fee is \$3,145 per room for tourist accommodation uses, \$5,607 per winery, \$3.26 per square foot for commercial space, and \$4.01 per square foot for restaurant uses.

State law allows jurisdictions to include the costs of administering the Impact Fee Program in the fee amount. Administrative requirements include collecting and allocating impact fee revenue, record keeping and reporting of fund activity, and periodic updates to the Fee Program. This analysis assumes that administrative costs of 2.0 percent of the total Fee Program will be applied to reflect the City's overhead and administrative burdens. As shown in **Table 16**, this would increase the maximum development impact fee to \$11,291 per single-family unit and \$9,618 per multifamily unit. For nonresidential uses, the fee is \$3,208 per room for tourist accommodation uses, \$5,720 per winery, \$3.33 per square foot for commercial uses, and \$4.09 per square foot for restaurant uses. Actual Fee Program administration costs will vary from year to year depending on development activity and other program requirements.

**Table 12**  
**Summary of 20-Year Capital Facilities Costs Allocation Between New and Existing Development**

Item	Total Cost	Cost Allocated to Existing Development (1)	Cost Allocations to New Development (2)		
			Approved Projects	Poten'l Development	Total
Fire	\$6,694,967	\$5,302,897	\$556,703	\$840,952	\$1,397,655
Police	\$1,778,471	\$1,408,678	\$147,884	\$221,910	\$369,794
Quality of Life					
Cultural / Recreation	\$2,330,013	\$0	\$855,952	\$1,474,061	\$2,330,013
City Administrative	\$7,940,000	\$6,289,053	\$660,230	\$990,717	\$1,650,947
<b>Total</b>	<b>\$18,743,451</b>	<b>\$13,000,627</b>	<b>\$2,220,769</b>	<b>\$3,527,640</b>	<b>\$5,748,409</b>

(1) To be funded by non-fee sources.

(2) Allocated based on service population proportion of buildout total shown in Table 3.

Source: Economic & Planning Systems, Inc.

**Table 13**  
**New Development Maximum Cost Allocation by Land Use\***

Item	Residential Development		Non-Residential Development			
	Single Family	Multi-Family	Tourist Accommodations	Winery	Commercial	Restaurant
Fire	21%	25%	26%	1%	27%	0.4%
Police	21%	25%	26%	1%	27%	0.4%
Quality of Life						
Cultural / Recreation (1)	32%	39%	11%	0%	17%	0.3%
City Administration	21%	25%	26%	1%	27%	0.4%

\*Note: excludes approved projects.

(1) Allocated based on the modified service population demand associated with residential uses having a factor of 1, while commercial uses having a factor of 0.2 and tourist accommodation of 0.1, as demonstrated in Table 3.

28 Source: Economic & Planning Systems, Inc.

**Table 14**  
**New Development Maximum Cost by Land Use\***

Item	Cost Allocated to New Development	Residential Development		Non-Residential Development			
		Single Family	Multi-Family	Tourist Accommodations	Winery	Commercial	Restaurant
Fire	\$840,952	\$175,859	\$210,093	\$217,774	\$4,766	\$229,055	\$3,404
Police	\$221,910	\$46,405	\$55,439	\$57,466	\$1,258	\$60,443	\$898
Quality of Life							
Cultural / Recreation (1)	\$1,474,061	\$478,251	\$571,352	\$166,403	\$5,184	\$249,168	\$3,703
City Administration	<u>\$990,717</u>	<u>\$207,178</u>	<u>\$247,509</u>	<u>\$256,558</u>	<u>\$5,615</u>	<u>\$269,848</u>	<u>\$4,010</u>
<b>Total</b>	<b>\$3,527,640</b>	<b>\$907,693</b>	<b>\$1,084,394</b>	<b>\$698,201</b>	<b>\$16,822</b>	<b>\$808,513</b>	<b>\$12,016</b>
<i>Distribution</i>	<i>100%</i>	<i>25.7%</i>	<i>30.7%</i>	<i>19.8%</i>	<i>0.5%</i>	<i>22.9%</i>	<i>0.3%</i>

\*Note: excludes approved projects.

(1) Allocated based on the modified service population demand associated with residential uses having a factor of 1, while commercial uses having a factor of 0.2 and tourist accommodation of 0.1.

Source: Economic & Planning Systems, Inc.



**Table 15**  
**Maximum Fee by Land Use\***

Item	Residential Development		Non-Residential Development			
	Single Family <i>per unit</i>	Multi-Family <i>per unit</i>	Tourist Accommodations <i>per room</i>	Winery <i>per winery</i>	Commercial <i>per sq.ft.</i>	Restaurant <i>per sq.ft.</i>
Fire	\$2,145	\$1,827	\$981	\$1,589	\$0.92	\$1.13
Police	\$566	\$482	\$259	\$419	\$0.24	\$0.30
Quality of Life						
Cultural / Recreation	\$5,832	\$4,968	\$750	\$1,728	\$1.00	\$1.23
City Administration	<u>\$2,527</u>	<u>\$2,152</u>	<u>\$1,156</u>	<u>\$1,872</u>	<u>\$1.09</u>	<u>\$1.34</u>
<b>Total</b>	<b>\$11,069</b>	<b>\$9,430</b>	<b>\$3,145</b>	<b>\$5,607</b>	<b>\$3.26</b>	<b>\$4.01</b>

\*Note: Derived by dividing the cost allocation shown in Table 12 by the forecast for potential development as shown in Table 4.

Source: Economic & Planning Systems, Inc.

**Table 16**  
**Maximum Fee by Land Use with 2% Administration Cost (1)**

Item	Residential Development (per unit)		Non-Residential Development			
	Single Family	Multi-Family	Tourist Accommodations <i>per guest room</i>	Winery <i>per winery</i>	Commercial <i>per sq.ft.</i>	Restaurant <i>per sq.ft.</i>
Fire	\$2,188	\$1,863	\$1,001	\$1,620	\$0.94	\$1.16
Police	\$577	\$492	\$264	\$428	\$0.25	\$0.31
Quality of Life						
Cultural / Recreation	\$5,949	\$5,068	\$765	\$1,763	\$1.02	\$1.26
City Administration	<u>\$2,577</u>	<u>\$2,195</u>	<u>\$1,179</u>	<u>\$1,909</u>	<u>\$1.11</u>	<u>\$1.36</u>
<b>Total</b>	<b>\$11,291</b>	<b>\$9,618</b>	<b>\$3,208</b>	<b>\$5,720</b>	<b>\$3.33</b>	<b>\$4.09</b>

(1) The fee of 2% falls within a reasonable range typically charged for development impact fees' administrative expenses; fee is rounded.

Source: Economic & Planning Systems, Inc.

## APPENDIX A

### W-Trans Transportation Impact Fee Study



## APPENDIX A: SUMMARY

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This appendix provides the basis for the Transportation Impact Fee nexus estimated by W-Trans and provides supporting transportation-related detail and the City's existing transportation policies related to this study.

### Basis of Fee

Based on the net cost estimated in **Table 11**, \$3.4 million is needed to fund the improvements necessary to accommodate development projected during the next 20 years (see **Table 4**). As discussed below, anticipated future development is expected to generate a total of 1,041 trips during the critical p.m. peak hour. An even division of the costs among trips results in an average cost per trip of about \$7,420.

However, many of the trips associated with new retail development, restaurants and even hotels are linked to existing trips. Such trips could be pass-by trips where a patron stops at the new development while passing by en route from a primary origin to a primary destination or linked to another trip, such as a new hotel guest visiting a new restaurant. To account for these linked trips, adjustments were applied to reduce the fee per trip for these types of land uses.

Conversely, residential development generates not only new vehicle trips but also an increased need for infrastructure for alternative modes. To reflect this higher demand, an adjustment was applied to increase the trip fee for residential uses. Resulting transportation development impact fees are shown in **Table A-1**. Note that the total amount to be collected based on the assumed amount of future development is equal to the amount needed to fund the identified projects.

**Table A-1 Transportation Development Impact Fee Summary**

Item	Total Units	Unit Type	PM Peak Trips				Base Fee per Unit	Total
			Projected Trip Count	Projected Trip Rate	Discount/ Surcharge	Discounted Trip Totals		
Single Family Detached	82	sfd	82	1.00	1.25	103	<b>\$9,276</b>	<b>\$760,620</b>
Apartment	115	du	71	0.62	1.25	89	<b>\$5,751</b>	<b>\$661,369</b>
Specialty Retail Center	248	ksf	672	2.71	0.25	168	<b>\$5,028</b>	<b>\$1,246,824</b>
Winery	3	wineries	30	10.00	1.00	30	<b>\$74,207</b>	<b>\$222,621</b>
Hotel	222	rooms	133	0.60	0.50	67	<b>\$2,226</b>	<b>\$494,218</b>
Quality Restaurant	3	ksf	22	7.49	0.20	4	<b>\$11,116</b>	<b>\$33,349</b>

## Existing Conditions

### Study Intersections

To provide a framework for the transportation impact fee, the following eleven intersections were selected for evaluation.

1. Lincoln Avenue (SR 29)/Silverado Trail-Lake Street
2. Brannan Street/Silverado Trail
3. Mora Avenue/Grant Street
4. Lake Street/Grant Street
5. Lincoln Avenue (SR 29)/Brannan Street
6. Lincoln Avenue (SR 29)/Fair Way
7. Washington Street/Oak Street
8. Lincoln Avenue (SR 29)/Washington Street
9. Foothill Boulevard (SR 128)/Petrified Forest Road
10. Foothill Boulevard (SR 128)/Berry Street
11. Lincoln Avenue (SR 29)/Foothill Boulevard (SR 128)

The weekday p.m. peak period was selected for analysis as this typically represents worst-case operating conditions. New traffic counts were collected for five of the intersections in June 2013 while available data from 2011 was used for Lincoln Avenue/Brannan Street and Silverado Trail/Brannan Street, 2010 data was available for Foothill Boulevard/Petrified Forest Road, and 2007 data was used for Lincoln Avenue/Lake Street-Silverado Trail, Lincoln Avenue/Foothill Boulevard and Washington Street/Oak Street. Note that this older data is still considered valid as traffic volumes peaked in 2007 and decreased in 2008 due to the slowing of the economy, but have now rebounded to similar levels compared to before the economic downturn.

*SR-29 (Lincoln Avenue)/Silverado Trail-Lake Street* is an all-way stop-controlled intersection with single lanes on all four approaches, though the northbound SR-29 and westbound Silverado Trail approaches flare out to provide separate right-turn lanes with adequate length to store one vehicle and the southbound and eastbound approaches have angled stop bars to accommodate side-by-side movements. The west leg of the intersection is called Lake Street and the north leg Lake County Highway. Bike lanes exist on both sides of Silverado Trail to the east of the intersection.

*Brannan Street/Silverado Trail* is a tee intersection, stop-controlled on the terminating Brannan Street approach, with one lane in each direction on all approaches. There are bike lanes on both Silverado Trail approaches to the intersection.

*Mora Avenue/Grant Street* is a tee intersection with the terminating Mora Avenue approach stop-controlled. A driveway on the south side of Grant Street may function as a fourth leg of the intersection, though it does not have a stop sign. There is one lane in each direction on all approaches. Additionally, there is a bike lane on the south side of Grant Avenue to the east of this intersection. To the west, Grant Avenue is signed as a bike route.

*Lake Street/Grant Street* is an all-way stop-controlled intersection with one lane in each direction on all approaches. There is a bike lane on the south side of Grant Street that terminates at this intersection. The westbound direction is signed as a bike route.

*Lincoln Avenue (SR 29)/Brannan Street-Wapoo Avenue* is a two-way-stop-controlled intersection with stops on the Brannan Street and Wapoo Avenue approaches, with one lane in each direction on all approaches. The Wapoo Avenue approach is skewed at an acute angle to the south.

*Lincoln Avenue (SR 29)/Fair Way* is a two-way-stop-controlled intersection with stops on the Fair Way approaches and one lane in each direction except the northbound Lincoln Avenue approach which has a separate left turn lane and a shared through-right turn lane. There are crosswalks on the north and west legs of the intersection.

*Washington Street/Oak Street* is a tee intersection with stop controls and one lane in each direction on all approaches. The south leg of Oak Street is a driveway leading to Logvy Park. There is a crosswalk across the terminating Washington Street leg. Oak Street is signed as a bike route north of Washington Street.

*Lincoln Avenue (SR 29)/Washington Street* is the only signalized intersection in Calistoga. The eastbound and westbound Washington Street approaches each have one shared lane while the northbound and southbound Lincoln Avenue approaches each have a separate left-turn lane and a shared through/right-turn lane. Crosswalks with pedestrian phasing exist on all four legs.

*SR-128 (Foothill Boulevard)/Petrified Forest Road-Cedar Street* is all-way stop-controlled. There are separate left-turn lanes on both SR 128 approaches and a right-turn lane on the eastbound Petrified Forest approach. The east leg of the intersection is known as Cedar Street. Crosswalks are provided on the south and east legs of the intersection.

*Foothill Boulevard (SR 128)/Berry Street* is a tee intersection with one shared lane on each approach and stop controls on the Berry Street approach.

*SR-29/128 (Foothill Boulevard)/SR-29 (Lincoln Avenue)* has stop controls on all four approaches, three of which have single lanes. Only the westbound SR-29/128 approach has two lanes, with one for right-turns only. SR-29 is routed along the east and north legs of the intersection, while SR-128 (Foothill Boulevard) continues straight through the intersection in an east-west alignment. The south leg of the intersection is called Kortum Canyon Road; the first 220 feet of this roadway are private. There are crosswalks on the north and west legs of the intersection.

## **Intersection Operation**

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersection was analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side-street stop controls, or those which are unsignalized and have one or two approaches stop-controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections with stop signs on all approaches were analyzed using the "All-Way Stop-Controlled" Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole, and is then related to a Level of Service.

The study intersections that are currently controlled by a traffic signal, or may be in the future, were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using optimized signal timing.

The ranges of delay as well as general descriptions of operations for each service level are summarized in **Table A-2**.

**Table A-2 Intersection Level of Service Criteria**

LOS	Two-Way Stop-Controlled	All-Way Stop-Controlled	Signalized
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach, and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

Under existing conditions, all but one of the study intersections are operating acceptably at LOS D or better. The lone exception is Foothill Boulevard (SR 128)/Lincoln Avenue (SR 29), which is operating at LOS F. These results are summarized in **Table A-3** with detailed calculations provided in **Appendix B**.



**Table A-3 Existing PM Peak Hour Intersection Levels of Service**

<b>Study Intersection Approach</b>	<b>Delay</b>	<b>LOS</b>
1. Lincoln Avenue/Lake Street-Silverado Trail	10.5	B
2. Brannan Street/Silverado Trail	2.3	A
<i>Northbound Brannan Street Approach</i>	<i>9.5</i>	<i>A</i>
3. Mora Avenue/Grant Street	1.2	A
<i>Southbound Mora Avenue Approach</i>	<i>9.0</i>	<i>A</i>
4. Lake Street/Grant Street	7.6	A
5. Lincoln Avenue/Brannan Street	3.0	A
<i>Westbound Brannan Street Approach</i>	<i>11.4</i>	<i>B</i>
6. Lincoln Avenue/Fair Way	1.8	A
<i>Westbound Fair Way Approach</i>	<i>14.6</i>	<i>B</i>
7. Washington Street/Oak Street	7.1	A
8. Lincoln Avenue/Washington Street	5.9	A
9. Foothill Boulevard/Petrified Forest Road	18.0	C
10. Foothill Boulevard/Berry Street	1.4	A
<i>Southbound Berry Street Approach</i>	<i>24.9</i>	<i>C</i>
11. Lincoln Avenue/Foothill Boulevard	<b>96.2</b>	<b>F</b>

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Only the overall average delay is shown for signalized and all-way stop-controlled intersections, while results are also shown for the worst-case minor approach to two-way stop-controlled intersections in italics; results reflecting unacceptable operation are shown in **bold** text

### Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision histories were obtained from records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is 2007 through 2011. These collisions records were sorted to identify the roadway segments and intersections with the highest number of reported collisions.

### Roadways

The five roadways with the highest number of reported collisions are shown in **Table A-4**. It was found that the majority of collisions occurred on congested corridors, with collisions on the two state highways accounting for approximately half of the 157 collisions reported citywide. In general, the most common collision type on these segments were rear-end collisions, sideswipes and broadside movements, all of which would be expected on congested corridors. No specific improvements were identified to address the types of collisions that have been occurring along

these corridors except that any intersection improvements that reduce the level of congestion will also have a benefit in terms of reducing the collisions associated with these congested conditions.

**Table A-4 Highest Collision Locations – Roadways**

Roadway	Reported Collisions
SR 29-Lincoln Avenue	55
SR 128-Foothill Boulevard	24
Washington Street	12
Petrified Forest Road	8
Cedar Street	6

Notes: Collisions Records for the period of 2007 through 2011

**Intersections**

The eight intersections with the highest number of reported collisions are indicated in **Table A-5**. All but one of these intersections are located along one of the two state highways that traverse Calistoga. In general, the collision types reported at these intersections are consistent with what would be expected at congested intersections, with many of the collisions involving two vehicles traveling in the same direction, or in many cases, a parked vehicle. Of the 60 collisions at these eight intersections that involved two vehicles, 53 percent were traveling in the same direction (sideswipes or rear ends), 27 percent came from opposing legs, and 20 percent were right-angle collisions involving one driver on each of the two streets. There were no apparent collisions trends noted at any of these intersections; therefore, no specific safety improvements were identified for inclusion in the impact fee.

**Table A-5 Highest Collision Locations – Intersections**

Intersection	Reported Collisions
SR 29-Lincoln Avenue/Washington Street	17
Foothill Boulevard-SR 128/SR 29	15
Foothill Boulevard-SR 128/Petrified Forest Road	11
SR 29/Lake Street-Silverado Trail	9
SR 29/Pine Street	6
Gerard Street/Washington Street	6
SR 29-Lincoln Avenue/Stevenson Street	5
SR 29/Wapoo Avenue-Brannan Street	5

Notes: Collisions Records for the period of 2007 through 2011

## Future Conditions

### Potential Development

The development potential for each of the currently vacant or underdeveloped parcels within the City of Calistoga was established on a zone basis using each parcel's zoning and land use designation. The City was divided into twelve (12) zones for analysis purposes, as shown in **Figure A-1**, and the potential for development in each zone within the next 20 years was estimated by City Planning Department staff. Note that no potential development was identified in either Zone 4 or 5. The future development used for purposes of evaluating future operating conditions and establishing an impact fee is summarized in **Table A-6**.

**Table A-6**  
**Development Potential**

Zone	Single Family Dwellings	Apartments	Hotel	Retail/Commercial	Winery	Quality Restaurant
1	15 du					
2	35 du		15 rms			
3		73 du	40 rms	160 ksf		
4						
5						
6		6 du		6 ksf		
7			162 rms	14 ksf		3 ksf
8		36 du	5 rms	8 ksf		
9	14 du				1	
10	13 du					
11	5 du					
12				60 ksf	2	
<b>Total</b>	<b>82 du</b>	<b>115 du</b>	<b>222 rms</b>	<b>248 ksf</b>	<b>3</b>	<b>3 ksf</b>

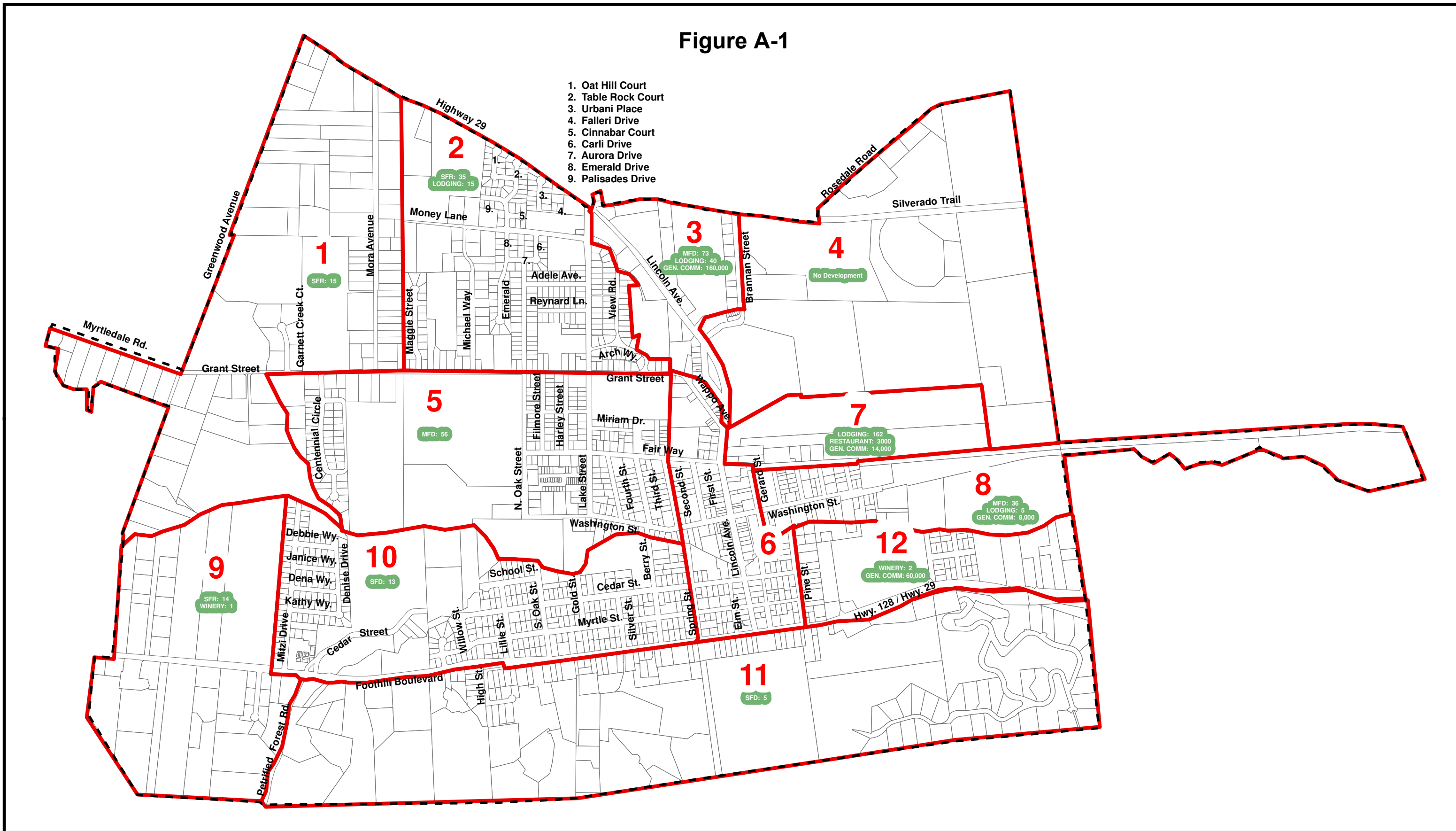
Notes: du = dwelling units; rms = rooms; ksf = 1,000 square feet

### Planned Future Improvements

No future improvements were assumed for purposes of the analysis.

Figure A-1

1. Oat Hill Court
2. Table Rock Court
3. Urbani Place
4. Falleri Drive
5. Cinnabar Court
6. Carli Drive
7. Aurora Drive
8. Emerald Drive
9. Palisades Drive



**POTENTIAL DEVELOPMENT SUBJECT TO NEW FEES**

- City Limits
- Potential Development Zones
- Development to occur within 20 Years
- Key Developable Sites



## Future Trip Generation Estimates

The additional traffic that could be added to the circulation system due to the potential development summarized in **Table A-6** was estimated. Based on the projected uses and level of development, the likely number of trips that each Zone would generate was determined both for the p.m. peak hour and on a daily basis using standard rates from *Trip Generation Manual*, 9<sup>th</sup> Edition, Institute of Transportation Engineers, 2012, for all uses except wineries, where trip generations from traffic studies done for other wineries in the area were used to estimate an average rate per winery.

The trip generation estimates by development area and land use type are shown in **Table A-7**. As shown, the potential future development within the next 20 years is expected to generate a total of 14,891 new trips on a daily basis, including 1,041 new p.m. peak hour trips.

Consideration was given to trips that would be generated between new homes and new commercial land uses by discounting new trips from residential uses by 35 percent. Further, a portion of the trips to some types of commercial establishments are made as an interim stop along the same route between a primary origin and destination. For instance, stopping to purchase gas or buy groceries while en-route between the work place and home would be such a trip. These trips are called pass-by trips, and are deducted from the trip generation projections to arrive at net new trips on the circulation network. The proposed land uses have an estimated total of 209 pass-by trips that were deducted from the trip generation estimate; the remaining 832 trips were added to the network to prepare the future conditions analysis.

### ***Trip Distribution***

The patterns used to distribute trips to the surrounding street network varied by land use type as well as location. Assumptions were developed for each Zone individually to account for potential internal capture (trips between new residential and new commercial in the same Zone) as well as the routes that would be used for trips originating in or destined for each Zone. In general, about 40 percent of new trips were assigned to destinations within the city limits, 30 percent to SR 128 east towards St. Helena, 10 percent east via Silverado Trail, and the remaining 20 percent to the west via SR 128, the north via SR 29 or the south via Petrified Forest Road.

**Table A-7 Trip Generation Summary**

Land Use	Units	Daily		PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out
<b>Zone 1</b>							
Single Family Residential	15 du	9.52	143	1.00	15	9	6
<b>Zone 2</b>							
Single Family Residential	35 du	9.52	333	1.00	35	22	13
Hotel	15 rms	8.17	123	0.60	9	5	4
<b>Zone 3</b>							
Apartment	73 du	6.65	485	0.62	45	29	16
Specialty Retail	160 ksf	44.32	7091	2.71	434	191	243
Hotel	40 rms	8.17	327	0.60	24	12	12
<b>Zone 6</b>							
Apartment	6 du	6.65	40	0.62	4	2	2
Specialty Retail	6 ksf	44.32	266	2.71	16	7	9
<b>Zone 7</b>							
Hotel	162 rms	8.17	1324	0.60	97	50	47
Specialty Retail	14 ksf	44.32	620	2.71	38	17	21
Restaurant	3 ksf	89.95	270	7.49	22	15	7
<b>Zone 8</b>							
Apartment	36 du	6.65	239	0.62	22	14	8
Specialty Retail	8 ksf	44.32	355	2.71	22	10	12
Hotel	5 rms	8.17	41	0.60	3	2	1
<b>Zone 9</b>							
Single Family Residential	14 du	9.52	133	1.00	14	9	5
Winery	1	90.00	90	20.00	20	5	15
<b>Zone 10</b>							
Single Family Residential	13 du	9.52	124	1.00	13	8	5
<b>Zone 11</b>							
Single Family Residential	5 du	9.52	48	1.00	5	3	2
<b>Zone 12</b>							
Specialty Retail	60 ksf	44.32	2659	2.71	163	72	91
Winery	2	90.00	180	20.00	40	10	30
<b>Total Trips</b>		<b>14,891</b>		<b>1,041</b>	<b>493</b>	<b>548</b>	

Note: du = dwelling unit; ksf = 1,000 square feet; occ rm = occupied room

## Future Intersection Operation

After trips associated with anticipated planned future development were added to the model, volumes at "screenlines" around the perimeter of the City were determined and compared to volumes generated by the Napa-Solano Travel Demand Model. Traffic generated by development outside the city limits will also add new trips to and through Calistoga, so these screenline volumes were used to estimate the volume of traffic generated outside the City that will affect the study intersections.

Upon adding the new traffic generated both within and outside the city limits, anticipated future deficient operation (i.e., LOS F) was identified for the following five locations.

- Lincoln Avenue (SR 29)/Silverado Trail-Lake Street
- Lincoln Avenue (SR 29)/Fair Way
- Foothill Boulevard (SR 128)/Petrified Forest Road
- Foothill Boulevard (SR 128)/Berry Street
- Lincoln Avenue (SR 29)/Foothill Boulevard (SR 128)

These results are summarized in **Table A-8**.

**Table A-8 Future PM Peak Hour Intersection Levels of Service**

<b>Study Intersection Approach</b>	<b>Delay</b>	<b>LOS</b>
1. Lincoln Avenue (SR 29)/Silverado Trail-Lake Street	<b>**</b>	<b>F</b>
Mitigated (Signalized)	40.3	D
2. Brannan Street/Silverado Trail	1.2	A
<i>Northbound Brannan Street Approach</i>	<i>45.5</i>	<i>E</i>
3. Mora Avenue/Grant Street	10.0	B
<i>Southbound Mora Avenue Approach</i>	<i>9.3</i>	<i>A</i>
4. Lake Street/Grant Street	7.8	A
5. Lincoln Avenue (SR 29)/Brannan Street	4.0	A
<i>Westbound Brannan Street Approach</i>	<i>34.0</i>	<i>D</i>
6. Lincoln Avenue (SR 29)/Fair Way	<b>38.3</b>	<b>E</b>
<i>Westbound Fair Way Approach</i>	<i>**</i>	<i>F</i>
Mitigated (Signalized)	15.4	B
7. Washington Street/Oak Street	7.1	A
8. Lincoln Avenue (SR 29)/Washington Street	11.7	B
9. Foothill Boulevard (SR 128)/Petrified Forest Road	<b>**</b>	<b>F</b>
Mitigated (Signalized)	23.7	C
10. Foothill Boulevard (SR 128)/Berry Street	2.2	A
<i>Southbound Berry Street Approach</i>	<i>50.6</i>	<i>F</i>
<i>Mitigated (Left-turn Lane)</i>	<i>31.5</i>	<i>D</i>
11. Lincoln Avenue (SR 29)/Foothill Boulevard (SR 128)	<b>**</b>	<b>F</b>
Mitigated (Signalized)	54.2	D

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Only the overall average delay is shown for signalized and all-way stop-controlled intersections, while results are also shown for the worst case minor approach to two-way stop-controlled intersections in *italics*; \*\* indicates delay in excess of 120 seconds; Results reflecting unacceptable operation are shown in **bold** text; Mitigated LOS assumes completion of improvements identified in the following section

### **Vehicular Capacity Improvements**

Based on the analysis performed, improvements were identified that would result in acceptable operating conditions at each of the five locations where unacceptable operation is projected. Following are descriptions of the recommended improvement projects that are needed to accommodate future traffic demands to be included in the Transportation Impact Fee.



**A. Lincoln Avenue-Lake County Highway/Silverado Trail-Lake Street**

The project at this location includes conversion of the existing all-way stop-controlled intersection to signalized control. Protected left-turn phasing was assumed for the Lincoln Avenue approaches and split phasing for the Silverado Trail-Lake Street approaches. Additional lanes are needed as part of the project to provide two lanes on the southbound Lake County Highway (SR 29) approach (left-turn and through/right-turn lanes), three lanes on the northbound Lincoln Avenue approach (left-turn, through and right-turn lanes), and three lanes on westbound Silverado Trail (left-turn, through and right-turn lanes).

**B. Lincoln Avenue/Fair Way**

This project will provide signalization, including permissive left-turn phasing on both Lincoln Avenue and Fair Way. Minor widening is expected to be needed to align the Fair Way approaches.

**C. Foothill Boulevard/Petrified Forest Road**

The project at this intersection will provide signalization, including protected left-turn phasing on Foothill Boulevard and split-phasing on Petrified Forest Road. Widening to provide a third lane on the eastbound Foothill Boulevard (separate left-turn, through, and right-turn lanes) is expected to be needed.

**D. Foothill Boulevard/Berry Street**

This project will provide a dedicated left-turn pocket and acceleration lane on southbound Foothill Boulevard (SR 128) to accommodate drivers turning into and out of Berry Street. Widening to both sides is assumed, resulting in 6,900 square feet of new pavement. Retaining walls will most likely be needed on both sides of SR 128.

**E. Lincoln Avenue/Foothill Boulevard**

This project includes signalization as well as widening to provide turn lanes. Protected left-turn phasing would be provided on Foothill Boulevard and split phasing on Lincoln Avenue. Additional lanes that would be needed include left-turn lanes on eastbound and westbound Foothill Boulevard and southbound Lincoln Avenue and a right-turn lane on eastbound Foothill Boulevard.

**Pedestrian and Cyclist Facility Improvements**

Information from various planning documents was used as the basis for determining improvements needed to address the adequacy of facilities for walking and bicycling as identified in the 2012 Calistoga Bicycle Transportation Plan. Following are descriptions of the projects included in the Transportation Impact Fee.

**F. Lincoln Avenue/Cedar Street Pedestrian Warning System**

To improve pedestrian safety at this intersection, a warning system consisting of in-roadway warning lights will be installed in the southern crosswalk across Lincoln Avenue.

**G. Lincoln Avenue/Brannan Street Pedestrian Warning System**

To improve pedestrian safety at this intersection, a warning system consisting of in-roadway warning lights will be installed in the crosswalk across Lincoln Avenue.

**H. Pioneer Park – Pedestrian/Bicyclist Bridge over Napa River**

This project would replace the low-water crossing at Pioneer Park that is planned for removal to enhance fish passage on the upper Napa River. Due to limited traffic signals on SR 29, the Washington Street corridor is the designated Safe Route to School from the southerly portion of town. The new bridge would provide a year-round pedestrian and bicyclist link between downtown and the city’s affordable housing areas with Pioneer Park and the Calistoga Elementary School on Berry Street.

**I. Bike Facilities – Various Locations**

The City’s 2012 Bicycle Transportation Plan calls for the installation of 7.5 miles of Class I bicycle paths and 3 miles of Class II bicycle lanes along city streets. The Class I paths will also serve pedestrians.

**J. Sidewalk Gap Closure – Various Locations**

The City’s ADA Access and Transition Plan identifies numerous locations where there are gaps in the existing sidewalk system, totaling approximately 80,600 lineal feet.

**Improvement Projects Cost**

Probable costs for constructing each of the ten improvement projects identified above are shown in **Table A-9**. Note that these are planning-level cost estimates only, and while the cost of any individual project may actually be more or less than the amount estimated, the total amount needed to construct all of these projects is expected to be at least as much as, if not more than, the total amount to be collected through application of the traffic impact fee. Additional details behind these cost estimates are included in **Appendix B**.

**Table A-9 Estimated Improvement Project Costs**

<b>Project</b>	<b>Cost</b>
A. Lincoln Avenue/Silverado Trail-Lake Street	\$853,000
B. Lincoln Avenue/Fair Way	\$950,000
C. Foothill Boulevard/Petrified Forest Road	\$650,000
D. Foothill Boulevard/Berry Street	\$750,000
E. Foothill Boulevard/Lincoln Avenue	\$1,925,000
F. Lincoln Avenue/Cedar Street Pedestrian Warning System	\$100,000
G. Lincoln Avenue/Brannan Street Pedestrian Warning System	\$100,000
H. Pioneer Park – Pedestrian/Bike Bridge over Napa River	\$853,000
I. Bike Paths and Lanes – Various Locations	\$3,603,000
J. Sidewalk Gap Closure – Various Locations	\$1,857,000
<b>Total Estimated Cost</b>	<b>\$11,641,000</b>

## Funding

In addition to the proposed transportation impact fee, other funding sources are expected to be available that would cover a portion of the cost of the projects identified.

A traffic signal mitigation fee program has been established in the City of Calistoga Municipal Code, Section 17.10.030, for future improvements at the following study intersections:

- SR-29 (Lincoln Avenue)/Silverado Trail-Lake Street
- SR-128 (Foothill Boulevard)/Petrified Forest Road
- SR-29 (Lincoln Avenue)/SR-128/SR-29 (Foothill Boulevard)

The fee is based upon new daily vehicle trips generated by a project and would be replaced by the proposed transportation impact fee. The City has not finalized improvement plans for these intersections, nor is there a schedule for plans or improvements to be completed.

Additional funding sources are summarized in **Table A-10**.

**Table A-10 Existing and Potential Funding Sources**

<b>Source</b>	<b>Funds</b>
<b>Existing Traffic Signal Mitigation Fee Balance</b>	
	\$270,000
<b>Measure T Funds</b>	
General Roadway Imp	\$500,000
Class 1 Pathways	\$515,000
Sidewalks	\$500,000
Signals	\$250,000
<b>STIP/RTIP</b>	
Petrified/Foothill Signal	\$580,000
Lincoln/Foothill Signal	\$1,250,000
Lincoln/Silverado Trail Signal	\$680,000
<b>HSIP</b>	
Cedar/Lincoln In-Pavement	\$50,000
Lincoln/Brennan (In-Pavement Lighting)	\$80,000
Foothill/Berry (Left-turn)	\$500,000
<b>SR2S</b>	
Bridge at Pioneer	\$850,000
<b>CMAQ</b>	
Lincoln/Foothill Signal	\$444,000
Bike Paths	\$500,000
<b>Pedestrian/Bicycle</b>	
Grants	\$500,000
<b>SHOP</b>	
Signals	\$750,000
<b>Total</b>	<b>\$8,219,000</b>



**APPENDIX B**  
W-Trans Transportation Improvements  
and Cost Estimates

**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**A. Lincoln Avenue/Silverado Trail-Lake Street**

Project Location:



Project Description:

The project includes conversion of the existing all-way stop-controlled intersection to a signalized control. Protected left-turn phasing was assumed for the Lincoln Avenue approaches and split phasing for the Silverado Trail-Lake Street approaches. Additional lanes are needed as part of the project to provide two lanes on the southbound Lake County Highway (SR 29) approach (left-turn and through/right-turn lanes), three lanes on the northbound Lincoln Avenue approach (left-turn, through and right-turn lanes), and three lanes on westbound Silverado Trail (left-turn, through and right-turn lanes).

Project Estimate (all dollars in 1,000's)

Design	\$ 62
Environmental	\$ 31
Administration	\$ 62
Construction	\$ 620
Sub Total	\$ 775
Contingency 10%	\$ 78
<b>Total</b>	<b>\$ 853</b>



**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**B. Lincoln Avenue/Fair Way**

Project Location:



Project Description:

This project will provide signalization, including permissive left-turn phasing on both Lincoln Avenue and Fair Way. Minor widening is expected to be needed to align the Fair Way approaches.

Project Estimate (all dollars in 1,000's)

Design	\$ 69
Environmental	\$ 36
Administration	\$ 69
Construction	\$ 690
Sub Total	\$ 864
Contingency 10%	\$ 86
<b>Total</b>	<b>\$ 950</b>



**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**C. Foothill Boulevard/Petrified Forest Road**

Project Location:



Project Description:

This project will provide signalization, including protected left-turn phasing on Foothill Boulevard and split-phasing on Petrified Forest Road. Widening to provide a third lane on the eastbound Foothill Boulevard (separate left-turn, through, and right-turn lanes) is expected to be needed.

Project Estimate (all dollars in 1,000's)

Design	\$ 58.0
Environmental	\$ 17.5
Administration	\$ 35.0
Construction	\$ 430.4
Right of way	\$ 50.0
Sub Total	\$ 590.9
Contingency 10%	\$ 59.1
<b>Total</b>	<b>\$ 650.0</b>





**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**D. Foothill Boulevard/Berry Street**

Project Location:



Project Description:

The project will provide a dedicated left-turn pocket and acceleration lane on southbound Foothill Boulevard (SR 128) to accommodate drivers turning into and out of Berry Street. Widening to both sides is assumed, resulting in 6,900 square feet of new pavement. Embankment on the south side will likely mean retaining walls.

Project Estimate (all dollars in 1,000's)

Design	\$ 55
Environmental	\$ 27
Administration	\$ 55
Construction	\$ 545
Sub Total	\$ 682
Contingency 10%	\$ 68
<b>Total</b>	<b>\$ 750</b>



**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**E. Foothill Boulevard/Lincoln Avenue**

Project Location:



Project Description:

This project is assumed to include signalization as well as widening to provide turn lanes. Protected left-turn phasing would be provided on Foothill Boulevard and split phasing on Lincoln Avenue. Additional lanes that would be needed include left-turn lanes on eastbound and westbound Foothill Boulevard and southbound Lincoln Avenue and a right-turn lane on eastbound Foothill Boulevard.

Project Estimate (all dollars in 1,000's)

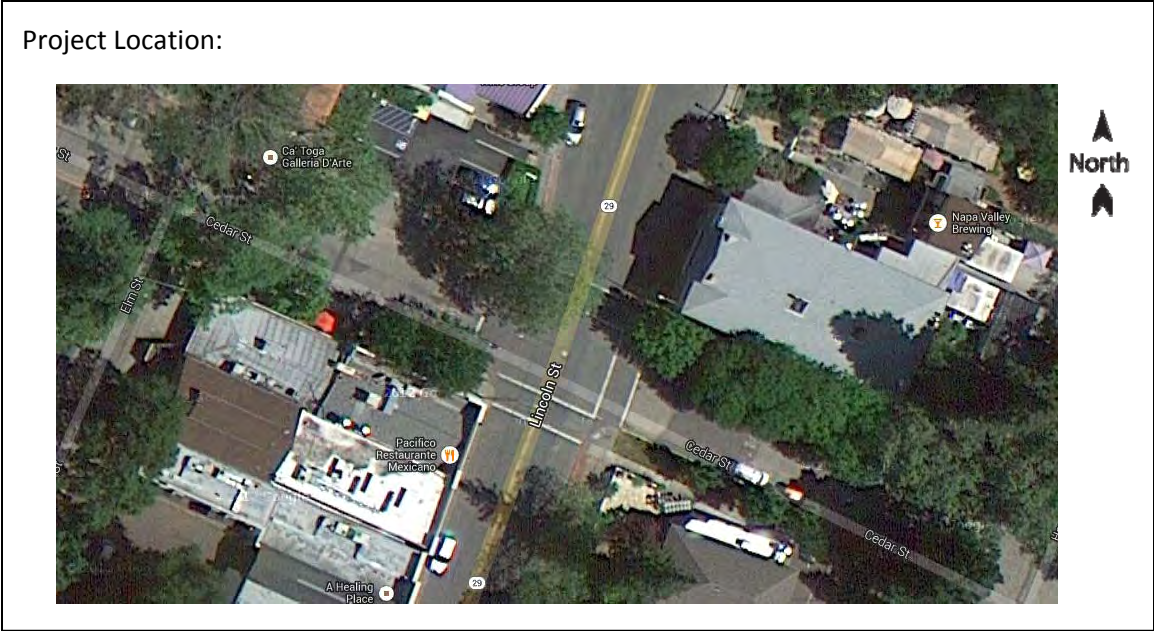
Right of way	\$ 250
Design	\$ 120
Environmental	\$ 60
Administration	\$ 120
Construction	\$1,200
Sub Total	\$1,750
Contingency 10%	\$ 175
<b>Total</b>	<b>\$1,925</b>



**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**F. Lincoln Avenue/Cedar Street Pedestrian Warning System**

Project Location:



Project Description:

To improve pedestrian safety at this intersection a warning system consisting of in-roadway warning lights will be deployed.

Project Estimate (all dollars in 1,000's)

Design	\$ 7
Environmental	\$ 4
Administration	\$ 7
Construction	\$ 73
Sub Total	\$ 91
Contingency 10%	\$ 9
<b>Total</b>	<b>\$ 100</b>





**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**G. Lincoln Avenue/Brannan Street Pedestrian Warning System**

Project Location:



Project Description:

To improve pedestrian safety at this intersection a warning system consisting of in-roadway warning lights will be deployed.

Project Estimate (all dollars in 1,000's)

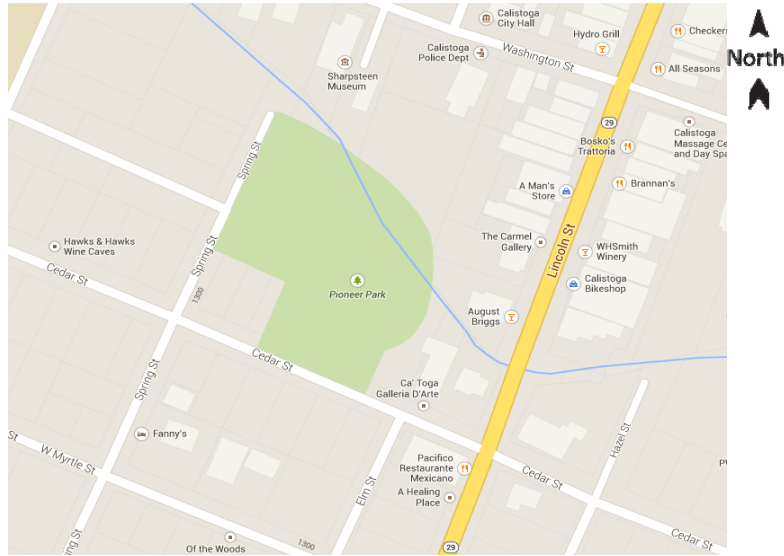
Design	\$ 7
Environmental	\$ 4
Administration	\$ 7
Construction	\$ 73
Sub Total	\$ 91
Contingency 10%	\$ 9
<b>Total</b>	<b>\$ 100</b>



**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**H. Pioneer Park – Pedestrian/Bike Bridge over Napa River**

Project Location:



Project Description:

This project would replace the low-water crossing at Pioneer Park that was removed to improve fish passage on the upper Napa River. Due to limited traffic signals on SR 29 the Washington Street corridor is the designated Safe Route to School from the southerly portion of town. The new bridge would provide a year-round pedestrian and bicycle link from downtown and the City’s affordable housing areas with Pioneer Park and the Calistoga Elementary School on Berry Street.

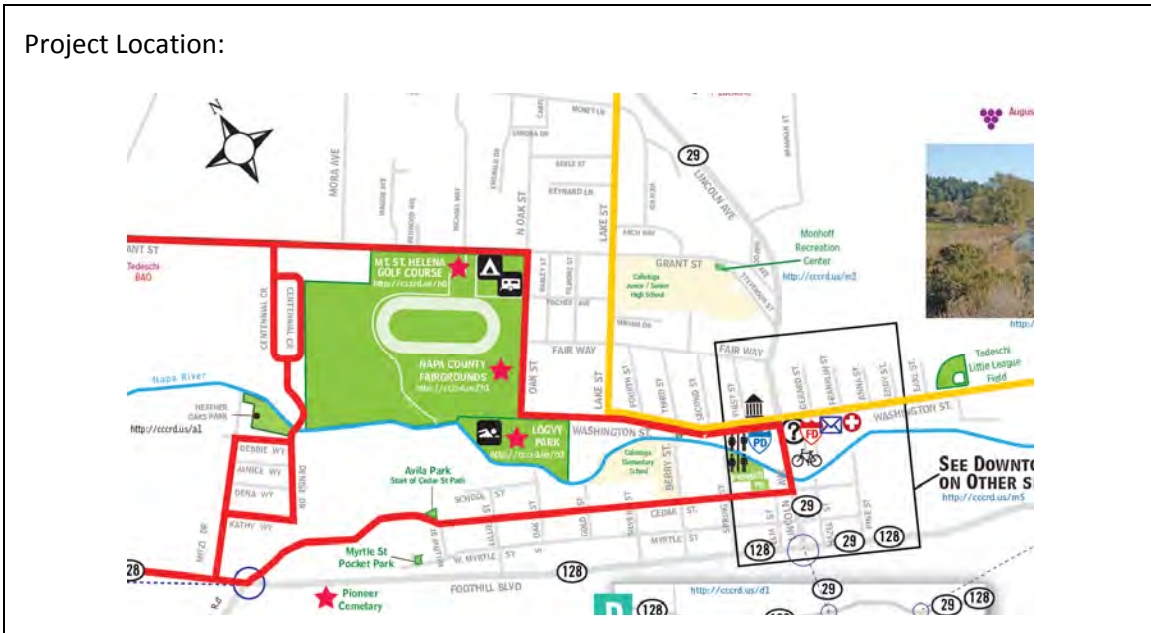
Project Estimate (all dollars in 1,000’s)

Design	\$ 62
Environmental	\$ 31
Administration	\$ 62
Construction	\$ 620
Sub Total	\$ 775
Contingency 10%	\$ 78
<b>Total</b>	<b>\$ 853</b>



**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**I. Bike Paths and Lanes – Various Locations**



Project Description:

The City's Bicycle Transportation Plan includes installation of 6.2 miles of Class I trails and 3.5 miles of Class II bike lanes along City streets. Construction of portion of these systems totaling 2.2 miles of Class I trails and 0.7 miles of Class II bike lanes was included in the fee estimate.

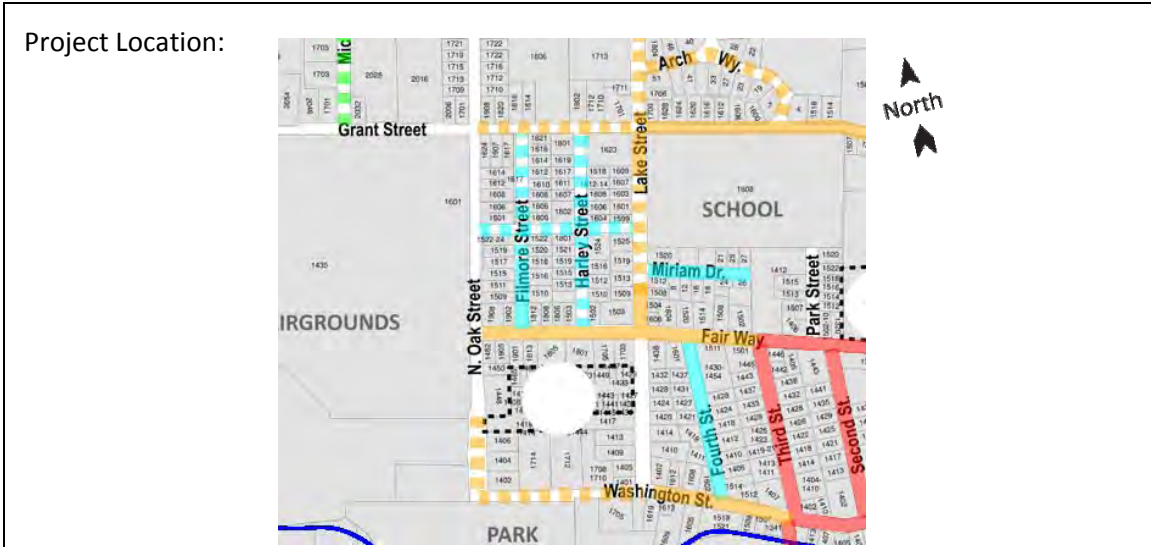
Project Estimate (all dollars in 1,000's)

Design	\$ 262
Environmental	\$ 131
Administration	\$ 262
Construction	\$2,620
Sub Total	\$3,275
Contingency 10%	\$ 328
<b>Total</b>	<b>\$3,603</b>



**CITY OF CALISTOGA**  
**Traffic Impact Mitigation Fee**  
**Project Estimate**

**J. Sidewalk Gap Closure – Various Locations**



Project Description:

The City’s ADA Access and Transition Plan identifies numerous locations where there are gaps in the existing sidewalk system.

Project Estimate (all dollars in 1,000’s)

Design	\$ 135
Environmental	\$ 68
Administration	\$ 135
Construction	\$1,350
Sub Total	\$1,688
Contingency 10%	\$ 169
<b>Total</b>	<b>\$1,857</b>

