

The Economics of Land Use



Report

Nexus Study for Update of Development Impact Fees

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City of Benicia

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1. *BACKGROUND, CONTEXT, AND SUMMARY OF MAXIMUM FEES*

This Nexus Analysis for City of Benicia Development Impact Fees Update (Report) is designed to provide the City of Benicia (City) with the necessary technical documentation to support the adoption of an update to its five existing development impact fees and its Quimby parkland in-lieu fee. This Report has been prepared by Economic & Planning Systems, Inc. (EPS) in coordination with GHD, with input from City staff.

Impact fees are one-time charges on new development collected and used by jurisdictions to fund the cost of public facilities that are necessary to serve new growth. Impact fees are collected as a condition of development. The City currently has six fee programs: water and wastewater were first established in the 1970s; the park improvement impact fee was established in 1988; the parkland dedication in-lieu fee was first established in 1986; the remaining two (transportation and library) were created in 1992. Periodic updates are advised, and each of the fees has been updated at least once since it was created. The City now wants to update these fee programs to align growth projections, capital needs, and improvement costs with current data, and respond to evolving state legislation. This Report is focused on the park, transportation, and library fee updates.

While all of the existing fee programs are to be updated, the transportation and library fee programs are being modified/expanded. The library fee will be expanded to include not only the cost of acquiring new items for circulation but also the costs related to the library collections' inventory and check-out systems, as well as the costs of improving currently unfinished space in the basement to expand the overall usable space of the library. The transportation fee will now include not only vehicular traffic mitigation but also transit and multi-modal transportation improvements (such as bicycle and pedestrian improvements).

This Report provides the technical calculations required to determine the maximum fees the City can charge for each fee program based on the nexus between the impacts of new development and the costs of constructing the public facilities necessary to serve that development. The City may elect to reduce the fees based on economic or policy considerations. For example, the City may choose to phase-in fee increases or adopt fees that are lower than the maximum justified amount to encourage new development.

Report Background and Legal Context

The fee programs described in this Report are consistent with the most recent state legislation and relevant case law as well as the principles of the Mitigation Fee Act (Government Code Section 66000 et seq) and the Quimby Act (Government Code Section 66477 et seq). The City's Municipal Code currently authorizes the collection of fees for Park, Library, and Transportation facilities. This Report is designed to provide the necessary technical analysis supporting an updated schedule of fees to be adopted. Below are the key requirements of the Mitigation Fee Act that determine the structure, scope, and amount of the City's proposed impact fee programs:

- **Collected for Capital Facility and Infrastructure Improvements.** Development impact fee revenue can only be collected and used to cover the cost of capital facilities and

infrastructure that are required to serve new development in the City. Impact fee revenue cannot be used to cover the operation and maintenance costs of these or any other facilities.

- **Used to Fund Facility Needs Created by New Development Rather than Existing Deficiencies.** Impact fee revenue can only be used to pay for new or expanded capital facilities needed to accommodate growth. Impact fee revenue cannot be collected or used to cover the cost of existing deficiencies in the City's capital facilities or infrastructure. In other words, the cost of capital projects or facilities that are designed 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 population and employment are split on a "fair share" basis according to the proportion attributable to each.
- **Fee Amount Must Be Based on A Reasonable Relationship.** An impact fee amount must be based on a reasonable nexus, or connection, between new development and the need for and corresponding costs of the capital facilities and improvements included in the fee program. As such, an impact fee must be supported by specific findings that explain or demonstrate this nexus or relationship. 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.

Overview of Methodology and Key Assumptions

The results of the analysis contained in this Report are based on a variety of assumptions regarding population and employment growth in the City, service standards and facility demand, and corresponding costs. Key issues that may warrant consideration in conjunction with this Report include:

- **Socioeconomic Data and Projections.** The impact fee calculations are based on projections related to population and employment in the City through 2040. Baseline population and growth projections were developed based on data from the Association of Bay Area Governments (ABAG) with input from City staff to include employment growth capacity in the Benicia Business Park area. The estimates of development and population should be periodically reviewed and updated.
- **Future Capital Facility Needs.** The main source of information on future capital facilities needs are the various City departments that collect and implement the City's existing fee programs. EPS and GHD, conducted extensive inventories, interviews and discussions with the City's Library, Parks, Transportation, Public Utilities, and Planning Departments, as well as with the City Manager's Office.

This information was analyzed to determine existing levels of service and/or articulated service standards relative to future growth projections. Both the existing level of service and the service standard relate capital facility or infrastructure requirements to the land use categories that represent the primary source of demand for the capital facility or infrastructure improvement in question. Alterations in either the existing level of service or the service standard assumptions can affect the fee calculation and the allocation of costs between land use categories.

EPS, in collaboration with GHD, then worked to transform the analysis of existing levels of service and articulated service standards into estimates of the type and amount of new or expanded capital facilities and infrastructure that will be necessary to serve new development over the next 20 years.

- **Cost Allocation between New and Existing Development.** This analysis allocates the cost of future capital improvements and facilities between new and existing development, as required by the Mitigation Fee Act, based on a variety of methodologies.
 - In cases where new or expanded facilities or infrastructure improvements are determined to be needed entirely to accommodate new growth (e.g., there are no existing deficiencies), 100 percent of the costs are attributed to future development.
 - In cases where new or expanded facilities are determined to serve or benefit both existing and new residents and/or employees in a relatively proportional manner, the costs are allocated as such.
 - Finally, in cases where there is an existing level of service to be preserved as new development occurs, the average cost of maintaining that level of service is charged to new development, ensuring that new development does not create deficiencies in the level of service.
- **Cost Allocation to Land Use Categories.** The cost allocations to various land use categories (e.g., residential, commercial, industrial, etc.) are based on the relative demand or “fair-share” contribution of each land use category to the need for the facilities included.

The Transportation fee program will be charged to both residential and nonresidential development as both residents and employees create demand on the City’s transportation system, while the Library and Park impact fee programs are charged to residential land uses.

The fee calculations also utilize assumptions related to population and employment densities by land use type. Specifically, fee programs’ cost estimates per resident or per service population are converted to fee rates per unit or square foot based on average persons per household and square feet per employee factors. This ensures that fees charged by land use are proportional to one another.

- **Facility Cost Estimates.** The fee calculations include facility cost assumptions that have been developed based on recent bids received, City staff estimates, records of prior expenditures, as well as additional research.

Overview of Fee Programs

The City currently has six fee programs, as described below:

1. **Water Capacity Fee.** The water capacity fee is a one-time charge that the City imposes on residential and non-residential customers that require new or expanded connections to the City’s water system facilities. The purpose of this fee is to fund existing and planned water system improvements necessary to serve future growth.

2. **Wastewater Capacity Fee.** The wastewater capacity fee is a one-time charge that the City imposes on residential and non-residential customers that require new or expanded connections to the City's wastewater system facilities. The purpose of this fee is to fund existing and planned wastewater system improvements necessary to serve future growth.
3. **Transportation Impact Fee.** The transportation fee is a one-time charge that the City charges to new development. The purpose of this fee is to fund auto-oriented and multi-modal transportation improvements which mitigate the impacts of future growth on the City's circulation network.
4. **Library Book Fee.** The library fee is a one-time charge that the City charges to new residential development. The purpose of the fee is to fund improvements to the City's library needed to serve new population growth, such as capital investments in the technology that supports the library systems, expansions of library infrastructure and facilities, and continuing the quality and quantity of the collection held within the City's library.
5. **Parkland Improvement Impact Fee.** The parkland improvement fee is a one-time charge that the City charges to new residential, non-subdivision development. The Park Impact Fee is charged to mitigate the impact of new development on the need for improved parkland and trails in the City.
6. **Parkland Dedication In-Lieu Fees.** The purpose of this fee is to develop new or rehabilitate existing neighborhood or community park or recreational facilities reasonably related to serving the property which paid the fee, including the purchase of necessary land and/or improvement of such land for park or recreational purposes.

Summary of Maximum Allowable Fees and Relationship to Existing Programs

A summary of the maximum allowable impact fees calculated in this analysis by land use category is provided in **Table 1**. This table also compares the maximum allowable fee with the existing fees by land use category. The maximum allowable impact fee represents the highest fee the City may charge based on the requirements of the Mitigation Fee Act and this nexus analysis.

Table 1 Summary of Maximum Allowable Fees and Relationship to Existing Programs

Land Use	Library Impact Fee		Parkland Dedication (Quimby) In-Lieu Fee		Parkland Improvement Impact Fee [1]		Transportation Improvement Impact Fee	
	Current / Existing Fee	2020 Maximum Allowable Fee	Current / Existing Fee	2020 Updated Fee	Current / Existing Fee	2020 Maximum Allowable Fee	Current / Existing Fee	2020 Maximum Allowable Fee
Residential	<i>Fee Amount per Unit</i>		<i>Fee Amount per Unit</i>		<i>Fee Amount per Unit</i>		<i>Fee Amount per Unit</i>	
Single Family Unit [2]	\$235	\$348	\$6,127	\$10,770	n/a	\$10,043	\$2,180	\$5,763
Multifamily Unit [3]	\$235	\$270	\$4,083 - \$5,310	\$8,359	n/a	\$7,794	\$1,352	\$3,227
Accessory Dwelling Unit (≥ 750 sq.ft.)[4]	n/a	<i>varies in proportion to size of primary residence</i>	n/a	n/a	n/a	<i>varies in proportion to size of primary residence</i>	\$676	<i>varies in proportion to size of primary residence</i>
Nonresidential	<i>Fee Amount per 1,000 Building Square Feet</i>		<i>Fee Amount per 1,000 Building Square Feet</i>		<i>Fee Amount per 1,000 Building Square Feet</i>		<i>Fee Amount per 1,000 Building Square Feet</i>	
Retail/Commercial	n/a	n/a	n/a	n/a	n/a	\$738	\$10,802	\$7,492
Service/Commercial	n/a	n/a	n/a	n/a	n/a	\$1,413	\$10,737	\$15,618
Institutional/Assembly	n/a	n/a	n/a	n/a	n/a	\$707	\$4,044	\$1,095
Office	n/a	n/a	n/a	n/a	n/a	\$1,979	\$3,248	\$5,360
Lodging (<i>fees are per room</i>)	n/a	n/a	n/a	n/a	n/a	\$450	\$1,308	\$2,017
Industrial	n/a	n/a	n/a	n/a	n/a	\$824	\$2,115	\$7,261
Warehouse/Distribution	n/a	n/a	n/a	n/a	n/a	\$247	\$698	\$2,190
Nonresidential Agricultural Accessory Structures	n/a	n/a	n/a	n/a	n/a	\$165	n/a	\$2,075

[1] As a policy decision, the parkland improvement impact fee is not charged to nonresidential uses and waived for those parcels that are subject to the Quimby land dedication or in-lieu fee requirement.

[2] Consistent with BMC 17.16.030.G, single family is defined as buildings containing one dwelling unit located on a single lot, including mobile homes and factory-built housing.

[3] Consistent with BMC 17.16.030.E, multifamily is defined as two or more dwelling units on a site (e.g., apartments, condominiums, townhomes), including mobile homes and factory-built housing.

[4] Senate Bill 13 (effective 1/1/2020 - 12/31/2024) precludes jurisdictions from charging impact fees on ADUs under 750 square feet. Gov. Code 65852.2(f)(3)(A) requires that fees charged to ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. For example, if a proposed ADU is 800 square feet, and the primary residence is 2,400 square feet, impact fees will be 1/3 of the single family fee (800 / 2,400 = 33.3%).

Sources: City of Benicia; GHD; Economic & Planning Systems, Inc.

2. DEMOGRAPHIC AND LAND USE ASSUMPTIONS

This chapter describes the demographic and land use assumptions utilized for the technical calculations in this nexus study. The estimates are based on a variety of population, employment, demographic, and real estate data from a variety of sources including publications from ABAG/MTC (the Bay Area's regional planning organization), the Census, academic institutions, non-profit organizations, public agencies, as well as with input from City staff.

Purpose of Assumptions

The assumptions detailed in this chapter are used to calculate the following metrics, which will be necessary for the calculation of maximum justifiable fees:

- **Service Standards.** Estimates of existing population and employment levels are used to formulate current levels of service standards for each type of capital facility, so that estimated demand from future growth is proportional to current demand from existing development. The approach to estimating the level of service varies among the fee programs.
- **Future Capital Needs.** Estimates of future population and employment growth in the City are used to determine the future demand for capital facilities. These capital facilities are intended to be funded by the fee.
- **Allocation of Costs.** Estimates related to population and employment density (e.g., persons per household or employees per square foot) are used to allocate costs between residential and commercial land use categories.

Population and Employment Growth

Table 2 provides the baseline and future population and employment estimates used in this fee program update, reflecting a twenty-year time horizon (from 2020 to 2040). Based on input from City staff, this study relies on population and employment estimates from the Association of Bay Area Governments (ABAG) Plan Bay Area 2040 projections. ABAG is a regional agency, responsible for forecasting changes to the Bay Area's population and economy. ABAG's distribution of growth within the region among counties, cities and priority development areas (PDAs) is built around expected local policies and infrastructure investment as well as historic economic behavior. ABAG's forecasts are widely relied upon by local jurisdictions to help plan for future growth.

Job growth capacity at the Benicia Business Park is not reflected in ABAG's 2040 projections, yet represents an important part of planning for Benicia's future. As such, the job growth capacity within the Business Park is added to the ABAG estimates. Anticipating this potential job growth at this time results in more conservative (i.e., lower) fees.

Table 2 Growth Forecasts (2020-2040)

Category	Amount by Year		2020 - 2040 Growth		
	2020	2040	Total Growth	Annual Growth Rate	Growth as a Share of 2040 Total
Total Residential Population	27,570	30,735	3,165	0.5%	10.3%
Total Housing Units	10,515	11,345	830	0.4%	7.3%
Single Family Units	6,910	7,000	90	0.1%	1.3%
Multifamily Units	3,605	4,345	740	0.9%	17.0%
Employment	14,550	24,760	10,210	2.7%	41.2%

Sources: ABAG/MTC Plan Bay Area 2040 Projections; City of Benicia Planning Department; Benicia Business Park 2007 EIR; Economic & Planning Systems, Inc.

Service Population Calculations

Some of the fee programs are also based on calculations that translate the population and employment projections into estimates of existing and future “service populations.” Service population is a term which represents a combined weighting of population (residents) and jobs (employees). The service population is derived from assumptions that compare residents and employees based on the relative service demands or typical service profiles of each, allowing for allocations of demand for facilities across residential and nonresidential land uses. Of course, a service population can differ depending on the type of proposed facility and the public demand for that facility. For example, the facility needs of the library department are linked primarily to demand from the City’s residential population rather than employment growth, whereas roadway improvements are used by both residents and employees in the City. Service population calculations were used in the Park Improvement Impact Fee Program and the Transportation Impact Fee Program and are described in more detail in the relevant chapters.

Land Use Categories and Density Assumptions

Fees are calculated for a range of land use categories and informed by the type of development that City staff expects to occur in the City. These land use categories are summarized in **Table 3** along with example uses. This table provides illustrative examples only and may not address every circumstance.

In the City of Benicia, Parkland Dedication In-Lieu Fee, the Parkland Improvement Impact Fee, and the Library Impact Fee are charged only to residential development. The Transportation Impact Fee as well as the Water and Wastewater Capacity Fees are charged to residential and nonresidential development.

Table 3 Land Use Categories

Land Use Category	Description and Examples [1]
Residential	
Single Family	Single family detached dwelling units, including single family manufactured homes.
Multifamily [2]	Multifamily attached dwelling units, including condominiums, townhomes, and apartments.
2nd SFR Unit/Accessory Dwelling Unit (ADU) [3]	Accessory dwelling units.
Nonresidential	
Retail/Commercial	Uses include regional- and neighborhood-serving retail establishments, including retail as part of mixed-use developments. Specific uses include big-box warehouse stores, department stores, grocery stores, and other establishments whose primary purpose is the sale of retail goods.
Service/Commercial	Uses include businesses that provide services, as opposed to primarily retail goods, such as restaurants, fitness facilities, beauty/barber shops, salons, banks, social services, funeral services, gas stations, and general repair shops, including auto repair.
Office	Category includes general office as well as medical or dental office. Uses include professional services, finance/insurance/real estate uses (not including customer-serving banks), administration-type uses, and offices and clinics of medical, dental, and health practitioners.
Institutional/Assembly	Uses include places of civic and cultural assembly, places of worship, congregate care facilities, private schools and private day care facilities, as well as movie theaters and other visitor-generating facilities or structures on agricultural and non-agricultural land.
Lodging [4]	Uses include resorts, hotels, motels, and bed and breakfast inns.
Industrial	Uses include construction, manufacturing, processing, and transportation uses, as well as dairies and agricultural processing facilities. Ancillary office space included as part of industrial development is included.
Warehouse/Distribution	Uses include warehousing, distribution, and storage uses. Ancillary office space included as part of warehouse/distribution development is included.
Nonresidential Agricultural Accessory Structures	Uses include barns, stables, accessory buildings, or structures that are utilized in conjunction with the agricultural use of the property, including the storage of agricultural products and supplies and equipment used in agricultural operations.

[1] This table provides illustrative examples only and may not address every circumstance. Specific questions may be addressed to the Public Works Department, which is responsible for making the final determination of land use category applicability.

[2] For the purposes of the Quimby Land Dedication requirement and in-lieu fee, the multifamily land use category refers to multifamily units on mapped parcels created through the Subdivision Map Act.

[3] Senate Bill 13 (effective 1/1/2020 - 12/31/2024) precludes jurisdictions from charging impact fees on ADUs under 750 square feet. Gov. Code 65852.2(f)(3)(A) requires that fees charged to ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. For example, if a proposed ADU is 800 square feet, and the primary residence is 2,400 square feet, impact fees will be 1/3 of the single family fee (800 / 2,400 = 33.3%).

[4] Lodging does not include short-term rentals. Short-term rentals would pay the fee associated with the primary use – either single family or multifamily.

Sources: City of Benicia; Economic & Planning Systems, Inc.

In addition to the demographic calculations, the fee programs also utilize assumptions related to population and employment densities by land use type. Specifically, fee programs' cost estimates per resident or per service population are converted to fee rates per unit or square foot based on average persons per household and square feet per employee factors. For residential development, the analysis relies on U.S. Census data (American Community Survey, 2014-2018 Five Year Average) for the average number of persons per household for single-family and multifamily units. For nonresidential development, the fee levels incorporate data from a variety of sources related to the average employees per 1,000 sq. ft. of building space, such as the U.S. Green Building Council, a Southern California Association of Governments (SCAG) Employment Density Study, and other publicly available studies.

The land use density assumptions utilized in this Report are summarized in **Table 4**, with further documentation of data sources for nonresidential land uses provided in **Appendix A, Table 1**. As shown, single family units currently have a higher average number of persons per unit than multifamily units. This analysis assumes that future single family units will continue to have a higher average number of persons than multifamily dwelling units and thus will generate relatively different levels of impact on fee program facilities. For example, based on the persons per household data in **Table 4**, a multifamily unit would generate 78 percent of the impact generated by a single family unit. The impacts of other units relative to a single family unit differ based on the number of persons in the respective unit type.

Table 4 also shows assumptions for employee densities per 1,000 sq. ft. of building space for various nonresidential uses. Impact fees for nonresidential uses that are based on service population will vary consistently with these differences in employee generation. Specifically, uses that generate more workers per 1,000 sq. ft. will pay a proportionally higher fee.

Table 4 Fee Programs Land Use Density Assumptions

Land Use Fee Categories	Persons per Household ¹ <i>a</i>	Sq. ft. per Employee ² <i>b</i>	Employees per 1,000 Sq. Ft. ² <i>c = 1,000/ b</i>
See Appendix A, Table 1 for Sources			
Residential			
Single Family ³	2.68	-	-
Multifamily ⁴	2.08	-	-
2nd SFR Unit/Accessory Dwelling Unit ⁵	1.50	-	-
Nonresidential			
Retail/ Commercial	-	670	1.49
Service Commercial	-	350	2.86
Institutional/Assembly	-	700	1.43
Office	-	250	4.00
Lodging	-	1,100	0.91
Industrial	-	600	1.67
Warehouse/Distribution	-	2,000	0.50
Agricultural Uses⁶			
Non-residential Agricultural Accessory Structures	-	3,000	0.33

[1] Average household size per occupied housing unit in Benicia based on data from the 2018 American Community Survey (5-year estimates) conducted by the U.S. Census Bureau.

[2] Averages based on a number of data sources reviewed by EPS. See Appendix A, Table 1.

[3] Consistent with BMC 17.16.030.G, single family is defined as buildings containing one dwelling unit located on a single lot, including mobile homes and factory-built housing.

[4] Consistent with BMC 17.16.030.E, multifamily is defined as two or more dwelling units on a site (e.g., apartments, condominiums, townhomes), including mobile homes and factory-built housing. For the purposes of the Quimby Land Dedication requirement and in-lieu fee, the multifamily land use category refers to multifamily units on mapped parcels created through the Subdivision Map Act.

[5] Senate Bill 13 precludes jurisdictions from charging impact fees on ADUs under 750 square feet and Gov. Code 65852.2(f)(3)(A) requires that fees charged to ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. To the extent the legal landscape shifts in the future, the typical household size data for ADUs is provided here to provide guidance if alternative fee calculations are needed. Household size estimate from "Yes in My Backyard: Mobilizing the Market for Secondary Units, June 2012" published by Center for Community Innovation (CCI) at the Institute for Urban & Regional Development (IURD) at UC-Berkeley.

[6] Density assumptions were based on data for other nonresidential uses and adjusted to reflect less intensive usage associated with agricultural uses.

Source: Economic & Planning Systems, Inc.

3. LIBRARY FEE PROGRAM

The Benicia Public Library provides a full range of library services to local residents at its main library location at the end of East L Street, near the City's civic heart and commercial downtown corridor. The current library was built in 1993. The City's library impact fee program was first established in 1992.

Methodology

Even though the Library primarily serves the City's residents, the Benicia Public Library maintains a relationship with the County's library system. Therefore, the Library fee is designed to cover not only the costs associated with books and collections materials within the City of Benicia library system but also costs associated with maintaining the logistical and systemic links with the County Library system. This fee is also intended to include capital costs associated with the renovation of unfinished library space to accommodate new collections, materials and programs. For the purposes of this study, it is assumed that only residential development will pay a Library impact fee since these facilities primarily serve City residents.

Service Population

The library fee will be charged only to new residential development, and as such, the calculation is based on the City's current and future population. As shown on **Table 5**, the total City resident population is expected to grow from 27,570 to 30,735 people, an addition of 3,165 residents, representing 10.3 percent of the projected 2040 residential population. For the Library Fee program, which is tied to residential growth and demand, this represents the "fair share" allocation of costs related to the investments needed to serve new growth.

Table 5 Estimated Benicia Population Growth and Growth as Share of 2040 Total

Item	Base Year (2020) <i>a</i>	Buildout (2040) <i>b</i>	Absolute Growth <i>c = b - a</i>	Growth as Share of Future Buildout <i>d = c / b</i>
Total Residents	27,570	30,735	3,165	10.3%

Sources: ABAG/MTC Plan Bay Area 2040 Projections; Economic & Planning Systems, Inc.

Program Improvements and Cost Allocation

The four main components of the library fee program, as shown on **Table 6**, include two systems that are shared with the Solano County Library System, the cost of upgrading/finishing the Library basement, and the cost of acquiring collections materials to maintain the current level of service. These investments are needed to meet the needs of the current and future population of Benicia.

Table 6 Library Planned Facilities, Estimated Costs, and Cost Allocation

Item	Formula	Amount
Integrated Library System Replacement Cost ¹	a	\$170,000
Number of Replacement Cycles (2020-2040)	b	1
Subtotal ILS Cost	$c = a * b$	\$170,000
Share of ILS Cost Attributable to New Growth ²	d	10.3%
Amount of ILS Cost Allocated to Fee Program	$e = c * d$	\$17,506
RFID System Five-Year Cost ³	f	\$50,000
Number of Five-Year Cycles (2020-2040)	g	4
Subtotal RFID Cost	$h = f * g$	\$200,000
Share of RFID Cost Attributable to New Growth ²	d	10.3%
Amount of RFID Cost Allocated to Fee Program	$i = h * d$	\$20,595
Library Basement Finishing ⁴	j	\$914,000
Share of Basement Cost Attributable to New Growth ²	k	10.3%
Amount of Basement Cost Allocated to Fee Program	$l = j * k$	\$94,121
Current Library Collections ⁵	m	104,000
Current Resident Population of City of Benicia	n	27,570
Current Per Resident Library Service Level	$o = m / n$	3.77
New Residential Growth (2020-2040) ⁶	p	3,165
Number of New Collections Items Needed to Maintain Current Service Level	$q = o * p$	11,939
Cost per Collections Item ⁷	r	\$25
Total Cost for New Collections Items	$s = q * r$	\$298,477
Share of New Collections Cost Attributable to New Growth ⁸	t	100%
Amount of New Collections Cost Allocated to Fee Program	u	\$298,477
Total Library Costs Allocated to Fee Program	$v = e + i + l + u$	\$430,699
Existing Library Impact Fee Fund Balance⁹	w	\$19,736
Net Library Costs Allocated to Fee Program	$x = v - w$	\$410,963

[1] The Integrated Library System is the online catalog and circulation system. Even though the City of Benicia operates a separate library system, its system shares the underlying Countywide infrastructure. Therefore, this amount represents the Benicia Library's share of the total County Library System's ILS system costs.

[2] See Table 5.

[3] Even though the City of Benicia operates a separate library system, its system shares the underlying infrastructure to code and track library materials/equipment with the Countywide library system. Therefore, this amount reflects Benicia Library's share of the total County Library System's RFID system costs.

[4] Basement finishing is anticipated to involve the creation of restrooms, carpeting, lighting, etc. Recent bid for scaled-down version is for \$714,000, and City estimates additional \$200,000 would be needed to complete the project as originally conceived.

[5] This represents the total number of books, audio/visual materials, and other physical items that the library holds in its collections for public circulation.

[6] See Table 5.

[7] Typical cost per item provided by the head of the City of Benicia's Library based on number of new collection items acquired in 2019 and total acquisition and cataloging costs.

[8] The cost for new collection items is 100% attributable to the fee program as the number of items needed is based on what is needed to maintain the current library service level per resident.

[9] Library Impact Fee Fund Balance for FY 2019-20 is unaudited.

Sources: Benicia Public Library; Capital Improvement Plan (2019/20 - 2023/24); Economic & Planning Systems, Inc.

The two systems that the City shares with Solano County are the integrated library system (also known as ILS) and the inventory tracking system (also known as Radio Frequency Identification (RFID) tracking). These two systems are used to identify and track all library collections materials (such as books, magazines, audio/video tapes, computer equipment, electronic devices, etc.). The City pays its fair share toward these countywide systems. Because these two systems will benefit not only future residents but also existing residents, only 10.3 percent, or new growth's "fair share" of these costs is allocated to the fee program, as shown on **Table 5**. This amounts to roughly \$38,500 for both systems.

The cost of upgrading/finishing the library basement is outlined in the City's Capital Improvements Plan. This capital project aims to provide more space for library events, workshops and other special programming. Again, because this project will benefit both current and future residents, only 10.3 percent of this cost, or approximately \$94,000, is allocated to the fee program.

The largest component of the library costs is the expansion of the collections materials such that the library continues to maintain its existing level of service. According to **Table 6**, there are 3.77 items in the library's collections per City resident. In order to maintain this service level, the library would need to add nearly 12,000 items to serve new residents at a cost of approximately \$300,000. Because this cost is 100 percent attributable to new growth, it is allocated entirely to the fee program.

Together, the capital projects costs and the new collections materials costs amount to approximately \$430,700 that is eligible for inclusion in the fee program. Currently, there is a library fee fund balance of roughly \$19,700; this amount is deducted from the total eligible fee program costs, resulting in approximately \$411,000 of costs in the updated library fee program.

Fee Calculation

The library impact fee is calculated in two steps. First, the fair share cost allocated to new development is divided by the growth in population projected between 2020 and 2040. This yields a per resident cost of \$129.85 as shown in **Table 7**.

Second, the cost for each type of residential unit is determined by multiplying the number of persons projected for each household by the per resident cost. As shown in **Table 7**, this calculation results in a maximum impact fee of \$348 for single family units and \$270 for multifamily units.

Table 7 Calculation of Maximum Library Fees

Item Description	Estimated Amount
Library Costs Allocated to Fee Program	\$410,963
New Resident Population Growth	3,165
Library Cost per Resident	\$129.85

<u>Residential Land Use</u>	<u>Persons/Unit</u>	<u>Fee Per Unit</u>
Single Family Unit	2.68	\$348
Multifamily Unit	2.08	\$270
Accessory Dwelling Unit (≥ 750 sq.ft.) ¹	1.50	<i>varies in proportion to size of primary residence</i>

[1] Senate Bill 13 (effective 1/1/2020 - 12/31/2024) precludes jurisdictions from charging impact fees on ADUs under 750 square feet. Government Code 65852.2(f)(3)(A) requires that ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. To the extent the legal landscape shifts in the future, the typical household size data for ADUs is provided here to provide guidance if alternative fee calculations are needed.

Source: Economic & Planning Systems, Inc.

Mitigation Fee Act Nexus Findings

Nexus findings are provided below addressing (1) the purpose of the fee, (2) the specific use of fee revenue, (3) the relationship between the use of the fee 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 development. The technical information and calculations provided above support these nexus findings/requirements.

Purpose

The purpose of the fee is to fund library facilities, circulation materials, and associated technological infrastructure necessary to serve new development and ensure that new development pays its proportionate and fair share of future library improvements.

Use of Fee

Fee revenue will contribute funding for the expansion of library facilities, continued investment in circulation materials, and participation in the shared technological infrastructure that supports library functions.

Relationship

New residential development and the associated new residents in Benicia will contribute to Citywide demand for library facilities and other associated improvements. The fee, charged to new residential development, will be used consistent with the manner described above, thus ensuring a relationship between the residential development being charged the fee and the manner in which the fee revenue is used.

Need

New residential development and the associated new residents in Benicia will contribute to citywide demand for library facilities and other associated improvements at the same level as existing residents, and thus require additional facilities and improvements to maintain the current level of service for library facilities.

Proportionality

By establishing the ratio of anticipated residential growth between 2020 and 2040 as a share of the total residential population in 2040 and applying that ratio to the total anticipated library facility costs between 2020 and 2040, the maximum fee levels ensure that only the costs that can be attributed to new residential growth are used to calculate the maximum fee levels. Costs are allocated between residential land uses based on relative people per household assumptions, ensuring proportionality between land use categories.

4. *PARKLAND DEDICATION (QUIMBY) IN-LIEU FEE PROGRAM*

California Government Code Section 66477, a section of the Subdivision Map Act (commonly known as the Quimby Act), allows California jurisdictions to require parkland dedication from new residential subdivisions. The Quimby Act also allows for the establishment of a corresponding fee that can be paid in lieu of dedicating parkland, called a parkland in-lieu fee.

The City's parkland in-lieu fee was first established in 1986 and most recently updated in 1997; it has not been updated since. This study identifies the appropriate parkland dedication requirement as of 2020 under the Quimby Act for the City of Benicia, translates that standard into a per-unit dedication requirement, and quantifies a fee in lieu of the dedication requirement based on current land values.

Parkland Dedication Allocation Methodology

The Quimby Act specifies the methodology for determining the amount of parkland dedication that can be required on a per 1,000-residents basis that can, in turn, be translated into an in-lieu fee using current land values.

Parkland Existing Level of Service

The Quimby Act allows all jurisdictions to establish a parkland service standard (and associated parkland in-lieu fees) using a base standard of 3.0 acres per 1,000 residents. To the extent a jurisdiction provides an existing level of service above 3.0 acres per 1,000 residents, the City may use this higher standard, but cannot use a standard above 5.0 acres per 1,000 residents.

The City of Benicia provides access to a number of neighborhood parks and one community park for a total of 132.8 acres of parkland, as detailed in **Table 8**.¹ Based on this inventory of existing neighborhood and community parkland available to City residents, EPS calculated the existing level of service, as shown in **Table 9**, which is to be maintained in the future as new development occurs. Given the acreage of parkland and number of residents in the City, there are currently 4.8 acres per 1,000 residents in the City of Benicia.

¹ Neighborhood Parks typically serve a residential neighborhood within a ¼- to ¾-mile radius. Generally neighborhood parks range from 2 to 5 acres but may be smaller or larger. Typically, a neighborhood park includes playground equipment, playfields, and picnic facilities. Larger neighborhood parks may include tennis courts, volleyball courts, basketball courts, and restroom facilities. Community Parks are larger recreation areas serving a wider population.

Table 8 City of Benicia Inventory of Improved Parkland

Improved Parkland	Acreage	Type of Park
Arneson Park	0.1	Neighborhood Park
St. Paul's Square Park	0.1	Neighborhood Park
Ethelree Saraiva Park	0.5	Neighborhood Park
Gateway Park	0.5	Neighborhood Park
Turnbull Park	0.5	Neighborhood Park
St. Catherine's Wood	1.3	Neighborhood Park
Duncan Graham	2.0	Neighborhood Park
Park Solano	2.0	Neighborhood Park
Channing Circle	2.5	Neighborhood Park
Matthew Turner Park	2.5	Neighborhood Park
Maria/Ribiero Field	2.6	Neighborhood Park
Waters End Park	2.6	Neighborhood Park
Skillman Park	3.0	Neighborhood Park
Fitzgerald Field	3.4	Neighborhood Park
Civic Center Park	3.5	Neighborhood Park
Overlook Park	3.5	Neighborhood Park
Bridgeview Park	4.5	Neighborhood Park
City Park	4.5	Neighborhood Park
Willow Glen Park	4.5	Neighborhood Park
Francesca Terrace Park	5.0	Neighborhood Park
Southampton Park	6.0	Neighborhood Park
Alvarez West 9th Street Park	6.0	Neighborhood Park
Jack London Park	7.7	Neighborhood Park
Waterfront Park (1st Street Green)	14.0	Neighborhood Park
Benicia Community Park	<u>50.0</u>	Community Park
Total Parkland Acres	132.8	

Sources: City of Benicia Parks & Recreation Department; Economic & Planning

Table 9 Existing Level of Service of Neighborhood and Community Parkland

Item	Amount
City Residents (1)	28,088
2018 Parkland Inventory Acres (2)	132.8
Park Acres per 1,000 Residents	4.73

(1) For purposes of establishing the level of park acreage per 1,000 residents, the Quimby Act requires that the number of residents be based on Federal census data. This population number varies from the ABAG estimates used elsewhere in this study.

(2) The Quimby Act requires that the resident population data and the park acreage data be from the same point in time. The City reports that it has not added any major parkland in the last 10+ years, so the data presented on Table 8 is as true for the year 2018 as it is for the year 2020.

Sources: 2018 American Community Survey (5-year estimates) conducted by the U.S. Census Bureau; City of Benicia; Economic & Planning Systems, Inc.

Parkland Dedication Requirements

The City is justified in establishing a parkland dedication requirement of 4.73 acres per 1,000 residents for new residential development approved through the Subdivision Map Act. Because the Quimby Act requirements are tied to the new population associated with new development, fees for single family and multifamily development are distinguished due to differences in the average number of persons per household.

EPS has developed persons per household estimates based on data from the U.S. Census American Community Survey (5-year estimate, 2014-2018) specific to the City of Benicia. The data indicates the following average household sizes:

- **Single Family Development**—2.68 persons per household
- **Multifamily Development**—2.08 persons per household

Table 10 shows that the application of the parkland service standard of 4.8 acres per 1,000 residents to the estimated persons per household results in parkland dedication requirements of 0.01267 acres (552 square feet) per unit for single family development and 0.00983 acres (428 square feet) per unit for multifamily development.

Value of Parkland

The fee estimates are based on average per acre land value costs for parkland in the Benicia vicinity. The costs of acquiring land for parks will vary on a project-by-project basis. EPS researched and evaluated recent vacant land (suitable for residential development) transactions in the City using Zillow data. Zillow is a privately owned and maintained data source that tracks residential real estate transactions. The data is publicly-available at no charge. Based on 11 transactions during the past 3 years, as shown on **Table 11**, the weighted average value per acre rounds to approximately \$850,000.

Table 10 Parkland Dedication Requirement Calculation

Item		Quimby Land Dedication Calculation	Source/ Calculation
Quimby Requirement (1)	(a)	4.73 acres / 1,000 residents	Quimby Act; City of Benicia
Acres per Resident	(b)	0.00473 acres / resident	(b) = (a) / 1,000
Single Family (2)	(c)	2.68 persons / housing unit	ACS 2014 - 2018 (3)
Multifamily (4)	(d)	2.08 persons / housing unit	ACS 2014 - 2018 (3)
Single Family	(e)	0.01267 acres / housing unit	(e) = (b) * (c)
	(f)	552 sq.ft. / housing unit	(f) = (e) * 43,560
Multifamily	(g)	0.00983 acres / housing unit	(g) = (b) * (d)
	(h)	428 sq.ft. / housing unit	(h) = (g) * 43,560

(1) The Quimby Act allows local jurisdictions to require between 3 and 5 acres of parkland per 1,000 residents, depending on the existing level of service.

(2) Consistent with BMC 17.16.030.G, single family is defined as buildings containing one dwelling unit located on a single lot, including mobile homes and factory-built housing.

(3) Average persons per household in City of Benicia by Units in Structure. (ACS, 2014 - 2018), mobile homes omitted.

(4) Consistent with BMC 17.16.030.E, multifamily is defined as two or more dwelling units on a site (e.g., apartments, condominiums, townhomes), including mobile homes and factory-built housing. For the purposes of the Quimby Land Dedication requirement and in-lieu fee, the multifamily land use category refers to multifamily units on mapped parcels created through the Subdivision Map Act.

Sources: City of Benicia; U.S. Census, American Community Survey (ACS) 2014 - 2018; Economic & Planning Systems, Inc.

Table 11 Land Value based on Vacant Land Transactions

Address	City	Type of Sale	Lot Size (Sq. Ft.)	Lot Size (Acres)	Sales Price	Price per Acre	Date Sold	Underlying Zoning
306 W I Street	Benicia	Vacant Land	6,098	0.14	\$310,000	\$2,214,431	2/27/2019	RS (SF Residential 0-7 DU/AC)
121 E North Street	Benicia	Vacant Land		0.34	\$11,000	\$32,353	12/18/2018	RS (SF Residential 0-7 DU/AC)
1047 W K Street	Benicia	Vacant Land	10,018	0.23	\$350,000	\$1,521,861	10/11/2018	RS (SF Residential 0-7 DU/AC)
1126 E 3rd Street	Benicia	Vacant Land	5,662	0.13	\$215,000	\$1,654,080	10/5/2018	RS (SF Residential 0-7 DU/AC)
1783 Clos Duvall Court	Benicia	Vacant Land	3,920	0.09	\$50,000	\$555,612	9/18/2018	PD (Planned Development)
1451 Park Road	Benicia	Vacant Land		0.56	\$325,000	\$580,357	8/23/2018	PD (Planned Development)
E N Street	Benicia	Vacant Land		0.29	\$122,500	\$422,414	4/15/2018	RS (SF Residential 0-7 DU/AC)
1059 W K Street	Benicia	Vacant Land	10,018	0.23	\$365,000	\$1,587,083	4/6/2018	RS (SF Residential 0-7 DU/AC)
East H Street	Benicia	Vacant Land		0.65	\$540,000	\$830,769	5/18/2017	RM (Medium Density Residential 8-14 DU/AC)
101 Riverview Terrace	Benicia	Vacant Land	6,098	0.14	\$150,000	\$1,071,499	1/12/2017	PD (Planned Development)
1876 Casa Grande Street	Benicia	Vacant Land	9,145	0.21	\$140,000	\$666,856	1/10/2017	RM (Medium Density Residential 8-14 DU/AC)
Rounded Weighted Average Price per Acre						\$850,000		

Sources: Zillow; Economic & Planning Systems, Inc.

Parkland In-Lieu Fees

The in-lieu fee levels that correspond to these parkland dedication requirements can be calculated by multiplying the dedication requirements by the current per acre land value. As shown in **Table 12**, this is equivalent to \$10,770 per unit for single family development and \$8,359 per unit for multifamily development.

Table 12 Estimated Parkland Dedication Requirement and In-Lieu Fee

Item		Quimby In-Lieu Fee Calculation	Source/ Calculation
Quimby Requirement (1)	(a)	4.73 acres/ 1,000 residents	Quimby Act
Land Cost per Acre	(b)	\$850,000 per acre	Zillow / EPS Research
Land Cost per 1,000 Residents	(c)	\$4,018,798 per 1,000 residents	(c) = (a) * (b)
Cost per Resident	(d)	\$4,019 per resident	(d) = (c) / 1,000
Single Family	(e)	2.68 persons/ housing unit	ACS 2014 - 2018 (2)
Multifamily	(f)	2.08 persons/ housing unit	ACS 2014 - 2018 (2)
Single Family	(g)	\$10,770 per unit	(g) = (d) * (e)
Multifamily	(h)	\$8,359 per unit	(h) = (d) * (f)

(1) Quimby Act allows local jurisdictions to require between 3 and 5 acres of parkland per 1,000 residents.

(2) Average persons per household in City of Benicia by Units in Structure. (ACS, 2014 - 2018), mobile homes omitted.

Sources: City of Benicia; Zillow; American Community Survey (ACS) 2014 - 2018; Economic & Planning Systems, Inc.

5. *PARKLAND IMPROVEMENT IMPACT FEE PROGRAM*

This chapter establishes the maximum parkland improvement development impact fee justifiable under the Mitigation Fee Act that could be required of new development in the City of Benicia. The City is updating its park development impact fee, as authorized by the Mitigation Fee Act (California Government Code 66000 et seq.).

The parkland improvement impact fee is being updated to mitigate the impact of new development on the need for improved parkland and trails in the City. The fee could be charged to all new residential and nonresidential development; however, the City has made a policy decision to charge the fee to residential development only.

The technical analysis included in this chapter presents the methodology and analysis to support the maximum fee levels in the City of Benicia under the Mitigation Fee Act, as summarized in the introduction on **Table 1**. To ensure that new residential development is charged a fee that is proportional to residential demand only, the technical analysis below uses a service population that includes nonresidential development, thus allocating costs between residential and nonresidential development. In this way, when the fee is charged only to residential development, the level of the fee excludes costs attributable to nonresidential development.

Per the City's direction, the impact fee would be charged to all new non-subdivision residential development in the City, which is not subject to the Quimby land dedication requirement. The calculation of the updated park improvement development impact fees is described below.

Methodology

The maximum parkland improvement development impact fees are, in part, determined by the City's current acreage of improved parks and trails as well as the average cost of park and trail improvements. This park improvement standard (measured in acres per 1,000 service population) along with the estimated average cost of improving parkland and trails are described below.

Service Population

The service population represents a relative weighting of population (residents) and jobs (employees). This measure allows for proportional allocations of demand for facilities across residential and nonresidential land uses. Even though the City has decided to exempt nonresidential development from this fee, using a service population approach ensures that residential development is only paying its fair share toward improvements that benefit both residents and employees.

For parkland and trail facilities, the demand from employees (relative to residents) is informed by assumptions about the hours of availability of park facilities and an employee's relative opportunity to access the City's park facilities. As shown on **Table 13**, employees are estimated to have approximately 13.2 percent of the opportunity to use the City's parkland and trail facilities compared with a resident. Applying this factor results in a service population estimate of 29,491, as shown in **Table 14**.

Table 13 Employee to Resident Equivalency Calculation

Benicia Residents and Employees	Existing		Relative Access to Park Facilities ²	Weighted Average	Employee Equivalency
	#	%			
Employment Status of Benicia Residents¹					
	Formula: $a = b * 27,570$		b^1	c	$d = b * c$
Not in Labor Force	12,815	46.5%	100.0%	46.5%	
Employed in the City	2,059	7.5%	56.0%	4.2%	
Employed Outside of the City	<u>12,696</u>	<u>46.0%</u>	45.1%	<u>20.7%</u>	
Total Residents	27,570	100.0%		71.4%	100.0%
Residence Status of Benicia Employees¹					
	Formula: $a = b * 14,550$		b^1	c	$d = b * c$
Live in the City ³	2,059	14.2%	0.0%	0.0%	
Live Outside the City	<u>12,491</u>	<u>85.8%</u>	11.0%	<u>9.4%</u>	
Total Jobs	14,550	100.0%		9.4%	13.2%
Employee to Resident Equivalency Factor			(9.4% / 71.4%) = 13.2%		

NOTE: Numbers shown are rounded figures.

[1] Distribution based on data from U.S. Census (OnTheMap 2017). Total residents and jobs are 2020 ABAG estimates.

[2] Weighting represents EPS estimate of relative availability of resident and employee cohorts to use City park facilities.

- ◆ A resident who is not in the labor force is assumed to have access to park facilities 100% of time (13 hours per day, 7 days a week, 48 weeks per year), relative to the other resident and employee cohorts; 100% is equal to 4,368 hours per year.
- ◆ A resident employed in the City is assumed to have access to park facilities 56% of the time (assuming he/she can access park facilities for 5 hours a day, 5 days a week and 13 hours a day for weekend days, for 48 weeks per year).
- ◆ A resident employed outside the City is assumed to access park facilities 45% of the time (3 hours a day, 5 days a week and 13 hours a day for weekend days, for 48 weeks per year).
- ◆ Those employed in the City but living elsewhere are assumed to have access to park facilities 11% of the time (2 hours per day, 5 days per week, 48 weeks per year).

[3] The number of residents who are employed in the City and the number of employees in the City who are residents are the same, representing the same group of unique individuals. This group is reflected both in the Total Residents and the Total Jobs to demonstrate the composition of the totals. As employees, this cohort is assigned a "weight" of 0%, as these individuals are fully reflected in the resident section of the table.

Sources: U.S. Census, LEHD OnTheMap 2017; ABAG/MTC Plan Bay Area 2040 Projections; Economic & Planning Systems, Inc.

Table 14 Service Population Calculation

Item	Base Year (2020)	Buildout (2040)	Absolute Growth	Growth as Share of Future Buildout
Total Residents	27,570	30,735	3,165	10.3%
Total Employees	14,550	24,760	10,210	41.2%
Service Population Calculation¹				
Amount Attributable to Residents (@ 100%)	27,570	30,735	3,165	
Amount Attributable to Employees (@ 13.2%)	<u>1,921</u>	<u>3,268</u>	<u>1,348</u>	
Total Service Population	29,491	34,003	4,513	13.3%
Service Population Growth as a Share of 2040 Service Population			(4,513 / 34,003) =	13.3%

NOTE: Numbers shown are rounded figures.

[1] The attributable share for residents is assumed to be 100% and the attributable share for employees is calculated on Table 13.

Sources: LEHD OnTheMap 2017; ABAG/MTC Plan Bay Area 2040 Projections; Economic & Planning Systems, Inc.

Inventory of Improved Parks and Trails and Service Standard

As noted in the Parkland Dedication (Quimby) In-Lieu Fee Program chapter, the City maintains a total of 132.8 acres of improved parkland. In addition, the City also has 5.2 acres of improved trails, which are detailed in **Table 15**.

Based on this inventory of existing improved parkland and trails in the City, EPS calculated an existing level of service that will be applied to new development. Given the amount of parkland, trails and the service population in the City, there are currently 4.5 acres of parks as well as 0.18 acres of trails per 1,000 service population in the City of Benicia, as shown in **Table 16**.

For development impact fees under the Mitigation Fee Act, if the City establishes its maximum fee schedule based on the current, effective level of service standard, the City would be requiring new development to contribute a consistent and proportional share with no fee-related requirement to backfill for existing deficiencies. City staff has indicated that parks and recreation facilities are available to be used by both residents and workers, so the service standard of 4.5 acres per 1,000 service population is used (rather than the 4.73 acres per 1,000 resident standard used in the Quimby parkland in-lieu fee) to establish the maximum development impact fee on new development.

Table 15 City of Benicia Parkland and Trails Inventory

Active Areas	Acreage	Type of Park Facility
Improved Parkland		
Arneson Park	0.1	Neighborhood Park
St. Paul's Square Park	0.1	Neighborhood Park
Ethelree Saraiva Park	0.5	Neighborhood Park
Gateway Park	0.5	Neighborhood Park
Turnbull Park	0.5	Neighborhood Park
St. Catherine's Wood	1.3	Neighborhood Park
Duncan Graham	2.0	Neighborhood Park
Park Solano	2.0	Neighborhood Park
Channing Circle	2.5	Neighborhood Park
Matthew Turner Park	2.5	Neighborhood Park
Maria/Ribiero Field	2.6	Neighborhood Park
Waters End Park	2.6	Neighborhood Park
Skillman Park	3.0	Neighborhood Park
Fitzgerald Field	3.4	Neighborhood Park
Civic Center Park	3.5	Neighborhood Park
Overlook Park	3.5	Neighborhood Park
Bridgeview Park	4.5	Neighborhood Park
City Park	4.5	Neighborhood Park
Willow Glen Park	4.5	Neighborhood Park
Francesca Terrace Park	5.0	Neighborhood Park
Southampton Park	6.0	Neighborhood Park
Alvarez West 9th Street Park	6.0	Neighborhood Park
Jack London Park	7.7	Neighborhood Park
Waterfront Park (1st Street Green)	14.0	Neighborhood Park
Benicia Community Park	<u>50.0</u>	Community Park
Total Parkland Acres	132.8	
Improved Trails [1]		
Paved Open Space Trails	<u>5.2</u>	Class I Multi-Use Trails
Total Trail Acres	5.2	

[1] Paved trails within open space areas, including Lake Herman Regional Park trails, the Braitto Open Space trail, and the Water's End trail.

Sources: City of Benicia Parks & Recreation Department; Economic & Planning Systems, Inc.

Table 16 Parks and Trails Existing Level of Service

Item	Amount
City Service Population [1]	29,491
2020 Inventory of Improved Parkland (acres) [2]	132.8
Parks Acreage per 1,000 Service Population	4.50
2020 Inventory of Improved Trails (acres) [2]	5.2
Trails Acreage per 1,000 Service Population	0.18

[1] See Table 14.

[2] See Table 15.

Sources: City of Benicia; Economic & Planning Systems, Inc.

Parkland and Trails Improvement Costs

Based on discussions with City staff, the parkland improvements costs used for this fee calculation are derived from two prior park improvement projects as well as planned trail improvements in the City, as noted in **Table 17**. The weighted, per acre cost of the two park improvement projects, adjusted to 2020 dollars, amounts to approximately \$787,000. This value does not include land acquisition.

The cost of improving parkland will vary on a project-by-project basis; however, City staff determined this amount is a reasonable average planning-level cost estimate for the purpose of establishing this fee. The cost of improving an acre of trails to a Class I Multi-Use Path standard is \$1,153,000 in 2020 dollars.

Table 17 Parkland and Trails Improvement Costs

Item	Nominal Cost	Land Acres	Nominal Per Acre Cost	2020 Per Acre Cost ¹
	<i>a</i>	<i>b</i>	<i>c = a / b</i>	<i>d = c * inflation</i>
Waterfront Park ²	\$2,700,000	5.0	\$540,000	\$635,133
Water's End Park	\$1,900,000	2.7	\$703,704	\$1,067,556
Parkland Weighted Average³			\$597,000	\$787,000
Trails⁴	\$5,635,000	5.2	\$1,084,000	\$1,153,000

[1] 2020 cost escalation is determined by applying the increase in the ENR Construction Cost Index for the San Francisco region. For Waterfront Park, the costs were inflated from 2014 to 2020; for Water's End Park, costs were increased from 2006 to 2020.

[2] Only five of the 14 acres at Waterfront Park were improved given that the park contains protected coastal wetlands and marshes.

[3] Amounts shown are rounded to the nearest thousand.

[4] Cost estimate for Class I multi-use paths detailed in the City's Draft Active Transportation Plan (as submitted to the Solano County Transportation Authority). This 2019 nominal estimate has been increased to 2020 using the ENR Construction Cost Index. Amounts are rounded to the nearest thousand.

Sources: City of Benicia; Engineering News Record Construction Cost Index; Economic & Planning Systems, Inc.

Fee Calculation

The Mitigation Fee Act maximum parkland development impact fee calculations are driven by (1) the parkland and trail service standards per 1,000 service population, (2) the parkland and trail improvement cost estimates, and (3) the persons per household/employment densities. The fee calculation combines these assumptions to develop the maximum amount permissible to charge for the park improvement development impact fees.

Table 18 shows the calculation of the average cost of parkland and trail improvements per service population based on the City's current acreage of parkland and trails, as well as average improvement costs per acre, as described previously. The combination of the existing level of service of 4.5 acres of parkland and 0.18 acres of trails per 1,000 service population and the average improvement cost of \$787,000 per parkland acre and \$1,153,000 per trails acre results in parkland costs of \$3,543,963 and trails costs of \$203,305 per 1,000 service population. In turn, the average parkland/trails improvement costs total approximately \$3,747 per resident or employee.

The technical analysis uses a service population that includes nonresidential development to arrive at the cost per service population, thus proportionately allocating costs between residential and nonresidential development. In this way, when the fee is charged only to

residential development, the level of the fee excludes costs attributable to nonresidential development.

Table 18 Cost per Service Population

Item		Park Improvement Fee	Source/ Calculation
Existing Parkland Level of Service	(a)	4.50 acres/ 1,000 service pop.	City of Benicia
Parks Improvement Cost per Acre [1]	(b)	\$787,000 per acre	City of Benicia
Cost per 1,000 Service Population	(c)	\$3,543,963	(c) = (a) * (b)
Existing Trails Level of Service	(d)	0.18 acres/ 1,000 service pop.	City of Benicia
Trails Improvement Cost per Acre [2]	(e)	\$1,153,000 per acre	City of Benicia
Cost per 1,000 Service Population	(f)	\$203,305	(f) = (d) * (e)
Total Cost per 1,000 Service Population	(g)	\$3,747,269	(g) = (c) + (f)
Total Cost per Service Population	(h)	\$3,747	(h) = (g) / 1,000

[1] Per acre improvement costs, consistent with recent park improvement project costs in the City of Benicia. See Table 17 for cost calculation.

[2] Per acre improvement costs consistent with City's Draft Active Transportation Plan prepared for Solano Transportation Authority.

Sources: City of Benicia; Economic & Planning Systems, Inc.

As shown in **Table 19**, to determine the maximum park improvement development impact fees by land use, the per service population cost is applied to the relevant service population generation per residential unit type. To see the per service population cost applied to nonresidential uses, see **Appendix B**.

Table 19 Estimated Park Impact Fee

Land Use	Cost per Service Population <i>a</i>	Service Population per Unit [1] <i>b</i>	Park Improvement Impact Fee <i>c = a * b</i>
Residential			
Single Family Unit	\$3,747	2.68	\$10,043 per unit
Multifamily Unit	\$3,747	2.08	\$7,794 per unit
Accessory Dwelling Unit (≥ 750 sq.ft.)[2]	\$3,747	1.50	<i>varies in proportion to size of primary residence</i>

[1] See Table 4.

[2] Senate Bill 13 (effective 1/1/2020 - 12/31/2024) precludes jurisdictions from charging impact fees on ADUs under 750 square feet. Government Code 65852.2(f)(3)(A) requires that ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. To the extent the legal landscape shifts in the future, the household size data is provided here to provide guidance if alternative fee calculations are needed.

Sources: City of Benicia; Economic & Planning Systems, Inc.

As shown above, these maximum park development impact fees are driven by the existing service standard, rather than a capital improvement list. Most of the City’s park plans date to the 1990s and are in need of update. One exception is the adopted plan for the Waterfront Park, which includes a regional trail segment, improved pathways and parking, three plazas, and a consolidated green. The City has also initiated an update of its Parks, Trails and Open Space Master Plan, which will include a Capital Improvement Program that will guide the use of the fee revenue for new investments in parkland and trails improvements.

Mitigation Fee Act Nexus Findings

Nexus findings are provided below addressing (1) the purpose of the fee, (2) the specific use of fee revenue, (3) the relationship between the use of the fee 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 development. The technical information and calculations provided above support these nexus findings/requirements.

Purpose

The purpose of the fee is to fund improved parkland and trails in the City necessary to serve new development and to ensure that new development pays its fair share of capital facilities costs.

Use of Fee

Fee revenue will contribute funding towards planning, designing, developing, and improving existing and newly acquired parkland and trails.

Relationship

New residential and non-residential development and the associated new residents and workers in Benicia will increase the City's demand for improved parkland and trails. Fee revenue from this new development will be used to complete parkland and trail improvements, thereby increasing the availability of improved parkland and trails consistent with the demand of the new residents and workers.

Need

Each new residential and non-residential development project will add to the incremental demand/need for improved parkland and trails. As a result, new improved parkland and trails are necessary to maintain the City's existing level of service.

Proportionality

The existing, effective improved parkland and improved trails service standards in the City are used to ensure that new development funds sufficient parkland and trail improvements to maintain the existing service standards in the City, but no more. In this way, the contribution of new development is proportional to its impact and is not expanded beyond its appropriate share.

6. TRANSPORTATION FEE PROGRAM

This chapter presents the analysis, nexus methodology, findings, and defensible fee amounts for transportation facilities. The City of Benicia last updated its Traffic Impact Fee (TIF) program and its associated fees in February 2014.² As part of this 2020 update, the City has elected to expand the fee program to also include multimodal improvements such as bikeways and sidewalks. As such, moving forward, this fee program will be referred to as the Transportation Impact Fee (TIF), rather than the existing Traffic Impact Fee (TIF).

The fees presented in this chapter represent the highest level of fees that could be legally adopted based upon the State's legally-mandated nexus requirements.

Purpose and Approach

A continuing premise of the TIF program is that on a citywide basis, traffic improvements will be most important on the major streets. While collector and local streets also serve important travel needs, the major street network is critical in providing the basic transportation infrastructure for the City. Thus, this updated TIF has again focused on the major streets and key intersections and interchanges along the major streets. The impact assessment and nexus methodology of this component of the fee program remains consistent with the existing TIF study.

The primary purpose of this update is to bring the fee program in line with current conditions, re-assess the City's transportation improvement needs, and update improvement project cost estimates. To address these objectives, there are four primary changes in methodology between this 2020 fee update and the current traffic fee:

1. **The fee program has been updated to assess proportional share on a "trip mile" basis rather than "trip" basis in order to bring the fee in line with current transportation analysis.** Unlike the existing TIF, which allocated fees per land use category strictly based on trip generation rates, this TIF incorporates average trip length as well. By incorporating trip length, the fee program proportionally allocates impact fee share based on the length of anticipated trips in addition to the quantity of anticipated trips. This change in cost allocation methodology brings the TIF proportional cost allocation in line with the statewide shift towards using vehicle-miles-travelled (VMT) as a primary transportation impact criterion, per Senate Bill 743. In addition, in December 2019, the Benicia City Council adopted VMT policies in compliance with ABAG program requirements for the downtown Priority Development Area (PDA).
2. **The land use growth assumptions in this 2020 TIF update are updated using refined growth assumptions.** The existing TIF included trips associated with both full buildout of the City's General Plan and full buildout of the then-proposed Benicia Business Park. The 2020 TIF update reflects land use growth assumptions that are based on 2020 to 2040 household and employee growth figures from the Association of Bay Area Governments (ABAG), plus

² Omni-Means. *2014 Citywide Traffic Impact Fee Update*. City of Benicia, October, 2014.

employment growth in the former Benicia Business Park, including the 2017 Benicia Industrial Park Transportation and Employment Center Plan.³ These growth assumptions were vetted and refined based on discussions with the City and are shown on **Table 2**.

- 3. The fee program has been updated to include multimodal improvements.** This updated 2020 TIF has been expanded to include bicycle and pedestrian improvements. The source of improvements, based on discussion with City staff, is the Solano Transportation Authority (STA) Active Transportation Plan for Benicia. The nexus methodology of this component of the fee program is new for the City's TIF program, and is based on establishing a service standard per capita. This approach is also referred to as an asset-based methodology.
- 4. Improvements in the Benicia Business Park that had been considered CEQA mitigation improvements previously are now fully included in the 2020 TIF.** The existing TIF excluded the cost of transportation improvement projects associated with the Benicia Business Park's CEQA mitigation measures. However, because the Benicia Business Park project is no longer being pursued, as it was proposed at the time of the existing TIF study's preparation, any improvements required to support future land development are now included in the 2020 TIF. If a specific development application is brought forward in the Benicia Business Park / Industrial Park area that exceeds the growth anticipated in this TIF, additional improvements may be required to maintain acceptable level of service (LOS) per the City's standards.

2020 TIF Update, Streets and Intersections

In the 2020 TIF update, the *Streets and Intersections* component of the fee is similar to the existing TIF program. To establish the 2020 TIF *Streets and Intersections* improvement needs, the following principal analysis steps were undertaken:

- Quantify Year 2020 (Existing) PM Peak Hour Traffic Operations.
- Forecast and Quantify Year 2040 (Future) PM Peak Hour Traffic Operations.
- Identify Future Improvement Needs and Develop Cost Estimates.

Level of Service Standard

Level of Service (LOS), consistent with City General Plan policy, was used to quantify existing and future intersection operations. LOS is expressed using a letter from A to F, with LOS A being best and LOS F being worst. LOS in this study was quantified using the *Synchro* (Trafficware) and *SIDRA Intersection* (Akselik & Associates) software suites, using *Highway Capacity Manual, 6th Edition* methodologies, where LOS is based on average vehicle delay. The City's General Plan Circulation Element establishes acceptable LOS targets for intersections:

³ Job growth capacity at the Benicia Business Park and/or Benicia Industrial Park is not reflected in ABAG's 2040 projections, yet City staff anticipates that this growth will still occur and have determined that it represents an important part of planning for Benicia's future. As such, the job growth capacity within this potential growth area is added to the ABAG estimates. Anticipating this potential job growth at this time results in more conservative (i.e., lower) fees.

“On the local, non-freeway road network in Benicia, traffic conditions are best represented by the operating level of intersections, because intersections are the primary source of delay and “bottlenecks”. Traffic operations at intersections are described in terms of Level of Service (LOS). LOS D is generally accepted as the standard for intersection operation and has been adopted as the standard for Benicia. (See Policy 2.20.1.)

Per the City’s adopted General Plan, LOS D was taken as the generally accepted service standard in this study. Where an intersection operates at LOS E or F, a deficiency is identified.

Year 2020 (Existing) Peak Hour Traffic Operations

The 2014 TIF Update collected intersection counts and assessed intersection capacity at 10 locations, and relied otherwise on analyses completed in other recent studies to establish existing operational conditions, namely the Benicia Business Park EIR. For this 2020 TIF update, new traffic counts were collected at 25 intersections citywide. **Figure 1** presents the intersection study locations for the 2020 TIF Update, including the existing intersection control types and geometric lane configurations.

Year 2020 (Existing) Peak Hour Traffic Counts

GHD collected existing AM and PM peak hour traffic counts at the 25 study intersections shown in **Figure 1**. GHD collected counts on Thursday, October 24, 2019 during typical weekday conditions, while area schools were in session.

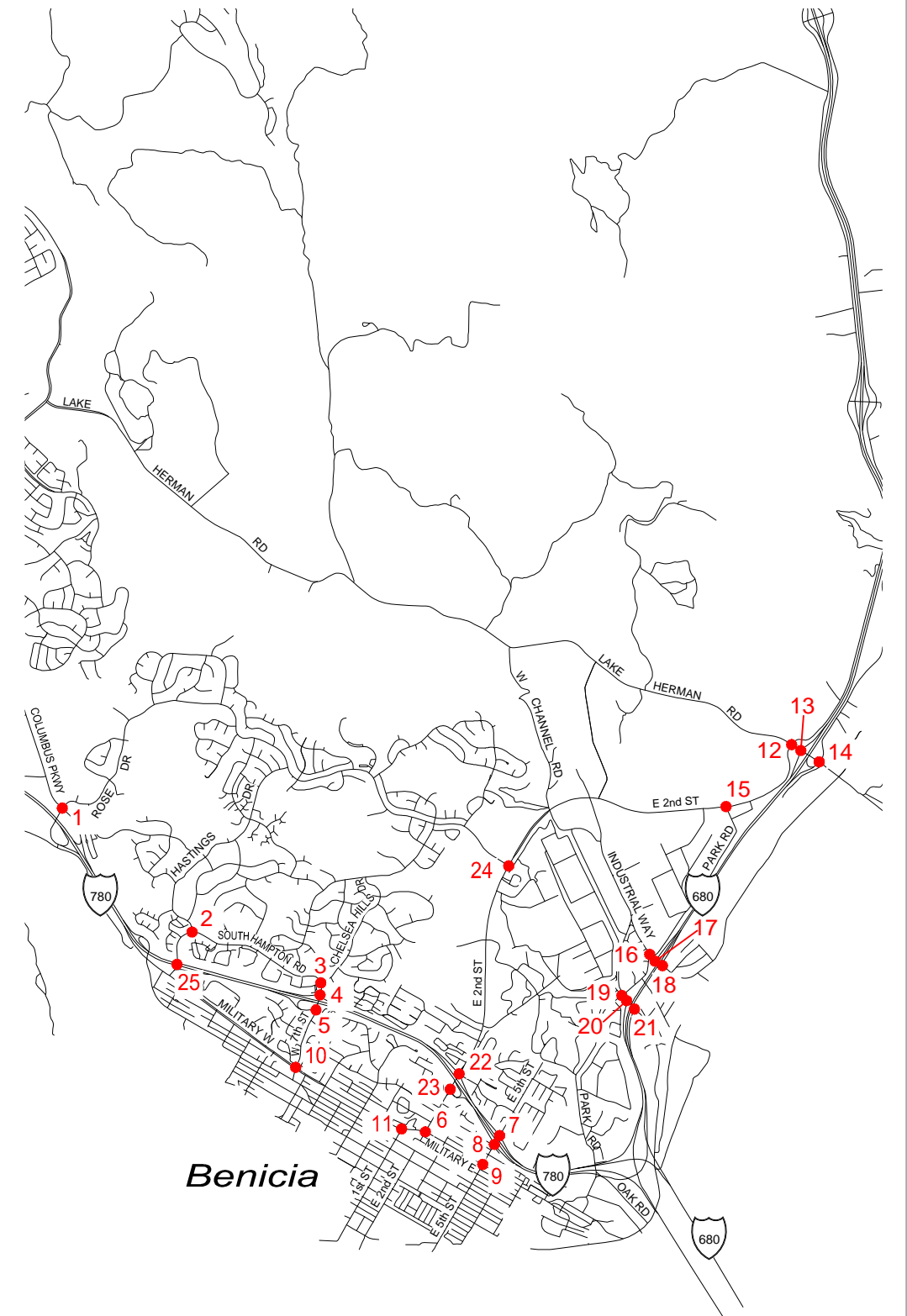
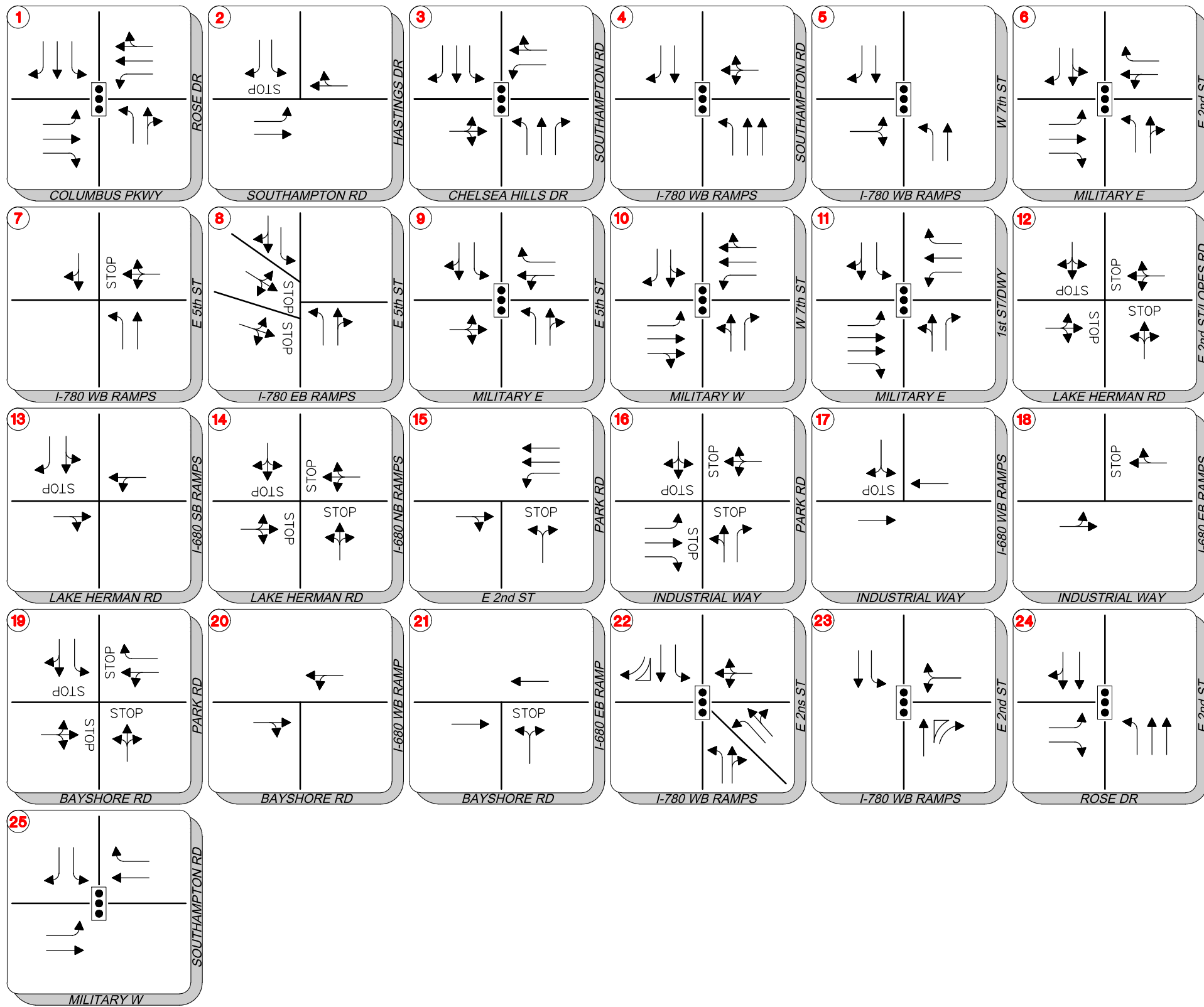
An intersection’s AM and PM peak hours are defined as the highest four consecutive, 15-minute periods of traffic flow between 7:00-9:00 a.m. and 4:00-6:00 p.m., respectively.

Figure 2 presents the Year 2020 (existing) AM and PM peak hour turning movement counts.

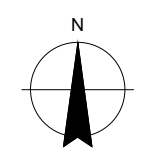
Year 2020 (Existing) Peak Hour Intersection LOS

Table 20 presents the results of the Year 2020 (existing) peak hour intersection capacity analysis, using the intersection geometrics presented in **Figure 1** and the traffic volumes presented in **Figure 2**.

As shown in **Table 20**, two intersections currently fail the City’s acceptable LOS threshold of “D”. These are the intersections of East 5th Street and both sets of I-780 ramp terminals. These intersections were also both found to operate at LOS E/F in the 2014 TIF Update.



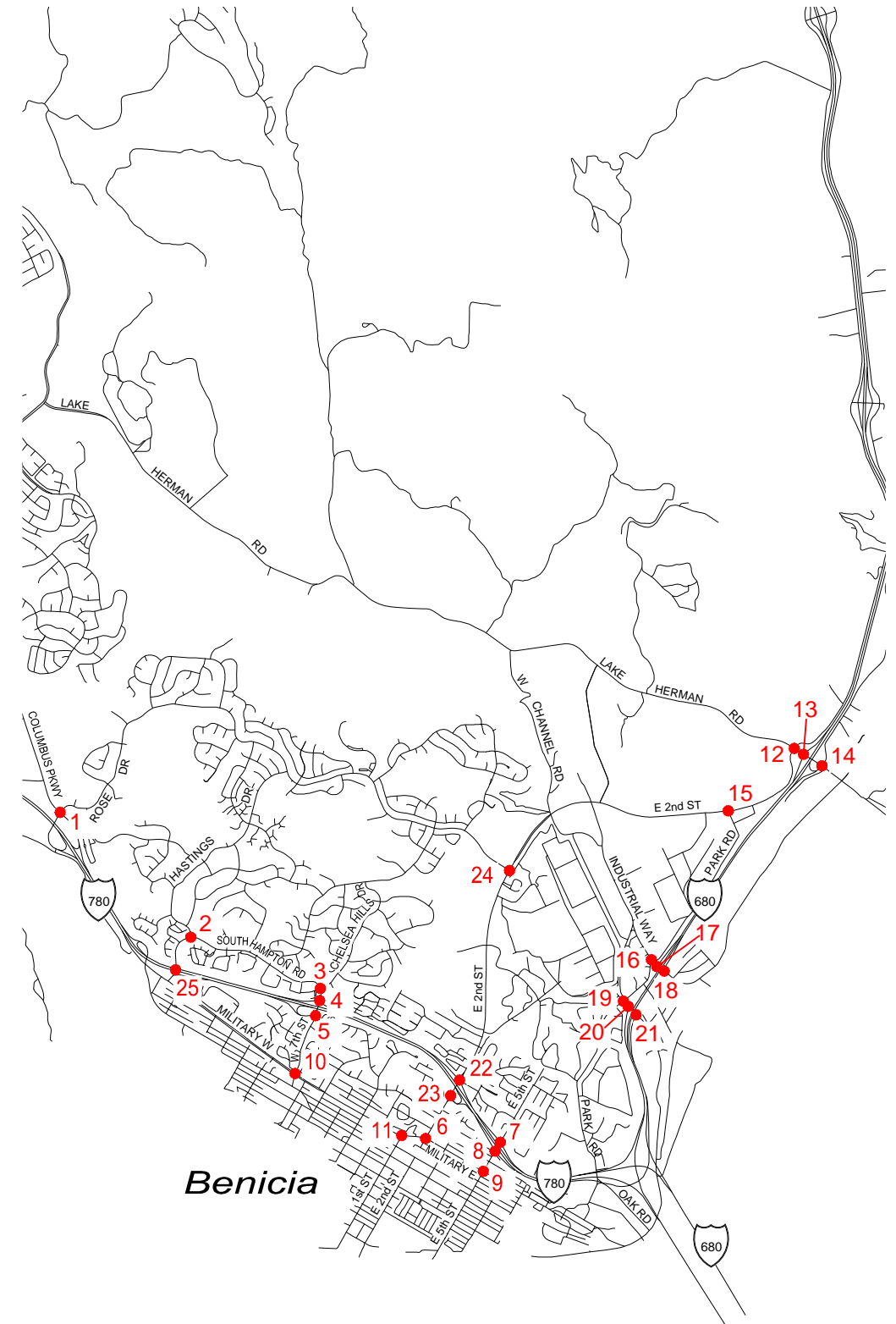
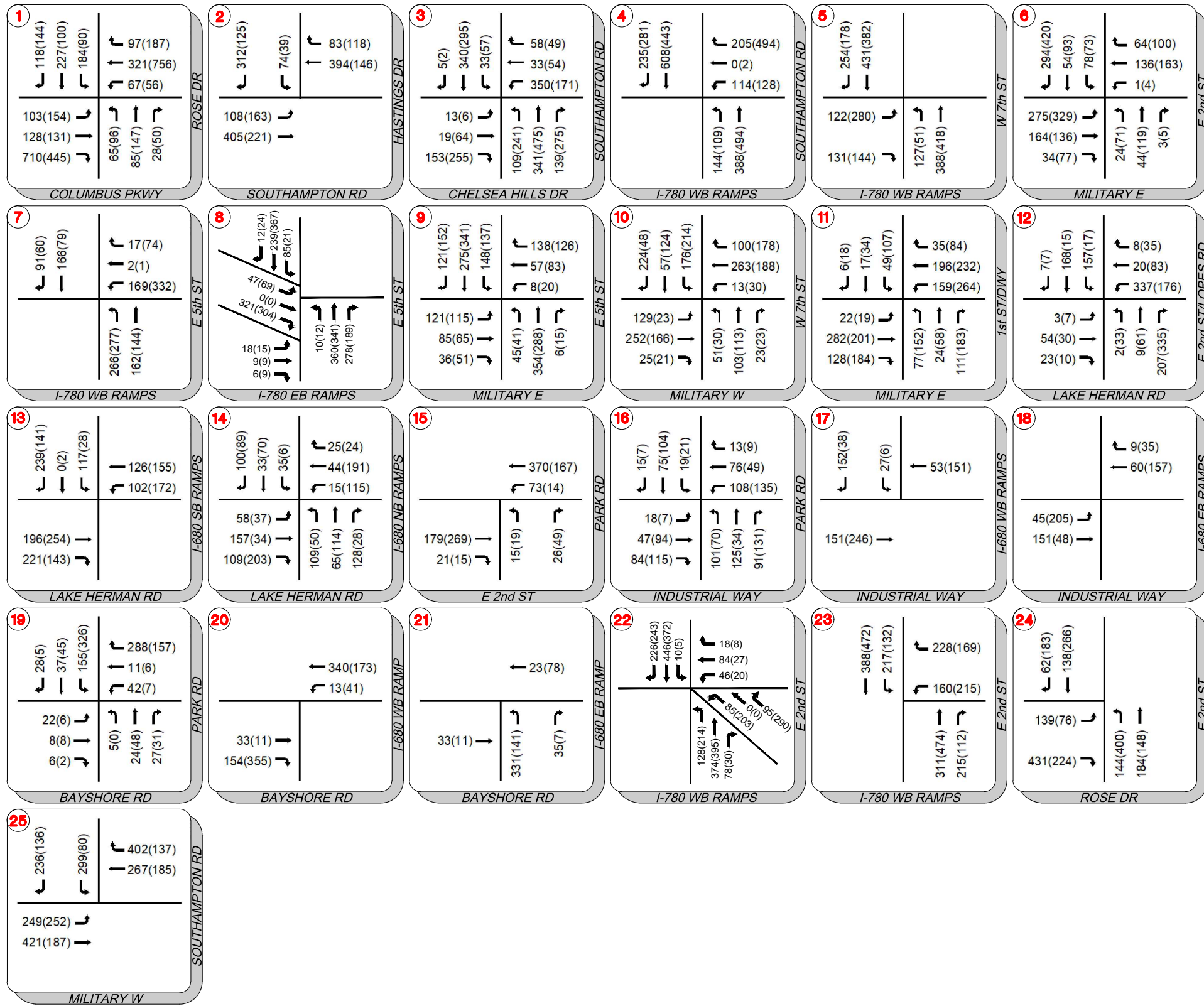
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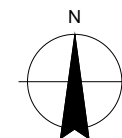
City of Benicia
 BENICIA DEVELOPMENT IMPACT FEE UPDATE
**EXISTING LANE GEOMETRICS
 AND CONTROL**

Project No. 11200265
 Report No. 1
 Date JULY 2020

FIGURE 1



LEGEND:
 XX - AM PEAK HOUR TRAFFIC VOLUMES
 (XX) - PM PEAK HOUR TRAFFIC VOLUMES



City of Benicia
 BENICIA DEVELOPMENT IMPACT FEE UPDATE

**EXISTING PEAK HOUR
 TRAFFIC VOLUMES**

Project No. 11200265
 Report No. 1
 Date JULY 2020

FIGURE 2

Table 20 Year 2020 (Existing) Intersection Peak Hour LOS

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Columbus Pkwy & Rose Dr	Signal	D	15.3	B	14.7	B
2	Southampton Rd & Hastings Dr	TWSC	D	24.1	C	12.9	B
3	Southampton Rd & Chelsea Hills Dr/ Shopping Center Driveway	Signal	D	23	C	19.6	B
4	Southampton Rd & I-780 WB Ramps	Signal	D	12.6	B	12.9	B
5	Southampton Rd & I-780 EB Ramps	Signal	D	10.5	B	11.5	B
6	E 2nd St & Military East	Signal	D	9.7	A	13.5	B
7	E 5th St & I-780 WB Ramps	TWSC	D	107.7	F	182.7	F
8	E 5th St & I-780 EB Ramps/E O St	TWSC	D	55.8	F	42.7	E
9	E 5th St & Military East	Signal	D	7.9	A	7.1	A
10	W 7th Street & Military West	Signal	D	18.8	B	14.3	B
11	1st St / Shopping Center Driveway & Military West	Signal	D	10.3	B	12.7	B
12	Lake Herman Rd & E 2nd St/Lopes Rd	AWSC	D	15.5	C	14.8	B
13	Lake Herman Rd & I-680 SB Ramps	TWSC	D	8.7	A	9.2	A
14	Lake Herman Rd & I-680 NB Ramps	AWSC	D	13.3	B	16.5	C
15	E 2nd St & Park Rd	TWSC	D	10.3	B	10.5	B
16	Industrial Way & Park Rd	AWSC	D	13	B	13.4	B
17	Industrial Way & I-680 SB Off Ramp	TWSC	D	9.9	A	10.2	B
18	Industrial Way & I-680 NB On Ramp	TWSC	D	5.6	A	8.6	A
19	Bayshore Rd/Refinery Driveway & Park Rd	AWSC	D	11.9	B	13	B
20	Bayshore Rd & I-680 SB On Ramp	TWSC	D	1.1	A	1.8	A
21	Bayshore Rd & I-680 NB Off Ramp	TWSC	D	12.8	B	10.5	B
22	E 2nd St & I-780 WB Ramps/E S St	Signal	D	20	B	27.4	C
23	E 2nd St & I-780 EB Ramps	Signal	D	13.9	B	13.7	B
24	E 2nd St & Rose Dr	Signal	D	10.9	B	17.4	B
25	Southampton Rd & Military West	Signal	D	54.8	D	9.2	A

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC & Signal

Year 2040 (Future) Peak Hour Traffic Operations

Year 2040 conditions were simulated by applying the anticipated 2020 to 2040 housing and employment growth forecasts to the Solano-Napa Activity Based Model (SNABM). The calculation of growth increment for this 2020 update is presented in **Table 2**. The growth in households and employees, shown below in **Table 21**, was geographically allocated to the Traffic Analysis Zone (TAZ) structure of the SNABM and then refined by City staff based on the City’s General Plan, Priority Development Areas (PDAs), and knowledge of development activity. This process ensured that the SNABM model’s future land use growth in the City of Benicia was consistent with the growth forecasts.

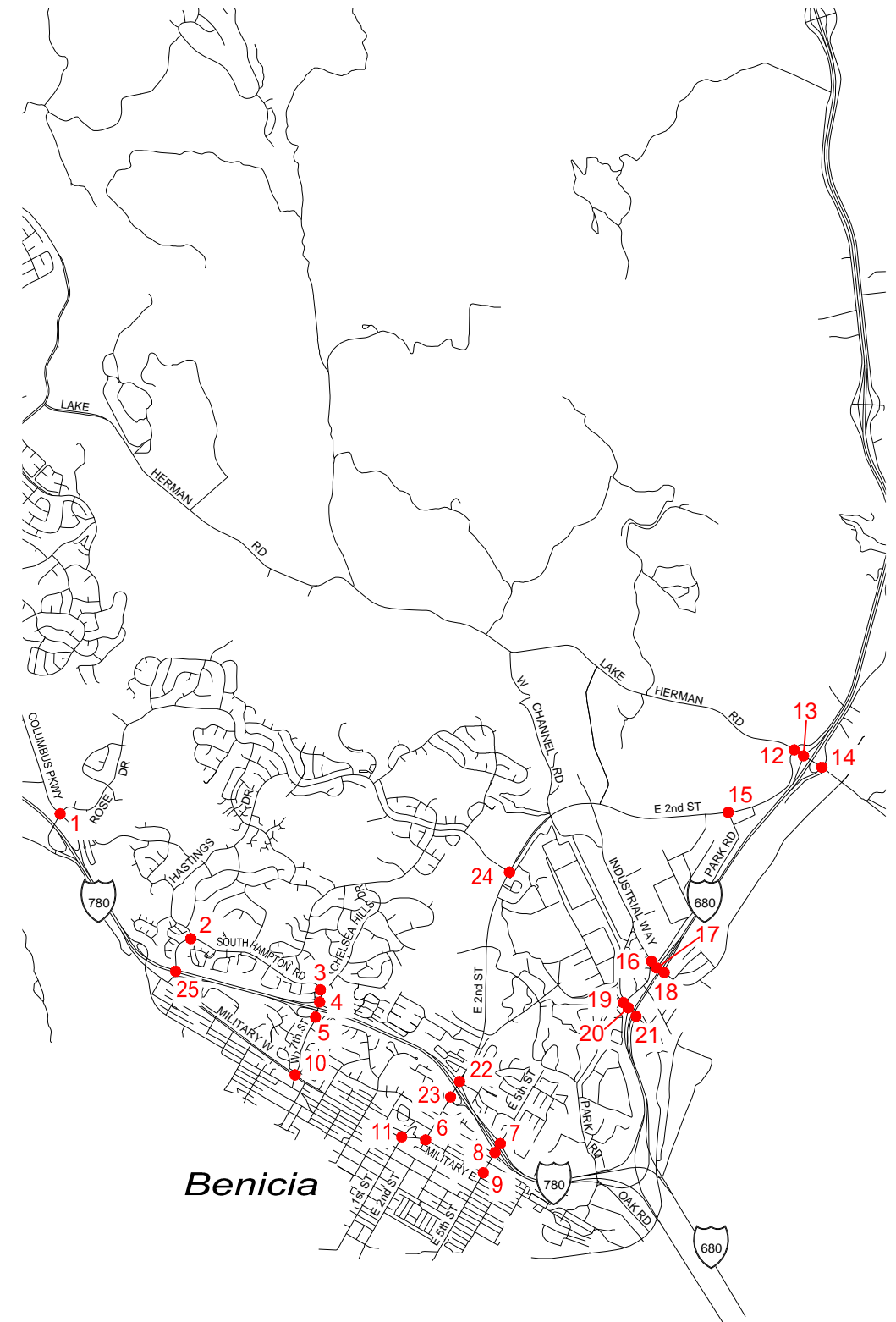
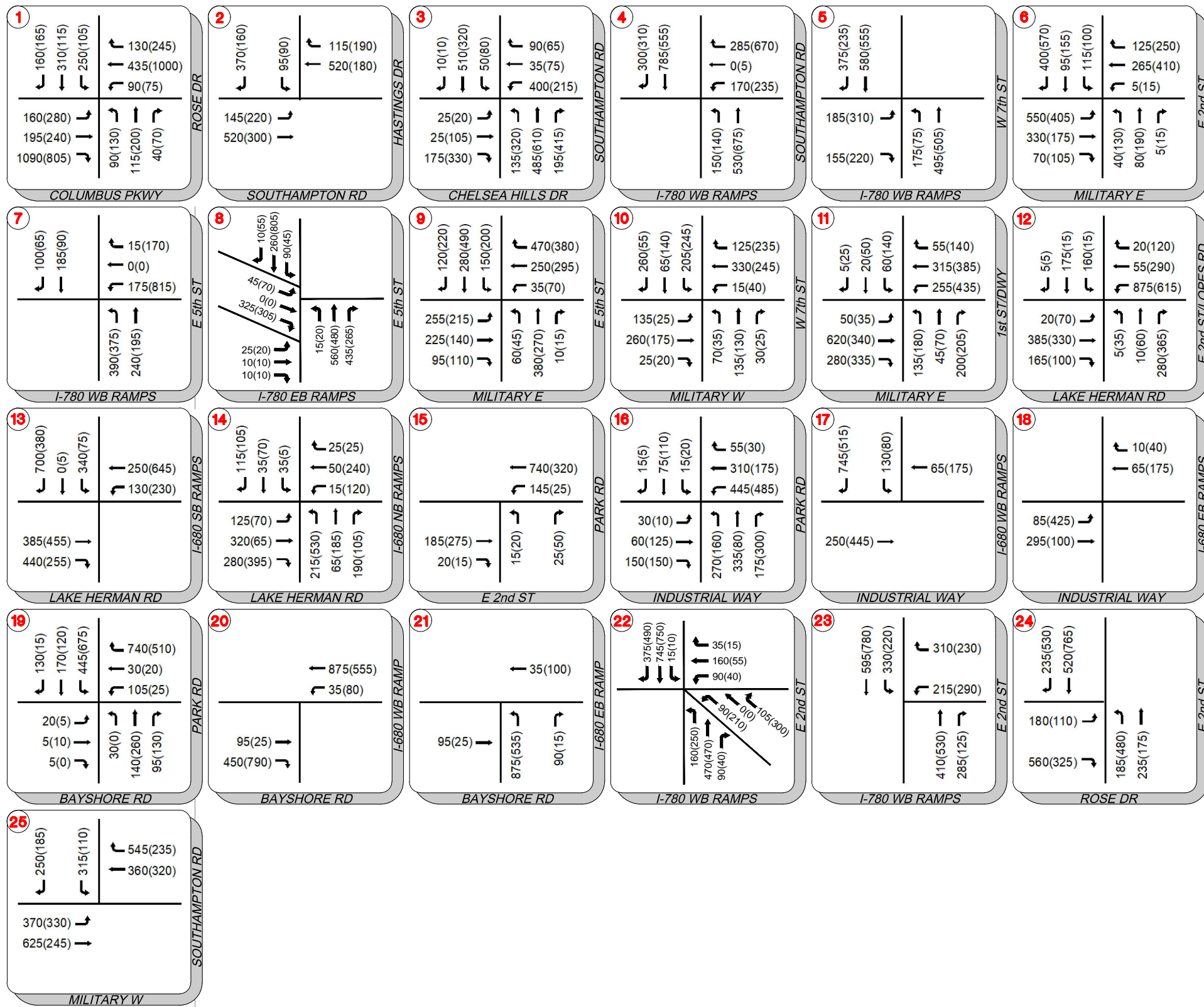
Table 21 2020 to 2040 Household and Employee Growth

Description	Amount
Total Household Growth (Dwelling Units)	830
Total Employment Growth (Jobs)	10,210

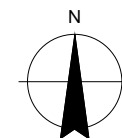
While adequate on a regional basis, the SNABM travel demand model structure, including the TAZ geography and roadway network detail, are inadequate to directly derive accurate intersection turning movement forecasts. GHD used the SNABM model outputs to calculate growth increments and growth rates in various parts of the City. These growth increments were then applied to existing intersection turning movements counts to generate forecasts, and the growth rates were used to validate the resulting forecasts against the SNABM model’s outputs. The resulting Year 2040 intersection turning movements are presented in **Figure 3**.

Year 2040 (Future) Peak Hour Intersection LOS

Table 22 presents the results of the Year 2040 (future) peak hour intersection capacity analysis, using the existing intersection geometrics and the traffic volumes presented in **Figure 3**. As shown in **Table 22**, several intersections are anticipated to exceed the City’s acceptable LOS threshold of “D” by Year 2040. These future intersection deficiencies are consistent with the findings of the 2014 TIF study at intersections 1 through 10. Intersections 11 through 25 were not assessed in the 2014 TIF study, as they were part of the Benicia Business Park EIR, and improvements at these locations, at that time, were assumed to be included as mitigation measures for that project.



LEGEND:
 XX - AM PEAK HOUR TRAFFIC VOLUMES
 (XX) - PM PEAK HOUR TRAFFIC VOLUMES



City of Benicia
 BENICIA DEVELOPMENT IMPACT FEE UPDATE
CUMULATIVE PEAK HOUR TRAFFIC VOLUMES

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 Report No. 1
 Date JULY 2020

FIGURE 3

Table 22 Year 2040 (Future) Intersection Peak Hour LOS

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Columbus Pkwy & Rose Dr	Signal	D	71.9	E	42.4	D
2	Southampton Rd & Hastings Dr	TWSC	D	60.7	F	23.7	C
3	Southampton Rd & Chelsea Hills Dr/Shopping Center Driveway	Signal	D	45.4	D	65.5	E
4	Southampton Rd & I-780 WB Ramps	Signal	D	28	C	60.1	E
5	Southampton Rd & I-780 EB Ramps	Signal	D	15	B	20.2	C
6	E 2nd St & Military East	Signal	D	30.5	C	57.8	E
7	E 5th St & I-780 WB Ramps	TWSC	D	418.5	F	1692.4	F
8	E 5th St & I-780 EB Ramps/E O St	TWSC	D	185.8	F	56.7	F
9	E 5th St & Military East	Signal	D	40.3	D	53.3	D
10	W 7th Street & Military West	Signal	D	45.1	D	20.9	C
11	1st St / Shopping Center Driveway & Military West	Signal	D	15	B	19.9	B
12	Lake Herman Rd & E 2nd St/Lopes Rd	AWSC	D	365	F	328	F
13	Lake Herman Rd & I-680 SB Ramps	TWSC	D	818.8	F	546.9	F
14	Lake Herman Rd & I-680 NB Ramps	AWSC	D	128.2	F	320.4	F
15	E 2nd St & Park Rd	TWSC	D	11.9	B	10.6	B
16	Industrial Way & Park Rd	AWSC	D	312.6	F	219.5	F
17	Industrial Way & I-680 SB Off Ramp	TWSC	D	61	F	72.9	F
18	Industrial Way & I-680 NB On Ramp	TWSC	D	4	A	27.6	D
19	Bayshore Rd/Refinery Driveway & Park Rd	AWSC	D	170.4	F	173.2	F
20	Bayshore Rd & I-680 SB On Ramp	TWSC	D	6.1	A	45.8	E
21	Bayshore Rd & I-680 NB Off Ramp	TWSC	D	217.2	F	22.9	C
22	E 2nd St & I-780 WB Ramps/E S St	Signal	D	77.5	E	126.6	F
23	E 2nd St & I-780 EB Ramps	Signal	D	29.8	C	28.2	C
24	E 2nd St & Rose Dr	Signal	D	19.5	B	72.3	E
25	Southampton Rd & Military West	Signal	D	85.3	F	11.9	B

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC & Signal

Year 2040 (Future) Traffic Capacity Improvement Needs

The Year 2040 (future) intersection LOS analysis presented in **Table 22** serves as the primary source to identify future traffic operational improvements needed to support the City's 2020 to 2040 growth. Roadway improvements included in the City's existing TIF were also reviewed and determined to remain necessary to support travel demand from future land development. A complete list of intersection improvements, street segment improvements, and other related projects is included in **Appendix C**.

2020 TIF Update—Streets and Intersections Summary

Based on the analyses presented in the preceding sections, **Table 23** presents the summary of *Streets and Intersections* improvements for the 2020 TIF.

Table 23 presents the existing TIF cost alongside the 2020 TIF cost estimate in order to provide a comparison between programs. Notes in the last column indicate changes in the 2020 TIF relative to the existing TIF.

Revised Project Scopes in 2020 TIF

Where noted in **Table 23**, some projects from the existing TIF were replaced with new projects in the 2020 TIF. These changes were all associated with proposed capacity improvements to I-680 interchange ramp terminals at Bayshore Road and Industrial Way. The existing TIF included a new ramp to ramp connection, parallel to Park Road, between the I-680 northbound off-ramp at Bayshore Road and the I-680 northbound on-ramp at Industrial Way. The feasibility of this new connection, upon further review, led the project team to develop a new project scope that would provide the same capacity improvement need without a new viaduct between ramp termini. The revised project scopes are designed to maintain acceptable circulation in this area while avoiding potential environmental and right-of-way impacts associated with a new viaduct.

Table 23 2020 TIF Update—Streets and Intersections Cost Summary

ID	Description	From	To	Intersection	2014 Estimated Cost	2020 Estimated Cost	2014 to 2020 Change Notes
Roadway Projects							
R1	New Roadway	Bayshore Road		Industrial Way		\$ -	Replaced by I14 to I18
R2	Park Road	Sulphur Springs Creek		Industrial Way	\$16,347,474	\$ -	Replaced by I14 to I18
R3	New Roadway	East 2nd Street		Park Road	\$3,570,000	\$ -	Replaced by Alternate Projects
R4	Park Road	Oak Drive		New Roadway	\$280,000	\$ -	Complete
R5	Industrial Way	East 2nd Street		I-680 NB Off-Ramp	\$1,100,000	\$1,600,000	Cost Updated
R6	Military West	West 2nd Street		West 5th Street	\$20,870	\$30,000	Cost Updated
R7	Columbus Parkway	Rose Drive		I-780 WB Off-Ramp	\$706,550	\$1,220,000	Cost Updated - Sidewalk cost moved to <i>Multimodal</i> TIF
R8	Columbus Parkway	Rose Drive		City Limits	\$150,000	\$1,690,000	Developer funding no longer available for balance
Intersection Projects							
I1	Rose Drive			Columbus Parkway	\$316,250	\$470,000	Scope & Cost Updated
I2	Hastings Drive			Southampton Road	\$490,500	\$710,000	Scope & Cost Updated
I3	West 7th Street			I-780 Westbound Ramps	\$198,600	\$510,000	Scope & Cost Updated
I4	East 2nd Street			Military East	\$154,800	\$470,000	Scope & Cost Updated
I5	East 5th Street			I-780 Westbound Ramps	\$683,200	\$920,000	Scope & Cost Updated
I6	East 5th Street			I-780 Eastbound Ramps	\$731,340	\$1,030,000	Scope & Cost Updated
I7	West 7th Street			Military West	\$2,800,000	\$4,730,000	Scope & Cost Updated
I9	Southampton Road			Chelsea Hills Drive	\$ -	\$80,000	New
I11	Lake Herman Road			East 2nd Street	\$ -	\$1,180,000	New
I12	Lake Herman Road			I-680 Southbound Ramps	\$ -	\$1,100,000	New
I13	Lake Herman Road			I-680 Northbound Ramps	\$ -	\$1,100,000	New
I14	Industrial Way			Park Road	\$ -	\$4,730,000	Replaces R1 & R2
I15	Industrial Way			I-680 Southbound Ramps	\$ -	\$4,730,000	Replaces R1 & R2
I16	Bayshore Road			Park Road	\$ -	\$3,070,000	Replaces R1 & R2
I17	Bayshore Road			I-680 Southbound Ramps	\$ -	\$230,000	Replaces R1 & R2
I18	Bayshore Road			I-680 Northbound Ramps	\$ -	\$630,000	Replaces R1 & R2
I19	East 2nd Street			I-780 Westbound Ramps	\$ -	\$4,730,000	New
I20	East 2nd Street			Rose Drive	\$ -	\$280,000	New
I21	Southampton Road			Military West	\$ -	\$240,000	New
Other Projects							
O1	Benicia Industrial Park Bus Hub Local Contribution				\$100,000	\$ -	Complete
O2	Citywide Traffic Calming Plan & Physical Improvements				\$1,000,000	\$220,000	Cost Updated and Allocated based on Service Population Growth as a Share of 2040 Total (Rounded)
O3	General Plan Circulation Element Update				\$200,000	\$40,000	Cost Updated and Allocated based on Service Population Growth as a Share of 2040 Total (Rounded)
O4	Update of Fee Program and Associated Transportation Modeling				\$200,000	\$40,000	Cost Updated and Allocated based on Service Population Growth as a Share of 2040 Total (Rounded)
Total Cost of Streets and Intersections Improvements					\$29,049,584	\$35,780,000	

2020 TIF Update, Multimodal

The *Multimodal* component of the 2020 TIF is new to the City's fee program. To establish the 2020 TIF *Multimodal* improvement needs, the following principal analysis steps were undertaken:

- Establish Multimodal Service Standard.
- Establish Existing Multimodal Deficiencies Relative to Service Standard.
- Identify Future Improvement Needs and Develop Cost Estimates.

Multimodal Service Standard

Unlike the *Streets and Intersections* component of the 2020 TIF Update, the *Multimodal* component of the TIF has been established using an "asset-based" methodology. Rather than establishing existing and future deficiencies on a location-by-location basis, a citywide multimodal service standard, by multimodal asset type, has been calculated based on the proposed City of Benicia bikeway and sidewalk improvements included in the STA Active Transportation Plan. This requires calculation of City service population numbers based on current and future residents and employees.

Service Population Calculation

The service population calculation varies for each fee program. For the multimodal transportation facilities, which are designed to serve both residential and nonresidential uses, the service population calculation is based on the relationships summarized in **Table 24**. These calculations compare City residents and employees based on regional commute patterns and the estimated proportion of "waking" hours spent in the City either working or not working. Regional commute patterns are tracked by data from U.S. Census (OnTheMap 2017) and are specific to the City of Benicia.

EPS evaluates different cohorts of residents and employees and estimates that residents who work outside the City spend an average of about 67 percent of their waking hours in the City relative to 100 percent of waking hours for residents who do not work at all or who both live and work in the City. For employees who work in the City of Benicia but live outside of the City, 33 percent of their waking hours are spent in the City of Benicia and the remaining 67 percent of waking time is spent in their city of residence.

To avoid double counting, residents who both live and work in the City are counted as both employees and residents, and their time is allocated between residential and commercial uses according to the time spent at each activity. After accounting for regional commute patterns and weighting the hours spent at each activity as shown on **Table 24**, the typical worker is estimated to have a resident equivalency factor of 40 percent of the typical resident.

Table 24 Service Population Factors Based on Resident to Employee Equivalency

Benicia Residents and Employees	Existing		Relative Access to Use City Facilities ¹	Weighted Average	Employee Equivalency
	#	%			
Employment Status of Benicia Residents²	<i>Formula:</i> $a = b * b^2$		<i>c</i>	<i>d = b * c</i>	
Not in Labor Force	12,815	46.5%	100%	46.5%	
Employed in the City	2,059	7.5%	67%	5.0%	
Employed Outside of the City	<u>12,696</u>	<u>46.0%</u>	67%	<u>30.9%</u>	
Total Residents	27,570	100.0%		82.4%	100.0%
Residence Status of Benicia Employees²	<i>Formula:</i> $a = b * b^2$		<i>c</i>	<i>d = b * c</i>	
Live in the City	2,059	14.2%	33%	4.7%	
Live Outside the City	<u>12,491</u>	<u>85.8%</u>	33%	<u>28.2%</u>	
Total Jobs	14,550	100.0%		32.9%	40.0%
Employee to Resident Equivalency Factor			(32.9% / 82.4%) =		40.0%

NOTE: Numbers shown are rounded figures.

[1] Represents EPS estimate of how various categories of residents and employees relate to each other in terms of access or capacity to use City facilities.

- ◆ A resident who is not in the labor force is assumed to have access to transportation facilities 100% of time (16 hours per day, 365 days per year); 100% is equal to 5,840 hours per year.

- ◆ An employee who works in the City is assumed to have access to Benicia's transportation facilities 33% of the time (40 hours per week for 48 weeks per year = 1,920 hours, relative to the total waking hours in the year of 5,840 hours).

- ◆ A resident who is employed outside of Benicia is assumed to have access to transportation facilities 67% of time (the inverse of 33%).

- ◆ A resident who is employed in Benicia is assumed to have access to transportation facilities 100% of time (67% as a resident and 33% as an employee).

[2] Distribution based on City of Benicia data from U.S. Census (OnTheMap 2017). Total residents and jobs are based on 2020 estimates provided by ABAG.

Sources: LEHD OnTheMap 2017; ABAG/MTC Plan Bay Area 2040 Projections; Economic & Planning Systems, Inc.

The multimodal service standard is established based on the Year 2040 service population, shown in **Table 25**. As further shown in **Table 25**, after applying the service population allocation percentages to Year 2020 and Year 2040 population and jobs, a growth of 7,249 in service population is anticipated. New growth between 2020 and 2040 represents 17.8 percent of the total 2040 service population.

Table 25 Service Population (2020 to 2040)

Demographic	Year		Growth 2020 to 2040	Growth as a Share of Future Service Population
	2020	2040		
Population	27,570	30,735	3,165	
100% Allocation to Service Population	27,570	30,735	3,165	
Jobs	14,550	24,760	10,210	
40% Allocation to Service Population	5,820	9,904	4,084	
Service Population	33,390	40,639	7,249	17.8%

Table 26 presents service standard, by facility type. The service standards for each multimodal facility type is calculated based on the lane mileage, by facility (or asset) type as indicated in the STA Active Transportation Plan, and divided by the 2040 service population. Because the City often requires developers to construct sidewalks as part of their required frontage improvements, only infill sidewalks, which are usually constructed by the City, are included.

Table 26 Multimodal Service Standard

Facility Type	Total STA Plan Miles by Asset Type <i>a</i>	2040 Service Population <i>b</i>	Service Standard (Linear Feet per Service Population) [1] $c = a / b * 5,280$
Multi-Use Path (Class I)	15.2	40,639	1.97
Bike Lane (Class II)	8.2	40,639	1.07
Bike Lane (Buffered)	3.3	40,639	0.43
Bike Route (Class III)	8.6	40,639	1.12
Bike Boulevard (Class III)	8.2	40,639	1.07
Class IV Bikeway	9.1	40,639	1.18
Priority Development Area (PDA) Sidewalk	36.0	40,639	4.68

[1] The service standard is converted to linear feet (5,280 feet per mile).

Year 2020 (Existing) Multimodal Deficiencies

By establishing existing service levels and subtracting existing deficiencies from the 2040 service standard, this analysis ensures that future development is only paying the increased costs associated with new growth. **Table 27** presents the existing deficiencies in the City's multimodal network relative to the multimodal service standards established in **Table 26**.

Table 27 Year 2020 (Existing) Multimodal Deficiencies Service Standard

Facility Type	Existing Miles by Asset Type	2020 Service Population	2040 Service Standard (Linear Feet per Service Population)	2020 Service Level [1] (in Miles)	Existing "Deficiency" (in Miles)
	<i>a</i>	<i>b</i>	<i>c</i>	$d = b * c / 5,280$	$e = d - a$
Multi-Use Path (Class I)	8	33,390	1.97	12.5	4.5
Bike Lane (Class II)	6	33,390	1.07	6.8	0.8
Bike Lane (Buffered)	0	33,390	0.43	2.7	2.7
Bike Route (Class III)	6	33,390	1.12	7.1	1.1
Bike Boulevard (Class III)	0	33,390	1.07	6.8	6.8
Class IV Bikeway	0	33,390	1.18	7.5	7.5
PDA Sidewalk	8	33,390	4.68	29.6	21.6

[1] Existing miles by asset type obtained from STA Active Transportation Plan per City of Benicia staff direction.

[2] The 2020 Service Level reflects the level of service needed to meet the 2040 service standards. To determine the existing deficiency, the 2040 service standard is applied to the 2020 service population.

Year 2040 (Future) Multimodal Improvement Needs

The quantity of multimodal facilities, expressed in miles, attributable to future development is calculated by subtracting the existing deficiencies identified in **Table 27** from the multimodal service standard established in **Table 26**. In order to assign a cost per mile of improvement, by facility type, the linear cost estimates from the STA Active Transportation Plan were applied to the improvement quantities attributable to service population growth between 2020 and 2040. The cost estimates by improvement type are shown in **Table 28**.

Table 28 Multimodal Improvement Cost Estimates by Facility Type

Facility	Cost per Mile [1]
Multi-Use Path (Class I)	\$1,610,000 per Mile
Class II Bicycle Lane	\$80,000 per Mile
Buffered Class II Bicycle Lane	\$120,000 per Mile
Class III Bike Route	\$60,000 per Mile
Class III Bike Boulevards	\$220,000 per Mile
Class IV Separated Bike Lanes	\$370,000 per Mile
Sidewalk	\$990,000 per Mile

[1] Unit costs from Solano Transportation Authority Draft ATP Appendix A.

Using the cost estimates above, **Table 29** presents the total *Multimodal* improvement costs assigned to future development in the 2020 TIF Update.

Table 29 2020 TIF Update—Multimodal Cost Attributable to Growth

Facility Type	Existing Miles by Asset Type [1]	Total STA Plan Miles by Asset Type [2]	2040 Service Standard [3] (Linear Feet per Service Population)	Existing "Deficiency" in Miles [4]	Future Miles Needed to Achieve Service Standard	Net New Miles Attributable to Future Growth	Estimation of Total Cost Attributable to Future Growth [5]
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = b - a</i>	<i>f = e - d</i>	<i>g = f * unit costs</i>
Multi-Use Path (Class I)	8.0	15.2	1.97	4.5	7.2	2.7	\$4,347,000
Bike Lane (Class II)	6.0	8.2	1.07	0.8	2.2	1.4	\$112,000
Bike Lane (Buffered)	0.0	3.3	0.43	2.7	3.3	0.6	\$72,000
Bike Route (Class III)	6.0	8.6	1.12	1.1	2.6	1.5	\$90,000
Bike Boulevard (Class III)	0.0	8.2	1.07	6.8	8.2	1.4	\$308,000
Class IV Bikeway	0.0	9.1	1.18	7.5	9.1	1.6	\$592,000
PDA Sidewalk	8.0	36.0	4.68	21.6	28.0	6.4	<u>\$6,336,000</u>
Total Cost of Active Transportation Improvements (Attributable to Growth)							\$11,857,000

[1] See Table 27.

[2] See Table 26.

[3] See Table 26.

[4] See Table 27.

[5] Calculation is net new miles multiplied by the costs presented in Table 28.

Calculation of Maximum Allowable Fee

Using the preceding analyses establishing the cost attributable to both the *Streets and Intersections* and *Multimodal* components of the 2020 TIF Update, **Table 30** presents the total cost included in the 2020 TIF Update. As shown in **Table 30**, the balance of the existing fee program is excluded from the total cost attributable to growth.

Table 30 Total 2020 TIF Update Cost Attributable to Growth

Description	Amount
Total <i>Streets and Intersections</i> Improvement Costs [1]	\$35,780,000
Total <i>Multimodal</i> Improvement Costs [2]	\$11,857,000
Less, Existing TIF Balance [3]	(\$903,071)
Amount to be Collected by 2020 TIF Update	\$46,733,929

[1] See Table 23.

[2] See Table 29.

[3] Transportation Impact Fee Fund Balance for FY 2019-20 is unaudited.

In order to determine the cost attributable to each unit of new growth, the total trip miles generated by the forecast 2020 to 2040 growth must be calculated by land use category. The total new single family and multifamily households are based on ABAG's 2020 to 2040 projections (see **Table 2**). The overall employment projections are based on ABAG projections plus estimates of employment capacity at the Benicia Business Park/Industrial Park area.⁴ The ABAG employment projections are available by industry sector. Different types of employees within industry sectors may occupy different types of spaces, which can then be translated to land use categories. This conversion is based on EPS judgement, informed by consideration of the ABAG industry sectors and knowledge of Solano County land use patterns. In the case of employment in the Benicia Business Park, the 2007 Benicia Business Park EIR documented employment by land use category, and since those projections are consistent with the General Plan and remain the most recent estimates available, they are used in this analysis.

The number of employees by land use category can be converted to square footage by land use category using the same employment density assumptions used throughout this fee study, which are shown on **Table 4**. **Table 31** below summarizes the new growth per land use category.

⁴ Job growth capacity at the Benicia Business Park/Industrial Park area is not reflected in ABAG's 2040 projections, yet City staff anticipates that such growth will still occur and have indicated that it represents an important part of planning for Benicia's future. As such, the job growth capacity within this potential growth area is added to the ABAG estimates. Anticipating this potential job growth at this time results in more conservative (i.e., lower) fees.

Table 31 2020 to 2040 Growth by Land Use Category

Land Use Category	Unit Quantity	Unit Description
Single Family Residential	90	DU
Multifamily Residential	740	DU
Retail/Commercial	68	1,000 sf
Service/Commercial	61	1,000 sf
Office	735	1,000 sf
Institutional/Assembly	108	1,000 sf
Lodging	790	Room
Industrial	4738	1,000 sf
Warehouse/Distribution	980	1,000 sf
Nonresidential Agricultural Accessory Structures	-	1,000 sf

Note: The number of employees by land use category are converted to square footage by land use category using the same employment density assumptions used throughout this fee study, which are shown on Table 4.

Table 32 presents the trip generation estimate for the projected land use growth values in **Table 31**. The trip generation values are obtained from *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2018). This is an industry standard source of trip generation rates, by land use category, based on national surveys of like uses. In addition to trip generation, trip length, in miles, was assigned based on 2017 National Household Travel Survey trip mileage data by trip purpose. This is a national reference document for trip lengths, by trip purpose, based on household surveys. Standard pass-through allowances are also included, consistent with the recently adopted STA regional impact fee program. Pass-through, or pass-by trips, are trips that frequent an establishment, like a gas station, but whose ultimate destination, like work, are the primary purpose. Adjusting trip calculations for pass-throughs avoids double counting these types of trips. This is standard industry practice, documented in *Trip Generation Handbook, 3rd Edition* (Institute of Transportation Engineers, 2018).

As shown below in **Table 32**, the 2020 to 2040 growth is anticipated to generate 4,536 new PM peak hour trip ends, after adjusting for pass-through allowances. After applying the trip lengths, by trip purpose, that same growth increment is anticipated to generate 94,067 new PM peak hour trip miles.

Table 32 2020 to 2040 New Trip Miles by Land Use Category

Land Use Category	Unit Description	Unit Quantity [1]	PM Trip Rate per Unit	New Trip Ends	Pass-Through Allowance	Adjusted Trip Ends	Trip Length (in miles)	New Trip Miles
		<i>a</i>	<i>b</i>	<i>c = a * b</i>	<i>d</i>	<i>e = c * d</i>	<i>f</i>	<i>g = e * f</i>
Single Family Residential	DU	90	1.00	90	100%	90	11.6	1,044
Multifamily Residential	DU	740	0.56	414	100%	414	11.6	4,807
2nd SFR Unit/Accessory Dwelling Unit (ADU) [2]	DU	-	0.48	-	100%	-	11.6	-
Retail/Commercial	1,000 sf	68	3.81	259	50%	130	7.9	1,023
Service/Commercial	1,000 sf	61	7.80	476	51%	243	7.9	1,917
Office	1,000 sf	735	1.15	845	77%	651	12.2	7,940
Institutional/Assembly	1,000 sf	108	0.49	53	64%	34	7.0	237
Lodging	Room	790	0.61	482	58%	280	11.6	3,242
Industrial	1,000 sf	4,738	0.63	2,985	85%	2,537	27.4	69,519
Warehouse/Distribution	1,000 sf	980	0.19	186	85%	158	27.4	4,337
Nonresidential Agricultural Accessory Structures	1,000 sf	-	0.19	-	80%	-	27.4	-
Total New Trip Ends				5,790		4,536		
Total New Trip Miles								94,067

[1] See Table 31.

[2] Senate Bill 13 (effective 1/1/2020 - 12/31/2024) precludes jurisdictions from charging impact fees on ADUs under 750 square feet. Gov. Code 65852.2(f)(3)(A) requires that fees charged to ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. To the extent the legal landscape shifts in the future, the typical trip rate and trip miles data for ADUs is provided here to provide guidance if alternative fee calculations are needed.

Sources: Trip Generation Manual, 10th Edition (Institute of Transportation Engineers, 2018); Trip Generation Handbook, 3rd Edition (Institute of Transportation Engineers, 2018); 2017 National Household Travel Survey.

Having established the new trip miles associated with the 2020 to 2040 growth increment, shown in **Table 32**, and the total cost attributable to new growth in **Table 30**, a cost per new trip mile is calculated and presented in **Table 33**.

Table 33 2020 TIF Update Cost Per Trip Mile Calculation

Description	Formula	Streets and Intersections	Multi-Modal	Total Amount
Total Costs in 2020 TIF Update [1]	<i>a</i>	\$35,780,000	\$11,857,000	\$47,637,000
Less Existing Fund Balance [2]	<i>b</i>	(\$903,071)	\$0	(\$903,071)
Amount to be Collected by 2020 TIF Update	$c = a - b$	\$34,876,929	\$11,857,000	\$46,733,929
Year 2040 PM Peak Hour Trip Miles Generated [3]	<i>d</i>	94,067	94,067	94,067
Cost per PM Peak Hour Trip Mile	$e = c / d$	\$370.77	\$126.05	\$496.82
Cost per Dwelling Unit Equivalent (DUE) [4]	$f = e * \frac{\text{single family trip}}{\text{trip length}}$	\$4,301	\$1,462	\$5,763

[1] See Table 30.

[2] Existing fund balance is allocated proportionally to streets and active transportation improvement costs.

[3] See Table 32.

[4] Cost per Dwelling Unit Equivalent is cost per trip mile (line "e") multiplied by single family trips/trip length shown on Table 32.

Applying the cost per trip mile calculation in **Table 33** to the land use categories that make up the proposed fee schedule, **Table 34** presents the maximum allowable fee per land use category for the 2020 TIF Update. The dwelling unit equivalent (DUE) calculation in **Table 33** is based on each land use category's PM peak hour trip rate and trip length relative to that of a single-family dwelling unit (1 SFDU = 1 DUE).

Table 34 Maximum Allowable Fee by Land Use Category

Land Use Category	Unit Description	PM Trip Rate per Unit	Pass-Through Allowance	Trip Length (in miles)	DUE Calculation [1]	Streets and Intersections Fee [2] (per Unit)	Multimodal Fee (per Unit)	Total 2020 TIF Fee (per Unit)
		<i>a</i>	<i>b</i>	<i>c</i>	$d = a * b * c / 11.6$	<i>e</i>	<i>f</i>	$g = e + f$
Single Family Residential	DU	1.00	100%	11.6	1.00	\$4,301	\$1,462	\$5,763
Multifamily Residential	DU	0.56	100%	11.6	0.56	\$2,409	\$819	\$3,227
Retail/Commercial	1,000 sf	3.81	50%	7.9	1.30	\$5,591	\$1,901	\$7,492
Service/Commercial	1,000 sf	7.80	51%	7.9	2.71	\$11,655	\$3,962	\$15,618
Office	1,000 sf	1.15	77%	12.2	0.93	\$4,000	\$1,360	\$5,360
Institutional/Assembly	1,000 sf	0.49	64%	7.0	0.19	\$817	\$278	\$1,095
Lodging	Room	0.61	58%	11.6	0.35	\$1,505	\$512	\$2,017
Industrial	1,000 sf	0.63	85%	27.4	1.26	\$5,419	\$1,842	\$7,261
Warehouse/Distribution	1,000 sf	0.19	85%	27.4	0.38	\$1,634	\$556	\$2,190
Nonresidential Agricultural Accessory Structures	1,000 sf	0.19	80%	27.4	0.36	\$1,548	\$526	\$2,075

[1] 1 DUE = 11.6 trip miles based on 1 peak hour trip per Single Family residential unit.
 [2] See costs per DUE on Table 33. For each land use category, the cost per DUE on Table 33 is multiplied by the DUE factor (column "d").

Mitigation Fee Act Nexus Findings

Nexus findings are provided below addressing: 1) the purpose of the fee; 2) the specific use of fee revenue; 3) the relationship between the use of the fee 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 development. The technical information and calculations provided above support these nexus findings/requirements.

Purpose

The purpose of the transportation impact fee program is to fund the planning, design, and construction of transportation facilities necessary to serve new development.

Use of Fee

Fee revenue will be used to help fund City transportation improvements, including roadway, intersection, and traffic calming projects; multimodal bicycle and pedestrian improvements; as well as planning work related to traffic calming and updates to the General Plan Circulation Element and the transportation impact fee program. A list of potential projects that could be funded with transportation impact fee revenues is included in **Appendix C** of this study.

Relationship

New residential and commercial development in the City of Benicia will increase the average number of vehicle miles traveled (VMT) in the City, thereby increasing demands for and travel on the City's transportation network. Average daily trip count and trip length data by land use category underscores the relationship between the type of new development and their impacts on transportation facilities.

Need

Each new development project will add to the incremental need for transportation capacity and improvements in the City. The transportation improvements considered in this study are considered necessary to meet the City's future transportation needs based on projected growth between 2020 and 2040.

Proportionality

The total costs of transportation facilities necessary to serve new development are assigned to each land use category based on that category's projected growth forecasts and anticipated impacts on the City's transportation service standards in order to ensure proportionality and ensure that new development is only charged its fair share.



APPENDICES:

- Appendix A: Employment Density Assumptions and Sources
- Appendix B: Park Impact Fee, Allocation to Nonresidential Uses
- Appendix C: Transportation Fee Program Improvements



APPENDIX A:
Employment Density Assumptions and Sources

Appendix A, Table 1
Employment Densities
Benicia Fee Study Updated Nexus Study; EPS# 191030

Data Source/ Specific Uses	Nonresidential							Non-residential Agricultural Accessory Structures
	Retail/ Commercial	Service/ Commercial	Office	Institutional/ Assembly	Lodging	Industrial	Warehouse/ Distribution	
U.S. Green Building Council¹								
General Light Industrial	-	-	-	-	-	463	-	-
Heavy Industrial	-	-	-	-	-	549	-	-
Industrial Park	-	-	-	-	-	500	-	-
Manufacturing	-	-	-	-	-	535	-	-
Warehousing	-	-	-	-	-	-	781	-
Warehousing	-	-	-	-	-	-	2,114	-
Elementary School	-	-	-	1,250	-	-	-	-
Elementary School	-	-	-	1,131	-	-	-	-
Hospital	-	-	-	372	-	-	-	-
Hospital	-	-	-	486	-	-	-	-
General Office - Suburbs	-	-	304	-	-	-	-	-
Corporate HQ - Suburbs	-	-	260	-	-	-	-	-
Single Tenant Office	-	-	295	-	-	-	-	-
Medical-Dental Building	-	-	207	-	-	-	-	-
Office Park	-	-	278	-	-	-	-	-
Research & Development Center	-	-	-	-	-	405	-	-
Business Park	-	-	332	-	-	-	-	-
Business Park	-	-	249	-	-	-	-	-
Building Material - Lumber Store	806	-	-	-	-	-	-	-
Specialty Retail Store	549	-	-	-	-	-	-	-
Discount Store	654	-	-	-	-	-	-	-
Hardware Store	1,042	-	-	-	-	-	-	-
Nursery-Garden Center	529	-	-	-	-	-	-	-
Quality Restaurant (Sit Down)	-	134	-	-	-	-	-	-
High Turnover (Sit Down)	-	100	-	-	-	-	-	-
Fast Food w/o drive-thru	-	70	-	-	-	-	-	-
Fast Food w/ drive-thru	-	92	-	-	-	-	-	-
Grocery	938	-	-	-	-	-	-	-
Lodging	-	-	-	-	1,124	-	-	-
Lodging	-	-	-	-	917	-	-	-
Bank	-	317	-	-	-	-	-	-
Office under 100,000 sq.ft.	-	-	228	-	-	-	-	-
Office over 100,000 sq.ft.	-	-	221	-	-	-	-	-
Neighborhood Retail	588	-	-	-	-	-	-	-
Community Retail	383	-	-	-	-	-	-	-
SCAG Employment Density Study²								
Regional Retail	857	-	-	-	-	-	-	-
Other Retail/Services	-	344	-	-	-	-	-	-
Low-Rise Office	-	-	288	-	-	-	-	-
High-Rise Office	-	-	311	-	-	-	-	-
Hotel/Motel	-	-	-	-	1,152	-	-	-
R&D/Flex Space	-	-	-	-	-	344	-	-
Light Manufacturing	-	-	-	-	-	439	-	-
Heavy Manufacturing	-	-	-	-	-	-	-	-
Warehouse	-	-	-	-	-	-	814	-
Government Offices	-	-	261	-	-	-	-	-
Portland Metro Employment Density Study (by Industry Group)³								
Food & Kindred Products	-	-	-	-	-	630	-	-
Textile & Apparel	-	-	-	-	-	930	-	-
Lumber & Wood	-	-	-	-	-	640	-	-
Furniture; Clay, Stone & Glass; Misc.	-	-	-	-	-	760	-	-
Paper & Allied	-	-	-	-	-	1,600	-	-
Printing, Publishing & Allied	-	-	-	-	-	450	-	-
Chemicals, Petroleum, Rubber, Leather	-	-	-	-	-	420	-	-
Primary & Fabricated Metals	-	-	-	-	-	300	-	-
Machinery Equipment	-	-	-	-	-	400	-	-
Electrical Machinery, Equipment	-	-	-	-	-	700	-	-
Transportation Equipment	-	-	-	-	-	700	-	-

Appendix A, Table 1
Employment Densities
Benicia Fee Study Updated Nexus Study; EPS# 191030

Data Source/ Specific Uses	Nonresidential							Non-residential Agricultural Accessory Structures
	Retail/ Commercial	Service/ Commercial	Office	Institutional/ Assembly	Lodging	Industrial	Warehouse/ Distribution	
Transportation and Warehousing	-	-	-	-	-	-	3,290	-
TCPU – Communications and Public Utilities	-	460	-	-	-	-	-	-
Wholesale Trade	-	-	-	-	-	-	1,390	-
Retail Trade	470	-	-	-	-	-	-	-
Finance, Insurance, & Real Estate	-	-	370	-	-	-	-	-
Non-Health Services	-	770	-	-	-	-	-	-
Health Services	-	-	-	350	-	-	-	-
Educational, Social, Membership Services	-	-	-	740	-	-	-	-
Employment Density in the Puget Sound Region³								
Agriculture	-	-	-	-	-	-	-	3,023
Warehousing	-	-	-	-	-	-	1,086	-
School	-	-	-	766	-	-	-	-
Industrial	-	-	-	-	-	696	-	-
Commercial	-	-	-	323	-	-	-	-
Hospital/Convalescent Center	-	-	-	-	-	-	-	-
Office	-	-	292	-	-	-	-	-
GSA Workspace Utilization Study (2011)⁴								
Government Offices (Fed.)	-	-	218	-	-	-	-	-
Private Sector Offices	-	-	230	-	-	-	-	-
GSA's Headquarters (2013)	-	-	92	-	-	-	-	-
City of Davis Fiscal Model⁵								
Retail	500	-	-	-	-	-	-	-
Office	-	-	300	-	-	-	-	-
Senior Care Facility	-	-	-	750	-	-	-	-
Daycare	-	-	-	750	-	-	-	-
Church	-	-	-	1,000	-	-	-	-
Restaurant	-	500	-	-	-	-	-	-
Athletic Club	-	750	-	-	-	-	-	-
Los Angeles Times article (12/15/2010)								
Area Development Magazine ⁶	-	-	200	-	-	-	-	-
Grabel.com ⁷	-	-	161	-	-	-	-	-
Movie Theater (EPS analysis)	-	-	-	452	-	-	-	-
Maximum	1,042	770	370	1,250	1,152	1,600	3,290	3,023
Minimum	383	70	92	323	917	300	781	3,023
Average	665	354	252	698	1,064	603	1,579	3,023
Average Sq. Ft. per worker (Rounded)	670	350	250	700	1,100	600	2,000	3,000

[1] From the USGBC website. Data based on various sources including, Institute of Transportation Engineers, U.S. Department of Energy; and SANDAG. URL: <http://www.usgbc.org/showfile.aspx?documentid=4111>, Accessed 2/7/2013

[2] From The Natelson Company (2001), "Employment Density Study," Data based on a survey of 5-counties in Southern California. URL: http://www.scag.ca.gov/forecast/downloads/employ_den.pdf, accessed 2/7/2013.

[3] From Pflum (2004), "Employment Density in the Puget Sound Region" University of Washington. URL: http://evans.uw.edu/sites/default/files/files/Pflum_2004.pdf, accessed 2/7/2013.

[4] From U.S. General Services Administration (2011), "Workspace Utilization and Allocation Benchmark," URL: http://www.gsa.gov/graphics/ogp/Workspace_Utilization_Benchmark_July_2012.pdf, accessed 2/7/2013.

[5] From City of Davis fiscal model assumptions. URL: http://city-council.cityofdavis.org/Media/Default/Documents/PDF/Finance/Commission%20Agenda%20-%20December%202012/Item_9b_Fiscal%20Model%20Sample.pdf, accessed 2/7/2013.

[6] From URL: <http://www.areadevelopment.com/siteSelection/Winter2012/key-trends-corporate-RE-planning-27766222.shtml>, accessed 2/7/2013.

[7] From URL: http://www.grabel.com/NR/rdonlyres/5862DDA9-49FE-43BD-8ACF-8A9D67011679/108/GRA13661_FootprintRedWhitePaper_FINALHR.PDF, accessed 2/7/2013.

Source: Economic & Planning Systems, Inc



APPENDIX B:
Park Impact Fee,
Allocation to Nonresidential Uses

Appendix B, Table 1
Park Improvement Impact Fee: Population, Employment, and Service Population Assumptions
Benicia Fee Study Updated Nexus Study; EPS# 191030

Land Use	Persons per Unit/ Sq.Ft. per Job (1)	Persons per Unit or Jobs per 1,000 Sq.Ft.	Service Population Factor (2)	Service Population per unit or per 1,000 Sq.Ft.
Residential (per Unit)				
Single Family (3)	2.68	2.68	1.00	2.68
Multifamily (4)	2.08	2.08	1.00	2.08
2nd SFR Unit/Accessory Dwelling Unit (ADU) (5)	1.50	1.50	1.00	1.50
Non-Residential				
Retail/Commercial	670	1.49	0.132	0.20
Service/Commercial	350	2.86	0.132	0.38
Institutional/Assembly	700	1.43	0.132	0.19
Office	250	4.00	0.132	0.53
Lodging	1,100	0.91	0.132	0.12
Industrial	600	1.67	0.132	0.22
Warehouse/Distribution	2,000	0.50	0.132	0.07
Nonresidential Agricultural Accessory Structures	3,000	0.33	0.132	0.04

(1) Average household size per occupied housing unit in Solano County based on data from the 2018 American Community Survey (5-year estimates) conducted by the U.S. Census Bureau. Commercial gross square feet per job based on assumptions used in Solano County and EPS experience.

(2) Service population is a measure of relative demand between residents and employees. As shown on Table 13, employees are estimated to have approximately 13.2 percent of the opportunity to use the City's parkland and trail facilities compared with a resident.

(3) Consistent with BMC 17.16.030.G, single family is defined as buildings containing one dwelling unit located on a single lot, including mobile homes and factory-built housing.

(4) Consistent with BMC 17.16.030.E, multifamily is defined as two or more dwelling units on a site (e.g., apartments, condominiums, townhomes), including mobile homes and factory-built housing.

(5) Senate Bill 13 (effective 1/1/2020 - 12/31/2024) precludes jurisdictions from charging impact fees on ADUs under 750 square feet. Government Code 65852.2(f)(3)(A) requires that ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. To the extent the legal landscape shifts in the future, the household size data is provided here to provide guidance if alternative fee calculations are needed.

Sources: City of Benicia; American Community Survey 2014 - 2018; Economic & Planning Systems, Inc.

Appendix B, Table 2

**Parks Improvement Impact Fee: Fee Calculation for Residential and Nonresidential Land Uses
Benicia Fee Study Updated Nexus Study; EPS# 191030**

Land Use	Cost per Service Population	Service Population per Unit or per 1,000 Sq.Ft.	Park Improvement Impact Fee
Residential	<i>Fee = Cost per Service Population * Service Population / per unit</i>		
Single Family	\$3,747	2.68	\$10,043 per unit
Multifamily	\$3,747	2.08	\$7,794 per unit
2nd SFR Unit/Accessory Dwelling Unit (ADU) ¹	\$3,747	1.50	\$5,621 per unit
Nonresidential	<i>Fee = Cost per Service Population * Service Population / 1,000 sq.ft.</i>		
Retail/Commercial	\$3,747	0.20	\$738 per 1,000 sq.ft.
Service/Commercial	\$3,747	0.38	\$1,413 per 1,000 sq.ft.
Institutional/Assembly	\$3,747	0.19	\$707 per 1,000 sq.ft.
Office	\$3,747	0.53	\$1,979 per 1,000 sq.ft.
Lodging	\$3,747	0.12	\$450 per 1,000 sq.ft.
Industrial	\$3,747	0.22	\$824 per 1,000 sq.ft.
Warehouse/Distribution	\$3,747	0.07	\$247 per 1,000 sq.ft.
Nonresidential Agricultural Accessory Structures	\$3,747	0.04	\$165 per 1,000 sq.ft.

[1] Senate Bill 13 (effective 1/1/2020 - 12/31/2024) precludes jurisdictions from charging impact fees on ADUs under 750 square feet. Government Code 65852.2(f)(3)(A) requires that ADUs 750 square feet or larger pay fees in proportion to the size of the primary residence. To the extent the legal landscape shifts in the future, the household size data is provided here to provide guidance if alternative fee calculations are needed.

Sources: City of Benicia; Economic & Planning Systems, Inc.

APPENDIX C:

Transportation Fee Program Improvements



APPENDIX C: TRANSPORTATION FEE PROGRAM IMPROVEMENTS

Intersection Improvements

The following intersection improvements were identified as necessary to maintain acceptable LOS under Year 2040 (future) conditions.

Rose Drive & Columbus Parkway

- Modify traffic signal to allow eastbound right turns to overlap with northbound left turns and to accommodate revised geometrics for westbound Columbus Drive.

Hastings Drive & Southampton Road

- Install traffic signal

West 7th Street & I-780 WB Ramps

- Provide westbound left turn pocket.

East 2nd Street & Military East

- Convert the westbound left/thru to a dedicated westbound left turn pocket, add a westbound thru pocket and convert the westbound right lane to a thru/right lane
- Convert the southbound left/thru turn pocket to a left only turn pocket and the southbound right turn lane to a thru/right lane.
- Convert the eastbound thru lane to an additional left turn lane and convert the eastbound right turn lane to a thru/right lane.
- Modify traffic signal to a protected eight phase signal with a southbound right turn overlap phase.

East 5th Street & I-780 WB Ramps

- Signalize intersection and widen westbound approach to accommodate a dedicated left turn pocket.

East 5th Street & I-780 EB Ramps/East O Street

- Remove access to O Street.
- Convert intersection to a signalized intersection.
- Additionally, the northbound approach is restriped to have a thru lane and a right turn pocket of 75 feet.

West 7th Street & Military West

- Install modern roundabout and reconfigure side streets

Southampton Road & Chelsea Hills Drive/Shopping Center Driveway

- Convert the southbound right turn pocket to a thru /right pocket
- Convert the northbound right turn pocket to a thru /right pocket
- Add an additional southbound receiving lane
- Add an additional northbound receiving lane.

Lake Herman Road & East 2nd Street/Lopes Road

- Install signal
- Widen/restripe northbound approach to a left turn pocket, a thru/right lane, and a right turn lane.
- Widen/restripe southbound approach to a left turn pocket and a thru/right lane.
- Widen/restripe eastbound approach to a left turn pocket, a thru lane, and a thru/right turn lane.
- Widen/restripe westbound approach to two left turn pockets and a thru/right lane.

Lake Herman Road & I-680 SB Ramps

- Install signal
- Widen/restripe southbound approach to a left/thru lane and a right turn pocket
- Widen/restripe westbound approach to a left/thru lane and a thru lane
- Widen/restripe eastbound approach to a thru lane and a thru/right lane

Lake Herman Road & I-680 NB Ramps

- Install signal
- Widen/restripe northbound approach to a left turn pocket and a thru/right lane
- Widen/restripe eastbound approach to a left turn pocket, a thru lane, and a right turn pocket.
- Widen/restripe westbound approach to a left turn pocket, a thru lane, and a thru/right pocket.

Industrial Way & Park Road and Industrial Way & I-680 SB Off Ramp

- Install modern roundabout, combining both intersections; or,
- Install signalized interchange improvement with coordinated signals

Bayshore Road/Refinery Driveway & Park Road

- Install modern roundabout; or,
- Install traffic signal with adequate turn pockets and queue storage

Bayshore Road & I-680 SB On Ramp

- Add an eastbound right turn pocket
- Add a westbound left turn pocket.

Bayshore Road & I-680 NB Off Ramp

- Install traffic signal.

East 2nd Street & I-780 WB Ramps/East S Street

- Install modern roundabout; or,
- Install traffic signal with turn restrictions on S Street

East 2nd Street & Rose Drive

- Widen/restripe southbound approach to two thru lanes and a right turn pocket
- Widen/restripe eastbound approach to add a right turn pocket

Southampton Road & Military West

- Update signal timing to add an overlap phase to the westbound right turn.

Street Segment Improvements

The following street segment improvements have been identified as necessary to support further development in the City:

Industrial Way (East 2nd Street to I-680 NB On-Ramp)

- Widen Industrial Way to a three-lane cross section, providing left turn access where necessary at major driveways along this roadway segment.

Military West (West 3rd Street to West 4th Street)

- Restripe existing shoulder and stripe a two-way left turn lane from W. Third Street to about 450 west of W. Third Street for improved access to adjacent development.

Columbus Parkway (Rose Drive to I-780 WB Off-Ramp)

- Widen Columbus Parkway at Rose Drive to accommodate a second westbound through lane. Extend culvert at creek to accommodate widening and relocate electrical vaults.

Multimodal Projects

Unlike the preceding Intersection and Street Segment Improvements, the Multimodal component of the TIF has been established using an “asset-based” methodology. Rather than establishing existing and future deficiencies on a location-by-location basis, a citywide multimodal service standard, by multimodal asset type, has been calculated based on the proposed City of Benicia bikeway and sidewalk improvements included in the [2020 STA Active Transportation Plan](#).

Other Projects

Other types of planning projects that are not as easily categorized are also include in the fee program, including a Citywide Traffic Calming Plan, the General Plan Circulation Element Update,

and the next update of the Transportation Impact Fee program, including the associated transportation modeling. Implementation of the Citywide Traffic Calming Plan (the improvements themselves) are included here as well.