Public Review Draft Report

Vacaville Development Impact Fee Update

The Economics of Land Use

Prepared for:
City of Vacaville

Prepared by:
Economic & Planning Systems, Inc. (EPS)

Incorporating work by:
John Long Consulting
Bartle Wells Associates
West Yost Associates

April 20, 2022

EPS #181033

Economic & Planning Systems, Inc.
455 Capitol Mall, Suite 701
Sacramento, CA 95814
916 649 8010 tel
916 649 2070 fax

Oakland
Sacramento
Denver
Los Angeles

www.epsys.com

Table of Contents

List of Tables and Figure

1. STUDY BACKGROUND AND SUMMARY OF RESULTS

Background

The City of Vacaville (City) collects a variety of development impact fees from new development projects in the City. These impact fee programs are intended to mitigate new development's impact on the need for new backbone infrastructure and public facilities and provide a mechanism by which new development contributes its "fair-share" to construction of new facilities needed to accommodate growth. Last comprehensively updated in 1992, following the City's 1990 General Plan, the City's current fee program includes the following components:

- Park and Recreation Fee
- Greenbelt Preservation Fee
- General Facilities Fee
- Police Fee
- Fire Fee
- Drainage Detention Fee(s)
- Drainage Conveyance Fee
- Drainage Water Quality Fee
- Sewer Capacity Fee
- Water Connection Fee
- Traffic Fee

The City completed and adopted a General Plan Update in 2015 which guides the City's planning efforts through General Plan buildout. This Nexus Study focuses on General Plan Buildout excluding the Northeast Area.[1] To ensure the above-mentioned development impact fee programs are in line with the 2035 General Plan Update policies and service level standards, the City engaged EPS and other technical consultants to prepare a Comprehensive Development Impact Fee Update (DIF Update) Nexus Study.[2]

Purpose of the Nexus Study

Development impact fees can only be charged to new development and must be based on the impact of new development on public facilities. The purpose of this report and supporting documents/studies is to establish the nexus (or reasonable relationship) between new development that occurs in the City and the need for additional public facility improvements as a result of this new development. This development impact fee Nexus Study is based on the standards identified in the City's General Plan and master planning documents, existing standards of service, and the City's planned capital facilities/improvements.

---

[1] General Plan Buildout is based on land uses from the 2035 General Plan. Land uses within the urban reserve east of Leisure Town Road were included. The Northeast area and other parts of the east of Leisure Town Road area were not included in the 2035 General Plan analysis. At the time the General Plan was updated, it was assumed these areas would be addressed by the next General Plan.

[2] Provided under separate cover are John Long Consulting's Transportation Impact Fee update (*Appendix A)*; Bartle Wells Associates' (BWA) Water and Sewer Capacity Fee updates (*Appendix B*); West Yost Associates/City staff inputs for the Storm Drain fee (*Appendix C*); and the City's updated equivalent dwelling unit (EDU) schedule by land use for sewer capacity fees (*Appendix D*).

Authority

This study and supporting documents serve as the basis for requiring development impact fees under Assembly Bill (AB) 1600 legislation, as codified by the Mitigation Fee Act (California Government Code sections 66000 *et. seq*.). This section of the Mitigation Fee Act sets forth the procedural requirements for establishing and collecting development impact fees. These procedures require that a reasonable relationship, or nexus, must exist between a governmental exaction and the purpose of the condition.

Required Nexus Findings

√ Identify the purpose of the fee.

√ Identify how the fee is to be used.

√ Determine how a reasonable relationship exists between the fee's use and the type of development project on which the fee is imposed.

√ Determine how a reasonable relationship exists between the need for the public facility and the type of development project on which the fee is imposed.

√ Demonstrate a reasonable relationship between the amount of the fee and the cost of the public facility attributable to the development on which the fee is imposed.

Summary

As new development continues to occur in the City, additional public facilities will be required to serve future residents and employees. The public facility costs allocated to new development reflect public facility improvements that are needed to accommodate future development while maintaining desired service level standards. This Nexus Study computes future development's share of future public facility improvement costs based on planned facilities or level of service standards as determined by the City related to some of the fee components and includes the outcomes of the technical analyses completed by other consultants for traffic, sewer, and water fee components (with references to the additional technical documents). The development impact fee programs will not fund the construction of public facility improvements required to cure existing level of service deficiencies. This study (and associated documents) updates and consolidates the following public capital facilities fees:

- Park and Recreation Fee
- Greenbelt Preservation Fee
- General Facilities Fee
- Police Fee
- Fire Fee
- Drainage Fee
- Sewer Capacity Fee
- Water Capacity Fee
- Transportation Fee

It is important to note that developers are (or may) also required to pay other City fees that are not updated in this Nexus Study including the water annexation fee, the General Plan cost recovery fee, along with a range of processing/cost recovery fees (e.g., building permit fees).

A summary of the results of the Nexus Study are provided in the tables below. These tables show the maximum justifiable new development impact fees, for example development prototypes for different land uses.[3] It is important to note that the actual fees charged to a project will depend on specific project development characteristics. For all fee categories, the City can adopt development impact fees below the maximum level by removing proposed capital projects, reducing service standards, and/or increasing the use of other funding sources to support capital improvements. For all development impact fees, the City Finance Department adds a 4 percent charge to fund the costs of fee program administration, collection, and reporting.

Summary tables include:

- **Updated Fees. Table 1-1** shows the updated maximum justifiable development impact fees by land use category (under illustrative development project assumptions). For single-family residential development, this table only shows the updated fees for an average-sized single-family home in the City of Vacaville (homes in the 2,000 to 3,000 square foot range). Per City direction, fees will be differentiated by single-family home size with the full detail on the maximum justifiable fees for all single-family home size categories provided in **Table 1-3**. These numbers reflect the base fee and the 4 percent Finance Department administration charge.

- **Existing vs. Updated Fees. Table 1-2** shows the difference between the maximum justifiable fees for the illustrative project types under the updated maximum fee schedule and the City's existing (2022) fee schedule.

- **Updated Fees for All Residential Sizes. Table 1-3** shows the full detail on the updated fees on residential development. Distinct impact fees were developed for different size ranges of single-family homes where it was possible to differentiate the demand for capital facilities by home size range. As shown, under this approach, for most fee categories, smaller single-family homes will pay lower fees (for many fee categories) than the average home size, while large homes will pay higher fees. These numbers reflect the base fee and the 4 percent Finance Department administration charge.

[3] The transportation impact fee is the one exception where the fees have been reduced below their maximum justifiable level based on additional study and stakeholder discussions.

Table 1-1 Summary of Maximum Justifiable Development Impact Fees by Land Use

Item	Single Family (per unit) [1]	Multifamily (per unit) [2]	Commercial [3]	Office [3]	Industrial [4]
	per unit		*per 1,000 sf*		
Maximum Updated Fees [5]					
Police	$936	$638	$234	$402	$158
Fire [6]	$1,314	$894	$329	$564	$222
General Facilities	$1,255	$855	$314	$539	$212
Parks and Recreation Facilities	$14,630	$9,962	*Applied to residential uses only*		
Greenbelt Preservation	$445	$303	*Applied to residential uses only*		
Traffic [7]	$15,048	$8,513	$19,448	$13,010	$4,763
Drainage [8]	$426	$162	$348	$348	$470
Sewer Capacity [9]	$10,205	$6,803	$4,252	$2,551	$850
Water Installation & Capacity [10]	$12,863	$8,160	$4,996	$4,996	$1,869
Total	**$57,121**	**$36,289**	**$29,921**	**$22,410**	**$8,545**

[1] For summary purposes, shows fees for average home - 2,500 square foot, 4-bedroom single family home.
[2] Assumes a 1000 square foot, 2-bedroom apartment within a 200 units apartment development on 10 acres (20 DU/Acre).
[3] Assumes a 65,340 square foot development on 5 acres (.30 FAR).
[4] Industrial assumes a 174,600 sf building on 10 acres (.40 FAR) with low-density uses such as warehousing.
[5] Includes the City Finance Department's 4 percent add-on charge for administration of the fee program.
[6] Assumes fire fee levels derived from Scenario 1: Master Plan.
[7] Fees for development outside of the DTSP and Transit Areas for average for single family home, the middle sized commercial category, and for general industrial.
[8] Fees shown for development west of LTR. Single family shows fee for 4-8 units/ acre residential and mulit-family show fees for 20+ units/ acre. Non-residential fees based on applicable per gross acre fees applied to development prototypes.
[9] Fees for development outside of DTSP. Commercial fees shown reflect medium commercial category. Industrial fees shown for warehouse/ storage (substantial variation for different industrial uses depending on water use) . Other industrial uses calculated on project basis using City formula.
[10] Assumes one 1-inch meter for single family residential units. Assumes one 2-inch meter for every 20 multi-family units. For nonresidential prototype projects, assumes proportional share of development with two 2-inch meters. Includes meter only installation fee in addition to water capacity fee.

Table 1-2 Comparison of Maximum Justifiable Fees and Existing Fees

Item	Single Family (per unit) [1]	Multifamily (per unit) [2]	Commercial [3]	Office [3]	Industrial [4]
	per unit		*per 1,000 sf*		
Existing Fees					
Police	$949	$830	$1,768	$935	$264
Fire	$425	$145	$131	$131	$157
General Facilities	$944	$584	$528	$407	$284
Parks and Recreation Facilities	$5,564	$3,826	*Applied to residential uses only*		
Greenbelt Preservation	$296	$203	*Applied to residential uses only*		
Traffic	$12,178	$8,525	$6,585	$4,993	$3,658
Drainage [6]	$1,455	$610	$751	$751	$751
Sewer Capacity	$12,289	$9,831	$2,458	$3,072	$1,024
Water Connection & Installation [8]	$11,083	$7,184	$4,366	$4,366	$1,634
Total	**$45,183**	**$31,738**	**$16,587**	**$14,655**	**$7,772**
	per unit		*per 1,000 sf*		
Maximum Updated Fees [9]					
Police	$936	$638	$234	$402	$158
Fire	$1,314	$894	$329	$564	$222
General Facilities	$1,255	$855	$314	$539	$212
Parks and Recreation Facilities	$14,630	$9,962	*Applied to residential uses only*		
Greenbelt Preservation	$445	$303	*Applied to residential uses only*		
Traffic	$15,048	$8,513	$19,448	$13,010	$4,763
Drainage	$426	$162	$348	$348	$470
Sewer Capacity [7]	$10,205	$6,803	$4,252	$2,551	$850
Water Capacity and Installation [8]	$12,863	$8,160	$4,996	$4,996	$1,869
Total	**$57,121**	**$36,289**	**$29,921**	**$22,410**	**$8,545**

[1] Assumes a 2,500 square foot, 4-bedroom single family home.
[2] Assumes a 100 square foot, 2-bedroom apartment within a 200 units apartment development on 10 acres (20 DU/Acre).
[3] Assumes a 65,340 square foot development on 5 acres (.30 FAR).
[4] Industrial assumes a 174,600 sf building on 10 acres (.40 FAR) with low-density uses such as warehousing.
[5] Assumes fire fee levels derived from Scenario 1: Master Plan.
[6] Existing fees include detention and conveyance fee components. Assumes development is located in Zone 2. For purposes of this analysis, drainage fees calculated based on gross acreage.
[7] Updated fees assume development is located outside Downtown Specific Plan Boundary (DTSPB).
[8] For single family residential, fee level assumes a 1-inch meter. Assumes one 1-inch meter for single family residential units. Assumes one 2-inch meter for every 20 multi-family units. For nonresidential prototype projects, assumes proportional share of development with two 2-inch meters. Includes complete installation fee in addition to water connection fee. Includes meter only installation fee, the fee level for which is assumed to remain consistent with the current fee schedule, in addition to water connection fee. For updated fees, assumes development is located outside of the DTSPB.
[9] Includes the City Finance Department's 4 percent add-on charge for administration of the fee program.

Table 1-3 Summary of Updated Residential Development Impact Fees by Size/Type

Item [1]	Single Family (per unit) [2]					Multifamily (per unit) [3]
	< 1000 sf	*1,000 to 1,999 sf*	*2,000 to 2,999 sf*	*3,000 to 3,999 sf*	*> 4,000 sf*	
Police	$344	$606	$936	$1,154	$1,241	$638
Fire	$483	$850	$1,314	$1,618	$1,739	$894
General Facilities	$461	$812	$1,255	$1,546	$1,662	$855
Parks and Recreation Facilities	$5,374	$9,470	$14,630	$18,029	$19,378	$9,962
Greenbelt Preservation	$163	$288	$445	$548	$589	$303
Traffic	$6,471	$10,383	$15,048	$18,359	$19,412	$8,513
Drainage [4]	$251	$251	$426	$487	$487	$162
Sewer Capacity	$5,953	$8,504	$10,205	$11,906	$11,906	$6,803
Water Capacity & Installation [5]	$12,863	$12,863	$12,863	$12,863	$12,863	$8,160
Total	**$32,362**	**$44,026**	**$57,121**	**$66,509**	**$69,277**	**$36,289**

[1] All fees have been translated into a per-unit basis, although some fees are determined based on other factors like water meter size. Includes the City Finance Department's 4 percent add-on charge for administration of the fee program.
[2] Single family size ranges established based on differences in estimated persons per household. There is an impact fee exemption from accessory dwelling units (ADUs) under 750 sf. ADUs above 750 sf pay fees based on the proportion of the square footage of the ADU to the square footage of the primary dwelling unit. Senior-restricted units have lower traffic fee based on their low trip reduction.
[3] For most capital facilities fees, there is one multi-family fee. However, multi family fees for sewer and drainage will vary by unit size and density, and water capacity fees will vary depending on number and size of meters. Fees here are shown for an illustrative multi-family prototype.
[4] Drainage fee varies by residential density; for illustrative purposes, this table assumes densities decrease as size of units grow.
[5] Water capacity fees are based on meter size and all single family units require the same meter.

As shown in **Table 1-2**, there is substantial variation in the changes in fee levels between different capital facility types and land uses for the development prototypes evaluated. Overall, if updated fees were adopted at these levels, aggregated development impact fees would change as follows:

- **Average Single-Family Development**. Aggregate fee increase of about 26 percent, with increases in fee for some categories and decreases in others. Largest single fee increase is associated with the updated maximum parks and recreation fee.
- **Multifamily Development**. Increase of 14 percent in aggregate fees for development prototype evaluated, increases in fee for some categories and decreases in others. Largest single fee increase is associated with the updated maximum parks and recreation fee.
- **Nonresidential Development**. Aggregate fees on nonresidential development increase the most with estimated increases of 80 percent, 53 percent, and 10 percent, respectively, for the commercial, office, and industrial prototypes considered. These aggregate fee increases are primarily driven by increases in the updated transportation impact fees.

As shown in **Table 1-3**, the City is proposing single-family development fees based on unit size. Sewer capacity and drainage fees currently vary by unit type, though variations in single-family fees would be new for most fee categories. Varying the fees in this manner results in:

- Fees for the largest single-family homes are $69,277 per unit, about 21 percent above the fee on the average/typical single-family home of $57,121 per unit.
- Fees for the smallest single-family homes are $32,362 per unit, about 43 percent below the fee on the average/typical single-family homes and somewhat below the fee for the average multifamily unit.
- Compared to the existing, aggregated single-family fee of $45,183 per unit, the fees on single-family homes below 2,000 square feet would see reductions in aggregate fees while homes over 2,000 square feet will see fee increases with larger increases for large units.

Fee Program Applicability

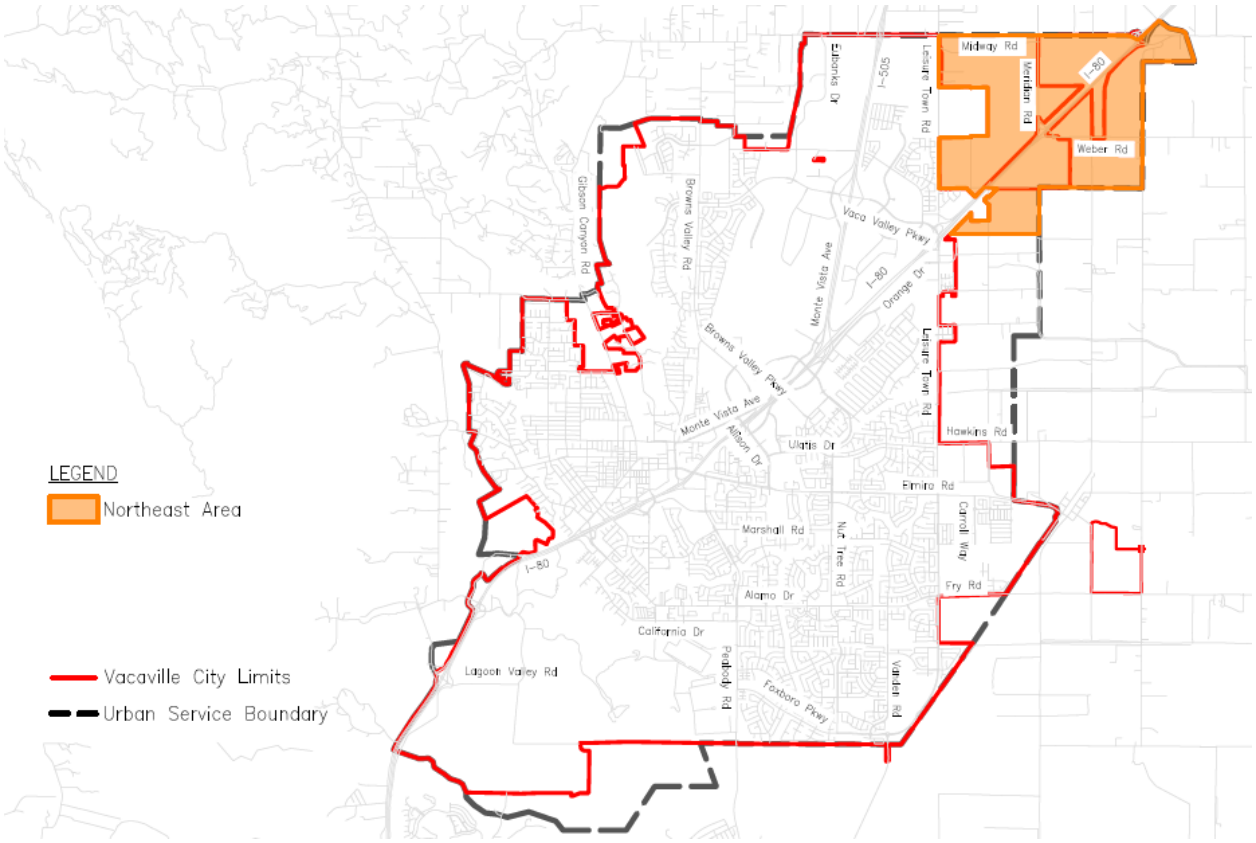
Future development subject to the City's development impact fees will include all development within the existing City limits and Urban Growth Boundary (UGB), excluding development in the Northeast Area (DIF Boundary). This Nexus Study allocates the costs of future public facility needs resulting from new development to all DIF Boundary growth except for future Fire facilities and equipment needs.[4] **Figure 1-1** identifies the DIF Boundary, including the identification of Lagoon Valley and the Northeast Area. Below summarizes the DIF Update fee program applicability.

City Geography Applicability	Fee Program
DIF Boundary (with geographic Variations for certain) fees[5]	• Police Fee • General Facilities Fee • Traffic Fee • Drainage Detention Fee • Drainage Conveyance Fee • Drainage Water Quality Fee • Sewer Capacity Fee • Water Connection Fee
DIF Boundary Excluding Lagoon Valley	• Fire Fee

[4] Under a Development Agreement, Lagoon Valley development is required to make a CBC payment that covers fire facilities. As a result, Lagoon Valley developers are not required to pay the Citywide Fire Facilities Fee. Lagoon Valley developers are also required to contribute to parks and recreation facilities as part of their CBC.

[5] Within the DIF boundary, certain fees are further differentiated by geography (e.g., within the Downtown Specific Plan). Based on the nexus analyses, Transportation, Sewer, Water, and Drainage fees vary depending upon where the development is located within the DIF boundary. For traffic, a portion of the DTSPB has a TOD fee reduction as well as the area around the Allison Transportation Center. For sewer and water, fees are lower inside the DTSPB. For storm drain, fees vary between whether development is west of, or east of, Leisure Town Road.

Figure 1-1 Development Impact Fee Boundaries



Nexus Methodology

Development impact fees must be related to the demand for facilities generated by new development. Several findings regarding the demand and need for new facilities generated by new land uses are required to levy a fee on future development. The fee imposed must demonstrate rough proportionality to the demand generated, or benefit received, by each land use category on which the fee is imposed.

Public facility requirements used in this Nexus Study are determined using standards-based and facilities master plan-based methods. These methodologies are described below.

- **Standards-Based Methodology**: This approach determines costs attributable to future development based on current facility inventory, demographic data, and the resulting existing service level standard. Facility needs attributable to new development are then computed by applying current service level standards and unit costs to future development projections.

- **Facilities Master Plan-Based Methodology**: Under this approach, the local agency identifies total facility needs through development of a facilities or infrastructure master plan and associated capital improvement program. Impact fee calculations then must determine

the appropriate proportion of planned future facilities attributable to demands generated by new development. This determination can be made via two distinct approaches:

— An evaluation of existing deficiencies and a nexus-based determination of the proportion of future facilities costs attributable to future development, or

— A cost allocation methodology that considers both existing and future facilities as well as existing and future development levels and allocates costs accordingly. This approach is useful for facilities where it is difficult to determine the appropriate distribution of costs between existing and future development and ensures that new development is not underwriting existing facility deficiencies.

In some cases, a hybrid approach is used to determine the need for future facilities to serve new development. For instance, the Parks and Recreation Fee uses a standards-based methodology to determine the need for new parkland area based on standards identified in the City General Plan, and the need for recreation facilities are based on future facilities planned in the Parks and Recreation Master Plan.

The methodologies applied to each City development impact fee component are summarized below.

Nexus Methodology	Development Impact Fee Category
Standards-Based Methodology – Existing Level of Service	• Police • Fire • General Facilities – Corporation Yard • Parks and Recreation – Trails Segments • Greenbelt Preservation
Standards-Based Methodology – Master Plan Level of Service	• Parks and Recreation – Neighborhood, Community and Regional Parks
Facilities Master Plan/Capital Improvement Program-Based Methodology	• Parks and Recreation – Recreation Facilities • Parks and Recreation – Trail Access Points • General Facilities – City Hall Improvements • Transportation Improvements derived from General Plan Level of Service (LOS) Standards • Drainage • Sewer Capacity Fee • Water Connection Fee

Land Use Assumptions

The land uses used in this Nexus Study represent the residential and nonresidential development assumptions consistent with 2035 General Plan Buildout excluding the Northeast Area ("Buildout minus Northeast Area"). As detailed in **Chapter 2** of this Nexus Study, the Northeast Area growth and infrastructure needs are excluded from this report.

Facilities Costs, Fee Calculation, and Cost Allocation

For each of the development impact fee program components, this Nexus Study (or associated technical studies) details the facility requirements based on nexus methodologies described above. Based on the future facility requirements and unit cost estimates as determined by the City and EPS, total facility costs and the proportion of the costs attributable to future development are calculated.

Costs are allocated to future development based on the benefit derived from the public facility improvement by land use category for each fee component. This Nexus Study uses a variety of cost allocation methodologies to apportion public facility costs in accordance with the benefit received by land use category. Public facility requirements, the associated costs, cost allocation, and fee calculation for each component of the City's development impact fees are discussed in more detail in the following chapters.

It is important to note that this Nexus Study includes the nexus methodology and fee calculations for the following capital facility categories:

- Police Fee
- Fire Fee
- General Facilities Fee
- Parks and Recreation Fee
- Greenbelt Preservation Fee
- Drainage Fee

The nexus methodology and fee calculations for the other capital facility categories are referenced in this report as appendices and are provided under separate cover.

Organization of Report

This report is divided into 11 chapters, including this Study Background and Summary of Results:

- **Chapter 2** describes the land use and growth projections and associated service population estimates used to help update several of the development impact fee programs.
- **Chapter 3** through **Chapter 8** describe the facility requirements, estimated facility costs, cost allocation, and fee calculation for the components of the City's development impact fee program evaluated in this report.
- **Chapter 9** and **Chapter 10** summarize the findings of the distinct nexus studies completed for transportation and water/sewer capacity respectively (provided in full in *Appendix A* and *Appendix B* under separate cover).
- **Chapter 11** provides references to City documents outlining key aspects of fee program implementation and administration.

2. LAND USE AND GROWTH ASSUMPTIONS

This chapter outlines the land use and growth assumptions used in this Nexus Study, including an overview of the fee program boundary, land use assumptions for existing and future development, population and employment growth calculations, and the methodologies used to identify facilities needed to serve new development and to allocate costs amongst benefitting development.

Fee Program Boundary

The 2035 General Plan establishes the following political and planning boundaries of relevance to this Nexus Study:

- **City Limits**. The City Limits boundary includes all incorporated land within the legal jurisdiction of the City, which total 29.6 square miles.
- **Sphere of Influence**. The Sphere of Influence (SOI) is a boundary that identifies land that the City may annex in the future, and for which urban services, if available, would be provided. The SOI delineates the City's probable future boundary, totaling approximately 35 square miles in size.
- **Urban Growth Boundary**. In 2008, the City adopted a 20-year Urban Growth Boundary (UGB), which totals 36 square miles in size and encompasses the SOI. The UGB was adopted by the City Council and is incorporated in the General Plan Land Use Element. The General Plan Land Use element outlines procedures to amend the location of the UGB and the City's UGB policies. Land outside the UGB cannot be designated for anything other than agriculture, park, open space, public facility, and utility uses until March 1, 2028, specifically as set forth in the 2035 General Plan.
- **Northeast Growth Area**. Adoption of the UGB created two new significant areas of undeveloped land within the UGB: the East of Leisure Town Road Growth Area and the Northeast Growth Area. Each of these growth areas is partially located outside of the existing City Limits and SOI, but within the UGB. The East of Leisure Town Road Growth Area is approximately 1,300 acres, and the Northeast Growth Area is approximately 1,400 acres. Because the Northeast Growth Area is not expected to develop within the foreseeable future, due to infrastructure costs, this Nexus Study excludes future growth and capital facilities needs associated with development of the Northeast Growth Area. Therefore, the City's UGB excluding the Northeast Growth Area is used to define the DIF Boundary.
- **Lagoon Valley**. Lagoon Valley is a development located in the Lower Lagoon Valley Policy Plan area. The policy plan area is in the southwest corner of the City and functions as a major community separator and gateway between Vacaville and Fairfield. Buildout and new growth in Lagoon Valley are distinguished from the rest of the City because Lagoon Valley development is subject to a Development Agreement. Through the Development Agreement, Lagoon Valley developers fund park and fire facility improvements through the CBC Fee. As a result: (1), the future population and associated public facility impacts from Lagoon Valley are not included in the Fire Fee analysis; and (2) while they are included in the Parks and

Recreation Fee nexus analysis, Lagoon Valley is eligible for a partial parks fee credit due to their parks investments).

- **Downtown Specific Plan Growth Boundary.** This area encompasses the City's downtown. Development in the downtown is expected to have more modest impacts on the City's sewer and water systems and so is assessed a lower fee.

- **TOD Zones.** John Long Consulting identified two areas of the City where transportation impacts would be lower (areas around the transit centers). The transit centers include: (1) the Vacaville Transit Plaza, located downtown in the southeast corner of E Monte Vista Avenue and Cernon Street, and (2) the Vacaville Transportation Center, located at the southeast corner of Allison Drive and Travis Way. The maximum transportation fees on land uses in these areas are lower than in other areas in the City.

Land Use and Growth Assumptions

Estimates of future development are a significant variable used to determine facility requirements in this Nexus Study. The future land uses used in this Nexus Study represent the projected growth the City is anticipated to experience through the buildout of the land uses identified in the 2035 General Plan. However, as described above, this Nexus Study excludes the buildout and future growth associated with the Northeast Growth Area. As a result, this Nexus Study focuses on "General Plan Buildout minus Northeast Growth Area". This area includes the East of Leisure Town Road urban reserve area. As described later in this section, future facility needs for the DIF components are based on the increase in service population.

The 2035 General Plan, adopted by the City Council on August 11, 2015, through Resolution No. 2015-074, sets forth the land use policies for the City. The 2035 General Plan defines land use categories and identifies the conceptual land use configuration for lands in the City. **Figure 1-1** in **Chapter 1** identifies the DIF Boundary, which, as noted above, includes all land currently within the UGB, but excludes the Northeast Growth Area.

The remainder of this section summarizes the residential and nonresidential land use buildout projections used to prepare this Nexus Study. To estimate future land uses, the City conducted an inventory of existing development in the City, and projected future, or capacity, development, according to the land use designations set forth in the 2035General Plan. Future development buildout and the associated growth quantified in this chapter is limited to the UGB, excluding the Northeast Growth Area.

DIF Boundary Development at Buildout

The City's DIF Boundary development buildout included in this Nexus Study is based on **Buildout minus Northeast Area** projections for the General Plan. **Table 2-1** shows the City's estimated residential unit and nonresidential building square footage at buildout and the associated growth expected between 2015 and Buildout, including:

- About 47,700 Residential Dwelling Units including about 12,900 new residential units.

- About 13.3 million square feet of Commercial uses including about 4.6 million new square feet of commercial building development.

- About 4.7 million square feet of Office/Medical uses including about 2.5 million new square feet of office/medical building development.
- About 17.8 million square feet of Industrial uses including about 9.7 million new square feet of industrial building development.

As mentioned in **Chapter 1**, fire development impact fee calculations exclude residential and nonresidential growth associated with Lagoon Valley. As shown in **Table 2-1**, Lagoon Valley is forecast to add 1,306 residential units and approximately 841,000 square feet of Office uses. Note, the City's DIF Boundary buildout is inclusive of the Lagoon Valley buildout projections.

Population, Employment and Persons Served Assumptions

To determine the future facility needs for fees based on either standards-based or master plan LOS, EPS calculated the growth in persons served. To calculate the growth in persons served, EPS combined the population and employment projections of future growth with residential persons per household and employment density assumptions, as detailed below.

Future Growth Population and Employment

Costs for the fee categories using a standards-based methodology are established and allocated in accordance with population or employees generated by each of the various land use categories discussed above. EPS calculated the DIF Boundary future growth population by multiplying the future growth residential units by the estimated persons per household (PPH) for each residential land use. EPS estimated the PPH for Single-Family and Multifamily non-age restricted units using data from the United States (US) Census Bureau's American Community Survey (ACS) Public Use Microdata Sample (PUMS) for residential units constructed since 2000 in Solano and Yolo Counties.[6] The PPH for Single-Family Age Restricted and Multifamily Age Restricted units are based on a survey of active adult residential developments in Northern California and Nevada.

Multiplying the future growth residential units by the average PPH by residential land use results in an estimated future growth population of approximately 39,100 residents, as shown in **Table 2-2**. For purposes of the fire fee calculation, EPS estimated the buildout population excluding Lagoon Valley. As shown in **Table 2-3**, the future growth population for the DIF Boundary excluding Lagoon Valley is approximately 34,800 residents (excludes 4,300 residents).

[6] EPS developed a detailed analysis to derive estimated PPH by residential unit size ranges using the US Census Bureau's PUMS data. To conduct this analysis with a significant sample size, EPS used PUMS data for Solano and Yolo Counties as a representation of the household characteristics in Vacaville.

Table 2-1 Summary of Buildout Minus Northeast Land Use Assumptions

Land Use	DIF Boundary: Existing Development (2015)	DIF Boundary: Future Growth	DIF Update Boundary	Lagoon Valley Future Growth [2]
Residential Dwelling Units				
Single-Family	26,005	9,308	35,313	1,255
Single-Family Age Restricted	1,678	5	1,683	0
Multifamily	6,049	3,547	9,596	51
Multifamily Age Restricted	1,029	78	1,107	0
Total Residential Dwelling Units	**34,761**	**12,938**	**47,699**	**1,306**
Nonresidential Square Feet				
Commercial	**8,677,000**	**4,653,600**	**13,330,600**	**0**
Office				
Office	1,159,100	2,312,200	3,471,300	841,200
Medical	303,700	0	303,700	0
Hospital	788,600	143,000	931,600	0
Subtotal Office	**2,251,400**	**2,455,200**	**4,706,600**	**841,200**
Industrial				
Industrial	893,300	10,000	903,300	0
Warehouse	2,857,500	7,741,800	10,599,300	0
HICUBE [3]	4,385,100	1,961,100	6,346,200	0
Subtotal Industrial	**8,135,900**	**9,712,900**	**17,848,800**	**0**
Other/Public				
Assembly-Use	966,200	434,400	1,400,600	0
Assisted Living	332,300	(112,600)	219,700	0
Subtotal Other/Public	**1,298,500**	**321,800**	**1,620,300**	**0**
Subtotal Nonresidential Square Feet	**20,362,800**	**17,143,500**	**37,506,300**	**841,200**

lu

Sources: City of Vacaville General Plan EIR; Traffic Study; EPS.

[1] Based on the land use information in the City of Vacaville Traffic Study, provided by the City of Vacaville on October 8, 2020.
[2] Lagoon Valley future growth is inclusive of the DIF Boundary growth.
[3] A high-cube warehouse/distribution center (HICUBE) is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses.

Table 2-2 Future Persons Served—DIF Boundary

Future Land Uses	Future Units/ Sq. Ft.	PPH/ Sq. Ft. per Employee [2]	Total Residents/ Employees	Persons Served Factor	Total Persons Served
Residential [3]	*units*	*pph*	*residents*		
Single-Family	9,308	3.33	30,976	1.0	30,976
Single-Family Age Restricted	5	1.80	9	1.0	9
Multifamily	3,547	2.27	8,037	1.0	8,037
Multifamily Age Restricted	78	1.04	81	1.0	81
Subtotal Residential	**12,938**		**39,103**		**39,103**
Nonresidential	*sq. ft.*	*sq. ft. per employee*	*employees*		
Commercial [4]	4,653,600	600	7,756	0.5	3,878
Office					
Office	2,312,200	350	6,606	0.5	3,303
Medical	0	350	0	0.5	0
Hospital	143,000	400	358	0.5	179
Subtotal Office	**2,455,200**		**6,964**		**3,482**
Industrial					
Industrial	10,000	890	11	0.5	6
Warehouse	7,741,800	1,700	4,554	0.5	2,277
HICUBE [5]	1,961,100	890	2,203	0.5	1,102
Subtotal Industrial	**9,712,900**		**6,769**		**3,384**
Subtotal Nonresidential	**16,821,700**		**21,489**		**10,744**
Total					**49,848**
					persons

Sources: U.S. Census Bureau, American Community Survey (2014-2018); City of Vacaville.

[1] Based on the land use information in the City of Vacaville Traffic Study, prepared by DKS Associates.
[2] Single-Family and Multifamily Residential (non-age restricted) persons per household assumptions are based on data from the U.S. Census Bureau's American Community Survey Public Use Microdata Sample (PUMS) for homes constructed since 2000 in Solano and Yolo Counties. Age Restricted (Single-Family and Multifamily) persons per household assumptions are based on estimates EPS has obtained for master planned communities throughout Northern California. Square feet per employee assumptions are based on the City of Vacaville Traffic Study, prepared by DKS Associates.
[3] Includes owner- and renter-occupied housing units.
[4] Commercial land uses includes Retail, Retail Highway, Service, and Downtown land uses.
[5] A high-cube warehouse/distribution center (HICUBE) is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses.

Table 2-3 Future Growth Persons Served—DIF Boundary Less Lagoon Valley

Future Land Uses	Lagoon Valley Future Growth: Future Units/ Sq. Ft.	PPH/ Sq. Ft. per Employee [3]	Total Residents/ Employees	Persons Served Factor	Total Persons Served	DIF Boundary Future Growth Persons Served [4]	DIF Update Boundary Less Lagoon Valley Persons Served
Residential [5]	*units*	*pph*	*residents*				
Single-Family	1,255	3.33	4,176	1.0	4,176	30,976	26,799
Single-Family Age Restricted	0	1.80	0	1.0	0	9	9
Multifamily	51	2.27	116	1.0	116	8,037	7,922
Multifamily Age Restricted	0	1.04	0	1.0	0	81	81
Subtotal Residential	**1,306**		**4,292**		**4,292**	**39,103**	**34,811**
Nonresidential	*sq. ft.*	*sq. ft. per employee*	*employees*				
Commercial [6]	0	600	0	0.5	0	3,878	3,878
Office							
Office	841,200	350	2,403	0.5	1,202	3,303	2,101
Medical	0	350	0	0.5	0	0	0
Hospital	0	400	0	0.5	0	179	179
Subtotal Office	**841,200**		**2,403**		**1,202**	**3,482**	**2,280**
Industrial							
Industrial	0	890	0	0.5	0	6	6
Warehouse	0	1,700	0	0.5	0	2,277	2,277
HICUBE [7]	0	890	0	0.5	0	1,102	1,102
Subtotal Industrial	**0**		**0**		**0**	**3,384**	**3,384**
Subtotal Nonresidential	**841,200**		**2,403**		**1,202**	**10,744**	**9,543**
Total					**5,494**	**49,848**	**44,354**

persons less LV

Sources: U.S. Census Bureau, American Community Survey (2014-2018); City of Vacaville.

[1] Based on the land use information in the City of Vacaville Traffic Study, prepared by DKS Associates.
[2] Fire Fee capital needs and improvement costs are based on the future demand resulting from DIF Boundary residential growth excluding Lagoon Valley. Lagoon Valley developers directly fund fire facility improvements. Therefore, the future population and associated fire facilities impacts from Lagoon Valley are not included these fee analyses.
[3] Single-Family and Multifamily Residential (non-age restricted) persons per household assumptions are based on data from the U.S. Census Bureau's American Community Survey Public Use Microdata Sample (PUMS) for homes constructed since 2000 in Solano and Yolo Counties. Age Restricted (Single-Family and Multifamily) persons per household assumptions are based on estimates EPS has obtained for master planned communities throughout Northern California.
Square feet per employee assumptions are based on the City of Vacaville Traffic Study, prepared by DKS Associates.
[4] See Table 2-2 for details.
[5] Includes owner- and renter-occupied housing units.
[6] Commercial land uses includes Retail, Retail Highway, Service, and Downtown land uses.
[7] A high-cube warehouse/distribution center (HICUBE) is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses.

DIF Boundary employment projections were calculated by dividing the buildout nonresidential square footage by the estimated employment density by nonresidential land use category. Employment density, expressed in the number of square feet per employee, is based on assumptions used in the City of Vacaville Traffic Study. Using the aforementioned method and assumptions results an estimated growth of approximately 21,300 new employees, as shown in **Table 2-2**. As shown in **Table 2-3**, the future growth employees for the DIF Boundary excluding Lagoon Valley are approximately 18,900 (excludes 2,400 employees).

Future Growth Persons Served

The future growth population and employment estimates describe above, as well as the associated resident and employee densities, provide the basis for the allocation of DIF components based on existing or master plan LOS standards among the various land use categories.

The purpose of allocating certain improvement costs among the various land uses is to provide an equitable method of funding required facilities. The keys to apportioning the cost of citywide improvements to different land uses are the assumptions that the demands placed on public facilities are related to land use type and that such demands can be stated in relative terms for all land uses. It is by relating demand for facilities to land use types that a nexus, or reasonable relationship, can be established to apportion the fair share costs to that land use.

Demand for DIF facilities will be driven by new residents and employees generated by new development. For standards-based development impact fees, this Nexus Study employs a persons-served method to apportion costs amongst the various land use categories based on each land use category's proportionate benefit from the new facility, as determined by the new residents and employees generated.

DIF costs are allocated to land uses based on their projected use of the facilities. While residents are the primary beneficiaries of City facilities, businesses and employees also benefit from the use of these improvements. For purposes of DIF cost allocation, the total number of projected employees is adjusted to reflect the smaller demand for City facilities by an employee in comparison to demand for City facilities generated by a resident. Reflecting this differentiation in demand, one employee is assumed to equal 0.5 residents. By applying this adjustment factor to the projected employees, the DIF Boundary future persons served is approximately 49,800, as shown in **Table 2-4**. Using this same approach, the persons served at buildout for the DIF Boundary excluding Lagoon Valley is approximately 44,300, as shown in **Table 2-4**.

Table 2-4 Summary of Future Growth Persons Served

Item	Weighting Factor Assumption	Existing Residents and Employees (2020) [1] [2]	Existing Persons Served (2020)	Future Residents and Employees (2015-2035)	Future Persons Served (2015-2035) [3]
Formula	*A*	*B*	*C = A * B*	*D*	*E = D * A*
Population and Employees					
Residents	1.00	98,855	98,855	39,103	39,103
Employees	0.50	38,772	19,386	21,489	10,744
Total Population and Employees		**137,627**	**118,241**	**60,592**	**49,848**
Population and Employees					
Residents	1.00	98,855	98,855	34,811	34,811
Employees	0.50	38,772	19,386	19,085	9,543
Total Population and Employees		**137,627**	**118,241**	**53,896**	**44,354**

assumps

Sources: US Census LEHD OnTheMap, 2017; California Department of Finance; EPS.

[1] Residents are based on population estimates from the California Department of Finance (DOF) data for January 1, 2020.
[2] Employees are based on the 33,549 jobs estimated by the US Census Onthemap.ces.census.gov in Vacaville in 2017 and the annual average growth rate of 1.66% since 2017 for Solano County estimated by the California EDD and then adjusted by an additional 10% to account for self-employed workers.
[3] See the following tables for buildout persons served estimates.
DIF Boundary: Table 2-2.
DIF Boundary Excluding Lagoon Valley: Table 2-3.
[4] Fire Fee capital needs and improvement costs are based on the future demand resulting from DIF Boundary residential growth excluding Lagoon Valley. Lagoon Valley developers fund fire facility improvements directly. Therefore, the future population and associated capital impacts from Lagoon Valley are not included these fee analyses.

Residential Occupancy Factors

EPS assessed the connection between persons per household and home sizes. The purpose was to assess whether it was possible to establish a link between unit size and Persons per Household (PPH) based on available data. If larger homes have more persons per household, then impacts on public facilities would be greater for larger homes where demand is driven by number of persons.

To assess whether there is a correlation between housing unit sizes and PPH, EPS completed the following steps:

- Used the US Census Bureau PUMS data to query for Public Use Microsample Areas (PUMAs) covering Solano and Yolo Counties (smaller geographies provided too small of a sample size).
- Developed a crosstab query of average PPH by the number of bedrooms per unit for homes constructed since 2000.
- Used Solano County assessor data to determine the average unit square footage by the number of bedrooms per unit.
- Developed a curve fit equation to interpolate the average PPH by range of unit square footages.

As shown in **Table 2-5**, the data indicated a relationship between the estimated PPH and different single-family home size ranges. A clear relationship could not be discerned between PPH and multifamily unit sizes based on the information available. These differences in PPH by single-family unit size range can then be used to calibrate the residential development impact fees by unit size using a persons-served allocation method.

Table 2-5 Estimated Persons per Unit-by-Unit Size Range

Average Sq. Ft.	Sq. Ft. Range Low		Sq. Ft. Range High	Estimated Persons per Household
Single-Family Residential				
1,000	< 1,000			1.22
1,500	1,000	-	1,999	2.15
2,500	**2,000**	**-**	**2,999**	**3.33**
3,500	3,000	-	3,999	4.10
4,000	≥ 4,000			4.41
Multifamily Residential				2.27

pph

Source: U.S. Census Bureau; County of Solano; CoStar; EPS.

3. POLICE FACILITIES

As the City continues to grow, additional police personnel will be required to serve the expanding residential and employee population. The additional police personnel will require facility space, vehicles, and equipment. The Police Fee component funds the expansion of police facilities and acquisition of additional vehicles and equipment necessary to serve new development based on current facility and fleet standards.

This chapter provides an overview of existing and future LOS standards, facility, fleet and equipment cost estimates, and the Police Fee component cost allocation methodology.

LOS Standards

Methodology Used

This Nexus Study calculates the police facilities, vehicles, and equipment required to serve future development based on the existing LOS for said facilities, vehicles, and equipment currently provided by the City. The existing LOS is applied to projected future development to calculate the future facility requirements, which then are allocated amongst the various land uses on a persons–served basis, according to the total residents or employees generated by each land use category.

Existing Facilities, Fleet and Equipment

Police Facilities

The police department currently operates out of an approximately 39,000 square feet Police Headquarters building co-located with City Hall. The current Headquarters houses police management, administration, and police service functions. The City owes approximately $4 million in debt service to fully fund the existing Police Headquarters. As a result, this Nexus Study reduces the existing Police Headquarters facility LOS to reflect the outstanding debt to fully fund the facility. In addition, the City's Police Department occupies approximately 1,500 square feet of space to house the Family Investigative Response Services Team (FIRST), a special victims unit to address the needs of families, senior citizens and children in response to family violence. The existing inventory of police facilities is documented in **Table 3-1**.

The existing LOS for police facilities is calculated based on the entire current citywide resident population and weighted current employment population (persons-served population). Employees tend to demand a smaller set of services than residents and, as such, their demand weighting typically is discounted. To compute the persons-served population, a weighting factor of 0.5 is applied to the employee population. Shown in **Table 3-2**, this translates into an existing LOS of approximately 285 square feet of existing police facilities per existing 1,000 City persons served.

Table 3-1 Police Facilities Inventory

Item	Total	Value per Unit	Current Replacement Value
Facilities	*sq. ft.*	*per sq. ft. [1]*	
Headquarters Building [2]	38,560	$630	$24,292,800
Less Former Redevelopment Authority Debt [3]	(6,349)	$630	($4,000,000)
FIRST Office	1,460	$630	$919,800
Total Facilities	**33,671**		**$21,212,600**
Police Fleet	*vehicle*	*per vehicle [4]*	
Patrol Vehicles [5] [6]	71	$68,000	$4,828,000
Detective Vehicles [5] [7]	15	$39,400	$591,000
Motorcycles - BMW 200 RTRT [8]	11	$45,000	$495,000
Under Cover [9]	5	$35,000	$175,000
M/C Trailer	1	$2,000	$2,000
Radar and Machine Trailers	3	$8,000	$24,000
DUI Trailer	1	$20,000	$20,000
Wells Cargo Express 20' Enclosed Trailer	1	$30,000	$30,000
Generator	1	$100,000	$100,000
Winnebago Adventurer - Command Post	1	$175,000	$175,000
Northstar Type V Command	1	$315,000	$315,000
MRAP (Mine Resistant Ambush Protected) - ARV	1	$733,000	$733,000
Cargo Van - UC Van	1	$28,000	$28,000
Cargo Van - Evidence	2	$60,000	$120,000
Passenger Van	2	$35,000	$70,000
Specialty - Ford Crown Vic - PIT	2	$47,000	$94,000
Isuzu NPR W/Util Body - SWAT	1	$40,000	$40,000
Ford F250 4X4 Crew Cab - MFF F250	1	$59,000	$59,000
Ford F150 Crew Cab - CRU	1	$65,000	$65,000
2004 Haulmark TS7/16DT2	1	$1,500	$1,500
Ford Police Interceptor Utility SUV - Traffic	2	$80,000	$160,000
Traffic - 2007 Ford Crown Victoria	1	$80,000	$80,000
Community Service Officer [10]	7	$48,000	$336,000
Admin Vehicles [11]	22	$45,000	$990,000
Total Police Fleet	**155**		**$9,531,500**
	officers	*per officer [12]*	
Officer Equipment	**86**	**$13,502**	**$1,161,164**
	detectives	*per detective [12]*	
Detective Equipment	**25**	**$3,455**	**$86,375**
Total Value of Existing Police Facilities, Vehicles, and Equipment			**$31,991,639**

police facilities

Source: City of Vacaville.

[1] Cost per building square foot based on costs for recently constructed public safety buildings in other areas. Estimate does not include land acquisition costs.
[2] Excludes the cost for the unfinished 440 square foot communications center, as those facilities are anticipated to serve future development and assumed to be included in Table 3-5.
[3] Reflects the approximate debt owed to fully fund the existing Police Headquarters Building. This remaining debt is reduced from the total facility replacement cost.
[4] Includes up-fitting costs and radio/MCTs.
[5] See Table 3-3.
[6] Includes black-and-white Ford Crown Victoria and Ford Utility Police Inceptor patrol vehicles.
[7] Includes Ford Fusion detective vehicles.
[8] Includes radio. The City has two 2004 SUZUKI DRZ400SK4, the cost shown are for the BMW R1200RT-P.
[9] Based on the rounded average cost for the current undercover vehicles.
[10] Includes Ford Ranger and Toyota Tacoma vehicles.
[11] Includes the average cost for the current admin vehicles. Includes 4 admin volunteer vehicles that are leased at $5,000/year, but show the purchase price of $33,000.
[12] See Table 3-4.

Table 3-2 Police Existing Level-of-Service Standards and Future Requirement

Facilities and Equipment	Employee Weighting Factor Assumption [1]	Existing Inventory [2]	Existing Level of Service *per 1,000 persons served*	Future Development Requirements [2]
Persons Served (DIF Boundary) [2]				
Residents	1.000	98,855		39,103
Employees	0.500	19,386		10,744
Total Persons Served		**118,241**		**49,848**
Facilities				
Facility Sq. Ft.		33,671	285	14,195
Police Fleet				
Patrol Vehicles		71	0.60	29.9
Detective Vehicles		15	0.13	6.3
Motorcycles - BMW 200 RTRT		11	0.09	4.6
Under Cover		5	0.04	2.1
M/C Trailer		1	0.01	0.4
Radar and Machine Trailers		3	0.03	1.3
DUI Trailer		1	0.01	0.4
Wells Cargo Express 20' Enclosed Trailer		1	0.01	0.4
Generator		1	0.01	0.4
Winnebago Adventurer - Command Post		1	0.01	0.4
Northstar Type V Command		1	0.01	0.4
MRAP (Mine Resistant Ambush Protected) - ARV		1	0.01	0.4
Cargo Van - UC Van		1	0.01	0.4
Cargo Van - Evidence		2	0.02	0.8
Passenger Van		2	0.02	0.8
Specialty - Ford Crown Vic - PIT		2	0.02	0.8
Isuzu NPR W/Util Body - SWAT		1	0.01	0.4
Ford F250 4X4 Crew Cab - MFF F250		1	0.01	0.4
Ford F150 Crew Cab - CRU		1	0.01	0.4
2004 Haulmark TS7/16DT2		1	0.01	0.4
Ford Police Interceptor Utility SUV - Traffic		2	0.02	0.8
Traffic - 2007 Ford Crown Victoria		1	0.01	0.4
Community Service Officer		7	0.06	3.0
Admin Vehicles		22	0.19	9.3
Total Police Fleet		**155**		**65.3**
Officers		86	0.73	36.3
Detectives		25	0.21	10.5
				police LOS

Source: City of Vacaville; EPS.

[1] Service population estimates are derived based on a weighting of 1.0 for residents and 0.5 for employees.
[2] See Table 2-4 for existing and future development.

Police Fleet

As documented in **Table 3-1**, the police department fleet currently comprises 155 vehicles, including 71 patrol vehicles, 15 detective vehicles, 11 motorcycles, 5 under cover vehicles, 22 administrative vehicles, 7 community service officer vehicles, and 24 other vehicles or other fleet equipment. Translated to existing LOS standards, the police department provides the ratio of fleet vehicles and equipment per 1,000 persons served as detailed in **Table 3-2**.

Details on the costs to outfit police and detective vehicles are provided in **Table 3-3**. Note, EPS removed costs related to annual services, fueling and annual maintenance costs as those are ongoing costs not related to one-time acquisitions needed to serve a growing service population.

Police Officer and Detective Equipment

The City police department has 86 sworn officers and 25 detectives, or 0.73 officers and 0.21 detectives per 1,000 persons served. Each police officer and detective have personal equipment that will need to be acquired to accommodate the need for additional police officers and detectives resulting from new residential and nonresidential growth.

Details on the costs to outfit police officers and detectives are provided in **Table 3-4**. Note, EPS removed costs related to annual services, licenses, and professional memberships as those are ongoing costs not related to one-time acquisitions needed to serve a growing service population.

Table 3-3 New Police Vehicle Expense

Item	Amount
New Patrol Vehicle Expense	
Patrol Vehicle	$54,500
Mobile Connectivity Trailer (MCT)	$6,000
Vision Mobile License (includes PM)	$1,800
Radio an APX6500 7/800 Radio	$4,500
Dash Camera	$1,200
Subtotal New Patrol Vehicle Expense	**$68,000**
New Detective Vehicle Expense	
Detective Vehicle (Fusion)	$26,500
Mobile Connectivity Trailer (MCT)	$6,000
Radio an APX6500 7/800 Radio	$4,500
Dash Camera	$1,200
Rifle/Handgun Lock Box	$1,200
Subtotal New Detective Vehicle Expense	**$39,400**

pvehicle

Source: City of Vacaville Police Department.

Table 3-4 New Police Officer and Detective Department Expense

Item	Amount
New Officer Expense	
Class A Uniform Shirt	$100
Black Basket Weave Underfelt, Gold Buckle	$35
Class A Uniform Pants	$115
LAPD Shirt	$85
LAPD Pant	$85
Nametag	$12
Badge	$85
Ballistic Helmet	$250
Ballistic Vest	$840
Holder	$450
Baton	$20
Baton Ring	$11
Business Cards	$50
Cell Phone	$75
Department ID	$5
Accumold Duty Belt	$65
FTO Manual	$15
Flashlight & Charger	$135
Gas Mask with Holder	$400
Handcuffs	$30
Handcuff Case	$54
Handgun	$450
Shotgun	$800
Handgun Holster	$217
Double Mag Pouch	$42
Keepers	$40
Keys	$0
Latent Print Kit	$20
Memory Cards	$25
Miranda Card	$5
OC Spray	$15
OC Holder	$30
Officer Handbook	$30
Radio / Charger / Lapel Mic	$4,700
Radio Ear Piece	$43
Radio Holder	$50
Rain Gear	$100
Tactical Pistol Light	$146
Taser & Holster	$2,000
Body Mic Camera Recorder	$200
Traffic Safety Vest	$32
Bpad Testing	$60
Background	$1,500
Disk Assessment	$80
Subtotal New Officer Expense	**$13,502**
New Detective Expense	
UC Firearm	$450
Rifle Plates	$250
Vice Manual	$10
Court Holster	$75
Court Magazine Holder	$30
IFAK	$110
Communication System	$800
Tactical Helmet	$650
Heavy Vest	$250
Molle Vest Name Placard	$50
Molle Attachments	$150
Nomex Gloves	$50
Nomex Balaclava	$30
Nomex Flight Suit	$185
IWB Holster	$65
Binoculars	$200
Monocular	$100
Subtotal New Detective Expense	**$3,455**

expense

Source: City of Vacaville Police Department.

Future Facility Costs

EPS and the City estimate the total future police facility, fleet, and equipment costs attributable to future development will be approximately $13.5 million. Calculated by applying the existing LOS described above to future persons served, EPS calculated the staff, facilities and equipment needed to serve new development, including the following items:

- Facility Construction Costs
- Police Fleet Acquisition Costs
- Police Officer and Detective Equipment Costs

Table 3-5 details the calculations relative to future facility and vehicle costs, which are further discussed below.

Facility Construction Cost

EPS and the City estimate facility construction costs will total approximately $630 per police building square foot as detailed in **Table 3-5**. This cost estimate includes the following components:

- Design and Engineering Costs
- Site Development
- Surface Parking Costs
- Site Construction Costs
- Vertical Construction Costs
- Site Landscaping
- FF&E

Applying the estimated cost to the planned future police facilities results in an estimated future facility construction cost estimate of $8.9 million.

Police Fleet Acquisition

Table 3-5 identifies the fleet acquisition costs by type of police department vehicle. Total fleet acquisition costs attributable to future development are estimated to be approximately $4.0 million.

Police Officer and Detective Equipment Acquisition

Table 3-5 identifies the officer and detective equipment acquisition costs, estimated to be approximately $526,000.

Table 3-5 Estimated Planned Police Facility and Fleet Costs

Planned Facilities and Fleet	Number [1]		Unit Cost [2]		Total Cost of Planned Facilities
Facilities Construction	14,195	sq. ft.	$630	per sq. ft.	**$8,942,772**
Police Fleet					
Patrol Vehicles	29.9	vehicles	$68,000	per vehicle	$2,035,368
Detective Vehicles	6.3	vehicles	$39,400	per vehicle	$249,151
Motorcycles - BMW 200 RTRT	4.6	vehicles	$45,000	per vehicle	$208,680
Under Cover	2.1	vehicles	$35,000	per vehicle	$73,776
M/C Trailer	0.4	vehicles	$2,000	per vehicle	$843
Radar and Machine Trailers	1.3	vehicles	$8,000	per vehicle	$10,118
DUI Trailer	0.4	vehicles	$20,000	per vehicle	$8,432
Wells Cargo Express 20' Enclosed Trailer	0.4	vehicles	$30,000	per vehicle	$12,647
Generator	0.4	vehicles	$100,000	per vehicle	$42,158
Winnebago Adventurer - Command Post	0.4	vehicles	$175,000	per vehicle	$73,776
Northstar Type V Command	0.4	vehicles	$315,000	per vehicle	$132,796
MRAP (Mine Resistant Ambush Protected) - ARV	0.4	vehicles	$733,000	per vehicle	$309,015
Cargo Van - UC Van	0.4	vehicles	$28,000	per vehicle	$11,804
Cargo Van - Evidence	0.8	vehicles	$60,000	per vehicle	$50,589
Passenger Van	0.8	vehicles	$35,000	per vehicle	$29,510
Specialty - Ford Crown Vic - PIT	0.8	vehicles	$47,000	per vehicle	$39,628
Isuzu NPR W/Util Body - SWAT	0.4	vehicles	$40,000	per vehicle	$16,863
Ford F250 4X4 Crew Cab - MFF F250	0.4	vehicles	$59,000	per vehicle	$24,873
Ford F150 Crew Cab - CRU	0.4	vehicles	$65,000	per vehicle	$27,402
2004 Haulmark TS7/16DT2	0.4	vehicles	$1,500	per vehicle	$632
Ford Police Interceptor Utility SUV - Traffic	0.8	vehicles	$80,000	per vehicle	$67,452
Traffic - 2007 Ford Crown Victoria	0.4	vehicles	$80,000	per vehicle	$33,726
Community Service Officer	3.0	vehicles	$48,000	per vehicle	$141,649
Admin Vehicles	9.3	vehicles	$45,000	per vehicle	$417,360
Subtotal Police Fleet	**65.3**				**$4,018,249**
Equipment Costs					
Officer	36.3	officers	$13,502	per officer	$489,519
Detectives	10.5	detectives	$3,455	per detective	$36,414
Total Equipment Costs	**46.8**				**$525,932**
Total Police Facility and Fleet Costs for Future Development					**$13,486,953**

police cost

Source: City of Vacaville.

[1] See Table 3-2 for details.
[2] See Table 3-1 for details.

Cost Allocation Methodology and Fee Calculation

The previous section details the costs of providing additional police facilities and vehicles needed to serve new development. The following section describes the methodology used to allocate the overall cost burden of developing police facilities and acquiring vehicles to residential and nonresidential land uses to calculate the maximum justifiable police fee component per unit and per 1,000 nonresidential square feet.

Police Facility Cost Allocation

As discussed above, the LOS standards are based on the residential and employee population of the City and similarly are allocated to both residential and nonresidential development.

For purposes of the police facility cost allocation, the total number of projected employees is adjusted to reflect the smaller demand for police facilities by an employee as it relates to the demand for the facilities generated by a resident. One employee is assumed to equal 0.5 residents.

Applying this factor to the projected future 21,304 employees creates an adjusted, resident-equivalent, future employee population of 10,652 employees. Adding this figure to the projected future residential population of 39,103 new residents results in a total of 49,755 additional persons served.

Total police facility costs then are allocated to future development by distributing the total costs over the projected persons-served population to determine the cost per resident and employee shown in **Table 3-6**.

Calculation of Residential and Nonresidential Fees

Based on the persons-served calculation discussed above, total future police facility costs are apportioned to residential and nonresidential development to derive a maximum justifiable fee per residential unit and nonresidential 1,000 building square feet. Dividing the total future facility and fleet costs of $13.5 million by the projected future persons-served population results in a cost of $271 per person served. This cost per person served equates to $271 per resident and $135 per employee when applying the adjustment factor discussed above.

The cost per resident or per employee then is applied to the residential PPH (residential land uses) or employees per 1,000 square feet (nonresidential land uses) to derive the police facility cost allocation for each land use category, as depicted in **Table 3-6**. Adding a 4 percent City Finance department charge for fee program administration generates the total maximum justifiable police facility fee component for each land use category, as shown in **Table 3-7**.

Table 3-6 Police Facilities Cost Allocation

Item	Persons per Household / Employee per Sq. Ft.	Amount
Persons Served (DIF Boundary)		
Future Residents		39,103
Future Employees		10,744
Future Persons Served		**49,848**
Total Police Costs Allocated to Future Development [1]		**$13,486,953**
Cost per Persons Served		**$271**
Cost per Resident		$271
Cost per Employee		$135
Fee by Land Use Category		
Residential		
Single-Family Residential	*persons per unit*	*per unit*
<1,000 Sq. Ft.	1.22	$331
1,000 - 1,999 Sq. Ft.	2.15	$583
2,000 - 2,999 Sq. Ft.	3.33	$900
3,000 - 3,999 Sq. Ft.	4.10	$1,110
≥ 4,000 Sq. Ft.	4.41	$1,193
Multifamily Residential	2.27	$613
Nonresidential	*emp per 1,000 sq. ft.*	*per 1,000 sq. ft.*
Commercial	1.67	$225
Office		
Office	2.86	$387
Medical	2.86	$387
Hospital	2.50	$338
Industrial		
Industrial	1.12	$152
Warehouse	0.59	$80
HICUBE	1.12	$152

police fee

[1] See Table 3-5 for details.

Table 3-7 Summary of Maximum Justified Police Fee

Future Land Uses	Base Fee	4% Finance Dept. Charge	Total Fee
Residential	----------*per unit*----------		
Single-Family Residential			
<1,000 Sq. Ft.	$331	$13	$344
1,000 - 1,999 Sq. Ft.	$583	$23	$606
2,000 - 2,999 Sq. Ft.	$900	$36	$936
3,000 - 3,999 Sq. Ft.	$1,110	$44	$1,154
≥ 4,000 Sq. Ft.	$1,193	$48	$1,241
Multifamily Residential	$613	$25	$638
Nonresidential	----------*per 1,000 sq. ft.*----------		
Commercial	$225	$9	$234
Office			
Office	$387	$15	$402
Medical	$387	$15	$402
Hospital	$338	$14	$352
Industrial			
Industrial	$152	$6	$158
Warehouse	$80	$3	$83
HICUBE	$152	$6	$158

Findings for Police Facility Fee Component

Purpose of Fee

The Police Fee component developed through this Nexus Study will fund the police facility improvements, vehicle, and equipment acquisition necessary to serve new residential and nonresidential development in the City based on the LOS described in this chapter. New development in the City will increase the service population and, therefore, the need for new police personnel.

Use of Fee

The fee will be used to construct new development's fair share portion of police buildings, as well as acquire police vehicles and equipment necessitated by new development; to plan, design, and develop police facilities; and to fund the studies and administration to support the program.

Relationship between Use of Fee and Type of Development

Development of new residential and nonresidential land uses in the City of Vacaville will generate a need for additional police personnel, facilities, equipment and vehicles. The fee will be used to develop and expand the user capacity for police facilities and to acquire equipment and vehicles to serve new users from residential and nonresidential development.

Relationship between Need for Facility and Type of Project

Each new residential and nonresidential development project will generate additional demand for police services and personnel. Additional police personnel will be housed in future police facilities and will require associated vehicles and equipment to serve additional demand generated by new residents, businesses, and employees.

Relationship between Amount of Fee and Cost of or Portion of Facility Attributed to New Development

The amount of police facilities needed by each land use has been estimated by applying the police cost per persons served for each land use. The common use factor for residential land uses is the number of persons per household for each residential land use category.

The common use factor for nonresidential land uses is based on the number of employees generated per 1,000 square feet for commercial, office, and industrial development and on the ratio of police demand for an employed resident as compared to a non-employed resident.

4. FIRE FACILITIES

As the City continues to grow, additional fire personnel will be required to serve the expanding residential and employee population. The additional fire personnel will require facility space, apparatus, and equipment. The Fire Fee component funds the expansion of fire facilities and acquisition of additional apparatus and equipment necessary to serve new development based on current facility, apparatus, and equipment standards. As noted in **Chapter 1** of this Nexus Study, the Fire Fee applies to the DIF Boundary excluding Lagoon Valley.

This chapter provides an overview of existing and future LOS standards, facility, as well as apparatus and equipment cost estimates, and the fire facilities fee component cost allocation methodology.

LOS Standards

Methodology Used

This Nexus Study calculates the fire facilities, apparatus, and equipment required to serve future development based on the existing LOS for said facilities, apparatus, and equipment currently provided by the City. The existing LOS is applied to projected future development to calculate the future facility requirements, which then are allocated amongst the various land uses on a persons–served basis according to the total residents or employees generated by each land use category.

Existing Facilities, Apparatus, and Equipment

Fire Facilities

The fire department currently occupies five (5) fire stations totaling approximately 37,000 square feet for fire management and services functions. The existing inventory of fire facilities is documented in **Table 4-1**.

The existing LOS for fire facilities is calculated based on the entire current DIF Boundary excluding Lagoon Valley resident population and weighted current employment population (persons served population). Existing development in the aforementioned area is included in this calculation as the existing fire facilities inventoried in **Table 4-1** also serve development in those areas of the City. Employees tend to demand a smaller set of services than residents and, as such, their demand weighting typically is discounted. To compute the persons-served population, a weighting factor of 0.5 is applied to the employee population. Shown in **Table 4-2**, the existing LOS is approximately 315 square feet of existing fire facilities per existing 1,000 City persons served.

Table 4-1 Fire Facilities Inventory

Item	Total	Value per Unit	Current Replacement Value
Existing Facilities and Equipment			
Facilities	*sq. ft.*	*per sq. ft. [1]*	
Station 71 (S. Orchard Ave)	12,374	$802	$9,928,609
Station 72 (Nut Tree and Ulatis)	5,416	$802	$4,345,672
Station 73 (Eubanks Ct)	5,416	$802	$4,345,672
Station 74 (Alamo Dr)	5,776	$802	$4,634,528
Station 75 (Cogburn Cir)	8,266	$802	$6,632,446
Total Facilities	**37,248**		**$29,886,927**
Fire Fleet	*vehicles*	*per vehicle*	
Type 1 Engine	7	$717,000	$5,019,000
Type 3	3	$427,000	$1,281,000
Type 5	3	$325,000	$975,000
Engine - Ladder Truck	1	$1,400,000	$1,400,000
Utilities (Pick Up Trucks)	2	$55,000	$110,000
F-250 Pickups (Trn71 and old OES pickup)	2	$50,000	$100,000
F-450 Stakeside Utility	1	$65,000	$65,000
Heavy Rescue	1	$800,000	$800,000
Medic/Ambulance	6	$300,000	$1,800,000
Fire Admin	9	$35,000	$315,000
Command Vehicle - Explorer	2	$50,000	$100,000
Command Vehicle - Expedition	1	$55,000	$55,000
Battalion Chief Vehicle	2	$60,000	$120,000
Trailer	2	$7,000	$14,000
Total Fire Fleet	**42**		**$12,154,000**
Equipment	*vehicles*	*per vehicle*	
Type 1 Engine	7	$138,500	$969,500
Type 3	3	$40,500	$121,500
Type 5	3	$30,000	$90,000
Engine - Ladder Truck	1	$280,000	$280,000
Utilities (Pick Up Trucks)	2	$12,000	$24,000
F-250 Pickups (Trn71 and old OES pickup)	2	$10,000	$20,000
F-450 Stakeside Utility	1	$10,000	$10,000
Heavy Rescue	1	$103,600	$103,600
Medic/Ambulance	6	$135,000	$810,000
Fire Admin	9	$1,000	$9,000
Command Vehicle - Explorer	2	$25,500	$51,000
Command Vehicle - Expedition	1	$29,000	$29,000
Battalion Chief Vehicle	2	$29,000	$58,000
Investigation Trailer	1	$2,000	$2,000
Trench Trailer	1	$15,000	$15,000
Generator	3	$75,000	$225,000
Total Equipment	**45**		**$2,817,600**
Total Value of Existing Fire Facilities, Vehicles, and Equipment			**$44,858,527**

fire facilities2

Source: City of Vacaville.

[1] Value per sq. ft. reflects construction costs for Station 75, which is the most recently constructed fire facility. Construction costs do not include land acquistion costs.

Table 4-2 Fire Facility Level-of-Service Standard

Facilities and Equipment	Employee Weighting Factor Assumption [1]	Existing Inventory [2] [3]	Existing Level of Service *per 1,000 persons served*	Future Development [2] [3]
Persons Served (DIF Boundary Excluding Lagoon Valley) [1]				
Residents	1.000	98,855		34,811
Employees	0.500	19,386		9,543
Total Persons Served		**118,241**		**44,354**
Facilities				
Facilities Sq. Ft.		37,248	315	13,972
Fire Fleet				
Type 1 Engine		7	0.06	2.6
Type 3		3	0.03	1.1
Type 5		3	0.03	1.1
Engine - Ladder Truck		1	0.01	0.4
Utilities (Pick Up Trucks)		2	0.02	0.8
F-250 Pickups (Trn71 and old OES pickup)		2	0.02	0.8
F-450 Stakeside Utility		1	0.01	0.4
Heavy Rescue		1	0.01	0.4
Medic/Ambulance		6	0.05	2.3
Fire Admin		9	0.08	3.4
Command Vehicle - Explorer		2	0.02	0.8
Command Vehicle - Expedition		1	0.01	0.4
Battalion Chief Vehicle		2	0.02	0.8
Trailer		2	0.02	0.8
Total Fire Fleet		**42**		**15.8**
Equipment				
Type 1 Engine		7	0.06	2.6
Type 3		3	0.03	1.1
Type 5		3	0.03	1.1
Engine - Ladder Truck		1	0.01	0.4
Utilities (Pick Up Trucks)		2	0.02	0.8
F-250 Pickups (Trn71 and old OES pickup)		2	0.02	0.8
F-450 Stakeside Utility		1	0.01	0.4
Heavy Rescue		1	0.01	0.4
Medic/Ambulance		6	0.05	2.3
Fire Admin		9	0.08	3.4
Command Vehicle - Explorer		2	0.02	0.8
Command Vehicle - Expedition		1	0.01	0.4
Battalion Chief Vehicle		2	0.02	0.8
Investigation Trailer		1	0.01	0.4
Trench Trailer		1	0.01	0.4
Generator		3	0.03	1.1
Total Equipment		**45**		**16.9**

fire LOS

Source: City of Vacaville; EPS.

[1] Service population estimates are derived based on a weighting of 1.0 for residents and 0.5 for employees.

[2] Fire Fee capital needs and improvement costs are based on the future demand resulting from DIF Boundary residential growth excluding Lagoon Valley. Lagoon Valley developers fund fire facility improvements through a Community Benefit Contribution. Therefore, the future population served and associated capital impacts from Lagoon Valley are not included in this fee analysis.

[3] See Table 2-4 for existing and future development.

Fire Apparatus and Equipment

As detailed in **Table 4-1**, the fire department's apparatus and equipment comprises 14 fire engines, numerous light-weight trucks, ambulances, and trailers totaling 42 items in its fleet. **Table 4-1** also details the additional equipment costs needed to outfit the existing fire department fleet plus the costs of 3 generators.

Table 4-2 details the existing LOS of existing fire apparatus and equipment per existing 1,000 City persons served.

Future Facilities and Fleet Requirements

Future Fire Facilities

As the City continues to grow, City staff anticipates additional fire facilities, apparatus, and equipment will be required to serve new residents, businesses, and employees. The City intends to construct additional fire facilities to accommodate new fire personnel or relocate/expand stations required to meet the demands generated by new development.

Future facility requirements are based on the existing LOS provided for fire facilities. EPS applied the current facility square footage per 1,000 City persons-served to the projected future persons-served anticipated through General Plan *Buildout minus Northeast Area*. This calculation results in a future facility requirement of approximately 13,900 additional fire facility square feet, as detailed in **Table 4-2**.

Future Fire Apparatus and Equipment Requirements

Additional fire personnel also will require additional apparatus and equipment. Applying the LOS standards discussed above to the number of projected persons served generates the need for additional apparatus and equipment, as detailed in **Table 4-2**.

Future Facility Costs

EPS and the City estimate the total future fire facility, apparatus, and equipment costs attributable to future development will be approximately $16.8 million. By applying the existing LOS described above to future persons served, EPS calculated the fire facilities and equipment needed to serve new development, including the following items:

- Facility Construction Cost
- Fire Facility, Apparatus, and Equipment Acquisition Costs

Table 4-3 details the calculations relative to future facility and equipment costs, which are further discussed below.

Table 4-3 Estimated Planned Fire Facility and Fleet Costs

Planned Facilities and Fleet	Number [1]		Unit Cost [2]		Total Cost of Planned Facilities
Facilities Construction [3]	**13,972**	**sq. ft.**	**$802**	**per sq. ft.**	**$11,210,986**
Fire Fleet					
Type 1 Engine	2.6	vehicles	$717,000	per vehicle	$1,882,694
Type 3	1.1	vehicles	$427,000	per vehicle	$480,520
Type 5	1.1	vehicles	$325,000	per vehicle	$365,736
Engine - Ladder Truck	0.4	vehicles	$1,400,000	per vehicle	$525,159
Utilities (Pick Up Trucks)	0.8	vehicles	$55,000	per vehicle	$41,262
F-250 Pickups (Trn71 and old OES pickup)	0.8	vehicles	$50,000	per vehicle	$37,511
F-450 Stakeside Utility	0.4	vehicles	$65,000	per vehicle	$24,382
Heavy Rescue	0.4	vehicles	$800,000	per vehicle	$300,091
Medic/Ambulance	2.3	vehicles	$300,000	per vehicle	$675,204
Fire Admin	3.4	vehicles	$35,000	per vehicle	$118,161
Command Vehicle - Explorer	0.8	vehicles	$50,000	per vehicle	$37,511
Command Vehicle - Expedition	0.4	vehicles	$55,000	per vehicle	$20,631
Battalion Chief Vehicle	0.8	vehicles	$60,000	per vehicle	$45,014
Trailer	0.8	vehicles	$7,000	per vehicle	$5,252
Subtotal Fire Fleet	**15.8**				**$4,559,128**
Equipment Costs					
Type 1 Engine	2.6	vehicles	$138,500	per vehicle	$363,672
Type 3	1.1	vehicles	$40,500	per vehicle	$45,576
Type 5	1.1	vehicles	$30,000	per vehicle	$33,760
Engine - Ladder Truck	0.4	vehicles	$280,000	per vehicle	$105,032
Utilities (Pick Up Trucks)	0.8	vehicles	$12,000	per vehicle	$9,003
F-250 Pickups (Trn71 and old OES pickup)	0.8	vehicles	$10,000	per vehicle	$7,502
F-450 Stakeside Utility	0.4	vehicles	$10,000	per vehicle	$3,751
Heavy Rescue	0.4	vehicles	$103,600	per vehicle	$38,862
Medic/Ambulance	2.3	vehicles	$135,000	per vehicle	$303,842
Fire Admin	3.4	vehicles	$1,000	per vehicle	$3,376
Command Vehicle - Explorer	0.8	vehicles	$25,500	per vehicle	$19,131
Command Vehicle - Expedition	0.4	vehicles	$29,000	per vehicle	$10,878
Battalion Chief Vehicle	0.8	vehicles	$29,000	per vehicle	$21,757
Investigation Trailer	0.4	vehicles	$2,000	per vehicle	$750
Trench Trailer	0.4	vehicles	$15,000	per vehicle	$5,627
Generator	1.1	vehicles	$75,000	per vehicle	$84,401
Total Equipment Costs	**16.9**				**$1,056,919**
Total Fire Facility and Fleet Costs for Future Development					**$16,827,034**

fire cost

Source: City of Vacaville.

[1] See Table 4-2 for details.
[2] See Table 4-1 for details.
[3] See Table 4-1 for details.

Facility Construction Cost

Based on the estimated costs to construct Station 75, the City's newest fire station, EPS estimates that facility construction costs will total approximately $802 per fire facility building square foot as shown in **Table 4-3**. This cost estimate includes the following components:

- Design and Engineering Costs
- Site Development
- Surface Parking Costs
- Site Construction Costs
- Vertical Construction Costs
- Site Landscaping
- FF&E

Applying this estimated cost to the planned future fire facilities results in an estimated future facility construction cost estimate of $11.2 million. **Table 4-3** identifies the acquisition costs by type of fire department apparatus and equipment. Total apparatus and equipment costs attributable to future development are estimated to be approximately $5.6 million.

Cost Allocation Methodology and Fee Calculation

The previous section details the costs of providing additional fire facilities, apparatus, and equipment needed to serve new development. The following section describes the methodology used to allocate the overall cost burden of developing fire facilities and acquiring apparatus and equipment to residential and nonresidential land uses to calculate the maximum justifiable fire fee component per unit and per 1,000 nonresidential square feet.

Fire Facility Cost Allocation

As discussed above, the LOS standards are based on the residential and employee population of the City and similarly are allocated to both residential and nonresidential development. Note, the existing population and employees used to calculate LOS standards and determine future growth needs for the Fire Fee excludes development in Lagoon Valley.

For purposes of the fire facility cost allocation, the total number of projected employees is adjusted to reflect the smaller demand for fire facilities by an employee as it relates to the demand for the facilities generated by a resident. One employee is assumed to equal 0.5 residents.

Applying this factor to the projected future 18,901 employees creates an adjusted, resident-equivalent, employee population of 9,543 employees. Adding this figure to the projected future residential population of 34,811 new residents, resulting in a total of 44,354 persons served.

Total fire facility costs then are allocated to future development by distributing the total costs over the projected persons-served population to determine the cost per resident and employee shown in **Table 4-4**.

Table 4-4 Fire Facilities Cost Allocation

Item	Persons per Household / Employee per Sq. Ft.	Amount
Persons Served (DIF Boundary Excluding Lagoon Valley) [1]		
Future Residents		34,811
Future Employees		9,543
Future Persons Served		**44,354**
Total Fire Costs Allocated to Future Development		**$16,827,034**
Cost per Persons Served		**$379**
Cost per Resident		$379
Cost per Employee		$190
Fee by Land Use Category		
Residential		
	persons	
Single-Family Residential	*per unit*	*per unit*
<1,000 Sq. Ft.	1.22	$464
1,000 - 1,999 Sq. Ft.	2.15	$817
2,000 - 2,999 Sq. Ft.	3.33	$1,263
3,000 - 3,999 Sq. Ft.	4.10	$1,556
≥ 4,000 Sq. Ft.	4.41	$1,672
Multifamily Residential	2.27	$860
	emp per	
Nonresidential	*1,000 sq. ft.*	*per 1,000 sq. ft.*
Commercial	1.67	$316
Office		
Office	2.86	$542
Medical [2]	2.86	$542
Hospital	2.50	$474
Industrial		
Industrial	1.12	$213
Warehouse	0.59	$112
HICUBE	1.12	$213

fire fee2

[1] Fire Fee capital needs and improvement costs are based on the future demand resulting from DIF Boundary residential growth excluding Lagoon Valley. Lagoon Valley developers fund fire facility improvements through a Community Benefit Contribution. Therefore, the future population served and associated capital impacts from Lagoon Valley are not included in this fee analysis.

[2] No future medical office development is currently projected. Rate for medical office is derived based on persons served generated based on employee per square foot relative to a single-family unit.

Calculation of Residential and Nonresidential Fees

Based on the persons-served calculation discussed above, total future fire facility costs are apportioned to residential and nonresidential development to derive a maximum justifiable fee per residential unit and nonresidential 1,000 building square feet. Dividing the total future facility, apparatus, and equipment costs of $16.8 million by the projected future persons-served population results in a cost of $379 per person served. This cost per person served equates to $379 per resident and $190 per employee when applying the adjustment factor discussed above.

The cost per resident or per employee then is applied to the residential PPH (residential land uses) or employees per 1,000 square feet (nonresidential land uses) to derive the police facility cost allocation for each land use category, as depicted in **Table 4-4**. Adding a 4 percent Finance Department charge for fee program administration generates the total maximum justifiable fire facility fee component for each land use category, as shown in **Table 4-5**.

Table 4-5 Summary of Maximum Justified Fire Fee

Future Land Uses	Base Fee	4% Finance Dept. Charge	Total Fee
Residential	*per unit*		
Single-Family Residential			
<1,000 Sq. Ft.	$464	$19	$483
1,000 - 1,999 Sq. Ft.	$817	$33	$850
2,000 - 2,999 Sq. Ft.	$1,263	$51	$1,314
3,000 - 3,999 Sq. Ft.	$1,556	$62	$1,618
≥ 4,000 Sq. Ft.	$1,672	$67	$1,739
Multifamily Residential	$860	$34	$894
Nonresidential	*per 1,000 sq. ft.*		
Commercial	$316	$13	$329
Office			
Office	$542	$22	$564
Medical	$542	$22	$564
Hospital	$474	$19	$493
Industrial			
Industrial	$213	$9	$222
Warehouse	$112	$4	$116
HICUBE	$213	$9	$222

Findings for Fire Facility Fee Component

Purpose of Fee

The Fire Fee component developed through this Nexus Study will fund the fire facility improvements and vehicle and equipment acquisition necessary to serve new residential and nonresidential development in the City based on the LOS described in this chapter. New development in the City will increase the service population and, therefore, the need for new fire personnel and associated facilities and equipment.

Use of Fee

The fee will be used to construct new development's fair share portion of fire buildings, as well as acquire fire apparatus and equipment necessitated by new development; to plan, design, and develop fire facilities; and to fund the studies and administration to support the program.

Relationship between Use of Fee and Type of Development

Development of new residential and nonresidential land uses in the City will generate a need for additional fire personnel, facilities, apparatus, and equipment. The fee will be used to develop and expand the user capacity for fire facilities and to acquire apparatus and equipment to serve new users from residential and nonresidential development.

Relationship between Need for Facility and Type of Project

Each new residential and nonresidential development project will generate additional demand for fire services and personnel. Additional fire personnel will be housed in future fire facilities and will require associated apparatus and equipment to serve additional demand generated by new residents, businesses, and employees.

Relationship between Amount of Fee and Cost of or Portion of Facility Attributed to New Development

The amount of fire facilities needed by each land use has been estimated by applying the fire cost persons served for each land use. The common use factor for residential land uses is the number of persons per household for each residential land use category.

The common use factor for nonresidential land uses is based on the number of employees generated per 1,000 square feet for commercial, office, and industrial development and on the ratio of fire demand for an employed resident as compared to a non-employed resident.

5. GENERAL FACILITIES

General facilities include the City Hall campus expansion and the City Corporation Yard. City Hall facilities provide space for the City's civic functions, including City Council and Commission meetings. As the City continues to grow, additional space for civic engagements will be required to provide space for greater audiences and participants. The City Hall campus expansion will increase space for the City Council Chambers, reception and office space, and associated functions. In addition, the City Hall campus expansion project includes additional City Hall parking area needed to provide parking for additional City administrative employees.

Corporation yard facilities provide maintenance facilities, vehicle and equipment storage, fuel supply and work areas for various City departments and associated operations. The General Facilities Fee funds the improvements of these facilities and the purchase and installation of equipment required to support maintenance operations generated by the need for additional space to serve new development.

This chapter provides an overview of LOS standards, facility cost estimates, and the general facilities fee component cost allocation methodology.

LOS Standards

Methodology Used

This Nexus Study calculates the general facilities required to serve future development using a combination of methodologies, as listed below.

- City Hall Expansion: Facilities master plan-based methodology.
- Corporation Yard: Existing service standards.

The sections below detail how these approaches are applied to calculate the general facilities needed to serve the City's future development.

City Hall Expansion

This Nexus Study calculates the total value of City Hall facilities at buildout (including existing facilities and planned new facilities) and determines new development's appropriate contribution based on new development's proportional share of persons-served at buildout. New development's fair share of costs is then allocated to various land uses on a persons-served basis according to the total residents or employees generated by each land use category.

Corporation Yard

This Nexus Study calculates the corporation yard facilities and equipment required to serve future development based on the existing LOS for said facilities and equipment currently provided by the City. The existing LOS is applied to projected future development to calculate the future facility requirement, which then are allocated amongst the various land uses on a persons-served basis according to the total residents or employees generated by each land use category.

Since only the corporation yard subcomponent of the General Facilities Fee uses an existing LOS standards approach, the following section describes the existing corporation yard facilities and equipment that will serve as the basis for determining the future facility and equipment needs to serve new residential and nonresidential growth.

Existing Facilities and Equipment

As the General Facility Fee uses an existing LOS standards approach for the corporation yard facilities, this Nexus Study provides an overview only for those facilities.

Corporation Yard

Various City departments use corporation yard facility space to house City employees and store equipment and vehicles. Currently, the City uses approximately 51,000 square feet of building space for various operations and storage. In addition, the City operates a fuel station and other maintenance facility for material bins, concrete washout, and conex storage. The existing inventory of corporation yard facilities is documented in **Table 5-1**.

The existing LOS for corporation yard facilities is calculated based on the entire DIF Boundary resident population and weighted current employment population (persons served population). All existing development in this area is included in this calculation as the existing corporation yard facilities inventoried in **Table 5-1** serve all development in this area of the City. Employees tend to demand a smaller set of services than residents and, as such, their demand weighting typically is discounted. To compute the persons-served population, a weighting factor of 0.5 is applied to the employee population. The existing LOS of corporation yard facilities per 1,000 persons served is provided in **Table 5-2**.

Future Facilities Requirements

City Hall Expansion and Existing Facilities

The City plans to expand its City Hall to accommodate additional civic space and to acquire fixtures, furniture and equipment for the increased space. The City Hall expansion will improve the areas listed below.

- Reception/Office
- Conference Facilities
- Council Chambers
- Employee Area
- Common Areas/Hallways
- Exterior Plaza/Main City Hall Entrance
- Additional City Hall Parking

As shown in **Table 5-3**, the existing City Hall Complex already contains space for some of the planned improvements listed above. Therefore, EPS reduced the costs of the planned City Hall expansion based on the estimated replacement costs of existing space that will be replaced by the expansion project.

As shown in **Table 5-3**, the total net value of existing and planned City Hall improvements is approximately $51.9 million, including about $39.2 million in existing improvements and a net new value of $12.7 million in planned improvements.

Table 5-1 Existing General Facilities and Equipment—Corporation Yard

Item	Amount		Replacement Cost per Unit [2]	Building Replacement Cost	Furnishings, Fixtures & Equipment Replacement	Total Replacement Cost	Total Replacement Cost per Unit
Facilities [1]							
Garage with Mezzanine	14,200	Sq. Ft.	$200	$2,840,000	$2,000,000	$4,840,000	$341
Pole Parn	10,000	Sq. Ft.	$40	$400,000	$0	$400,000	$40
Facilities, Field Utilities, Central Stores	7,900	Sq. Ft.	$200	$1,580,000	$100,000	$1,680,000	$213
Building B	7,700	Sq. Ft.	$200	$1,540,000	$150,000	$1,690,000	$219
Portable Offices & Park Offices	3,700	Sq. Ft.	$150	$555,000	$50,000	$605,000	$164
Streets Building with Mezzanine	5,500	Sq. Ft.	$200	$1,100,000	$100,000	$1,200,000	$218
Parks Interior Storage	1,800	Sq. Ft.	$75	$135,000	$0	$135,000	$75
Fuel Station	1	Unit	$2,000,000	$2,000,000	$0	$2,000,000	$2,000,000
Material Bins, Concrete Washout, Conex Storage	1	Unit	$300,000	$300,000	$0	$300,000	$300,000
Total Value of Existing General Facilities & Equipment				**$10,450,000**	**$2,400,000**	**$12,850,000**	

corp yard

Source: City of Vacaville.

[1] Facilities and cost information provided by the City of Vacaville.
[2] Corporation Yard facilities values reflect hard construction costs only.

Table 5-2 General Facilities Facility Level-of-Service Standard and Future Requirement—Corp Yard

Facilities and Equipment	Employee Weighting Factor Assumption [1]	Existing Inventory [2]	Existing Level of Service *per 1,000 persons served*	Future Development [2]
Persons Served (DIF Boundary) [2]				
Residents	1.0	98,855		39,103
Employees	0.5	19,386		10,744
Total Persons Served		**118,241**		**49,848**
Facilities [1]				
Garage with Mezzanine		14,200	120.09	5,986
Pole Parn		10,000	84.57	4,216
Facilities, Field Utilities, Central Stores		7,900	66.81	3,330
Building B		7,700	65.12	3,246
Portable Offices & Park Offices		3,700	31.29	1,560
Streets Building with Mezzanine		5,500	46.52	2,319
Parks Interior Storage		1,800	15.22	759
Fuel Station		1	0.01	0.4
Material Bins, Concrete Washout, Conex Storage		1	0.01	0.4
Total Value of Existing General Facilities & Equipment				

corp yard LOS

Source: City of Vacaville; EPS.

[1] Service population estimates are derived based on a weighting of 1.0 for residents and 0.5 for employees.
[2] See Table 2-4 for existing and future development.

Table 5-3 Buildout General Facilities and Equipment—City Hall

Item	Amount	Cost per Unit [1]	Total Building Cost	Other Costs	Total Cost
				Fixtures, Furniture, Equipment	
Existing City Hall Complex					
Council Chambers Building	3,755	$630	$2,365,650	-	$2,365,650
Conference Rooms A/B and 1 + 2	1,283	$630	$808,290	-	$808,290
Public Works	16,275	$630	$10,253,250	-	$10,253,250
FIRST	5,600	$630	$3,528,000	-	$3,528,000
Finance/Administration	14,500	$630	$9,135,000	-	$9,135,000
HR/City Attorney	8,775	$630	$5,528,250	-	$5,528,250
Community Development	10,500	$630	$6,615,000	-	$6,615,000
Subtotal Existing City Hall Complex	**60,688**		**$38,233,440**	**$1,000,000**	**$39,233,440**
Planned City Hall Improvements				*Soft Costs @ 40%*	
Reception/Office	7,340	$700	$5,138,000	$2,055,200	$7,193,200
Conference Facilities	1,700	$700	$1,190,000	$476,000	$1,666,000
Council Chambers	4,900	$700	$3,430,000	$1,372,000	$4,802,000
Employee Area	400	$700	$280,000	$112,000	$392,000
Common Areas/Hallways	3,200	$700	$2,240,000	$896,000	$3,136,000
Fixtures, Furniture & Equipment	1	$250,000	$250,000	-	$250,000
Subtotal Planned City Hall Improvements	**17,540**		**$12,528,000**	**$4,911,200**	**$17,439,200**
Less Replaced City Hall Facilities					
Reception/Office	3,700	$630	($2,331,000)	-	($2,331,000)
Conference Facilities	1,275	$630	($803,250)	-	($803,250)
Council Chambers	3,750	$630	($2,362,500)	-	($2,362,500)
Common Areas/Hallways	800	$630	($504,000)	-	($504,000)
Subtotal Replaced City Hall Facilities	**9,525**		**($6,000,750)**	**$0**	**($6,000,750)**
Other Planned Improvements				*Soft Costs @ 40%*	
Exterior Plaza/Main City Hall Entrance Area	3,400	$125	$425,000	$170,000	$595,000
Additional City Hall Parking	35,000	$13	$446,250	$178,500	$624,750
Subtotal Planned City Hall Improvements	**38,400**		**$871,250**	**$348,500**	**$1,219,750**
Total Value of Planned General Facilities & Equipment			**$45,631,940**	**$6,259,700**	**$51,891,640**

city hall bo

Source: City of Vacaville.

[1] Cost per unit based on the following information:
Existing City Hall Complex and Replaced City Hall Facilities: Assumes the existing City Hall Complex replacement costs are equal to the gross per square foot Police Headquarters costs.
Planned City Hall Improvements: Based on costs provided by the City of Vacaville and reviewed by JKA Architecture. Costs include demolition, sitework, security improvements, Council Chambers seats, audio and visual equipment, high-quality finishes, and built-in filing and cabinetry.
Other Planned Improvements: Based on costs provided by the City of Vacaville. City Hall parking costs include demolition, grading, paving, concrete, signage, striping, lighting, LS & IRR. Parking costs are based on the Intermodal Phase 2 project.

Corporation Yard

As the City continues to grow, City staff anticipates additional vehicles, equipment, operational and maintenance staff will be required to serve new residents, businesses, and employees. The City intends to construct additional corporation yard facilities to accommodate new vehicles, equipment, and personnel required to meet the demands generated by new development.

Future facility requirements are based on the existing LOS for corporation yard facilities. EPS applied the current facility standards per 1,000 City persons served to the projected future persons served within the DIF Boundary through *General Plan Buildout minus Northeast Area*. This calculation results in a future facility requirement detailed in **Table 5-2**.

Future Facility Costs

EPS estimates the total future general facility costs attributable to future development will be approximately $18.1 million, as summarized in **Table 5-4**.

EPS calculated the City Hall Expansion costs attributable to future development by applying future development's proportion of persons served at buildout. As shown in **Table 5-5**, future development's fair share of City Hall Expansion costs is approximately $15.4 million. However, because the net cost of the planned City Hall expansions sums to $12.7 million, the cost allocation to new development is capped at that amount and included in **Table 5-4**.

To calculate the corporation yard facilities needed to serve future persons served, EPS applied the existing LOS described above to future persons served. As shown in **Table 5-6**, the total estimated corporation yard improvement costs needed to serve new development is approximately $5.4 million.

Cost Allocation Methodology and Fee Calculation

The previous section details the costs of providing additional general facilities needed to serve new development. The following section describes the methodology used to allocate the overall cost burden of developing general facilities to residential and nonresidential land uses to calculate the maximum justifiable General Facilities Fee component per unit and per 1,000 nonresidential square feet.

General Facilities Cost Allocation

As discussed above, the LOS standards are based on the residential and employee population of the City and similarly are allocated to both residential and nonresidential development.

For purposes of the general facilities cost allocation, the total number of projected employees is adjusted to reflect the smaller demand for general facilities by an employee as it relates to the demand for the facilities generated by a resident. One employee is assumed to equal 0.5 residents.

Applying this factor to the projected future 21,304 employees creates an adjusted, resident-equivalent, future employee population of 10,744 employees. Adding this figure to the projected future residential population of 39,103 new residents results in a total of 49,848 additional persons served.

Total general facilities costs are then allocated to future development by distributing the total costs over the projected persons-served population to determine the cost per resident and employee shown in **Table 5-7**.

Table 5-4 General Facilities Costs allocated to New Development

Item	Table Reference	DIF Costs
City Hall Improvements [1]	Table 5-3	$12,658,200
Corporation Yard Improvements [2]	Table 5-6	$5,417,248
Total		**$18,075,448**

summ gf costs

[1] City Hall improvements based on future growth's proportional share of City Hall buildout costs, limited to the planned net costs of the proposed improvements.

[2] Corporation Yard improvements based on future growth's facility needs based on the current service standards of existing facilities.

Table 5-5 Distribution of General Facilities City Hall Costs Between Existing and Future Persons Served

Item	Assumption	Persons Served [1]	Percentage of Total Persons Served	Distribution of Costs
Total Costs [2]	**$51,891,640**			
Existing		118,241	70.3%	$36,502,903
Future (DIF Boundary)		49,848	29.7%	$15,388,737
Total		**168,089**	**100.0%**	**$51,891,640**

dist city hall

[1] See Table 2-2.
[2] See Table 5-3.

Table 5-6 Estimated Corporation Yard General Facilities Costs

Planned Facilities and Fleet	Number [1]	Unit Cost [2]	Total Cost of Planned Facilities
Facilities Construction			
Corporation Yard Replacement Cost			
Garage with Mezzanine	5,986 Sq. Ft.	$341 per Sq. Ft.	$2,040,426
Pole Barn	4,216 Sq. Ft.	$40 per Sq. Ft.	$168,630
Facilities, Field Utilities, Central Stores	3,330 Sq. Ft.	$213 per Sq. Ft.	$708,247
Building B	3,246 Sq. Ft.	$219 per Sq. Ft.	$712,463
Portable Offices & Park Offices	1,560 Sq. Ft.	$164 per Sq. Ft.	$255,053
Streets Building with Mezzanine	2,319 Sq. Ft.	$218 per Sq. Ft.	$505,891
Parks Interior Storage	759 Sq. Ft.	$75 per Sq. Ft.	$56,913
Fuel Station	0.4 Unit	$2,000,000 per Unit	$843,151
Material Bins, Concrete Washout, Conex Storage	0.4 Unit	$300,000 per Unit	$126,473
Total Corporation Yard Replacement Cost			**$5,417,248**
Total General Facilities Costs for Future Development			**$5,417,248**

corp yard cost

Source: City of Vacaville.

[1] See Table 5-2 for details.
[2] See Table 5-1 for details.

Table 5-7 General Facilities Cost Allocation

Item	Persons per Household / Employee per Sq. Ft.	Amount
Persons Served (DIF Boundary)		
Future Residents		39,103
Future Employees		10,744
Future Persons Served		**49,848**
Total General Facility Costs Allocated to Future Development [1]		**$18,075,448**
Cost per Persons Served		**$363**
Cost per Resident		$363
Cost per Employee		$181
Fee by Land Use Category		
Residential		
	persons	
Single-Family Residential	*per unit*	*per unit*
<1,000 Sq. Ft.	1.22	$443
1,000 - 1,999 Sq. Ft.	2.15	$781
2,000 - 2,999 Sq. Ft.	3.33	$1,207
3,000 - 3,999 Sq. Ft.	4.10	$1,487
≥ 4,000 Sq. Ft.	4.41	$1,598
Multifamily Residential	2.27	$822
	emp per	
Nonresidential	*1,000 sq. ft.*	*per 1,000 sq. ft.*
Commercial	1.67	$302
Office		
Office	2.86	$518
Medical	2.86	$518
Hospital	2.50	$453
Industrial		
Industrial	1.12	$204
Warehouse	0.59	$107
HICUBE	1.12	$204
		gff fee

[1] See Table 5-4.

Calculation of Residential and Nonresidential Fees

Based on the persons-served calculation discussed above, total future general facilities costs are apportioned to residential and nonresidential development to derive a maximum justifiable fee per residential unit and nonresidential 1,000 building square feet. Dividing the total general facilities costs allocated to new development of $18.1 million by the projected future persons-served population results in a cost of $363 per person served. This cost per person served equates to $363 per resident and $181 per employee when applying the adjustment factor discussed above.

The cost per resident or per employee then is applied to the residential PPH (residential land uses) or employees per 1,000 square feet (nonresidential land uses) to derive the general facilities cost allocation for each land use category, as depicted in **Table 5-7**. Adding a 4 percent administration charge generates the total maximum justifiable police facility fee component for each land use category, as shown in **Table 5-8**.

Table 5-8 Summary of Maximum Justified General Facilities Fee

Future Land Uses	Base Fee	4% Finance Dept. Charge	Total Fee
Residential	*per unit*		
Single-Family Residential			
<1,000 Sq. Ft.	$443	$18	$461
1,000 - 1,999 Sq. Ft.	$781	$31	$812
2,000 - 2,999 Sq. Ft.	$1,207	$48	$1,255
3,000 - 3,999 Sq. Ft.	$1,487	$59	$1,546
≥ 4,000 Sq. Ft.	$1,598	$64	$1,662
Multifamily Residential	$822	$33	$855
Nonresidential	*per 1,000 sq. ft.*		
Commercial	$302	$12	$314
Office			
Office	$518	$21	$539
Medical	$518	$21	$539
Hospital	$453	$18	$471
Industrial			
Industrial	$204	$8	$212
Warehouse	$107	$4	$111
HICUBE	$204	$8	$212

Findings for General Facility Fee Component

Purpose of Fee

The General Facility Fee component developed through this Nexus Study would fund the City Hall and Corporation Yard improvements necessary to serve new residential and nonresidential development in the City based on the LOS described in this chapter. New development in the City will increase the service population and civic engagements, therefore, the need for new City Hall space. In addition, new development in the City will increase the need for additional maintenance facility space required to house added vehicles and equipment and work areas to support maintenance operations generated by the need from new development.

Use of Fee

The fee will be used to construct new development's fair share portion of the City Hall expansion project, in addition to Corporation Yard facility space and equipment necessitated by new development; to plan, design and develop general facilities; and to fund the studies and administration to support the program.

Relationship between Use of Fee and Type of Development

Development of new residential and nonresidential land uses in the City will generate a need for additional civic building and maintenance equipment and operations space. The fee will be used to develop and expand the capacity for general facilities and to acquire equipment to serve new users from residential and nonresidential development.

Relationship between Need for Facility and Type of Project

Each new residential and nonresidential development project will generate additional demand for City Hall and Corporation Yard space. Additional City Hall space will be needed to accommodate increased civic engagement by new residents, businesses, and employees. Additional City operations and maintenance personnel and equipment will be housed in future Corporation Yard facilities to serve additional demand generated by new residents, businesses, and employees.

Relationship between Amount of Fee and Cost of or Portion of Facility Attributed to New Development

The amount of general facilities needed by each land use has been estimated by applying the general facilities cost persons served for each land use. The common use factor for residential land uses is the number of persons per household for each residential land use category.

The common use factor for nonresidential land uses is based on the number of employees generated per 1,000 square feet for commercial, office, and industrial development and on the ratio of general facilities demand for an employed resident as compared to a non-employed resident.

6. PARK AND RECREATION FACILITIES

The 2035 General Plan establishes a targeted level of service standard of 4.5 acres of neighborhood, community, and regional parks per 1,000 residents. In addition, the City recently completed the 2021 Parks and Recreation Master Plan (2021 PRMP) which guides the changes and investments to Vacaville's system of parks, open space, and recreation facilities. The updated Park and Recreation Fee will provide a mechanism to fund new neighborhood, community and regional parks at the service standards set forth in the 2035 General Plan. The Parks and Recreation Development Impact Fee (DIF) will also help the City fund new development's fair share of planned citywide recreation facilities (e.g., community centers, pools). In addition, the City prepared a Recreation Needs Assessment in 2013 where residents voiced desire for the City to emphasize outdoor recreation amenities in its parks programming. In response, this Nexus Study adds a trails component to the Parks and Recreation Fee based on a combination of current trails service standards and planned trail access points.

Parks and recreation service standards are established on a per resident basis. Since the trails system does not serve as employment or activity center connections, the parks and recreation facilities costs are allocated only to residential land uses. The Park and Recreation Fee applies to all new residential development in the DIF Boundary.

This chapter provides an overview of LOS standards, facility and land acquisition cost estimates, and the parks and recreation facilities fee component cost allocation methodology.

LOS Standards and Cost Assumptions

Methodology Used

This Nexus Study calculates the parks and recreation facilities required to serve future development using a combination of methodologies, as listed below.

- Neighborhood, Community and Regional Parks: 2035 General Plan service standards.
- Recreation Facilities: Facilities master plan-based methodology.
- Trails: Existing service standards (trail segments) and facilities master plan-based methodology (access points or trail heads).

Table 6-1 summarizes the parks and recreation facility service level standards and cost assumptions. The sections below detail how these LOS standards are applied to calculate the parks and recreation facilities needed to serve the City's future development.

Table 6-1 Park and Recreation Facility Service Level Standards and Cost Assumptions

Item	Service Level Standard [1] [2]		Estimated Capital Cost [3] [4]	Estimated Land Acquisition Cost [5] [6]
Parks			*per acre*	*per acre*
Neighborhood Parks	1.8	*acres per 1,000 res*	$500,000	$398,000
Community Parks	1.7	*acres per 1,000 res*	$500,000	$398,000
Regional Parks	1.0	*acres per 1,000 res*	$25,000	$0
Total Park Acres	**4.5**	***acres per 1,000 res***		
Recreation Facilities				
Community Centers			*See Table 6-4*	
Senior Centers				
Neighborhood Centers				
Gymnasiums				
Pools				
Baseball/Softball Fields			*Costs assumed to be included in park improvement costs above.*	
Football/Soccer Fields				
Basketball Courts				
Tennis Courts				
Volleyball Courts				
Trails Development			*per lineal ft.*	
Trail Segments	940.0	*lineal feet per 1,000 res*	$176.70	$0
Trail Access Points			*See Table 6-5*	

sls

Source: Vacaville Parks and Recreation Master Plan, May 2021; Great Redwood Trail Feasibility Assessment, 2020.

[1] The City did not carry forward the recreation facilities standards from the 2015 General Plan and 2013 Recreation Needs Assessment. Therefore, the recreation service standards are excluded from the calculations used in this analysis.

[2] Trails Development: Existing service level standard based on the total developed trails on open spaces, including the Lagoon Valley Park and adjacent open space areas, as provided by the City of Vacaville. Assumes there are existing 17.6 miles of developed trails.

[3] Parks: Costs for Neighborhood Parks and Community Parks reflect the new park development costs provided in the 2021 PRM Costs for Regional Parks are provided by the City and MIG.

[4] Trails Development: Cost estimates based on the Great Redwood Trail Feasibility Assessment prepared by Alta Planning and Design (2020). Costs per lineal foot based on a per-mile cost of $933,000 for Rural Trails. Cost estimate includes hard costs, soft costs, permitting, project administration, construction management, mobilization, design services and contingency

[5] Neighborhood and Community Parks: Estimated land acquisition costs are based on an evaluation of unimproved (paper lot) residential development areas comparable to Vacaville, including new home communities in Solano, Yolo, Sacramento and Placer Counties. See Table 6-2 for details.

[6] Regional Parks: Land for regional parks and trails has already been acquired.

Neighborhood, Community and Regional Parks

The City's standard of 4.5 acres of developed parkland per thousand residents was established in 1992 and carried forward in the 2035 General Plan.[7] As indicated below, this park acreage standard is further divided into the park categories of neighborhood, community, and regional parklands.

- Neighborhood Park: 1.8 acres per 1,000 residents
- Community Park: 1.7 acres per 1,000 residents
- Regional Park: 1.0 acres per 1,000 residents
- **Total**: **4.5 acres per 1,000 residents**

Based on information provided in the 2021 PRMP, this Nexus Study uses a park development cost estimate of $500,000 per acre, including soft costs and internal service charges.

Neighborhood and Community Parks Land Acquisition

The per-acre parkland acquisition costs used in this Nexus Study is $398,000 per acre. As detailed in **Table 6-2**, this land valuation is determined by a regional residential land valuation based on the estimated value of unimproved (paper lot) development areas in Northern California. This land valuation analysis is consistent with assumptions and methodologies used for Quimby dedication ordinances and parkland equalization fee programs used in new development areas throughout Northern California (Vacaville does not currently have a Quimby ordinance).[8]

Recreation Facilities

The 2021 PRMP specifies long-range facility standards and programming recommendations for all parks and recreation facilities. The 2021 PRMP is an implementation tool to further guide park and recreation investments through a 2035 planning horizon year. Provided in the PRMP is an implementation chapter that provides a list of major capital projects, including a capital improvement plan (CIP) for recreation facilities. This Nexus Study apportions the total recreation facilities costs between existing development and future development based on the percentage of total persons served at *Buildout of the General Plan (minus the Northeast Area)*.

This Nexus Study calculates new development's fair share of the recreation facilities based on new development's proportional share of residents served at buildout. This proportion is then applied to the total estimated costs of new recreation facilities. New development's fair share of costs are then allocated to residential land uses on a persons-served basis according to the total residents generated by each land use category.

Costs for future recreation facilities are described later in this chapter.

---

[7] The City's Parks and Recreation Master Plan (PRMP) indicates a current deficit in neighborhood and community parkland relative to the City's standards of about 1.4 acres per 1,000 residents.

[8] It should be noted that the Vacaville Parks and Recreation Master Plan (PRMP) assumes $250,000 per acre for land acquisition costs. Per acre acquisition costs based on land valuation analysis are assumed in the Nexus Study in order to more accurately reflect market realities.

Table 6-2 Parkland Acquisition Costs Analysis

Item	Transaction/ Appraisal Date	Total Acreage	Average Lot Sq. Ft.	Total No. of Lots	Estimated Lot Valuation: Loaded Lot	Less Site Costs [2]	Less Fees & Permits	Total Unimproved	Total Estimated Value	Assessed Value/Acre
City of Fairfield - One Lake (Appraised Value)						*$11 psf*				
N2 - Court	May-20	-	4,350	58	$144,300	($48,000)	($52,500)	$43,800	$2,540,400	-
N3A - 50x80	May-20	-	4,000	45	$160,000	($44,000)	($55,000)	$61,000	$2,745,000	-
N3B - 46x75	May-20	-	3,450	70	$148,000	($38,000)	($51,000)	$59,000	$4,130,000	-
N3C - Court	May-20	-	4,350	14	$144,300	($48,000)	($52,500)	$43,800	$613,200	-
N4A - 50x80	May-20	-	4,000	51	$160,000	($44,000)	($55,000)	$61,000	$3,111,000	-
N4B - 46x75	May-20	-	3,450	60	$148,000	($38,000)	($51,000)	$59,000	$3,540,000	-
N4C - Court	May-20	-	4,700	20	$144,300	($52,000)	($52,500)	$39,800	$796,000	-
N5A - 55x80	May-20	-	4,400	75	$165,000	($48,000)	($55,000)	$62,000	$4,650,000	-
N5B - Court	May-20	-	4,500	22	$144,300	($50,000)	($52,500)	$41,800	$919,600	-
N6A - Duet/Flats	May-20	-	2,300	60	$104,700	($25,000)	($44,800)	$34,900	$2,094,000	-
N6B - Court	May-20	-	4,700	24	$144,300	($52,000)	($52,500)	$39,800	$955,200	-
N7A - Duet/Flats	May-20	-	2,300	48	$104,700	($25,000)	($44,800)	$34,900	$1,675,200	-
N7B - Court	May-20	-	4,700	20	$144,300	($52,000)	($52,500)	$39,800	$796,000	-
Total/Weighted Average		**72.37**		**567**					**$28,565,600**	**$395,000**
City of Woodland - Spring Lake (Comparable Sales)						*$10 psf*				
Spring Lake Central - Phase 5	August-18	15.00	4,275	69	$168,000	($43,000)	($60,000)	$65,000	$4,485,000	$299,000
Spring Lake Central - Phase 4	April-18	10.80	6,825	44	$202,500	($70,000)	($60,000)	$72,500	$3,190,000	$295,370
Oyang North	February-18	23.20	4,800	112	$179,000	($50,000)	($67,000)	$62,000	$6,944,000	$299,310
Spring Lake Central - Phases 1 & 2	September-17	30.80	5,157	170	$176,764	($55,882)	($60,000)	$60,882	$10,349,940	$336,037
The Orchard at Spring Lake	September-16	23.50	6,000	103	$167,000	($50,000)	($67,000)	$50,000	$5,150,000	$219,149
Total/Weighted Average		**103.30**		**498**					**$30,118,940**	**$292,000**
City of Dixon - Parklane (Appraised Value)						*$13 psf*				
Greenwich - 50'x80' Lots	September-19	-	4,000	83	$200,000	($52,000)	($52,000)	$96,000	$7,968,000	-
Newbury II - 50'x100' Lots	September-19	-	5,000	77	$208,000	($65,000)	($52,000)	$91,000	$7,007,000	-
Pinehurst - 70'x100' Lots	September-19	-	7,000	68	$225,000	($91,000)	($53,000)	$81,000	$5,508,000	-
Inverness - 100'x100' Lots	September-19	-	10,000	53	$245,000	($130,000)	($54,000)	$61,000	$3,233,000	-
Total/Weighted Average		**55.38**		**281**					**$23,716,000**	**$428,000**
City of Folsom - FPASP SPIF Mitigation Fee [3]										
Single Family - W. of Placerville Road	May-20	288.00	7,150	-	$260,000	($65,000)	($112,000)	$83,000	-	$298,281
Single Family - E. of Placerville Road	May-20	99.50	7,350	-	$300,000	($105,000)	($114,100)	$80,900	-	$189,687
Single Family High Density - W. of Placerville Road	May-20	447.00	5,450	-	$240,000	($60,000)	($102,000)	$78,000	-	$425,423
Single Family High Density - E. of Placerville Road	May-20	156.80	5,780	-	$260,000	($95,000)	($102,400)	$62,600	-	$346,339
Multifamily Low Density - W. of Placerville Road	May-20	217.30	2,500	-	$200,000	($45,000)	($77,100)	$77,900	-	$629,452
Multifamily Low Density - E. of Placerville Road	May-20	14.90	2,500	-	$200,000	($45,000)	($77,100)	$77,900	-	$520,067
Total/Weighted Average		**1,223.50**								**$404,000**
City of W. Sacramento - Port Towne Subdivision (Appraised Value)	July-19	12.86	1,650	132	$170,000	($49,663)	($81,131)	$39,206	$5,175,192	**$402,000**
City of Roseville - Villages at Sierra Vista (Comparable Sales)						*$10 psf*				
Fiddyment Ranch, Villages F-11A1, -A2, -A3	February-20	33.03	4,725	175	$191,166	($47,000)	($67,000)	$77,166	$13,504,000	$408,840
Fiddyment Ranch, Village F-12	March-20	19.79	5,250	97	$202,000	($53,000)	($67,000)	$82,000	$7,954,000	$401,920
Westpark-Federico Parcels FD-22B & FD-3	November-19	21.59	5,336	106	$184,350	($47,600)	($72,500)	$64,250	$6,810,500	$315,447
Westbrook Parcels WB-20 & WB-21	August-19	20.21	3,825	147	$168,200	($44,000)	($48,200)	$76,000	$11,172,000	$552,796
Fiddyment Ranch, Village F-9B	December-18	15.54	5,775	70	$212,400	($58,000)	($70,400)	$84,000	$5,880,000	$378,378
Fiddyment Ranch, Village F-7A & 7B	December-18	23.76	4,500	131	$191,400	($45,000)	($70,400)	$76,000	$9,956,000	$419,024
Total/Weighted Average		**133.92**		**726**					**$55,276,500**	**$413,000**
Weighted Average Based on Acreage										**$398,000**

appraisal

Source: Improvement Area No. 1 of City of Fairfield CFD No. 2019-1 (One Lake), May 6, 2020, BBG; CFD No. 2004-1 (Spring Lake) Appraisal Report, September 11, 2018, Integra Realty Resources; Parklane, Final Map Units 3, 4, and 5 Appraisal Report, September 9, 2019, Integra Realty Resources; FPASP SPIF Mitigation Fee Appraisal Report, May 26, 2020, Integra Realty Resources; Port Towne at Bridgeway Lakes Subdivision Appraisal Report, July 15, 2019, Integra Realty Resources; City of Roseville Villages at Sierra Vista CFD No. 1 Appraisal Report, April 21, 2020, Integra Realty Resources.

[1] EPS evaluated park valuation estimates based on the estimated value of unimproved (paper lot) development areas in Northern California.
[2] Fairfield - One Lake: This report evaluated the appraised value for finished lots. EPS estimated the site development costs per lot assuming $11 per lot sq. ft.
Woodland - Spring Lake Central - Phase 5: This sales comp reflected finished lot status. EPS assumes the per square foot site costs to be $10 based on the average site costs for the other Spring Lake comps, which were unimproved status.
Dixon - Parklane: This report evaluated the appraised value for finished, or partially improved lots. EPS estimated the site development costs per lot assuming $13 based on the average site costs for comparable unimproved properties indicated in the Parklane CFD appraisal.
Roseville: The per square foot site costs reflect the improvement costs for Westpark - Federico and Westbrook, which were sold as paper lots and the remaining properties were sold as finished lots.
[3] The Folsom Plan Area Specific Plan Infrastructure Fee land valuation is based on the acreage weighting of the per-acre valuation for the indicated FPASP land use.

Trails

The Parks and Recreation Department maintains a system of walking and hiking trails in the City's open space areas. Per the City's Parks and Recreation Department, the City currently maintains approximately 17.6 miles of unpaved walking and hiking trails within City open space areas.[9]

The existing LOS for trail segments is calculated based on the current resident population in the DIF Boundary. The existing LOS is approximately 940 lineal feet per existing 1,000 residents served. The PRMP Implementation Chapter (Chapter 6) includes a list of planned trail access points. This Nexus Study apportions the total estimated costs of developing trail access points between existing development and future development based on the percentage of total persons served at General Plan Buildout minus the Northeast Area.

The trails development costs are based on a trails development feasibility analysis prepared for the Great Redwood Trail Feasibility Assessment – a 300-plus mile multi-use trail planned spanning from Marin to Humboldt Counties.[10]

Existing Facilities

As the Parks and Recreation Fee uses an existing LOS standards approach for trails development, this Nexus Study provides an overview only for those improvements.

Trails

The City maintains 17.6 miles of trails in City-owned open areas. The existing LOS for new trails development is calculated based on the DIF Boundary resident population. As shown in **Table 6-1**, the existing LOS of trails per 1,000 residents served is 940 lineal feet.

Future Facilities, Land Requirements, and Costs

EPS estimates the park and recreation facilities and parkland acquisition costs needed to serve new residential development is approximately $110.8 million, as shown in **Table 6-3**. This estimate is based on new development's fair share of future park and recreation facility and land acquisition costs based on the LOS standards described above.

The sections below detail the park and recreation facility and parkland needs and associated costs.

[9] This trail mileage is within the Lagoon Valley open space areas and represents the preponderance of the City's unpaved trails. Paved multi-use trails are part of the traffic impact fee, as they provide a transportation connection.

[10] Ascent Environmental/Alta Planning + Design: Great Redwood Trail Feasibility, Governance, and Railbanking Report, July 2020.

Table 6-3 Future Park and Recreation Facility Improvement Costs

Item		LOS Standard [1]	Amount	Estimated Construction Cost [2]	Total Cost	Other Funding Sources	Net Cost
Future Residents Served [3]			39,103				
Park Improvements [4]			*Acres*				
Neighborhood Parks	1.8	*acres per 1,000 res*	70.39	$500,000	$35,193,031	$0	$35,193,031
Community Parks	1.7	*acres per 1,000 res*	66.48	$500,000	$33,237,862	$0	$33,237,862
Regional Parks	1.0	*acres per 1,000 res*	39.10	$25,000	$977,584	$0	$977,584
Subtotal Park Improvements	**4.5**		**175.97**		**$69,408,477**	**$0**	**$69,408,477**
Recreation Facilities [5]							
Senior Center					$5,385,422	$0	$5,385,422
Neighborhood Centers (2 new sites)					$425,165	$0	$425,165
Multipurpose Recreation Center					$13,605,276	$0	$13,605,276
Sports Fields Complex					$13,024,217	$0	$13,024,217
Walter V Graham Aquatic Center Expansion					$2,290,221	$0	$2,290,221
Subtotal Facilities					**$34,730,301**	**$0**	**$34,730,301**
Trails Development			*lineal ft.*	*per lineal ft.*			
Trail Segments	940.0	*lineal feet per 1,000 res*	36,757.17	$176.70	$6,495,158	$0	$6,495,158
Trail Access Points [5]					$188,490	$0	$188,490
Subtotal Trails					**$6,683,648**	**$0**	**$6,683,648**
Total					**$110,822,426**	**$0**	**$110,822,426**

req cost

Source: Vacaville Parks and Recreation Master Plan, May 2021; Great Redwood Trail Feasibility Assessment, 2020.

[1] The City did not carry forward the recreation facilities standards from the 2015 General Plan and 2013 Recreation Needs Assessment. Therefore, the recreation service standards are excluded from the calculations used in this analysis. The costs are from the Parks and Recreation Master Plan.
[2] See Table 6-1 for park and trails improvements construction and land acquisition cost assumptions.
[3] All Parks and Recreation Fee components - park improvements, recreation facilities, and trails development - are tied to the future demand resulting from DIF Boundary residential growth. Lagoon Valley development is provided a DIF credit.
[4] Baseball/softball fields, football/soccer fields, basketball courts, tennis courts, and volleyball courts are assumed to be included in the costs for parks, as these are standard park amenities.
[5] See Table 6-4 and Table 6-5 for recreation facilities construction, trails access points, and land acquisition cost assumptions.

Neighborhood Parks

Neighborhood parks are intended to provide close-to-home recreation opportunities and access to nature and open spaces for residents. New neighborhood park sites should be 6 to 9 acres in new development areas. When land constraints occur, such as sites in infill development, the minimum size is 2 acres. Neighborhood parks shall include features such as play structures, turf, picnic structures, and other amenities.

As the City resident population increases, additional neighborhood parks will be required to serve new residents at the service standards indicated in the 2035 General Plan. EPS applied the service standard of 1.8 acres per 1,000 residents to the future residents served by new neighborhood parks. This results in a need for 70.39 acres of new neighborhood parks. At an estimated park development cost of $500,000 per acre, the costs of new neighborhood park development needed to serve future residents is approximately $35.2 million, as shown in **Table 6-3**.

Community Parks

Sized between 12 to 60 acres, community parks are intended to provide opportunities for a variety of organized and self-directed sports and recreation uses, serving people from across the community who typically visit for an hour or longer. Community parks include features such as play structures, multi-use open lawn areas, pedestrian paths, picnic areas, paved courts, sports fields, and other amenities.

As the City resident population increases, additional community parks will be required to serve new residents at the service standards indicated in the 2035 General Plan. EPS applied the service standard of 1.7 acres per 1,000 residents to the future residents served by new community parks. This results in a need for 66.48 acres of new community parks. At an estimated park development cost of $500,000 per acre, the costs of new community park development needed to serve future residents is approximately $33.2 million, as shown in **Table 6-3**.

Regional Parks

Regional parks are intended to preserve habitat, natural and cultural resources. Regional parks incorporate recreational activities while sensitively preserving parks character-defining resources. Lagoon Valley Park is the City's only regional park and no additional regional parks are planned. Therefore, site selection criteria are not provided in the 2021 PRMP. In addition to natural and cultural resource preservation, regional parks shall include picnic areas, walking paths, and other amenities.

The 2021 PRMP indicates the per-acre cost of $50,000 for nature integration, management and access to park space. Since development impact fees cannot include costs to manage parks and open space, EPS estimates the cost to develop regional park space is $25,000 per acre. Per acre costs do not include acquisition costs.

As the City resident population increases, additional regional parks will be required to serve new residents at the service standards indicated in the 2035 General Plan. EPS applied the service standard of 1.0 acres per 1,000 residents to the future residents served by new regional parks.

This results in a need for 39.1 acres of new regional parks. At an estimated park development cost of $25,000 per acre, the costs of new regional park development needed to serve future residents is approximately $1.0 million, as shown in **Table 6-3**.

Recreation Facilities

The 2021 PRMP provides a list of major capital projects, including a CIP for recreation facilities. The recreation facilities CIP includes renovation and new facility projects. This Nexus Study includes only the new recreation facilities projects. As shown in **Table 6-4**, the 2021 PRMP includes a range of low and high costs for the planned recreation facilities. This Nexus Study uses an average between the low and high costs for each facility to determine the total recreation facilities costs. **Table 6-4** indicates the total average estimated costs is equal to $122.5 million. These costs are then distributed to future residents based on the proportion of new residents at *Buildout of the General Plan (minus the Northeast Area)*. As shown in **Table 6-5**, $34.7 million of recreation facilities are allocated to future development.

Table 6-4 Future Recreation Facility Cost Estimates

Item	Estimated Capital Cost [1]		
	Low	High	Average (Rounded $10k)
Recreation Facilities			
Senior Center	$18,000,000	$20,000,000	$19,000,000
Neighborhood Centers (2 new sites)	$1,500,000	$1,500,000	$1,500,000
Multipurpose Recreation Center	$40,000,000	$56,000,000	$48,000,000
Sports Fields Complex	$35,500,000	$56,400,000	$45,950,000
Walter V Graham Aquatic Center Expansion	$8,000,000	$8,150,000	$8,080,000
Total Recreation Facility Centers	**$103,000,000**	**$142,050,000**	**$122,530,000**

Source: Vacaville Parks and Recreation Master Plan, May 2021.

[1] Does not include potential land acquisition costs as land needs have not been specificed at this time.

Table 6-5 Distribution of Recreation Costs Between Existing and Future Development

Item	Existing Development	Future Development	Total
Assumptions			
Residents Served [1]	98,855	39,103	**137,958**
Percentage of Total Persons Served	72%	28%	**100%**
Recreation Facilities [2]			
Senior Center	$13,614,578	$5,385,422	$19,000,000
Neighborhood Centers (2 new sites)	$1,074,835	$425,165	$1,500,000
Multipurpose Recreation Center	$34,394,724	$13,605,276	$48,000,000
Sports Fields Complex	$32,925,783	$13,024,217	$45,950,000
Walter V Graham Aquatic Center Expansion	$5,789,779	$2,290,221	$8,080,000
Total	**$87,799,699**	**$34,730,301**	**$122,530,000**
Trail Access Points [3]	$476,510	$188,490	**$665,000**

rec dist

Source: Vacaville Parks and Recreation Master Plan, May 2021; Great Redwood Trail Feasibility Assessment, 2020.

[1] Reflects the future residents from DIF Boundary growth. See Table 2-4 for details.
[2] Reflects an average of low and high cost ranges for the facilities. For Neighborhood Centers, one to serve existing residents and one to serve new residents. See Table 6-4.
[3] Table 6.2 of the City's Park and Recreation Master Plan (February 2021) indicates there are 7 open space locations that are targeted for trailhead improvements. This analysis is based on the assumption the City will develop 7 trail access points in the City at an estimated cost of $95,000 each. Cost estimate based on the Great Redwood Trail Feasibility Assessment prepared in by Alta Planning and Design.

Trails

The Parks and Recreation Department maintains a system of walking and hiking trails in the City's open space areas. Per the City's Parks and Recreation Department, the City currently maintains approximately 17.6 miles of unpaved walking and hiking trails within City open space areas.

The existing LOS for trails is calculated based on the current citywide resident population. The existing LOS of approximately 940 lineal feet per 1,000 residents served.

As the City resident population increases, additional trails will be required to maintain the current service standards. EPS applied the existing LOS standard of 940 linear feet per 1,000 residents to the future residents served by new trails. This results in a need for approximately 36,800 lineal feet, or 7 miles of new trails. At an estimated trails development cost of $176.70 per lineal foot, the costs of new trails development needed to serve future residents is approximately $6.5 million, as shown in **Table 6-3**.

As shown in **Table 6-5**, future development's share of planned trail access points is approximately $189,000.

Parkland Acquisition

The Park and Recreation Fee includes a land acquisition component to fund the acquisition of neighborhood and community parkland needed to serve new residents. As stated above, the City's only planned regional park is Lagoon Valley Park. The City owns Lagoon Valley Park and no additional regional park land acquisition is needed. Therefore, the parkland acquisition component will fund only the acquisition of neighborhood and community parkland.

Based on the parkland acreage required to serve new residents, the total estimated parkland acquisition cost is approximately $54.5 million, as shown in **Table 6-6**.

Table 6-6 Future Park Land Acquisition Costs

Item	Acreage [1]	Cost per Acre [2]	Total Cost	Other Funding Sources	Net Cost
Parks [3]					
Neighborhood Parks	70.39	$398,000	$28,013,652	$0	$28,013,652
Community Parks	66.48	$398,000	$26,457,338	$0	$26,457,338
Regional Parks [4]	0.00	$0	$0	$0	$0
Total Park Acres	**136.86**		**$54,470,991**	**$0**	**$54,470,991**
Recreation Facilities [5]		*not included at this time*			
Trails Development [4]	**0.00**	**0.00**	$0	**$0**	$0
Total	**136.86**	**$0**	**$54,470,991**	**$0**	**$54,470,991**

land aq

[1] See Table 6-3 for details.
[2] See Table 6-1 and Table 6-2 for details.
[3] Baseball/softball fields, football/soccer fields, basketball courts, tennis courts, and volleyball courts are assumed to be included in the costs for parks, as these are standard park amenities.
[4] Land for regional parks and trails has already been acquired.
[5] Land needs for new recreation facilities have not been specificed at this time and so are not included in this fee update.

Cost Allocation Methodology and Fee Calculation

The previous section details the costs of providing additional parks and recreation facilities needed to serve new residential development. The following section describes the methodology used to allocate the overall cost burden of developing parks and recreation facilities to residential land uses to calculate the maximum justifiable Parks and Recreation Fee component per unit. The parks and recreation standards and use in the City of Vacaville is driven by residential population. The City, therefore, does not charge the Parks and Recreation Fee to nonresidential development and nonresidential uses are not included in this cost allocation methodology and fee calculation section.

Parks and Recreation Cost Allocation

As discussed above, the LOS standards are based on the residential population of the City and similarly are allocated to only residential development. The City will charge all Parks and Recreation Fee components to all new residential development inside the DIF Boundary.

Total parks and recreation facilities costs then are allocated to future development by distributing the total costs over the projected resident population to determine the cost per resident. This calculation is shown for each Parks and Recreation Fee component, including land acquisition, in **Table 6-7** through **Table 6-12**.

Calculation of Residential and Nonresidential Fees

Based on the residents-served calculation discussed above, total future parks and recreation facilities costs are apportioned to residential development to derive a maximum justifiable fee per residential unit. Dividing the total future facilities and acquisition costs by the projected future residents-served results in the cost per person served for each Park and Recreation Fee component.

The cost per resident then is applied to the residential Persons Per Household (residential land uses) to derive the parks and recreation facilities cost allocation for each residential land use category, as depicted in **Table 6-7** through **Table 6-12**. Adding a 4 percent Finance Department charge for program administration to the subtotal of all Parks and Recreation Fee components generates the total maximum justifiable parks and recreation facilities fee component for each residential land use category, as shown in **Table 6-13**.

Table 6-7 Neighborhood Parks Cost Allocation

Item	Persons per Household	Amount
Future Residents [1]		39,103
Total Costs Allocated to Future Development [2]		$35,193,031
Cost per Resident		$900
Fee by Land Use Category		
Single-Family Residential		*per unit*
<1,000 Sq. Ft.	1.22	$1,100
1,000 - 1,999 Sq. Ft.	2.15	$1,939
2,000 - 2,999 Sq. Ft.	3.33	$2,995
3,000 - 3,999 Sq. Ft.	4.10	$3,691
≥ 4,000 Sq. Ft.	4.41	$3,967
Multifamily Residential	2.27	$2,039

[1] Parks and Recreation Fee improvement costs are allocated to residential uses only.
[2] See Table 6-3 for details.

Table 6-8 Community Parks Cost Allocation

Item	Persons per Household	Amount
Future Residents [1]		39,103
Total Costs Allocated to Future Development [2]		$33,237,862
Cost per Resident		$850
Fee by Land Use Category		
Single-Family Residential		*per unit*
<1,000 Sq. Ft.	1.22	$1,039
1,000 - 1,999 Sq. Ft.	2.15	$1,831
2,000 - 2,999 Sq. Ft.	3.33	$2,829
3,000 - 3,999 Sq. Ft.	4.10	$3,486
≥ 4,000 Sq. Ft.	4.41	$3,747
Multifamily Residential	2.27	$1,926

[1] Parks and Recreation Fee improvement costs are allocated to residential uses only.
[2] See Table 6-3 for details.

Table 6-9 Regional Parks Cost Allocation

Item	Persons per Household	Amount
Future Residents (DIF Boundary) [1]		39,103
Total Costs Allocated to Future Development [2]		$977,584
Cost per Resident		$25
Fee by Land Use Category		
Single-Family Residential		*per unit*
<1,000 Sq. Ft.	1.22	$31
1,000 - 1,999 Sq. Ft.	2.15	$54
2,000 - 2,999 Sq. Ft.	3.33	$83
3,000 - 3,999 Sq. Ft.	4.10	$103
≥ 4,000 Sq. Ft.	4.41	$110
Multifamily Residential	2.27	$57

[1] Parks and Recreation Fee improvement costs are allocated to residential uses only.
[2] See Table 6-3 for details.

Table 6-10 Recreation Facilities Cost Allocation

Item	Persons per Household	Amount
Future Residents (DIF Boundary) [1]		39,103
Total Costs Allocated to Future Development [2]		$34,730,301
Cost per Resident		$888
Fee by Land Use Category		
Single-Family Residential		*per unit*
<1,000 Sq. Ft.	1.22	$1,086
1,000 - 1,999 Sq. Ft.	2.15	$1,913
2,000 - 2,999 Sq. Ft.	3.33	$2,956
3,000 - 3,999 Sq. Ft.	4.10	$3,642
≥ 4,000 Sq. Ft.	4.41	$3,915
Multifamily Residential	2.27	$2,013

[1] Parks and Recreation Fee improvement costs are allocated to residential uses only.
[2] See Table 6-3 for details.

Table 6-11 Trails Development Cost Allocation

Item	Persons per Household	Amount
Future Residents (DIF Boundary) [1]		39,103
Total Costs Allocated to Future Development [2]		$6,683,648
Cost per Resident		$171
Fee by Land Use Category		
Single-Family Residential		*per unit*
<1,000 Sq. Ft.	1.22	$209
1,000 - 1,999 Sq. Ft.	2.15	$368
2,000 - 2,999 Sq. Ft.	3.33	$569
3,000 - 3,999 Sq. Ft.	4.10	$701
≥ 4,000 Sq. Ft.	4.41	$753
Multifamily Residential	2.27	$387

a8

[1] Parks and Recreation Fee improvement costs are allocated to residential uses only.
[2] See Table 6-3 for details.

Table 6-12 Parks Land Acquisition Cost Allocation

Item	Persons per Household	Amount
Future Residents (DIF Boundary) [1]		39,103
Total Costs Allocated to Future Development [2]		$54,470,991
Cost per Resident		$1,393
Fee by Land Use Category		
Single-Family Residential		*per unit*
<1,000 Sq. Ft.	1.22	$1,703
1,000 - 1,999 Sq. Ft.	2.15	$3,001
2,000 - 2,999 Sq. Ft.	3.33	$4,636
3,000 - 3,999 Sq. Ft.	4.10	$5,713
≥ 4,000 Sq. Ft.	4.41	$6,140
Multifamily Residential	2.27	$3,156

[1] Parks and Recreation Fee improvement costs are allocated to residential uses only.
[2] See Table 6-6 for details.

Table 6-13 Summary of Maximum Justified Parks and Recreation Fee by Component

Future Land Uses	Parks and Recreation Facility Improvements: Neighborhood Parks	Community Parks	Regional Parks	Recreation Facilities	Trails Development	Land Acquisition	Subtotal	4% Finance Dept Charge	Total Fee
Table Reference	*Table 6-7*	*Table 6-8*	*Table 6-9*	*Table 6-10*	*Table 6-11*	*Table 6-12*			
Residential [1]	*per unit*								
Single-Family Residential									
<1,000 Sq. Ft.	$1,100	$1,039	$31	$1,086	$209	$1,703	**$5,167**	$207	**$5,374**
1,000 - 1,999 Sq. Ft.	$1,939	$1,831	$54	$1,913	$368	$3,001	**$9,105**	$364	**$9,470**
2,000 - 2,999 Sq. Ft.	$2,995	$2,829	$83	$2,956	$569	$4,636	**$14,067**	$563	**$14,630**
3,000 - 3,999 Sq. Ft.	$3,691	$3,486	$103	$3,642	$701	$5,713	**$17,336**	$693	**$18,029**
≥ 4,000 Sq. Ft.	$3,967	$3,747	$110	$3,915	$753	$6,140	**$18,633**	$745	**$19,378**
Multifamily Residential	$2,039	$1,926	$57	$2,013	$387	$3,156	**$9,578**	$383	**$9,962**

summ

[1] Parks and Recreation Fee improvement costs are allocated to residential uses only.

Findings for Parks and Recreation Fee

Purpose of Fee

The Park and Recreation Fee component developed through this Nexus Study would fund the parks and recreation facility improvements and land acquisition necessary to serve new residential development in the City based on the LOS described in this chapter. New development in the City will increase the service population and, therefore, the need for new parks and recreation facilities and parkland.

Use of Fee

The fee will be used to construct new development's fair share portion of park and recreation facilities, as well as acquire parkland necessitated by new development; to plan, design, and develop parks and recreation facilities; and to fund the studies and administration to support the program.

Relationship between Use of Fee and Type of Development

Development of new residential land uses in the City will generate a need for additional parks and recreation facilities and parkland. The fee will be used to develop park and recreation facilities and acquire parkland to serve new users from residential development.

Relationship between Need for Facility and Type of Project

Each new residential development project will generate additional demand for park and recreation facilities and parkland. New parks and recreation facilities and additional parkland will serve additional demand generated by new residents.

Relationship between Amount of Fee and Cost of or Portion of Facility Attributed to New Development

The amount of park and recreation facilities needed by each land use has been estimated by applying the parks and recreation costs for persons served for each land use. The common use factor for residential land uses is the number of persons per household for each residential land use category.

7. GREENBELT PRESERVATION

The purpose of the Greenbelt Preservation Fee is to provide a financing mechanism for a system of open space and greenbelts in the City of Vacaville. As the City continues to grow, demand for the open space and greenbelt system will similarly increase, therefore requiring additional preserved acres to serve the expanding population. The Greenbelt Preservation Fee component funds the acquisition of additional greenbelt and open space acreage necessary to serve new development based on current open space and greenbelt standards.

Existing service level standard for Greenbelt Preservation is determined based on the existing resident population and the total open space acreage owned by the City of Vacaville, including acreage adjacent to Lagoon Valley Park. Greenbelt preservation service standards are established on a per resident basis. As greenbelt and open space preservation are assumed to benefit all residents, the Greenbelt Preservation Fee applies to the DIF Boundary including Lagoon Valley.

This chapter provides an overview of LOS standards, land acquisition cost estimates, and the greenbelt preservation fee component cost allocation methodology.

LOS Standards and Cost Assumptions

Methodology Used

This Nexus Study calculates greenbelt preservation acreage required to serve future development using an existing service standards methodology. Consistent with the methodology employed by the City of Vacaville to determine the Open Space and Greenbelt DIF in 1992, this Nexus Study calculates the acreage target based directly on the assumed level of growth and associated increased demand for open space.

Table 7-1 summarizes the greenbelt preservation service level standards and cost assumptions. The City of Vacaville currently owns approximately 2,000 acres of greenbelt and open space land, which includes nearly 770 acres in Lagoon Valley. Allocated across the existing residential population of 98,855, existing City-owned acreage results in approximately 19.8 acres per 1,000 residents. The section below explains how these LOS standards are applied to calculate the additional preservation acreage needed to serve the City's future development.

Greenbelt Preservation and Open Space Land Acquisition

The City of Vacaville has historically used fee title acquisition in meeting its open space preservation targets. This Nexus Study therefore assumes greenbelt and open space properties would be preserved through fee title acquisition. While the cost of properties can vary significantly based on a variety of factors (e.g., size, level of improvements, existing uses, zoning, etc.), this Nexus Study assumes, based on existing land availability, that properties to be acquired by the city be composed of a 50/50 mix of field crop land and irrigated pasture land. Per acre cost estimates by land type are based on a Garland & Associates analysis referenced in the 2019 Vacaville Agriculture and Avian Species Impact Mitigation Fee Study completed by BAE. Field crop land values were found to range between $5,000 and $9,000 while irrigated pasture land values were found to range between $5,000 and $7,000. Assuming an even split between

these two agricultural land uses, a median per acre value to $6,500 is assumed as shown in **Table 7-2**.

Future Land Requirements and Costs

EPS estimates the greenbelt preservation acquisition costs needed to serve new residential development at approximately $5.02 million, as shown in **Table 7-2**. This estimate is based on new development's fair share of future greenbelt land acquisition costs based on the LOS standards described above.

Table 7-1 Greenbelt Preservation Service Level Standards and Cost Assumptions

Item	Acres	Service Level Standard [1]	
Greenbelt and Open Space			
City-Owned Parcels (Excluding Lagoon Valley)	1,186	12.0	*acres per 1,000 res*
Lagoon Valley City-Owned Parcels	768	7.8	*acres per 1,000 res*
Total Existing Greenbelt and Open Space Acres	**1,954**	**19.8**	***acres per 1,000 res***

sls

Source: City of Vacaville; DRAFT Vacaville- Fairfield Greenbelt Development Impact Fee Study, May 5 2020; EPS.

[1] Existing service level standard for Greenbelt Preservation determined based on the existing resident population and the total open space acreage owned by City of Vacaville, including acreage adjacent to Lagoon Valley Park, as provided by the City of Vacaville.

Table 7-2 Greenbelt and Open Space Acquisition Costs Analysis

Item	Future Residents	Service Level Standard [1]	Acreage [2]	Cost per Acre [3]	Total Cost
Greenbelt Preservation					
Fee Title Acquisition	39,103	19.8 *acres per 1,000 res*	773	$6,500	$5,023,553
Total					**$5,023,553**

[1] See Table 7-1 for details.
[2] Acreage to be purchased is calculated based on a service level standard of 19.8 acres per 1,000 residents applied to the 39,103 future residents.
[3] Per acre cost estimate assumes properties would be preserved through fee title acquisition be composed of a 50/50 mix of field crop land and irrigated pasture land. Per acre cost estimates by land type are based on a Garland & Associates analysis referenced in the 2019 Vacaville Agriculture and Avian Species Impact Mitigation Fee Study completed by BAE. Field crop land values were found to range between $5,000 and $9,000 while irrigated pasture land values were found to range between $5,000 and $7,000. Assuming a 50/50 split of these land uses and the median value in the ranges, a per acre value to $6,500 is assumed.

Cost Allocation Methodology and Fee Calculation

The previous section details the costs of acquiring the additional greenbelt acreage needed to serve new residential development. The following section describes the methodology used to allocate the overall cost burden of preserving greenbelt acreage to residential land uses to calculate the maximum justifiable Greenbelt Preservation Fee component per unit. The City does not charge the Greenbelt Preservation Fee to nonresidential development. Therefore, nonresidential uses are not included in this cost allocation methodology and fee calculation section.

Greenbelt Preservation Cost Allocation

As discussed above, the LOS standards are based on the residential population of the City and similarly are allocated to only residential development. The City will charge the Greenbelt Preservation Fee to the total DIF Boundary.

Total greenbelt acquisition costs then are allocated to future development by distributing the total costs over the projected resident population to determine the cost per resident. This calculation is shown below in **Table 7-3**.

Calculation of Residential Fees

Based on the residents-served calculation discussed above, total future greenbelt preservation costs are apportioned to residential development to derive a maximum justifiable fee per residential unit. Dividing the total future acquisition costs by the projected future residents-served results in the cost per person served.

The cost per resident then is applied to the residential PPH (residential land uses) to derive the greenbelt preservation cost allocation for each residential land use category. Adding a 4 percent Finance Department charge for program administration to the subtotal generates the total maximum justifiable greenbelt preservation fee for each residential land use category, as shown in **Table 7-4**.

Table 7-3 Greenbelt Preservation Cost Allocation

Item	Persons per Household	Amount
Future Residents [1]		39,103
Total Costs Allocated to Future Development [2]		$5,023,553
Cost per Resident		$128
Fee by Land Use Category [1]		
Single-Family Residential		*per unit*
<1,000 Sq. Ft.	1.22	$157
1,000 - 1,999 Sq. Ft.	2.15	$277
2,000 - 2,999 Sq. Ft.	3.33	$428
3,000 - 3,999 Sq. Ft.	4.10	$527
≥ 4,000 Sq. Ft.	4.41	$566
Multifamily Residential	2.27	$291

a4

[1] Greenbelt preservation costs are allocated to residential uses only.
[2] See Table 7-2 for details.

Table 7-4 Summary of Maximum Justified Greenbelt Preservation Fee

Future Land Uses	Land Acquisition	4% Finance Dept. Charge	Total Fee
Residential [1]			
Single-Family Residential			
<1,000 Sq. Ft.	$157	$6	**$163**
1,000 - 1,999 Sq. Ft.	$277	$11	**$288**
2,000 - 2,999 Sq. Ft.	$428	$17	**$445**
3,000 - 3,999 Sq. Ft.	$527	$21	**$548**
≥ 4,000 Sq. Ft.	$566	$23	**$589**
Multifamily Residential	$291	$12	**$303**

summ

[1] Greenbelt preservation costs are allocated to residential uses only.

Findings for Greenbelt Preservation Fee

Purpose of Fee

The Greenbelt Preservation Fee component developed through this Nexus Study would fund the land acquisition necessary to serve new residential development in the City based on the LOS described in this chapter. New development in the City will increase the service population and, therefore, the need for new greenbelt and open space acreage.

Use of Fee

The fee will be used to acquire new development's fair share portion of greenbelt and open space acreage and to fund the studies and administration to support the program.

Relationship between Use of Fee and Type of Development

Development of new residential land uses in the City will generate a need for additional greenbelt and open space acreage. The fee will be used to preserve greenbelt acreage in perpetuity, which benefits new users from residential development.

Relationship Between Amount of Fee and Cost of or Portion of Land Acquisition Attributed to New Residential Development

The amount of greenbelt and open space acreage needed by each residential land use has been estimated by applying the cost of greenbelt preservation land acquisition to the number of persons served for each land use. The common use factor for residential land uses is the number of persons per household for each residential land use category.

8. STORM DRAINAGE FACILITIES

City staff, in collaboration with West Yost Associates, developed the necessary information required to calculate an updated maximum storm drain fee. The fee determines the cost of capital investments and supporting studies for both detention basins and conveyance systems that can be allocated to new development. This cost allocation is then converted into a cost per impervious area of development and subsequently into a fee schedule of per unit costs for new residential by density category and per gross acre fees for nonresidential development. Because of differences in needs for storm drain facilities and developer funding obligations between development on the west and east of Leisure Town Road, the fees are differentiated between the two areas.

Storm Drain Costs

Detention Basin Costs

Table 8-1 summarizes West Yost Associates/City information on Detention Basin improvement costs (including land acquisition costs). As shown, the total Detention Basin improvement costs sum to about $101.3 million. A large proportion of these costs will be directly funded by developers and the City has also identified substantial funding from other sources. Removing these two sources of funding, the net Detention Basin cost that is allocable to new development is about $7.5 million (see **Appendix C** for more detail). Of this amount, about $6.5 million is required to support investments to the west of Leisure Town Road and $1.0 million is required to support investments to the east of Leisure Town Road.

Table 8-1 Detention Basin Improvements/Land Acquisition Costs

IMPROVEMENT COSTS	
Total Detention Basin Improvement Costs	**$101,328,468**
minus	
Assumed Developer Funding	$54,321,542
Other Funding	$39,500,000
Subtotal	$93,821,542
Net Costs/ Fee Funding Required	**$7,506,926**
East of Leisure Town Road Project Cost	$1,000,000
West of Leisure Town Road Project Cost	$6,506,926

Source: City of Vacaville/ West Yost 2020 Detention Project Summary (List, Cost, Funding Allocation); Economic & Planning Systems, Inc.

System Study Costs

As shown in **Table 8-2**, there are a broad range of studies required to support new investments in Storm Drainage facilities. The City has considered its historical spending on these studies and identified an average annual expenditure of $125,000 on Detention Basin investment-related studies and $31,000 on conveyance capital system studies.

Considered over a 15-year period, this sums to a total expenditure of $2.34 million on system studies, including $1.875 million on detention basin studies and $465,000 on conveyance system studies. These costs are then allocated between the development on the west and east of Leisure Town Road. All of the Detention Basin study costs are allocated to west of Leisure Town Road development as those studies will support investments in that area. The conveyance system study costs are allocated to both west and east of Leisure Town Road in proportion to the expected levels of future impervious development (as discussed below).

Table 8-2 Detention Basin and Conveyance System Study Costs

Item	
System Study Costs (1)	
Dentention Basin Capital Systems Studies	$1,875,000
Conveyance Capital Systems Studies	$465,000
Total Capital Improvements Study Costs	**$2,340,000**
Allocation to West of LTR Growth	
Dentention Basin Capital Systems Studies (2)	$1,875,000
Conveyance Capital Systems Studies (3)	$399,606
Total	$2,274,606
Allocation to East of LTR Growth	
Conveyance Capital Systems Studies (3)	$65,394

(1) The City conducts studies to guide new capital investments in its Dentention Basins and Conveyances systems. City staff has indicated an annual expenditure of $31,000 per year to study/ guide new conveyance systems and $125,000 per year to study/ guide new Detention Basin projects. Total costs shown for a 15-year period.
(2) City Detention studies only associated with growth west of LTR so full study costs allocated there.
(3) City Conveyance study costs associated with growth west and east of LTR so costs allocated based on proportion of future impervious development.

Source: City of Vacaville; EPS

Fee Program Cost per Impervious Acre of Development

West Yost Associates estimated the expected amount of development of vacant land in the City of Vacaville within the fee program area under the General Plan. **Table 8-3** shows an expected total vacant acreage of future development of about 3,060 acres, including about 2,540 acres west of Leisure Town Road and 520 acres east of Leisure Town Road. It also shows the development by broad land use category (including residential, mixed use, commercial, industrial etc.).

Table 8-3 Vacant Areas expected to be Developed through Buildout (1)

Land Use	East of LTR	West of LTR	Total Acres
Commercial	8.9	471.1	480.0
Industrial	0.0	484.3	484.3
Mixed Use	146.9	406.7	553.6
Residential	300.9	1,083.9	1,384.8
School	63.8	97.2	161.0
Total Acres	520.5	2,543.2	3,063.7

(1) Represents Acres of currently Vacant Land by Land Use expected to be developed through buildout of the General Plan both east and west of Leisure Town Road. Excludes the Northeast Growth Area.

Source: West Yost Vacant Acreage Analysis; Economic & Planning Systems, Inc.

Storm drainage fees are generally based on the level of impervious development. **Table 8-4** translates the estimates of vacant acres of development into the associated impervious acres of development based on a compilation of average impervious acre percentages developed by West Yost using City information on storm drain standards. As shown the estimated acres of new impervious development to the West of Leisure Town Road are about 1,607 acres and about 263 acres to the East of Leisure Town Road.

Table 8-4 Impervious Development on Vacant Acreage through Buildout by Land Use

Land Use	% Impervious (1)	East of LTR (2)	West of LTR (2)	Total Acres
Commercial	80%	7.1	376.9	384.0
Industrial	90%	0.0	435.9	435.9
Mixed Use Average	50%	73.5	203.4	276.8
Residential Average	50%	150.5	542.0	692.4
School	50%	31.9	48.6	80.5
Total Acres	--	262.9	1,606.7	1,869.6

(1) Developed by West Yost and City Staff based on Table DS 4-4 of City's Storm Drain Design Standards.

(2) Calculation based on application of Average Impervious % to Vacant Acres shown in Table 8-3.

Source: City of Vacaville; West Yost; Economic & Planning Systems, Inc.

Combining these estimates of impervious acres with the fee program cost allocations for improvements and studies, the average cost per acre of impervious development can be calculated for the west and east of Leisure Town Road. As shown in **Table 8-5**, the results are as follows:

- **East of LTR**. The average fee program cost per impervious acre is $4,052.
- **West of LTR**. The average fee program cost per impervious acre is $5,466.

Table 8-5 Cost per Acre of Impervious Development

Land Use	Fee Program Cost Allocation	Impervious Acres of Development	Cost per Acre of Impervious Development (1)
East of LTR	$1,065,394	262.9	$4,052
West of LTR	$8,781,533	1,606.7	$5,466

(1) Calculation based on Cost Allocatioin and Imprevious Acres of development; Tables 8-1,-2, and -4.

Source: City of Vacaville; West Yost; Economic & Planning Systems, Inc.

Storm Drain Capital Facilities Fee Schedule

The estimates of cost per impervious acre can be converted into a fee schedule. Additional steps are necessary to convert this cost into a fee per gross acre of development for nonresidential and per unit for residential development. As shown in **Table 8-6**, distinct costs per gross vacant acre of development can be developed for difference land use based on the more detailed impervious percent factors provided in *Table DS-4* of the *City's Storm Design Standards*. For residential development, a further step is required to convert from per gross acre fee to per unit fee. As shown in **Table 8-7**, using the average densities for the different residential land use categories, distinct per unit fees can be developed.

Table 8-7 shows the maximum updated storm drainage impact fees for selected land use both to the west and east of Leisure Town Road. In summary:

- **East of LTR**. Per unit residential fees range from $116 to $347 per unit depending on residential development density and are $3,242 per acre for office/commercial developments and $3,647 per acre for industrial development.
- **West of LTR**. Per unit residential fees range from $156 to $468 per unit depending on residential development density and are $4,373 per acre for office/commercial developments and $4,919 per acre for industrial development.

Table 8-6 Storm Drainage Fee per Vacant Gross Acre by Land Use and Area

Land Use	% Impervious (1)	East of LTR	West of LTR
Industrial	90%	$3,647	$4,919
Commercial/ Office	80%	$3,242	$4,373
Residential Urban High Density/ Multi Family (20+ Units/ Acre)	80%	$3,242	$4,373
Residential High Density/ Mobile Home (14 - 20 Units/ Acre)	75%	$3,039	$4,099
Residential Medium Density (8 - 14 Units/ Acre)	65%	$2,634	$3,553
Residential Low/ Medium Density (4 - 8 Units/ Acre)	45%	$1,823	$2,460
Residential Low Density (3 - 4 Units/ Acre)	30%	$1,216	$1,640

(1) Calculations based on Cost per Acre of Impervious Development and Impervious % assumptions.
(2) Imprevious percentages from Table DS 4-4 of City's Storm Drain Design Standards. For residential categories where Table DS 4-4 provides a range, the mid-point has been used. For uses not shown in this table the per vacant acre fee can be derived using the impervious percentages shown in Tabls DS 4-4 or otherwise provided by City staff.

Source: City of Vacaville; West Yost; Economic & Planning Systems, Inc.

Table 8-7 Storm Drainage Fee Schedule for Selected Uses

Land Use	Average Density (Units/ Acre)	East of LTR	4% Finance Dept. Charge	West of LTR	4% Finance Dept. Charge	Total Fee East of LTR	Total Fee West of LTR
Non-Residential Uses (per gross acre)							
Industrial	na	$3,647	$146	$4,919	$197	**$3,793**	**$5,116**
Commercial/ Office	na	$3,242	$130	$4,373	$175	**$3,371**	**$4,547**
Residential Uses (per unit)							
Residential Urban High Density/ Multi Family (20+ Units/ Acre)	28	$116	$5	$156	$6	**$120**	**$162**
Residential High Density/ Mobile Home (14 - 20 Units/ Acre)	17	$179	$7	$241	$10	**$186**	**$251**
Residential Medium Density (8 - 14 Units/ Acre)	11	$239	$10	$323	$13	**$249**	**$336**
Residential Low/ Medium Density (4 - 8 Units/ Acre)	6	$304	$12	$410	$16	**$316**	**$426**
Residential Low Density (3 - 4 Units/ Acre)	3.5	$347	$14	$468	$19	**$361**	**$487**

(1) Calculations based on Cost per Acre of Impervious Development and Impervious % assumptions.
(2) Imprevious percentages from Table DS 4-4 of City's Storm Drain Design Standards. For residential categories where Table DS 4-4 provides a range, the mid-point has been used. For uses not shown in this table the per vacant acre fee can be derived using the impervious percentages shown in Tabls DS 4-4 or otherwise provided by City staff.

9. TRANSPORTATION FACILITIES

The City of Vacaville retained John Long Consulting to prepare a Nexus Study to update the existing City's traffic impact fees. The City's General Plan Update triggered the need for a major update to the City's development impact fees for transportation facilities. John Long completed the "Nexus Study: City of Vacaville Transportation Impact Fee Program" in April 2022 (TIF Nexus Study) in collaboration with City staff.

This chapter summarizes some of key outcomes of the Transportation Impact Fee Program Study (TIF Nexus Study). The TIF Nexus Study should be referred to directly for fee justifications and calculations, the updated transportation impact fees associated with a broad range of land uses, and the lower fees associated with the defined TOD areas.

As described in the Study and summarized in **Table 9-1**, the maximum allowable fee was established based on a full set of capital improvements and other currently available funding (see **Table 9-1**). The TIF Study determined the maximum allowable transportation fee per Equivalent Dwelling Unit (EDU) – average single-family unit - that is then applied to different land uses based on their EDU factors. As shown, the maximum allowable fee per average single-family unit is **$23,756 per EDU** and including a 4 percent transportation program administration component. Across all new development, this fee would be expected to raise about $518.4 million in constant dollars terms to support transportation improvements over the course of fee program implementation.

Recognizing that the maximum allowable transportation fee was high relative to some other Northern California jurisdictions, the City considered ways to reduce the fee level while staying consistent with General Plan policies. These included: (1) estimating potential future grant funding for transportation improvements; (2) additional grant funding to help cover the two ramp/interchange projects; (3) adjustment or removal of transportation projects that, on further evaluation, were not necessary to serve the forecasted growth and/or showed low benefit relative to costs. As shown in **Table 9-2**, the adjusted proposed fee per average single-family unit is **$14,469 per EDU** including a 4 percent transportation program administration component), about 60 percent of the maximum potential fee. Across all new development, the proposed fee is expected to raise about $315.8 million in constant dollars to support transportation improvements over the course of fee program implementation.

The current City transportation impact fee is **$12,178 per single-family unit**. Looking solely at an average single-family unit (i.e., not fee differences for smaller and larger units), the proposed new per EDU fee represents an increase of about $2,291 per unit, a 19 percent increase.

Table 9-3 shows the proposed fees across selected land uses (based on their EDU factors) as shown in the TIF Study. The City is proposing to adjust single-family fees around the average based on differences in persons per household. This results in the variations shown for single-family development. Full detail of the proposed fees for a full range of land uses (and for TOD areas) is provided in *Table 12* of the *TIF Nexus Study*.

Table 9-1 John Long TIF Fee Study: Nexus-Based Cost per EDU

Elements of the TIF Program	Cost allocated to New Development in TIF Program
Roadway Capacity Improvements	$515,806,840
Bike and Pedestrian Safety Improvements	$5,158,672
Traffic Safety and Signals	$10,252,748
Reimbursements/ Project Closeout	$5,014,246
Total Costs	**$536,232,506**
minus Funding	
Existing Grant Funding	$15,076,047
TIF Program Balance	$2,743,581
Other Funding	**$17,819,628**
Total Remaining Cost Funded by TIF	**$518,412,878**
Total Growth in EDU's	22,695
Cost per EDU	$22,843
Administrative Cost (4%)	$914
Maximum Nexus-Based Fee per EDU	**$23,756**

Source: Nexus Study: TIF Program (John Long) - Table 1; EPS

Table 9-2 John Long TIF Fee Study: City-Proposed Cost per EDU

Elements of the TIF Program	Cost allocated to New Development in TIF Program
Total Nexus-based Cost funded by TIF	**$536,232,506**
minus Costs Removed and Expanded Funding	
Existing Grant Funding	$15,076,047
TIF Program Balance	$2,743,581
Assumed Future Grant Funding	$35,363,615
Assumed Funding for Interchange/ Ramp Projects	$5,053,096
Reduction in Funding for Large Projects	$153,795,154
Eliminate Intersection Improvements with Low Cost/Benefit	$8,449,570
Other Funding/ Costs Removed	**$220,481,063**
Total Remaining Funding from TIF	**$315,751,443**
Total Growth in EDU's	22,695
Cost per EDU	$13,913
Administrative Cost (4%)	$557
Proposed Fee per EDU	**$14,469**

Source: Nexus Study: TIF Program (John Long) - Table 2; EPS

Table 9-3 John Long TIF Fee Study: City-Proposed Fee Schedule by Land Use

Land Use	EDU Factor	Standard Fee	4% Finance Dept. Charge	Total Fee
Proposed Fee per EDU	**na**	**$14,469**	**$579**	**$15,048**
Residential (Per Unit)				
Single Family: <1,000 SF	0.43	*$6,222*	$249	**$6,471**
Single Family: 1,000 to 1,999 SF	0.69	*$9,984*	$399	**$10,383**
Single Family (average): 2,000 to 2,999 SF	*1.00*	*$14,469*	$579	**$15,048**
Single Family: 3,000 to 3,999 SF	1.22	*$17,653*	$706	**$18,359**
Single Family: > 4,000 SF	1.29	*$18,665*	$747	**$19,412**
Single Family/ Age-Restricted	0.30	$4,341	$174	**$4,514**
Multi-Family	0.57	$8,185	$327	**$8,513**
Multi-Family/ Age-Restricted	0.26	$3,800	$152	**$3,952**
Non-Residential (Per Building Sq. Ft.)				
Commercial (mid-size)	0.00129	$18.70	$0.75	**$19.45**
Office	0.00086	$12.51	$0.50	**$13.01**
Medical Office	0.00269	$38.94	$1.56	**$40.50**
General Industrial	0.00032	$4.58	$0.18	**$4.76**
Fulfillment Center Warehouse	0.00130	$18.79	$0.75	**$19.54**
Parcel Hub Warehouse	0.00061	$8.78	$0.35	**$9.13**
Warehouse/ Self-Storage	0.00024	$3.48	$0.14	**$3.62**

* See Table 12 of Nexus Study for full set of land uses, EDU factors, and proposed fees.
Also, see Table 12 of Nexus Study for reduced fees that apply in defined TOD areas.

Source: Nexus Study: TIF Program (John Long) - Tables 11 and 12; EPS

10. WATER AND SEWER CAPACITY FEES

The City of Vacaville retained Bartle Wells Associates (BWA) to update the City's water and wastewater capacity fees. BWA completed the "Water and Sewer Capacity Fee Study" in December 2021 in collaboration with City staff (Water and Sewer Fee Study).

This Chapter summarizes the key outcomes of the Water and Sewer Study, though the study should be referred to directly for specifics on fee calculations and justifications. BWA used a "buy-in and expansion" methodology to establish new maximum sewer and water capacity fees on a per Equivalent Dwelling Unit (EDU) basis. Under this approach, new connections buy in for a proportionate share of existing facilities and pay for their fair share of expansion-related improvements to meet the capacity needs of new growth. The Water and Sewer Study provides the updated Water and Sewer Capacity fees on a per EDU basis.

The resulting fees per EDU can then be applied to the City's EDU schedule (i.e., schedule showing the EDU's that apply for different projects/circumstances) for sewer and water respectively to determine the fees associated with different development projects. Applicable sewer capacity fees can then be calculated in terms of fee per unit (for residential development) and fee per 1,000 square feet of building space (for nonresidential development). Because some planned sewer and water improvements only serve new development outside of the Downtown Specific Plan Boundary, different fees are provided for inside and outside the DTSPB.

Water capacity fees are tied to the water meter size and the number of meters. For certain uses (e.g., single-family developments), the size and number of water meters required is generally standard; for multifamily developments and nonresidential development, however, the water meter needs vary depending on the specifications of the project.

Taken together, the updated Water and Sewer Capacity Fees per EDU sum to **$19,811** outside the DTSPB and **$16,854** inside the DTSPB. The current 2022 Water and Sewer Capacity Fees sum to **$22,934**. Under the fee update, 2022 per EDU fees combined for water and sewer capacity fees will decrease by about 14 percent for development outside of the DTSPB and about 27 percent for development inside the DTSPB. Actual changes in fees will, however, depend on development specifics and the latest EDU specifications by land use. Under both the current and updated schedule, new development will also pay the additional current water installation fee.

Sewer Capacity Fees

Table 10-1 shows BWA's updated sewer capacity fees calculations by EDU for inside and outside the DTSPB. The updated Sewer Capacity Fee is **$8,177 per EDU** for development outside the DTSPB and **$6,613 per EDU** for development outside the DTSPB. The current Sewer Capacity Fee is **$12,289 per EDU**. In order to maintain consistency with the existing definition of an EDU for sewer fee purposes, a sewer EDU is defined as a single-family unit in the 1,000 to 1,999 square foot range. This is different from the definition of an EDU for transportation and other fee categories.

Table 10-1 Bartle Wells Associates Sewer Capacity Charge Calculations

Fees	Per GPD	Per EDU
Fee Components		
Buy-In Component	$26.47	$5,293
Expansion Component for All Growth	$6.60	$1,320
Expansion Component for Growth outside of the DTSPB (1)	$7.82	$1,564
Fees by Geography		
Sewer Capacity Fee outside of DTSPB	$33.07	**$6,613**
Sewer Capacity Fee inside of DTSPB	$40.89	**$8,177**

(1) Some capacity improvements are only required to serve growth outside of the Downtown Specific Growth Boundary (DSGB).

Source: BWA Water and Sewer Capacity Study: Table 4 - Sewer Capacity Charges; EPS

Table 10-2 shows the sewer fees for selected land uses based on a combination of the City's updated sewer EDU schedule with the per EDU sewer capacity fees established by BWA. The City's updated Sewer EDU schedule should be referenced for full set of land uses and EDU's. As shown, updated Sewer Capacity Charges vary by unit types and unit size with fees for single-family residential development ranging from about $5,700 to $11,500 per unit and for multifamily residential development from about $4,000 to $9,800 per unit. EDUs for nonresidential development vary much more widely with fees at about $2,500 per 1,000 square feet for "commercial low" land uses that includes office development and significantly higher for industrial uses that use high amounts of water.

Table 10-2 Sewer Capacity Charge Fee Schedule for Selected Uses

Land Use	EDU Factor *	Fee Outside of DTSPB	4% Finance Dept. Charge	Fee Inside of DTSPB	4% Finance Dept. Charge	Total Fee Outside of DTSPB	Total Fee Inside of DTSPB
Proposed Fee per EDU	**na**	**$8,177**	$327	**$6,613**	$265	**$8,504**	**$6,878**
Residential (Per Unit)							
Single Family: <1,000 SF	0.7	$5,724	$229	$4,629	$185	**$5,953**	**$4,814**
Single Family (EDU): 1,000 to 1,999 SF	*1.0*	*$8,177*	$327	*$6,613*	$265	**$8,504**	**$6,878**
Single Family: 2,000 to 2,999 SF	*1.2*	$9,812	$392	$7,936	$317	**$10,205**	**$8,253**
Single Family: 3,000 to 3,999 SF	1.4	$11,448	$458	$9,258	$370	**$11,906**	**$9,629**
Single Family: > 4,000 SF	1.4	$11,448	$458	$9,258	$370	**$11,906**	**$9,629**
Multi Family: <1,000 SF	0.5	$4,088	$164	$3,307	$132	**$4,252**	**$3,439**
Multi Family: 1,000 to 1,499 SF	0.8	$6,542	$262	$5,290	$212	**$6,803**	**$5,502**
Multi Family: 1,499 to 1,999 SF	1.0	$8,177	$327	$6,613	$265	**$8,504**	**$6,878**
Multi Family: > 2,000 SF	1.2	$9,812	$392	$7,936	$317	**$10,205**	**$8,253**
Non-Residential (Per 1,000 Bulding Sq. Ft.)							
Commercial Low (includes Office)	0.3	$2,453	$98	$1,984	$79	**$2,551**	**$2,063**
Commercial Medium (includes Medical Office)	0.5	$4,088	$164	$3,307	$132	**$4,252**	**$3,439**
Commercial High	1.0	$8,177	$327	$6,613	$265	**$8,504**	**$6,878**
Warehouse/ Storage	0.100	$818	$33	$661	$26	**$850**	**$688**
Other Industrial Users	*calculated by City staff using formula*						

* See City of Vacaville table of Updated 2022 Sewer EDU's for full set of land uses, EDU factors, and proposed fees. In order to maintain consistency with the existing definition of an EDU for sewer fees, a sewer EDU is defined as a single family unit in the 1,000 to 1,999 square foot range. This is different from the definition of an EDU for transportation and other fee categories.

Sources: BWA Water and Sewer Capacity Study: Table 4 - Sewer Capacity Charges; City of Vacaville Sewer EDU Factors; EPS

Water Capacity Fees

Table 10-3 shows BWA's updated water capacity fee calculations by EDU for inside and outside the DTSPB. The updated Water Capacity Fee is **$11,634 per EDU** for development outside the DTSPB and **$10,241 per EDU** for development outside the DTSPB. The current 2022 Water Capacity Fee is **$10,645 per EDU**.

Table 10-3 Bartle Wells Associates Water Capacity Charge Calculations

Fees	Per GPD	Per EDU
Fee Components		
Buy-In Component	$17.96	$5,028
Expansion Component for All Growth	$18.62	$5,213
Expansion Component for Growth outside of the DTSPB (1)	$4.98	$1,393
Fees by Geography		
Sewer Capacity Fee outside of DTSPB	$36.58	**$10,241**
Sewer Capacity Fee inside of DTSPB	$41.56	**$11,634**

(1) Some capacity improvements are only required to serve growth outside of the Downtown Specific Growth Boundary (DSGB).

Source: BWA Water and Sewer Capacity Study: Table 8 - Water Capacity Charges; EPS

Table 10-4 shows the water fees for different meter sizes based on a combination of the City's water meter/EDU schedule and the per EDU water capacity fees established by BWA. Many single-family detached units will require a 1-inch water meter so their fee per unit will commonly be $10,241 or $11,634 per unit depending on location. As noted above, fees for multifamily development and commercial development will depend on the number and size of meters required to serve individual developments.

Table 10-4 Water Capacity Fee Schedule by Meter Size

Meter Size	EDU Factor *	Fee Outside of DTSPB	4% Finance Dept. Charge	Fee Inside of DTSPB	4% Finance Dept. Charge	Total Fee Outside of DTSPB	Total Fee Inside of DTSPB
Proposed Fee per EDU	**na**	**$11,634**	$465	**$10,241**	$410	**$12,099**	**$10,651**
Single Family Residential							
0.75 inch	1.0	$11,634	$465	$10,241	$410	**$12,099**	**$10,651**
1 inch	1.0	$11,634	$465	$10,241	$410	**$12,099**	**$10,651**
1.5 inch	5.0	$58,170	$2,327	$51,205	$2,048	**$60,497**	**$53,253**
2 inch	8.0	$93,072	$3,723	$81,928	$3,277	**$96,795**	**$85,205**
Multi Family Residential/ Non-Residential							
0.75 inch	2.0	$23,268	$931	$20,482	$819	**$24,199**	**$21,301**
1 inch	2.6	$30,248	$1,210	$26,627	$1,065	**$31,458**	**$27,692**
1.5 inch	7.0	$81,438	$3,258	$71,687	$2,867	**$84,696**	**$74,554**
2 inch	13.4	$155,896	$6,236	$137,229	$5,489	**$162,131**	**$142,719**
3 inch	23.2	$269,909	$10,796	$237,591	$9,504	**$280,705**	**$247,095**
4 inch	37.4	$435,112	$17,404	$383,013	$15,321	**$452,516**	**$398,334**
6+ inch	*determined by Utilities Division*						

* Selected EDU factors from City of Vacaville, Building Division, January 1, 2022 Connection and *Develoment Impact Fee Schedule. Please refer to that schedule for details/ specifics.*

Source: BWA Water and Sewer Capacity Study: Table 8 - Water Capacity Charges;
City EDU by Water Meter Size Schedule; EPS

11. ADMINISTRATION AND IMPLEMENTATION

The City oversees the implementation and administration of the fee program consistent with the requirements of the Mitigation Fee Act. AB 602, which came into effect on January 1, 2022, adds additional administration and reporting requirements that the City is also undertaking. There are several components to the fee administration and implementation efforts including, but not limited to:

- Posting of nexus studies and fee schedules on City's Web sites.
- Annual fee adjustments.
- Annual fee reporting.
- Application and tracking of fee credits/reimbursements.
- Oversight of periodic Nexus Study updates.
- Collection of 4 percent administration cost as part of fee program.

In addition to these administrative efforts, the City is also responsible for use of the fee revenues to conduct the capital facilities as well as the pursuit of the other funding sources required to complement the fee revenue.

The City's Municipal Code, Chapter 11.01 addresses development impact fees and describes many of the key policies and procedures for fee administration and implementation, including impact fee funds, impact fee adjustments, and impact fee credits and reimbursements, among others.