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Final Report

2019 Nexus Update of the Subregional Transportation Mitigation Program (STMP) Impact Fee

Prepared for:
West Contra Costa Transportation
Advisory Committee (WCCTAC)
11A-1

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1. Introduction

The West Contra Costa Transportation Advisory Committee (WCCTAC) is a regional planning agency charged with obtaining the funding for regional transportation improvement projects in West Contra Costa County. WCCTAC's jurisdiction encompasses the western portion of the County, including unincorporated areas as well as the Cities of El Cerrito, Hercules, Pinole, Richmond and San Pablo.

WCCTAC first implemented a transportation impact fee via the Subregional Transportation Mitigation Program (STMP) in 1997. Impact fees are established under a state law known as Assembly Bill (AB) 1600, the Mitigation Fee Act. Fees charged pursuant to this legislation are used to build capital facilities needed to offset the impacts generated by new development. The STMP was designed to provide a contribution from new development toward a series of regional transportation improvements. WCCTAC conducted an update of the fee program in 2005 to help fund an expanded list of regional transportation improvements. Working with the member agencies, WCCTAC has successfully utilized fee revenue to fund various transportation projects throughout the region. This report documents a new update of the STMP, undertaken to update the program for current conditions.

1.1 Purpose

The purpose of this study is to provide the technical basis for updating the STMP. The focus of the updated program is to support a regional multimodal transportation system in West County that serves the expected future demand. This report documents the analytical approach for establishing the required nexus between anticipated future development in West Contra Costa County and the need for regional transportation improvements.

1.2 Study Area

As shown on **Figure 1-1**, the study area includes the unincorporated portions of western Contra Costa County, as well as the Cities of El Cerrito, Hercules, Pinole, Richmond and San Pablo.

1.3 Study Process

This study was developed under the direction of WCCTAC staff. Input was obtained at key points in the study process from the WCCTAC Technical Advisory Committee (TAC) and the WCCTAC Board of Directors (Board). Review was also provided by the WCCTAC Legal Counsel.

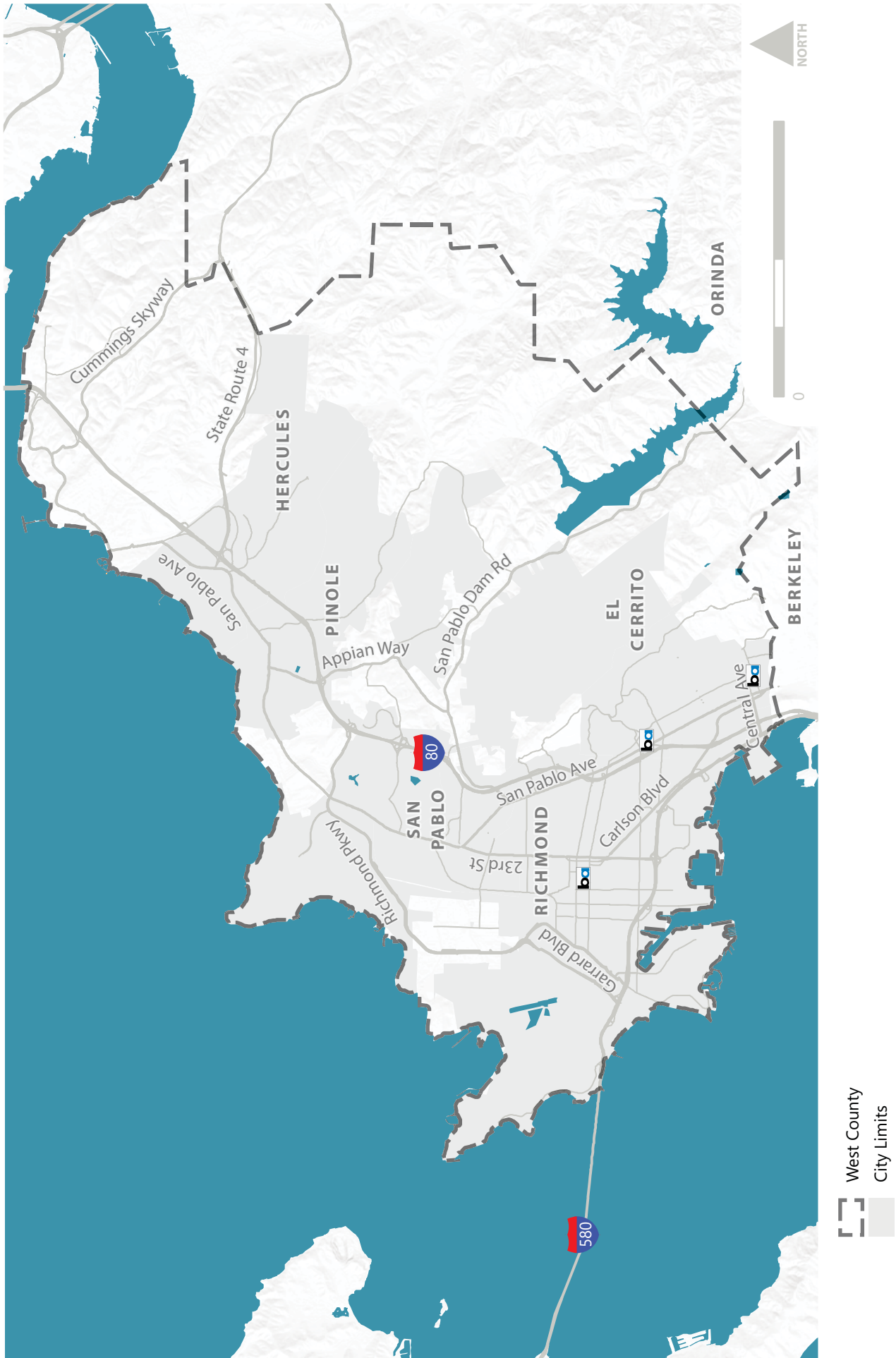


Figure 1-1
STMP Update Study Area





After the results of the fee study are approved by the Board, the updated fee program will be presented to the Contra Costa County Board of Supervisors and the City Councils of El Cerrito, Hercules, Pinole, Richmond and San Pablo. Each jurisdiction will be asked to adopt an updated ordinance, Master Cooperative Agreement, and hold an appropriate public hearing to implement the updated fee program.

1.4 Report Organization

This report contains a total of five chapters including this introductory chapter.

- **Chapter 2 – Fee Program Background** summarizes the status of the current West County STMP.
- **Chapter 3 – Capital Improvement Projects** describes the process for identifying the project list, including cost estimates for each project.
- **Chapter 4 – Growth Projections** summarizes the residential and non-residential growth projections anticipated in the planning horizon (year 2040) of the study.
- **Chapter 5 – Nexus Analysis** describes the methodology and results of the nexus analysis.
- **Chapter 6 – Summary of Required Program Elements** confirms that this report addresses all of the fee program elements as required by Assembly Bill (AB) 1600, the Mitigation Fee Act.



2. Fee Program Background

West Contra Costa County is an area that has experienced population and employment growth within the last decade and where new development is anticipated to continue, causing increased demand on the region's multimodal transportation system. This chapter describes the current status of the regional fees in West County. The West County STMP was first adopted in 1997, and an updated nexus study was prepared in 2005/06. The prior nexus study is titled *2005 Update of the Subregional Transportation Mitigation Program* (2005 Update of the STMP), dated May 5, 2006 and prepared by TJKM Transportation Consultants.

2.1 Overview of the STMP

The STMP is an important mechanism for regional collaboration in West County. The program involves all six jurisdictions (Contra Costa County and the five incorporated cities of El Cerrito, Hercules, Pinole, Richmond and San Pablo) and was established to comply with the countywide Measures C and J Growth Management Program requirements for a mitigation program to fund improvements needed to meet the transportation demands resulting from growth. Regional, multi-jurisdictional fee programs are more complicated than local mitigation fee programs administered by a single jurisdiction; however, regional programs offer a forum for cooperation and coordination that allows the agencies involved to make more comprehensive transportation investments than any single jurisdiction could do on its own.

It is also worth noting that local transportation mitigation fees are charged by some of the STMP member agencies, for the purposes of implementing transportation projects that improve local streets and other transportation facilities. Such local fee programs are separate from and in addition to the STMP.

2.2 Current STMP Fee Levels

The STMP fees from the fee schedule shown in the 2005 Update of the STMP are shown in **Table 2-1**. The STMP ordinance specifies that an inflation index will be used to adjust the fee levels annually to reflect changes in construction costs. This is a common practice in fee programs, to ensure that the "purchasing power" of the fee revenue keeps up with changes in the cost of building capital projects. The index is also shown in Table 2-1, along with a calculation of what the fees would currently be if they had been indexed for inflation.

Table 2-1: WCCTAC 2005 STMP Fee Schedule Indexed for Inflation

Land Use	Unit	2005 STMP Fee Schedule	Index (Jun. 2006 - Jun. 2018)	FY 2017-18 Fee Schedule If Indexed
Single family	per dwelling unit	\$2,595	1.42	\$3,697
Multi-family	per dwelling unit	\$1,648	1.42	\$2,348
Senior Housing	per dwelling unit	\$701	1.42	\$995
Hotel	per room	\$1,964	1.42	\$2,789
Retail	per sq. ft.	\$1.82	1.42	\$2.59
Office	per sq. ft.	\$3.51	1.42	\$5.00
Industrial	per sq. ft.	\$2.45	1.42	\$3.49
Storage Facility	per sq. ft.	\$0.53	1.42	\$0.75
Church	per sq. ft.	\$1.58	1.42	\$2.24
Hospital	per sq. ft.	\$4.21	1.42	\$5.98

Note: The index is based on the Engineering-News Record Construction Cost Index for the San Francisco Bay Area, as described in WCCTAC's STMP model ordinance.

In reviewing the actual fees being charged by the member agencies, it was found that there had not been consistent indexing over time. See **Table 2-2** for the currently adopted (as of July 2018) fee schedules for the five primary land use categories administered by WCCTAC member jurisdictions; the fee schedules for the Senior Housing, Hotel, Storage Facility, and other land use categories are not listed in Table 2-2. One objective of this new STMP update is to establish procedures for annual indexing of the fee, and to ensure that there is consistency in the fees being charged across all member agencies.

Table 2-2: Subregional Transportation Mitigation Program (STMP) Fees as of July 2018

Jurisdiction	Single Family (per dwelling unit)	Multi-Family (per dwelling unit)	Office (per square foot)	Retail (per square foot)	Industrial (per square foot)
WCCTAC (original 2005)	\$2,595	\$1,648	\$3.51	\$1.82	\$2.45
WCCTAC (if indexed)	\$3,697	\$2,348	\$5.00	\$2.59	\$3.49
County	\$3,768	\$2,392	\$5.10	\$2.65	\$3.56
El Cerrito	\$2,595	\$1,648	\$3.51	\$1.82	\$2.45
Hercules	\$2,904	\$1,844	\$3.93	\$2.04	\$2.74
Pinole	\$2,595	\$1,648	\$3.51	\$1.82	\$2.45
Richmond	\$2,655	\$1,686	\$4.00	\$2.00	\$3.00
San Pablo	\$2,595	\$1,648	\$3.51	\$1.82	\$2.45

Note: Table 2-2 summarizes the current fee schedules for the five primary land use categories only. Fee schedules for the following land use categories are not listed for brevity: Senior Housing, Hotel, Storage Facility, Church, Hospital and Other.

2.3 STMP Revenue and Disbursements

As shown in **Table 2-3**, the STMP generated about \$11.6 million in revenue as of December 1, 2018, including \$8.7 million between 2005 and 2018. About \$5.9 million has been disbursed as of December 1, 2018; total disbursements by project are summarized in **Table 2-4**. As shown in Table 2-3, an account balance of about \$5.7 million remains as of December 1, 2018. A portion of the remaining account balance has been allocated to projects on the current STMP project list; however, not all the allocated amount has been disbursed to the project sponsor agencies to date. WCCTAC also recently released a call for projects and will be coordinating with West County jurisdictions to disburse the remaining balance for transportation capital improvements that fall under the project list identified in the 2005 Update of the STMP. Revenues generated after the upcoming adoption of the STMP update will be disbursed for transportation capital improvements identified in the updated project list described in Chapter 3 below.

Table 2-3: STMP Revenue and Disbursements (as of December 1, 2018)¹

Period	Revenue	Disbursements	Balance ²
1998 – 2004	\$2,942,031.00	\$2,235,826.70	\$706,204.30
2005 – 2018 ³	\$8,668,484.55	\$3,652,097.91	\$5,722,590.94
Total to Date	\$11,610,515.55	\$5,887,924.61	\$5,722,590.94

Notes:

1. Information presented in Table 2-3 is based on the best information available at this time, however, the records may not be complete.
2. A portion of the remaining account balance has been allocated to projects on the current STMP project list; however, not all the allocated amount has been disbursed to the project sponsor agencies to date.
3. Reporting period as of December 1, 2018.

Source: WCCTAC, December 2018.

Table 2-4: STMP Disbursements by Project (as of December 1, 2018)¹

Project	Total Amount Committed	Total Amount Disbursed to Date
Richmond Intermodal Station	\$527,000.00	\$223,116.36
I-80/San Pablo Dam Road, I-80/Central Avenue, SR 4/ Willow Avenue Interchange Improvements	\$2,800,435.39	\$2,800,435.39
Capitol Corridor Improvements (Hercules Passenger Rail Station)	\$1,000,000.00	\$988,774.00
Ferry Service to San Francisco from Richmond and/or Hercules/Rodeo	\$300,000.00	\$0.00
BART Access and/or Parking Improvements (El Cerrito Plaza, El Cerrito Del Norte, and/or Richmond BART Stations)	\$1,186,200.00	\$813,991.86
Bay Trail Gap Closure	\$500,000.00	\$487,365.06
San Pablo Dam Road Improvements in Downtown El Sobrante	\$0.00	\$0.00
San Pablo Avenue Corridor Improvements	\$0.00	\$0.00
North Richmond Connection Project	\$0.00	\$0.00
Hercules Transit Center	\$304,963.13	\$304,963.13
Del Norte Area TOD Public Infrastructure Improvements	\$300,000	\$0.00
Administrative ²	N/A	\$269,278.81
Total	\$6,918,598.52	\$5,887,924.61

Notes:

1. Information presented in Table 2-4 is based on the best information available at this time, however, the records may not be complete for every project on the list.
2. Includes disbursements for administrative purposes and those that were not otherwise categorized.

Source: WCCTAC, December 2018.



3. Capital Improvement Projects

The Mitigation Fee Act indicates that impact fees should be used to fund capital projects, and not for ongoing operating or maintenance costs; for the purposes of this STMP update, emphasis was placed on defining a set of capital projects that achieve the subregional goals of the STMP.

3.1 Project List Criteria

There are many transportation needs in West County, and many projects have been considered or are in various phases of planning. To define projects that are consistent with the regional emphasis of the STMP, the following criteria were defined and accepted by the TAC and Board.

As a first step, all STMP-eligible projects must meet the following criterion:

- Does the project have a reasonable expectation of implementation during the timeframe of the fee program (i.e., year 2040)?

Then, a project should meet at least one of the following criteria to be eligible for STMP funding:

- Does the project address the impacts of congestion on regional travel?
- Is the project located on a Route of Regional Significance?
- Does the project improve access to BART stations, transit centers or major transit hubs?
- Does the project increase transit ridership?
- Does the project improve bicycle or pedestrian access to transit?

Although the focus of the STMP project list is to identify improvements that serve regional travel needs by reducing congestion or increasing accessibility along Routes of Regional Significance and major transit facilities, it is important to note that projects that are not directly located on such routes were also considered. Specifically, projects along other roadways that could indirectly improve regional travel or the operations of Routes of Regional Significance may meet one or more of the above criteria, and thus be STMP-eligible.

3.2 Project Research

Fehr & Peers, in coordination with WCCTAC staff, developed a preliminary list of projects that meet at least one of the approved criteria. These projects were identified by reviewing a large number of planning and



environmental review documents addressing West County's existing and future transportation needs. The following documents were reviewed to develop the preliminary draft project list:

- *Regional Measure 3 Expenditure Plan* (MTC, September 2017)
- *2016 Express Bus Study Update Final Report* (CCTA, June 2017)
- *2017 Countywide Comprehensive Transportation Plan Public Review Draft* (CCTA, May 2017)
- *West Contra Costa High-Capacity Transit Study* (WCCTAC, May 2017)
- *2015 Update of the Contra Costa Congestion Management Program* (CCTA, December 2015)
- *2014 Comprehensive Transportation Project List* (CCTA, March 2015)
- *West County Action Plan for Routes of Regional Significance* (CCTA, January 2014)
- *BART Sustainable Communities Operations Analysis* (BART, June 2013)
- *West Contra Costa Transit Enhancement and Wayfinding Plan* (WCCTAC, October 2011)
- *2009 Contra Costa Countywide Bicycle and Pedestrian Plan* (CCTA, October 2009)
- Various planning and environmental documents completed in the past several years and available on agency websites, including the following:
 - *Final Hercules Safeway Project Transportation Impact Assessment* (City of Hercules,
 - *Administrative Draft San Pablo City Hall Site Reuse Project Transportation Impact Assessment* (City of San Pablo, June 2017)
 - *San Pablo Avenue Complete Streets Study Feasibility Report* (Contra Costa County Public Works, April 2017)
 - *Administrative Draft West County Health Center – Transportation Impact Analysis* (Contra Costa County, April 2017)
 - *Draft CEQA Initial Study/Mitigated Negative Declaration Goodrick Avenue Bay Trail Gap Closure Project* (City of Richmond, January 2017)
 - *CVS/Pharmacy & Wireless Communication Facility Relocation Initial Study* (City of Pinole, October 2015)
 - *South Richmond Transportation Connectivity Plan* (City of Richmond, July 2015)
 - *Bay Walk Mixed-Use Project Final Initial Study and Mitigated Negative Declaration* (City of Richmond, July 2015)
 - *Pinole Gateway Shopping Center Initial Study* (City of Pinole, January 2015)
 - *Draft San Pablo Avenue Specific Plan* (City of El Cerrito, December 2014)
 - *Final Sycamore Crossing Transportation Assessment* (City of Hercules, November 2014)
 - *Final Environmental Impact Report San Pablo Avenue Specific Plan* (City of El Cerrito, August 2014)
 - *Richmond Central Project Initial Study Checklist Public Review Draft* (City of Richmond, April 2014)



- *Draft Environmental Impact Report Bottoms Property Residential Project* (City of Richmond, March 2014)
- *Final Report for the San Pablo Avenue Complete Streets Study* (Cities of Richmond and San Pablo, September 2013)
- *City of Richmond Bicycle Master Plan* (City of Richmond, October 2011)
- *Ohlone Greenway Master Plan* (City of El Cerrito, June 2009)

Fehr & Peers reviewed the documents listed above and assembled a comprehensive initial list of capital projects that were either located on a Route of Regional Significance or could indirectly improve operations on such routes. This initial process identified more than 150 projects. Fehr & Peers then removed duplicative projects, consolidated projects that contained similar elements based on project descriptions, and applied the STMP eligibility criteria, resulting in a preliminary draft list of 39 new projects, in addition to the 11 projects on the current STMP list. These potential projects were discussed at several meetings of the WCCTAC TAC and the Board, who made further adjustments and revisions.

3.3 STMP Update Project List

The TAC recommended, and Board approved, a final list of capital improvement projects for inclusion in the updated STMP. This list contains a combination of projects currently in the STMP, as well as projects that have been identified through the review of recent planning documents, the application of project eligibility criteria, and feedback from the TAC and Board. Overall, the purpose of the projects remains the same as when the STMP was first adopted. These projects are intended to provide congestion relief and mitigate traffic impacts on regional routes through capacity improvements on those routes, improved transit services for subregional and regional travel, and improved facilities that allow West County residents to more efficiently access regional routes and transit services. **Table 3-1** displays the updated STMP list, and the project locations are shown on **Figure 3-1**. All projects on the list are grouped into the following categories:

- Complete streets projects
- Other bicycle and pedestrian-focused improvements
- Transit and station-related improvements
- Local street and intersection improvements
- Freeway and interchange improvements

A detailed version of the project list is also provided in **Appendix A**. In addition to the 19 capital improvement projects shown in Figure 3-1, the project list also includes one administrative project that would allow for two comprehensive nexus studies and fee updates over the 22-year planning horizon of the 2019 STMP fee.

3.4 Cost Estimates

For the purposes of the STMP, it is necessary to have an estimate of the cost to implement each of the capital improvement projects on the project list. Cost estimates were developed for the STMP based on information provided in recent planning documents and input from the TAC. The year that cost estimates were developed varied for each project; to account for this, all cost estimates were escalated to 2018 dollars. The estimated cost of each project is shown on Table 3-1. Additional documentation of the cost estimates is provided in **Appendix B**.

Table 3-1: Updated STMP Projects and Estimated Cost

ID	Project	Description	Estimated Cost (2018\$)
Complete Streets Projects			
1	San Pablo Avenue Complete Streets Projects	a.) Construct bike and pedestrian improvements along San Pablo Avenue from Rodeo to Crockett.	\$ 8,610,000
		b.) Construct bicycle, pedestrian, and transit improvements along San Pablo Avenue between La Puerta Road and Hilltop Drive.	\$ 3,150,000
		c.) Construct bike, pedestrian and transit improvements along San Pablo Avenue from Rivers Street in San Pablo to Lowell Avenue in Richmond.	\$ 13,755,000
		d.) Implement Complete Streets improvements along San Pablo Avenue including directional cycle track or buffered bike lane and other bicycle, pedestrian and transit improvements in El Cerrito.	\$ 8,190,000
		e.) San Pablo Avenue Class I Boardwalk between John Muir Parkway and Sycamore Avenue.	\$ 398,000
		f.) Complete bicycle/pedestrian connection on San Pablo Avenue over Santa Fe Railroad tracks.	\$ 16,800,000
2	Appian Way Complete Streets Project	Provide continuous sidewalks, bike lanes, and improved bus stops along Appian Way from San Pablo Dam Road in unincorporated El Sobrante to about 900 lineal feet north of the city limit within the City of Pinole.	\$ 23,310,000
3	San Pablo Dam Road Improvements in Downtown El Sobrante	Provide complete street improvements on San Pablo Dam Road between El Portal Drive and Castro Ranch Road.	\$ 10,422,000
Other Bicycle and Pedestrian-Focused Improvements			
4	Bay Trail Gap Closure	Improve transit access by closing three key Bay Trail gaps: along Goodrick Avenue in Richmond, between Bayfront Park and Pinole Creek in Pinole, and between Atlas Road and Cypress Avenue in unincorporated Contra Costa County.	\$ 12,276,000

Table 3-1: Updated STMP Projects and Estimated Cost

ID	Project	Description	Estimated Cost (2018\$)
5	Ohlone Greenway Improvements	Implement crossing, wayfinding, signing, lighting, safety, access and security, and landscaping improvements along Ohlone Greenway.	\$ 3,045,000
6	I-580/Harbour Way Interchange Pedestrian & Bicycle Access Improvements	Improve pedestrian and bicycle crossings at the I-580/Harbour Way interchange ramps.	\$ 519,000
7	I-580/Marina Bay Parkway Interchange Pedestrian & Bicycle Access Improvements	Improve pedestrian and bicycle crossings at the I-580/Marina Bay Parkway interchange ramps.	\$ 1,095,000
8	Richmond “Ferry to Bridge” Bicycle Network Improvements (connecting Ferry Terminal with Richmond-San Rafael Bridge Bay Trail)	a.) Bicycle Boulevard in Point Richmond area: from the new trail at Tewksbury & Castro to existing Bay Trail at S. Garrard & Richmond Ave.	\$ 1,150,000
		b.) Class 1 trail in Point Richmond to Richmond Greenway, including S. Garrard Blvd and W. Ohio Ave.	\$ 2,950,000
		c.) Two-way cycle-track and road diet on W. Cutting Blvd, Cutting Blvd, and Hoffman Blvd.	\$ 3,550,000
		d.) Two-way cycle-track on Harbour Way South: Hoffman Blvd to Ferry Terminal.	\$ 1,100,000
Transit and Station-Related Improvements			
9	I-80 Express Bus	Capital improvements associated with implementing Express Bus Service on I-80 from Hercules south to Berkeley, Emeryville, Oakland, and expansion to San Francisco, with intermediate stops at the Richmond Parkway Transit Center, a potential I-80/Macdonald Avenue Express Bus/BRT transit center, and other intermediate stops.	\$ 109,203,000
10	Hercules Regional Intermodal Transportation Center	Complete construction of the new train stop for Capitol Corridor service, including parking, station platform, signage and plazas, rail improvements, bicycle and pedestrian access improvements (e.g. Bay Trail connections), etc. Future capital improvements could include preparation for ferry service.	\$ 53,550,000
11	BART Extension from Richmond Station	BART extension from the Richmond BART Station to Contra Costa College. Only the planning, conceptual engineering and program level environmental clearance phases of the project are included.	\$ 14,700,000
12	San Pablo Avenue Transit Corridor Improvements	Bus Rapid Transit (BRT) on San Pablo Avenue approximating the existing 72R Rapid Bus route from downtown Oakland to the Richmond Parkway Transit Center and extending Rapid Bus from the Richmond Parkway Transit Center to the Hercules Transit Center.	\$ 192,150,000

Table 3-1: Updated STMP Projects and Estimated Cost

ID	Project	Description	Estimated Cost (2018\$)
13	23rd Street Transit Corridor Improvements	23rd Street BRT from Richmond Ferry Terminal and UC Berkeley Richmond Field Station to Richmond BART/Capitol Corridor station, then continuing to Contra Costa College.	\$ 121,800,000
14	West County BART Station Access, Parking & Capacity Improvements	a.) El Cerrito Plaza Station Modernization and Capacity Enhancements.	\$ 49,442,000
		b.) El Cerrito Plaza BART Pedestrian & Bike Safety and Access Improvements.	\$ 1,260,000
		c.) Richmond BART Pedestrian & Bike Safety and Access Improvements.	\$ 3,465,000
		d.) Richmond Crossover Project.	\$ 34,759,000
15	Del Norte Area TOD Public Infrastructure Improvements	Planning, engineering, environmental studies, and construction of the public transportation-related improvements related to Transit Oriented Development (TOD) in the area around the El Cerrito Del Norte BART station.	\$ 37,761,000
Local Street and Intersection Improvements			
16	San Pablo Avenue Intersection Realignment at 23rd Street and Road 20	Realignment of skewed 5-legged intersection as part of a bridge removal project that will enhance pedestrian, bicycle and future BRT access.	\$ 15,120,000
Freeway and Interchange Improvements			
17	I-80/San Pablo Dam Road Interchange Improvements (Phase 2)	Reconstruct the existing I-80/San Pablo Dam Road interchange (including modifications to the El Portal Drive and McBryde Avenue ramps) and provide improved pedestrian and bicycle facilities.	\$ 84,788,000
18	I-80/Central Avenue Interchange Improvements (Phase 2)	Improve traffic operations and multimodal access at the I-80/Central Avenue interchange and along Central Avenue between Rydin Road and San Pablo Avenue. The project will be completed in two phases.	\$ 15,225,000
19	I-80/Pinole Valley Road Interchange Improvements	Improve merge onto the I-80 mainline from the EB Pinole Valley Road on-ramp to address vehicles accelerating uphill after stopping at ramp meter, in addition to ramp-terminal intersection improvements.	\$ 10,959,000
Administrative Projects			
20	Future Nexus Study Updates	Two comprehensive nexus studies and fee updates, over the 22-year planning horizon of the 2019 STMP Fee.	\$500,000
Total Estimated Cost			\$ 855,002,000

Notes: See Appendix A for detailed project descriptions.

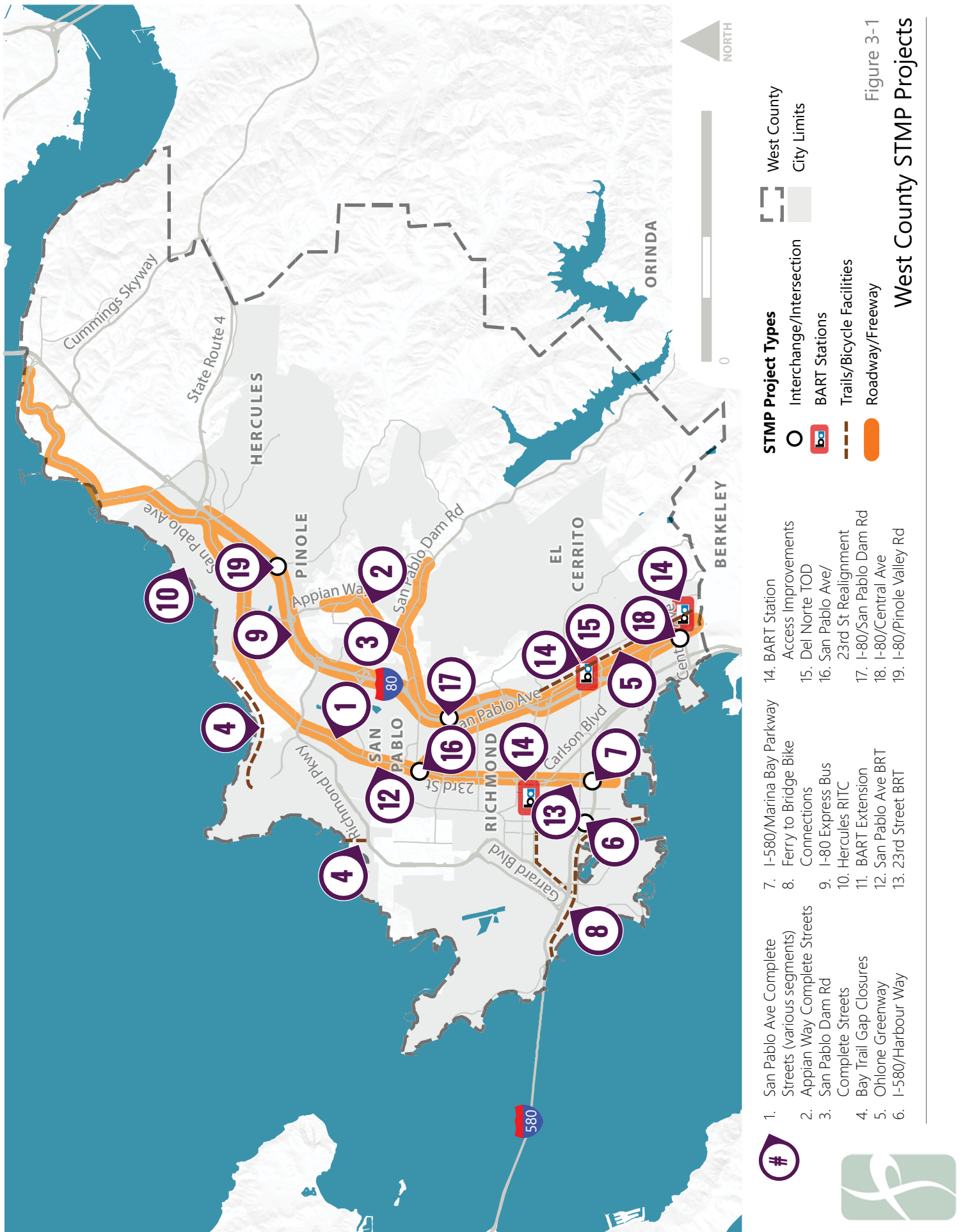


Figure 3-1

West County STMP Projects

4. Growth Projections

An important step in quantifying the nexus relationship is to determine the amount of new development anticipated in the planning horizon (year 2040) of the study. Fehr & Peers reviewed the historical and projected housing and job growth in West County provided by the Association of Bay Area Governments (ABAG) and summarized in **Table 4-1**. Based on the information presented in Table 4-1, the TAC recommended, and the Board approved, a 0.9 percent annual housing growth rate and 1.2 percent annual job growth rate for use in the nexus study update. These projections were incorporated into the year 2040 land use file of the Contra Costa Transportation Authority (CCTA) travel demand model in the appropriate Transportation Analysis Zones (TAZs) for the West County region. **Table 4-2** shows the amount of new development anticipated based on applying those growth rates; the number of dwelling units in West County would increase by 18,725 units (17 percent of total 2040 amount), and the number of jobs would increase by 18,794 jobs (21 percent of total 2040 amount). As shown in **Table 4-3**, total “service population” in West County, which is the sum of population plus jobs, is expected to increase by 82,037 (19 percent of total 2040 amount).

Table 4-1: West County Annual Growth Rate Comparison

Year Range	Annual Housing Growth Rate	Annual Job Growth Rate
2000 – 2005 (Historical)	0.9%	0.7%
2005 – 2010 (Historical)	-0.1%	-2.1%
2010 – 2015 (Historical)	0.9%	1.7%
2015 – 2040 (Forecast, based on ABAG <i>Projections 2013</i>)	1.2%	1.2%
2015 – 2040 (Forecast, based on ABAG <i>Projections 2017</i>)	1.0%	1.4%

Source: Fehr & Peers, 2018.

Table 4-2: Forecasted Housing and Job Growth in West County

Year	Residential (Dwelling Units)			Non-Residential (Jobs)			
	Single-Family	Multi-Family	Total	Office	Retail	Industrial	Total
2018	65,727	28,657	94,384	45,920	16,172	9,525	71,617
2040	70,412	42,697	113,109	60,528	19,485	10,398	90,411
Net Increase	4,685	14,040	18,725	14,608	3,313	873	18,794
Net Increase as % of Total 2040 Amount	7%	33%	17%	24%	17%	8%	21%

Source: Fehr & Peers, 2018.

Table 4-3: Forecasted Service Population Growth in West County

Year	Total Population	Total Jobs	Service Population (Population + Jobs)
2018	267,305	71,617	338,922
2040	330,548	90,411	420,959
Net Increase	63,243	18,794	82,037
Net Increase as % of Total 2040 Amount	19%	21%	19%

Source: Fehr & Peers, 2018.

The CCTA travel demand model land use forecasts for West County, which are based on data from ABAG, represent residential uses in terms of dwelling units and non-residential uses in terms of numbers of employees. However, because fees are typically assessed on the basis of building area, for the purpose of establishing fee rates, the forecasts of total employees have been converted to square feet of non-residential development by applying the following typical factors:

- Office: 3 employees per 1,000 square feet
- Retail: 2 employees per 1,000 square feet
- Industrial: 1 employee per 1,000 square feet

All uses were then converted to dwelling unit equivalents (DUEs), to account for the fact that different development types generate traffic with different characteristics, and to use a common unit of measurement. This conversion was accomplished by applying use-specific AM peak hour vehicle trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition. **Table 4-4**

contains the conversion factors used to calculate DUEs in this study. The results of the DUE conversion are presented in **Table 4-5**.

Table 4-4: DUE Conversion Factors

Land Use Category	Unit ¹	AM Peak Hour Vehicle Trip Rate ²	DUE per Unit ³
Single-Family	DU	0.74	1.00
Multi-Family	DU	0.36	0.49
Office	1,000 sq. ft.	1.16	1.57
Retail	1,000 sq. ft.	0.94	1.27
Industrial	1,000 sq. ft.	0.7	0.95

Notes:

1. DU = dwelling unit; sq. ft. = square feet.
2. AM peak hour trip rates are based on the following ITE codes: single-family = land use code 210, multi-family = land use code 221, office = land use code 710, retail = land use code 820, industrial = land use code 110.
3. DUE per Unit was calculated by normalizing the AM Peak Hour Trip Rate for each category such that the single-family residential category was assigned a DUE of 1.00. This is accomplished by dividing the AM Peak Hour Trip Rate for each category by 0.74, which is the AM Peak Hour Trip Rate of the single-family residential category. Example calculation: DUE per Multi-Family Unit = $0.36 / 0.74 = 0.49$.
4. Land uses that have unique characteristics that do not fall under any of the five general categories listed in the table were evaluated separately and assessed a fee per AM peak hour vehicle trip, as described further under Section 5.3.3.

Source: Fehr & Peers, 2018.

Table 4-5: Forecasted Growth in West County, Converted to DUE

Year	Residential (DUEs) ¹			Non-Residential (DUEs)			
	Single-Family	Multi-Family	Total	Office ²	Retail ³	Industrial ⁴	Total
2018	65,727	14,042	79,769	24,031	10,269	9,049	43,349
2040	70,412	20,922	91,334	31,676	12,373	9,878	53,927
Net Increase	4,685 (+7%)	6,880 (+49%)	11,565 (+14%)	7,645 (+32%)	2,104 (+20%)	829 (+9%)	10,578 (+24%)
Proportion of Total DUE Growth ⁵	21%	31%	52%	35%	9%	4%	48%

Notes:

1. Residential DUE conversion = Number of Dwelling Units * DUE per Unit.
2. Office DUE conversion = (Jobs/3 employees per 1,000 sq ft) * DUE per Unit.
3. Retail DUE conversion = (Jobs/2 employees per 1,000 sq ft) * DUE per Unit.
4. Industrial DUE conversion = (Jobs/1 employee per 1,000 sq ft) * DUE per Unit.
5. Total DUE Growth = 11,565 Net Increase in Residential DUEs + 10,578 Net Increase in Non-Residential DUEs = 22,143.
Example calculation: Single-Family DUE Proportion of Total DUE Growth = $4,685 / 22,143 = 21\%$.

Source: Fehr & Peers, 2018.



Following the same approach used in the 2005 STMP nexus study, the DUE conversion factors have been based on AM peak hour trip generation rates. The 2005 nexus study explained that the purpose of using AM peak hour rates was so as to “not overburden the application of the traffic fees on retail development.” Using the AM peak hour rates will allow the resulting fee calculations to be more directly compared to the current STMP fees. For the purposes of the STMP, which focuses on the impacts of new development, the most important piece of information is the estimated growth in DUEs between existing and future conditions. The total number of DUEs shown in Table 4-5 was used to calculate the maximum potential fee levels for each land use type.



5. Nexus Analysis

This chapter presents the nexus analysis conducted for the new STMP update.

5.1 Existing Deficiencies

An important part of a nexus analysis is to establish whether the transportation facilities that will be addressed by projects in the fee program are currently operationally deficient. Existing deficiencies should be accounted for in the fee calculations to ensure new development pays its fair share and is not being charged to correct an existing problem.

Fehr & Peers conducted an evaluation of existing transportation conditions based on a review of recent studies that contain information pertaining to the current operations along Routes of Regional Significance, existing transit services, and existing pedestrian and bicycle infrastructure. Based on the documents reviewed for this study and the performance standards applied in those documents, existing deficiencies were identified at the following locations, which are all intersections located along Routes of Regional Significance within the City of Richmond:

- Castro Street/Hensley Street
- Richmond Parkway/Pittsburg Avenue
- Richmond Parkway/Parr Boulevard
- Central Avenue/Jacuzzi Street/San Joaquin Street/Westbound I-80 Ramps

The only capital improvement project included in the project list described in Table 3-1 that addresses an intersection listed above is the I-80/Central Avenue Interchange Improvement Project (ID #18).

While the intersections listed above were the only locations specifically identified in the documents reviewed as failing to meet defined performance standards, it is well understood that many of the major transportation facilities in West County routinely operate at over-capacity conditions. For example, substantial congestion commonly occurs on I-80 and on the major routes that feed into or are parallel to the freeway. Parking lots at the three West County BART stations routinely fill around 7:30 AM, indicating that there is more demand for access to those stations than can currently be accommodated. In light of these conditions, the STMP calculations presented here have been conducted by calculating the growth in West County development as a percentage of the total future population and jobs. This is a conservative approach since only a relatively modest portion of each project's cost is included in the STMP, reflecting the projected traffic and service population growth in West County.



5.2 STMP Project Cost Responsibility

The estimation of the percentage of project responsibility that can be attributed to West County (and therefore the percentage of project cost to be included in the STMP) is shown in **Table 5-1**, and the following describes how those percentages were calculated.

The STMP is being updated to include a range of capital improvement projects that are intended to relieve congestion, improve transit services for subregional and regional travel, and allow West County residents to more efficiently access regional routes and transit services. The concept of this nexus study is to determine the proportion of the cost of each project that is reasonably attributable to new development within West County, and therefore could be included in the STMP fee. The primary analytical tool available to estimate the proportion of usage on each facility coming from new growth in West County is the CCTA regional travel demand model. The model is commonly used to evaluate projects that involve major changes to roadway facilities, such as adding lanes to a street or reconfiguring an interchange. The model is not designed or calibrated to capture smaller-scale changes, such as adding a bicycle lane, building sidewalks or crosswalks, or reconfiguring access to a transit station. Therefore, for the purposes of this STMP analysis, the model was used to estimate West County usage percentages for projects that involve freeway, interchange, or local street improvements, and an alternate method was used for projects that involve complete streets, bicycle/pedestrian, and transit-related improvements.

The percentages described below were applied to the cost of each STMP project, and the resulting amount represents the portion of the cost of each project that will be included when calculating the STMP fee. As shown in Table 5-1, using these calculations the STMP program could capture about \$162 million, which is approximately 19 percent of the overall total project cost of \$855 million; other funding sources would be needed to cover the remainder of the costs, to account for the travel demand generated by existing West County residents as well as existing and future travelers who pass through West County on their way to other destinations.

Table 5-1: Maximum STMP Amount for Each Project

ID	Project	Estimated Cost (2018\$)	% from West County	STMP Amount
Complete Streets Projects				
1	San Pablo Avenue Complete Streets Projects	\$ 50,903,000	19%	\$ 9,672,000
2	Appian Way Complete Streets Project	\$ 23,310,000	19%	\$ 4,429,000
3	San Pablo Dam Road Improvements in Downtown El Sobrante	\$ 10,422,000	19%	\$ 1,980,000
Other Bicycle and Pedestrian-Focused Improvements				
4	Bay Trail Gap Closure	\$ 12,276,000	19%	\$ 2,333,000
5	Ohlone Greenway Improvements	\$ 3,045,000	19%	\$ 579,000
6	I-580/Harbour Way Interchange Pedestrian & Bicycle Access Improvements	\$ 519,000	19%	\$ 156,000
7	I-580/Marina Bay Parkway Interchange Pedestrian & Bicycle Access Improvements	\$ 1,095,000	19%	\$ 197,000
8	Richmond Ferry to Bridge Bicycle Network Improvements	\$ 8,750,000	19%	\$ 2,450,000
Transit and Station-Related Improvements				
9	I-80 Express Bus Service	\$ 109,203,000	19%	\$ 20,749,000
10	Hercules Regional Intermodal Transportation Center	\$ 53,550,000	19%	\$ 10,175,000
11	BART Extension from Richmond Station	\$ 14,700,000	19%	\$ 2,793,000
12	San Pablo Avenue Transit Corridor Improvements	\$ 192,150,000	19%	\$ 36,509,000
13	23rd Street Transit Corridor Improvements	\$ 121,800,000	19%	\$ 23,142,000
14	West County BART Station Access, Parking & Capacity Improvements	\$ 88,926,000	19%	\$ 16,896,000
15	Del Norte Area TOD Public Infrastructure Improvements	\$ 37,761,000	19%	\$ 7,175,000
Local Street and Intersection Improvements				
16	San Pablo Avenue Intersection Realignment at 23rd Street and Road 20	\$ 15,120,000	12%	\$ 1,814,000
Freeway and Interchange Improvements				
17	I-80/San Pablo Dam Road Interchange Improvements (Phase 2)	\$ 84,788,000	19%	\$ 16,110,000
18	I-80/Central Avenue Interchange Improvements (Phase 2)	\$ 15,225,000	17%	\$ 2,588,000
19	I-80/Pinole Valley Road Interchange Improvements	\$ 10,959,000	14%	\$ 1,534,000
Administrative Projects				
20	Future Nexus Study Updates	\$500,000	100%	\$500,000
Totals		\$ 855,002,000	19%	\$ 161,781,000

Source: Fehr & Peers, 2018.



5.2.1 Transit, Bicycle, and Pedestrian Improvement Projects

For projects involving complete streets, transit, bicycle, and pedestrian improvements (project numbers 1 through 15), the percentage of project costs to be included in the STMP is set at the proportion of the total future service population (defined as population plus employment) in the year 2040 that is expected to be added by new development between 2018 and 2040. The service population calculations are provided below based on the service population summary shown in Table 4-2.

- 2018 existing service population in West County = 338,922
- 2040 projected service population in West County = 420,959
- Net increase in service population in West County = $420,959 - 338,922 = 82,037$
- Proportion of West County growth in 2040 service population = $82,037 / 420,959 = 19\%$

According to this calculation, 19 percent of the total future service population in West County would come from new residential and commercial development in West County. The calculation above accounts for existing and future West County residents that work within and outside of West County, in addition to people that live outside of West County but work in West County. Therefore, the percentage of transit, bicycle, and pedestrian improvements costs that are included in the STMP have been set at 19 percent.

5.2.2 Interchange and Local Street Projects

For projects involving changes to local streets and interchanges (project numbers 16 through 19), the land use projections for the year 2040 were incorporated in the CCTA travel demand model and the model was applied to generate estimates of travel patterns and volumes in the future. A common modeling technique called a select zone analysis was applied to identify the amount of total future traffic volume on each roadway link that is generated by land uses in the West County region. The model produces peak hour results for the PM time period; on each model link that represents the location of a STMP project, the PM peak hour growth in traffic volume attributable to new development in the West County region was compared to the overall future PM peak hour traffic volume, thereby calculating the share of the total future usage of that link attributed to growth in West County. This proportion ranges between 12 and 19 percent for the interchange and local street projects analyzed in this manner. Although the AM peak hour trip generation rates were used to identify the DUE growth anticipated in West County by land use category, the PM peak hour traffic volume growth from the CCTA travel demand model was used to identify the share of the total future usage of interchange and local street projects associated with future development.

It should be noted that the usage percentage for the I-80/San Pablo Dam Road Interchange Improvements Project (project number 17) was adjusted because the CCTA model results did not reflect growth in traffic



volumes at that interchange. Instead, the usage percentage was set to 19 percent to reflect the proportion of new service population in the West County region.

5.2.3 Administrative Projects

The administrative project included in the STMP is to fund future nexus study updates; therefore, 100 percent of the costs are attributed to the STMP update.

5.3 Maximum Fee Calculation

A fee calculation was completed based on the figures described above. Starting from the approximately \$162 million of project costs eligible to be included in the STMP, the costs were then proportioned to each land use category based on the number of DUEs estimated for that category. The total project capital costs associated with each land use category were then divided by the number of DUEs to establish the maximum potential fee level. **Table 5-2** shows the results of these calculations.

It is important to note that the fee calculation shown in Table 5-2 is intended to represent the maximum potential fee that is justified through this nexus analysis and that could be charged to each land use type to support the list of STMP projects. Setting new fee levels is a policy decision of the WCCTAC Board. If an action were taken to set fees lower than shown here, the STMP program would generate less revenue than estimated here and would take longer to generate the estimated funding for projects on the list.

STMP fees are charged to new development of all types located in the geographic area covered by the STMP. Further details about the application of the STMP to specific types of land uses are contained in the WCCTAC STMP Administrative Guidelines developed as part of this update.

Table 5-2: STMP Maximum Potential Fee Calculation by Land Use Category⁵

Land Use Category	Proportion of Total DUE Growth ¹	Capital Cost Allocated to Each Category ²	Total Units ³	Maximum STMP Fees ⁴
Single-Family Residential	21%	\$33,974,010	4,685 DU	\$7,252 per DU
Multi-Family Residential	31%	\$50,152,110	14,040 DU	\$3,572 per DU
Office	35%	\$56,623,350	4,869,300 sq. ft.	\$11.63 per sq. ft.
Retail	9%	\$14,560,290	1,656,500 sq. ft.	\$8.79 per sq. ft.
Industrial	4%	\$6,471,240	873,000 sq. ft.	\$7.41 per sq. ft.

Notes:

1. Proportion based on total DUE growth from 2018 – 2040, as summarized in Table 4-5.
2. Capital Cost Allocated to Each Category = \$161,781,000 * (Proportion of Total DUE Growth).
3. DU = dwelling unit; sq. ft. = square foot. Total units based on growth from 2018 – 2040, as summarized in Table 4-2.
4. Maximum Potential fee calculation for each land use category. Maximum Potential STMP Fee = (Proportion of Total Capital Cost) / (Total Units).
5. For any land use that has unique characteristics that are not captured under any of the general categories in the STMP ordinance, the fee will be calculated based on the number of AM peak hour trips for that specific land use. The maximum potential fee calculation is \$9,800 per AM peak hour trip; the calculation is described in more detail under Section 5.3.3. The STMP Administrative Guidelines provide further guidance for estimating the required fee for “other” category projects.

Source: Fehr & Peers, 2018.

5.3.1 Fee Comparison

The maximum potential STMP fee (presented in Table 5-2) was compared to the current STMP fees and to other sub-regional fee programs in Contra Costa, as summarized in **Table 5-3**. As shown in Table 5-3, the new maximum potential fees calculated are higher than the current non-indexed and indexed STMP fees in all land use categories. For residential uses, the new maximum STMP fee is somewhat higher than the residential fee charged in the Tri-Valley area, and lower than the residential fees in East County and Lamorinda. For non-residential uses, the new maximum STMP fee is higher than the comparable fees in East County and Tri-Valley, and roughly similar to the non-residential fees in Lamorinda.

Table 5-3: Comparison to Other Sub-Regional Fees

Jurisdiction	Single-Family (per unit)	Multi-Family (per unit)	Office (per sq. ft.)	Retail (per sq. ft.)	Industrial (per sq. ft.)
West County Area					
WCCTAC Maximum Potential Fee	\$7,252	\$3,572	\$11.63	\$8.79	\$7.41
WCCTAC (original 2005) ¹	\$2,595	\$1,648	\$3.51	\$1.82	\$2.45
WCCTAC (if indexed) ²	\$3,697	\$2,348	\$5.00	\$2.59	\$3.49
Other Sub-Regional Fees in Contra Costa					
East County	\$18,186	\$11,164	\$1.56	\$1.80	\$1.56
Lamorinda	\$7,269	\$5,088	\$7.78	\$7.78	\$7.78
Tri-Valley	\$4,369	\$3,010	\$7.43	\$3.48	\$4.32

Notes:

1. Reflects the 2005 STMP Fee Schedule.
2. Reflects the 2005 STMP Fee Schedule if it had been consistently indexed to year 2018. The index is based on the Engineering-News Record Construction Cost Index for the San Francisco Bay Area.

Source: Fehr & Peers, 2018.

5.3.2 Board-Recommended Fee Levels

At the September 28, 2018 meeting, the WCCTAC Board recommended that fee levels be set at 75 percent of the maximum potential fee calculations; the Board-recommended fee levels for the five major land use categories are presented in **Table 5-4**. Setting the fees at these levels is expected to generate an estimated \$121.3 million through year 2040.

Table 5-4: Board-Recommended STMP Fee Levels by Land Use Category

Jurisdiction	Single-Family (per unit)	Multi-Family (per unit)	Office (per sq. ft.)	Retail (per sq. ft.)	Industrial (per sq. ft.)
WCCTAC (original 2005) ¹	\$2,595	\$1,648	\$3.51	\$1.82	\$2.45
WCCTAC (if indexed) ²	\$3,697	\$2,348	\$5.00	\$2.59	\$3.49
WCCTAC Maximum Potential Fee	\$7,252	\$3,572	\$11.63	\$8.79	\$7.41
Board Recommendation (75% of WCCTAC Maximum Potential Fee)³	\$5,439	\$2,679	\$8.72	\$6.59	\$5.56

Notes:

1. Reflects the 2005 STMP Fee Schedule.
2. Reflects the 2005 STMP Fee Schedule if it had been consistently indexed to year 2018. The index is based on the Engineering-News Record Construction Cost Index for the San Francisco Bay Area.
3. The WCCTAC Board recommended during the September 28, 2018 meeting that fee levels be set at 75 percent of the maximum potential fee calculations.

Source: Fehr & Peers, 2018.

5.3.3 Maximum Potential Fee for Other Land Use Categories

As with the previously adopted STMP ordinance, the updated STMP Model Ordinance also specifies fees for the following land use categories: senior housing, hotel, storage facility, and other. The maximum potential fees for the senior housing, hotel and storage facility categories were calculated by applying the DUE factor for each category to the maximum potential fee per single family dwelling unit. Any land use that has unique characteristics that are not captured under any of the land use categories in the ordinance would fall under the "other" category, in which the fee is calculated based on the number of AM peak hour trips. The maximum potential fee per AM peak hour trip was calculated by dividing the maximum potential fee per single family dwelling unit by the AM peak hour trip generation rate (0.74) per single family dwelling unit; the calculation is shown below.

- Maximum potential fee per single family dwelling unit = \$7,252
- AM peak hour trip generation rate per single family dwelling unit = 0.74
- Maximum potential fee per AM peak hour trip = $\$7,252 / 0.74 = \$9,800$

The STMP Administrative Guidelines provide further guidance for estimating the required fee for “other” category projects. The maximum potential fee and Board-recommended fees (75 percent of the maximum potential fee) for these land uses are summarized in **Table 5-5**.

Table 5-5: STMP Fee Levels for Other Land Use Categories

Land Use	Unit	AM Trip Generation Rate ¹	DUE	WCCTAC Maximum Potential Fee ²	Board Recommendation (75% of WCCTAC Maximum Potential Fee) ²
Single-Family	Dwelling Unit	0.74	1.00	\$7,252	\$5,439
Senior Housing	Dwelling Unit	0.20	0.27	\$1,958	\$1,469
Hotel	Room	0.47	0.64	\$4,641	\$3,481
Storage Facility	Sq. ft.	0.0001	0.00014	\$1.02	\$0.76
Other ³	AM Peak Hour Trip	N/A	N/A	\$9,800	\$7,350

Notes:

1. AM peak hour trip rates are based on the following ITE codes found in the *ITE Trip Generation Manual* (10th Edition): single-family = land use code 210, senior housing = land use code 252, hotel = land use code 310, storage facility = land use code 151.
2. Fee estimate for senior housing, hotel, and storage facility land uses calculated by applying the DUE to the single-family family fee per dwelling unit.
3. The STMP Administrative Guidelines provide further guidance for estimating the required fee for “other” category projects.

Sources: *ITE Trip Generation Manual* (10th Edition); Fehr & Peers, 2018.

5.4 Other Funding Sources

As with the 2005 update of the STMP, the fee revenue from the 2019 STMP update will not pay the total cost of all transportation infrastructure improvements described in Table 3-1. Other funding will need to be obtained, some of which has already been identified. The following projects on the updated STMP list have identified other funding sources:

- Hercules Regional Intermodal Transportation Center (Project ID #9) has identified \$1 million in funding.
- Del Norte Area TOD Public Infrastructure Improvements (Project ID #15) has identified \$7.1 million in funding.
- San Pablo Avenue Intersection Realignment at 23rd Street and Road 20 (Project ID #16) has identified \$9.5 million in funding.



- I-80/Central Avenue Phase Interchange Improvements (Project ID #18) has identified \$13.9 million in funding.

Although additional funding sources have not yet been identified for the remaining projects, the following describes a range of other funding sources that are potentially available to fund the remaining capital costs.

Measure J - Approved by Contra Costa County voters in 2004, it imposed a continuation of a half-cent on the dollar sales tax for 25 more years beyond the original 1988 transportation sales tax measure (Measure C) that expired in 2009. As with Measure C, the tax revenues will be used to fund a voter-approved Expenditure Plan of transportation programs and projects. Measure J will provide approximately \$2.5 billion for countywide and local transportation projects and programs through the year 2034.

Regional Measure 3 - Approved by Bay Area voters in June 2018, Regional Measure 3 will raise tolls on the Bay Area region's state-owned toll bridges by \$1 beginning January 1, 2019. Tolls will rise by another \$1 in January 2022 with another \$1 increase in January 2025. Toll revenues will be used to finance a \$4.5 billion set of highway and transit improvements along the toll bridge corridors and their approach routes. The Regional Measure 3 Expenditure Plan currently contains \$25 million for I-80 corridor transit improvements in Contra Costa, \$100 million for AC Transit rapid bus corridor improvements, \$90 million for Capital Corridor improvements, and \$150 million for San Francisco Bay Trail and Safe Routes to Transit improvements,

One Bay Area Grants (OBAG) – Established in 2012, OBAG taps federal funds to maintain Metropolitan Transportation Commission's (MTC) commitment to regional transportation priorities while also advancing the Bay Area's land-use and housing goals. OBAG targets project investments in Priority Development Areas (PDAs), where cities and counties can use OBAG funds to invest in streetscape enhancements, bicycle and pedestrian improvements, Safe Routes to School projects, and transportation planning efforts. MTC adopted the funding and policy framework for the second round of the OBAG program in November 2015. The second round of OBAG funding is projected to generate about \$916 million to fund projects from 2017-18 through 2021-22. The OBAG 2 program is divided into a Regional Program, managed by MTC, and County Program, managed by the nine Bay Area Congestion Management Agencies (CMAs).

Senate Bill 1 (SB 1) – Signed into law by Governor Jerry Brown in April 2017, SB 1 is expected to raise \$52.4 billion for transportation investments over the next decade. Revenues to pay for SB 1 programs will come from new transportation-related fees and adjustments to state taxes on diesel fuel and gasoline. By 2018-19, MTC estimates SB 1 will generate more than \$365 million per year for transportation in the nine-county Bay Area. Most of that funding will be directed to maintenance and repairs of roadways and public transit systems. Funding will also be available for mobility improvements and expanding bicycle and pedestrian access.



State Transportation Improvement Program (STIP) Funds – Generated by gas tax revenues, these funds are allocated by the State of California to Contra Costa County every two years for programming transportation improvement projects. According to the *2018 Report of STIP Balances County and Interregional Shares* (California Transportation Commission, August 2018), about \$87.3 million in STIP funds are currently allocated to transportation projects in Contra Costa County.



6. Summary of Required Program Elements

This report has provided a detailed discussion of the elements of the updated West County Subregional Transportation Mitigation Program and explained the analytical techniques used to develop this nexus study. The report addresses all of the fee program elements required by AB 1600, as summarized below.

1. *Identifying the purpose of the fee*

The STMP has been in place for more than 20 years. The purpose of the STMP is to support regional multimodal transportation system improvements needed to mitigate the transportation-related impacts of new development in western Contra Costa County.

2. *Identifying how the fee will be used and the facilities to be funded through the fee*

The fee will be used to help fund capital improvement projects that will accommodate future transportation needs in western Contra Costa. Table 3-1 identifies the projects to be funded through the fee.

3. *Determining a reasonable relationship between the fee's use and the type of development on which the fee is imposed*

As described in Chapter 4, different types of development generate traffic with different characteristics. The calculations presented in Table 4-5 account for these different characteristics by applying dwelling unit equivalent factors to each type of development. These considerations account for the differential impacts on the transportation system generated by different development types.

4. *Determining a reasonable relationship between the need for the public facility and the type of development on which the fee is imposed*

The need for the improvements listed in Table 3-1 has been established through the prior and current STMP nexus studies. The STMP calculations presented in this report have been conducted by calculating the growth in West County development as a percentage of the total future population and jobs. This is a conservative approach since only a relatively modest portion of each project's cost is included in the STMP, reflecting the projected traffic and service population growth in western Contra Costa County.

5. *Determining a reasonable relationship between the amount of the fee and the cost of the public facility (or portion of facility) attributable to new development*



Chapter 5 of this report describes the calculations applied to determine the cost of the improvements listed in Table 3-1 that is attributable to new development. Thus, a reasonable effort has been made to quantitatively establish the relationship between the fees charged in the STMP and the costs of transportation infrastructure improvements attributable to new development within western Contra Costa.

Appendix A – 2019 Update of the STMP Project List

WEST COUNTY STMP PROJECTS						
ID	Project	Project Description	Document Reference	Total Project Cost Estimate	Other Identified Funding	Eligible STMP Funding Allocation ¹ Sponsor(s)
8	Richmond Ferry to Bridge Bicycle Network Improvements	a.) Point Richmond area: from the new trail at Tewksbury & Castro to existing bay trail at S Garrard & Richmond Ave. This segment could vary from short-term bicycle boulevard-style improvements through the neighborhood to a long-term goal of a Class I path through railroad and Caltrans ROW along Railroad Ave and Tewksbury Ave. (Approximately 2,300 ft)	N/A (Project Identified by City of Richmond Staff)	\$1,150,000		Richmond
		b.) Point Richmond to Richmond Greenway: including S Garrard Blvd and W Ohio Ave. Because acquisitions or easements on railroad property have failed, there is a proposal to build a Class I trail along the north side of W Ohio between Garrard and 2nd St. The curb and gutter on this side of the road would need to be rebuilt. A similar trail or 2-way cycle track could be extended along S Garrard to existing facilities at W Cutting. (W Ohio Ave segment: 3,100 ft, S Garrard Blvd: 2,800 ft)	N/A (Project Identified by City of Richmond Staff)	\$2,950,000		Richmond
		c.) W Cutting Blvd, and Hoffman Blvd. A two-way cycle track is proposed by reducing the number of vehicle travel lanes. Local businesses have requested the City add parking on the north side of West Cutting Blvd, and this will be studied in conjunction with the proposed bicycle facilities. This is also one of our focus areas for stormwater pollution mitigation, so a bioswale buffer between the cycle track and roadway would be ideal. Bicycle and pedestrian improvements adjacent to freeway access points are also necessary at Hoffman & Cutting and Hoffman & Harbour Way South. (W Cutting and Cutting Blvd segment: 5,500 ft, Hoffman Blvd: 1,600 ft)	N/A (Project Identified by City of Richmond Staff)	\$3,550,000		Richmond
		d.) Harbour Way South: Hoffman to Ferry Terminal. Private developments are in the process of planning and building portions of a two-way cycle track along the frontage of their properties between Hoffman and the Cannery property, and this project would connect and extend those improvements. (2,200 ft total)	N/A (Project Identified by City of Richmond Staff)	\$1,100,000	\$0	\$308,000
Other Bicycle and Pedestrian-Focused Project Category - Total Cost Estimate				\$25,685,000		
9	I-80 Express Bus (Short & Mid-Term Improvements)	Capital Improvements associated with implementing Express Bus Service on I-80 from Hercules Transit Center south to Berkeley, Emeryville, Oakland, and expansion to San Francisco, with intermediate stops at the Richmond Parkway Transit Center and a potential I-80/Macdonald Avenue Express Bus/BRT transit center. Expansion of park-and-ride lots and freeway ramp improvements could occur in the medium to long-term. A series of Richmond Parkway Transit Center Improvements may also include: -Improve pedestrian and bicycle crossings at the I-80/Blume Drive and I-80/Fitzgerald Drive intersections -New sidewalks and bicycle lanes providing access to the transit center.	West County High-Capacity Transit Study (2017), 2016 Express Bus Study Update Final Report (2017)	\$109,203,000		WCCTAC
10	Hercules Regional Intermodal Transportation Center	Current phase of Hercules RTC is to complete construction of the new train stop for Capitol Corridor service, including parking, station platform, signage and plazas, rail improvements, bicycle and pedestrian access improvements (e.g. Bay Trail connections), etc. Capital improvements along the corridor in West Contra Costa, including track improvements, drainage, fencing, safety improvements, etc. Future capital improvements could include preparation for ferry service.	West County High-Capacity Transit Study, Countywide Transportation Plan, 2005 Update of the STMP	\$53,550,000	\$1,000,000	Hercules
11	BART Extension (Planning & Conceptual Engineering Phases) from Richmond Station ³	BART extension from the Richmond BART Station. Only the planning, conceptual engineering and program level environmental clearance phases of the project are included for Segment 1 from Richmond to Contra Costa College/City of San Pablo.	West County High-Capacity Transit Study	\$14,700,000		WCCTAC
12	San Pablo Avenue Transit Corridor Improvements	BRT on San Pablo Avenue approximating the existing 72R Rapid Bus route from downtown Oakland to the Richmond Parkway Transit Center and extending Rapid Bus from the Richmond Parkway Transit Center to the Hercules Transit Center. In the short-term, Rapid Bus improvements could be extended to Richmond Parkway with service to Contra Costa College and Hilltop Mall and transit priority treatments introduced along the corridor. Extending Rapid Bus treatments north to the Hercules Transit Center and introducing bus-only lanes on San Pablo Avenue from El Cerrito del Norte north to 23rd Street could occur in the medium term.	West County High-Capacity Transit Study	\$192,150,000		WCCTAC

WEST COUNTY STMP PROJECTS						
ID	Project	Project Description	Document Reference	Total Project Cost Estimate	Other Identified Funding	Eligible STMP Funding Allocation ¹ Sponsor(s)
13	23rd Street Transit Corridor Improvements	23rd Street BRT from Richmond Ferry Terminal and UC Berkeley Richmond Field Station to Richmond BART/Capitol Corridor station, then continuing to Contra Costa College, with possible extension along San Pablo Avenue to Hilltop Mall and Hercules. Improvements to pedestrian facilities that enhance access to BRT stations are also assumed as part of this project.	West County High-Capacity Transit Study	\$121,800,000		\$23,142,000 WCCTAC
14	West County BART Station Access, Parking & Capacity Improvements	a) El Cerrito Plaza Station Modernization and Capacity Enhancements: Improve access, expand capacity, enhance placemaking, and address state-of-good repair issues at the 45-year old El Cerrito Plaza BART station. Include an improved kiss n' ride area, landscaping, new stairs and elevators to the platform, new station restrooms, and improved bus intermodal area with raised crosswalks.	El Cerrito Plaza and Del Norte Stations - Modernization Concept Plan (2013)	\$49,442,000		\$9,395,000 BART
		b) El Cerrito Plaza BART Pedestrian & Bike Safety and Access Improvements: Enhancements on streets between BART Station and Carlson Blvd, including improved pedestrian lighting, widened sidewalks, improved crosswalks, signal timing adjustments, wayfinding and signage, and upgraded bicycle facilities.	BART Walk and Bicycle Gap Study (2017)	\$1,260,000		\$239,000 BART, El Cerrito
		c) Richmond BART Pedestrian & Bike Safety and Access Improvements: Enhancements on streets surrounding BART Station to improve station access and safety, including pedestrian lighting, widened sidewalks, improved crosswalks, signal timing adjustments, wayfinding and signage, and upgraded bicycle facilities.	BART Walk and Bicycle Gap Study	\$3,465,000		\$658,000 BART, Richmond
		d) Richmond Crossover Project: Additional Crossover to allow quicker turnbacks, to utilize fleet more effectively, reduce conflicts in yard, and allow increased service frequency.	BART Sustainable Communities Operations Analysis (2013)	\$34,759,000		\$6,604,000 BART
15	Del Norte Area TOD Public Infrastructure Improvements	Planning, engineering, environmental studies, and construction of the public transportation-related improvements related to Transit Oriented Development (TOD) in the area around the El Cerrito Del Norte BART station. Funding will provide improvements including, but not limited to: new parking facilities; bicycle, pedestrian, and bus transit access improvements; signage; lighting; improvements to station access or station waiting areas; ADA improvements; improvements to adjacent streets, street crossings, or signals; and/or Ohlone Greenway improvements.	2005 Update of the STMP	\$37,761,000	\$7,100,000	\$7,175,000 El Cerrito
Transit and Station-Related Project Category - Total Cost Estimate				\$618,090,000	\$8,100,000	\$117,439,000
Local Street and Intersection Improvements						
16	San Pablo Avenue Intersection Realignment at 23rd Street and Road 20	Realignment of skewed 5-legged intersection as part of a bridge removal project that will enhance pedestrian, bicycle and future BRT access. The project will also include street re-configuration, re-striping and possibly signal modification at this intersection.	Countywide Transportation Plan	\$15,120,000	\$9,500,000	\$1,814,000 San Pablo
Local Street and Intersection Project Category - Total Cost Estimate				\$15,120,000	\$9,500,000	\$1,814,000

WEST COUNTY STMP PROJECTS						
ID	Project	Project Description	Document Reference	Total Project Cost Estimate	Other Identified Funding	Eligible STMP Funding Allocation ¹
Freeway and Interchange Improvements						
Reconstruct the existing I-80/San Pablo Dam Road interchange (including modifications to the El Portal Drive and McBryde Avenue ramps) and provide improved pedestrian and bicycle facilities. The project will be completed in two phases. The first phase (under construction) will relocate the El Portal Drive on-ramp to WB I-80 to the north, extend the auxiliary lane along WB I-80 between San Pablo Dam Road off-ramp and El Portal Drive on-ramp, and reconstruct the Riverside Avenue pedestrian overcrossing. The second phase includes the construction of a new connector road on the west side of I-80 to connect SPDR to McBryde Avenue with a new bridge over Wildcat Creek, reconstructing the on- and off-ramps to SPDR, replacing the existing SPDR overcrossing with a 6-lane structure, and realigning Anador Street. Phase 2 is included in this STMP update.						
17	I-80/San Pablo Dam Road Interchange Improvements (Phase 2)	Improve traffic operations and multimodal access at the I-80/Central Avenue interchange and along Central Avenue between Rydin Road and San Pablo Avenue. The project will be completed in two phases. The first phase will redirect left turns from WB Central Avenue onto WB I-80 to the adjacent I-580 EB on-ramp at Rydin Road during weekend peak hours; and will install traffic signals at the I-580 ramps. Construction of first phase will be completed in 2018. The second phase will increase the spacing between the signalized intersections east of I-80 by connecting Pierce Street and San Mateo Street, converting Pierce Street access at Central Avenue to "right-in, right-out," and relocating the traffic signal at Pierce Street/Central Avenue to the San Mateo Street/Central Avenue intersection. The second phase is included in this STMP update.	Countywide Transportation Plan, 2005 Update of the STMP	\$84,788,000	\$9,200,000	\$16,110,000.00
18	I-80/Central Avenue Interchange Improvements (Phase 2)	The project may include the following improvements: -Improve merge onto the I-80 mainline from the EB Pinole Valley Road on-ramp to address vehicles accelerating uphill after stopping at ramp meter. -Widen Pinole Valley Road ramp-terminal intersections at I-80 to provide a dedicated right turn lane to the EB and WB I-80 on-ramps. -Pinole Valley Road/I-80 intersection crossing enhancements.	Countywide Transportation Plan, 2005 Update of the STMP	\$15,225,000	\$13,873,000	\$2,588,000
19	I-80/Pinole Valley Road Interchange Improvements		Countywide Transportation Plan, West County Transit Enhancement and Wayfinding Plan	\$10,959,000		\$1,534,000
Freeway and Interchange Project Category - Total Cost Estimate				\$110,972,000	\$23,073,000	\$20,232,000
Administrative Projects						
20	Future Nexus Study Updates	Two comprehensive nexus studies and fee updates, over the 22-year planning horizon of the 2019 STMP Fee.		\$500,000		\$500,000
Total Project List Cost Estimate				\$855,002,000	\$40,673,000	\$161,781,000
Notes: 1. Column summarizes the portion of the capital costs that would be allocated to the STMP. 2. Complete Streets projects typically involve improvements to transit, pedestrian and bicycling infrastructure with the goal of increased usage of those modes, thus reducing vehicle volumes on Routes of Regional Significance. 3. Timing of BART extension implementation may extend beyond 2040; however, the STMP could fund early planning and design tasks.						

Appendix B – 2019 Update of the STMP Project List Cost Estimate Summary

STMP Projects and Estimated Costs

ID	Project	Description	Reported Cost	Year of cost estimate	Escalation Factor ¹	Estimated Cost, 2018\$
Complete Streets Projects						
1	San Pablo Avenue Complete Streets Projects	a.) Construct bike and pedestrian improvements along San Pablo Avenue from Rodeo to Crockett.	\$8,200,000	2017	1.05	\$8,610,000
		b.) Construct bicycle and pedestrian improvements along San Pablo Avenue between La Puerta Road and Hilltop Drive.	\$3,000,000	2017	1.05	\$3,150,000
		c.) Construct bike, pedestrian and transit improvements along San Pablo Avenue from Rivers Street in San Pablo to Lowell Avenue in Richmond.	\$13,100,000	2017	1.05	\$13,755,000
		d.) Implement Complete Streets improvements along San Pablo Avenue including directional cycle track or buffered bike lane and other bicycle, pedestrian and transit improvements in El Cerrito.	\$7,800,000	2017	1.05	\$8,190,000
		e.) San Pablo Avenue Class I Boardwalk between John Muir Parkway and Sycamore Avenue.	\$296,400	2011	1.34	\$398,000
		f.) Complete bicycle/pedestrian connection on San Pablo Avenue over Santa Fe Railroad tracks.	\$16,000,000	2017	1.05	\$16,800,000
2	Appian Way Complete Streets Project	Provide continuous sidewalks, bike lanes, and improved bus stops along Appian Way from San Pablo Dam Road in unincorporated El Sobrante to about 900 lineal feet north of the city limit within the City of Pinole.	\$22,200,000	2017	1.05	\$23,310,000
3	San Pablo Dam Road Improvements in Downtown El Sobrante	Provide complete street improvements on San Pablo Dam Road between El Portal Drive and Castro Ranch Road.	\$6,900,000	2005	1.51	\$10,422,000

Other Bicycle and Pedestrian-Focused Improvements

4	Bay Trail Gap Closure	Improve transit access by closing three key Bay Trail gaps: along Goodrick Avenue in Richmond, between Bayfront Park and Pinole Creek in Pinole, and between Atlas Road and Cypress Avenue in unincorporated Contra Costa County.	\$11,135,000	2016	1.10	\$12,276,000
5	Ohlone Greenway Improvements	Implement crossing, wayfinding, signing, lighting, safety, access and security, and landscaping improvements along Ohlone Greenway.	\$2,900,000	2017	1.05	\$3,045,000
6	I-580/Harbour Way Interchange Pedestrian & Bicycle Access Improvements	Improve pedestrian and bicycle crossings at the I-580/Harbour Way interchange ramps.	\$386,500	2011	1.34	\$519,000
7	I-580/Marina Bay Parkway	Improve pedestrian and bicycle crossings at the I-580/Marina Bay Parkway interchange ramps	\$815,300	2011	1.34	\$1,095,000
8	Richmond Ferry to Bridge Bicycle Network Improvements	a.) Point Richmond area: from the new trail at Tewksbury & Castro to existing Bay Trail at S. Garrard & Richmond Ave.	\$1,150,000	2018	1.00	\$1,150,000
		b.) Point Richmond to Richmond Greenway: including S. Garrard Blvd and W. Ohio Ave.	\$2,950,000	2018	1.00	\$2,950,000
		c.) W. Cutting Blvd, Cutting Blvd, and Hoffman Blvd.	\$3,550,000	2018	1.00	\$3,550,000
		d.) Harbour Way South: Hoffman Blvd to Ferry Terminal.	\$1,100,000	2018	1.00	\$1,100,000

Transit and Station-Related Improvements

9	I-80 Express Bus	Capital improvements associated with implementing Express Bus Service on I-80 from Hercules south to Berkeley, Emeryville, Oakland, and expansion to San Francisco, with intermediate stops at the Richmond Parkway Transit Center and a potential I-80/Macdonald Avenue Express Bus/BRT transit center.	\$104,003,000	2017	1.05	\$109,203,000
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10	Hercules Regional Intermodal Transportation Center	Current phase of Hercules RITC is to complete construction of the new train stop for Capitol Corridor service, including parking, station platform, signage and plazas, rail improvements, bicycle and pedestrian access improvements (e.g. Bay Trail connections), etc. Future capital improvements could include preparation for ferry service.	\$51,000,000	2017	1.05	\$53,550,000
11	BART Extension	BART extension from the Richmond BART Station. Only the planning, conceptual engineering and program level environmental clearance phases of the project are included.	\$14,000,000	2017	1.05	\$14,700,000
12	San Pablo Avenue Transit Corridor Improvements	Bus Rapid Transit (BRT) on San Pablo Avenue approximating the existing 72R Rapid Bus route from downtown Oakland to the Richmond Parkway Transit Center and extending Rapid Bus from the Richmond Parkway Transit Center to the Hercules Transit Center.	\$183,000,000	2017	1.05	\$192,150,000
13	23rd Street Transit Corridor Improvements	23rd Street BRT from Richmond Ferry Terminal and UC Berkeley Richmond Field Station to Richmond BART/Capitol Corridor station, then continuing to Contra Costa College.	\$116,000,000	2017	1.05	\$121,800,000
14	West County BART Station Access, Parking & Capacity Improvements	a.) El Cerrito Plaza Station Modernization and Capacity Enhancements.	\$42,710,000	2015	1.16	\$49,442,000
		b.) El Cerrito Plaza BART Pedestrian & Bike Safety and Access Improvements.	\$1,200,000	2017	1.05	\$1,260,000
		c.) Richmond BART Pedestrian & Bike Safety and Access Improvements.	\$3,300,000	2017	1.05	\$3,465,000
		d.) Richmond Crossover Project.	\$27,000,000	2012	1.29	\$34,759,000

15	Del Norte Area TOD Public Infrastructure Improvements	Planning, engineering, environmental studies, and construction of the public transportation-related improvements related to Transit Oriented Development (TOD) in the area around the El Cerrito Del Norte BART station.	\$25,000,000	2005	1.51	\$37,761,000
Local Street and Intersection Improvements						
16	San Pablo Avenue Intersection Realignment at 23rd Street and Road 20	Realignment of skewed 5-legged intersection as part of a bridge removal project that will enhance pedestrian, bicycle and future BRT access.	\$14,400,000	2017	1.05	\$15,120,000
Freeway and Interchange Improvements						
17	I-80/San Pablo Dam Road Interchange Improvements (Phase 2)	Reconstruct the existing I-80/San Pablo Dam Road interchange (including modifications to the El Portal Drive and McBryde Avenue ramps) and provide improved pedestrian and bicycle facilities.	\$80,750,000	2017	1.05	\$84,788,000
18	I-80/Central Avenue Interchange Improvements (Phase 2)	Improve traffic operations at the I-80/Central Avenue interchange and along Central Avenue between Rydin Road and San Pablo Avenue. The project will be completed in two phases.	\$14,500,000	2017	1.05	\$15,225,000
19	I-80/Pinole Valley Road Interchange Improvements	Improve merge onto the I-80 mainline from the EB Pinole Valley Road on-ramp to address vehicles accelerating uphill after stopping at ramp meter, in addition to ramp-terminal intersection improvements.	\$10,437,000	2017	1.05	\$10,959,000
Administrative Projects						
20	Future Nexus Study Updates	Two comprehensive nexus studies and fee updates, over the 22-year planning horizon of the 2019 STMP Fee.	\$500,000	2018	1.00	\$500,00
Total Estimated Cost			\$789,283,200			\$855,002,000

Notes:

¹ Most projects have cost estimates prepared in 2011 or more recently. For those projects, the escalation factor was calculated based on the Annual Infrastructure Construction Cost Inflation Estimates (AICCIE) reported by OneSanfrancisco (onesanfrancisco.org). Two projects (projects 3 and 15) have cost estimates dating to 2005; for those projects, an index of 1.37 as specified by WCCTAC's STMP model ordinance was used to escalate the costs to 2016 dollars, and then the inflation rates for years 2016 and 2017 (reported by onesanfrancisco.org) were used to escalate the cost to 2018 dollars.

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