



Final Report

**East Contra Costa
Regional Fee Program Update**

Prepared for:

**East Contra Costa Regional
Fee & Financing Authority**

Adopted: June 16, 2005

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1. INTRODUCTION

BACKGROUND

The East Contra Costa Regional Fee and Financing Authority (ECCRFFA or the Authority) is a regional planning agency charged with obtaining the funding for regional transportation improvement projects in eastern Contra Costa County. The Authority's jurisdiction encompasses the eastern portion of the County, including unincorporated areas as well as the Cities of Antioch, Brentwood, Oakley, and Pittsburg.

The Authority first implemented a transportation impact fee in 1994. The fee was designed to provide a contribution from new development toward a series of regional transportation improvements, such as the State Route (SR) 4 Bypass and the widening of SR 4 through Pittsburg and Antioch. Working with the member agencies and Caltrans, the Authority has successfully utilized fee revenue to initiate the design and construction of the SR 4 Bypass.

The Authority conducted an update of the fee program in 2001 to help fund an expanded list of regional transportation improvements. As the program update process was proceeding, a second joint powers authority was established (the East County Transportation Improvement Authority, or ECTIA). The fee structures for both Authorities were finalized in January 2002, and fees were levied by both Authorities to support different lists of improvement projects. A combined Strategic Plan was published in February 2003 outlining the cash flow projections and project prioritization for the regional improvements supported by the fee programs.

More recently, there has been interest in combining the two fee Authorities into a single entity by dissolving ECTIA and updating ECCRFFA to cover a comprehensive set of needed improvements to the regional transportation system.

PURPOSE

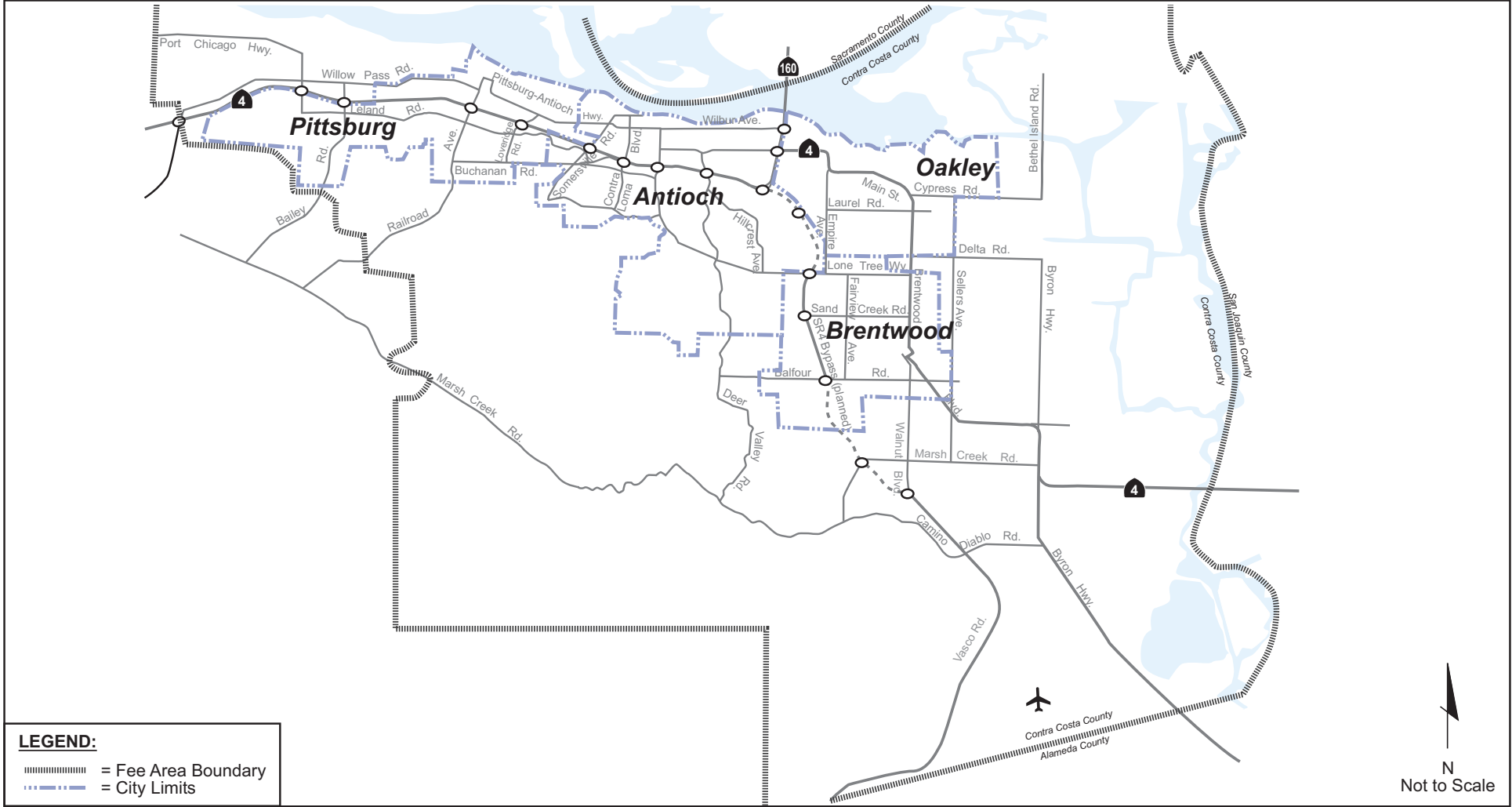
The purpose of this study is to provide the technical basis for updating the ECCRFFA fee program. The focus of the updated program is to support an overall regional transportation system in East County that serves the expected future demand. This report documents the analytical approach for determining the nexus between the fees and the regional impact created by anticipated development in East County.

STUDY AREA

As shown on Figure 1, the study area includes the unincorporated portions of eastern Contra Costa County, as well as the Cities of Antioch, Brentwood, Oakley, and Pittsburg.

STUDY PROCESS

This study was developed under the direction of the ECCRFFA staff. The initiative to update the fee program was discussed at public meetings before the Authority Board in the fall of 2003. Input was obtained at key points in the study process from the Technical Advisory Committee, the lead engineers from each City and the County, and the Executive Committee (i.e., the City Managers from the affected jurisdictions and the County Chief Administrative Officer). Review was also provided by the County Counsel's office.



After the results of the fee study are approved by the Authority Board, the updated fee program will be presented to the Contra Costa County Board of Supervisors and the City Councils of Antioch, Brentwood, Oakley, and Pittsburg. Each jurisdiction will be asked to adopt an ordinance in order to implement the updated fee program.

ORGANIZATION OF THE REPORT

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

- *Chapter II* – Fee Program Background summarizes the status of the current East County regional fee programs and provides a brief overview of the projects proposed to be included in the updated ECCRFFA program.
- *Chapter III* – Analysis Methodology describes the methods used in conducting the technical analysis necessary to establish the nexus.
- *Chapter IV* – Analysis Results describes the results of the nexus analysis.

Chapter V – Financing Considerations discusses the effect of the impact fees on the financing of the overall regional transportation improvement program.

2. FEE PROGRAM BACKGROUND

Eastern Contra Costa County is an area that has experienced considerable population and employment growth, and it continues to be one of the primary growth centers in the region. This growth in population and employment translates into increased demand for travel, and congestion on East County's freeways and arterial roads has resulted. The *Route 4 East Corridor Major Investment Study*, May 1999, provides extensive information on travel trends and expected growth in East County, and forecasts increasing congestion on the major facilities in the area without substantial improvements to the transportation system.

This chapter describes the current status of the regional fees in East County. The original fee program is documented in *Response to Proposed Route 4 Bypass Authority Development Fee Program*, Korve Engineering, April 1993. The fee program has undergone some modifications in the intervening years, with the fee levels for each community being changed periodically to reflect increasing construction costs.

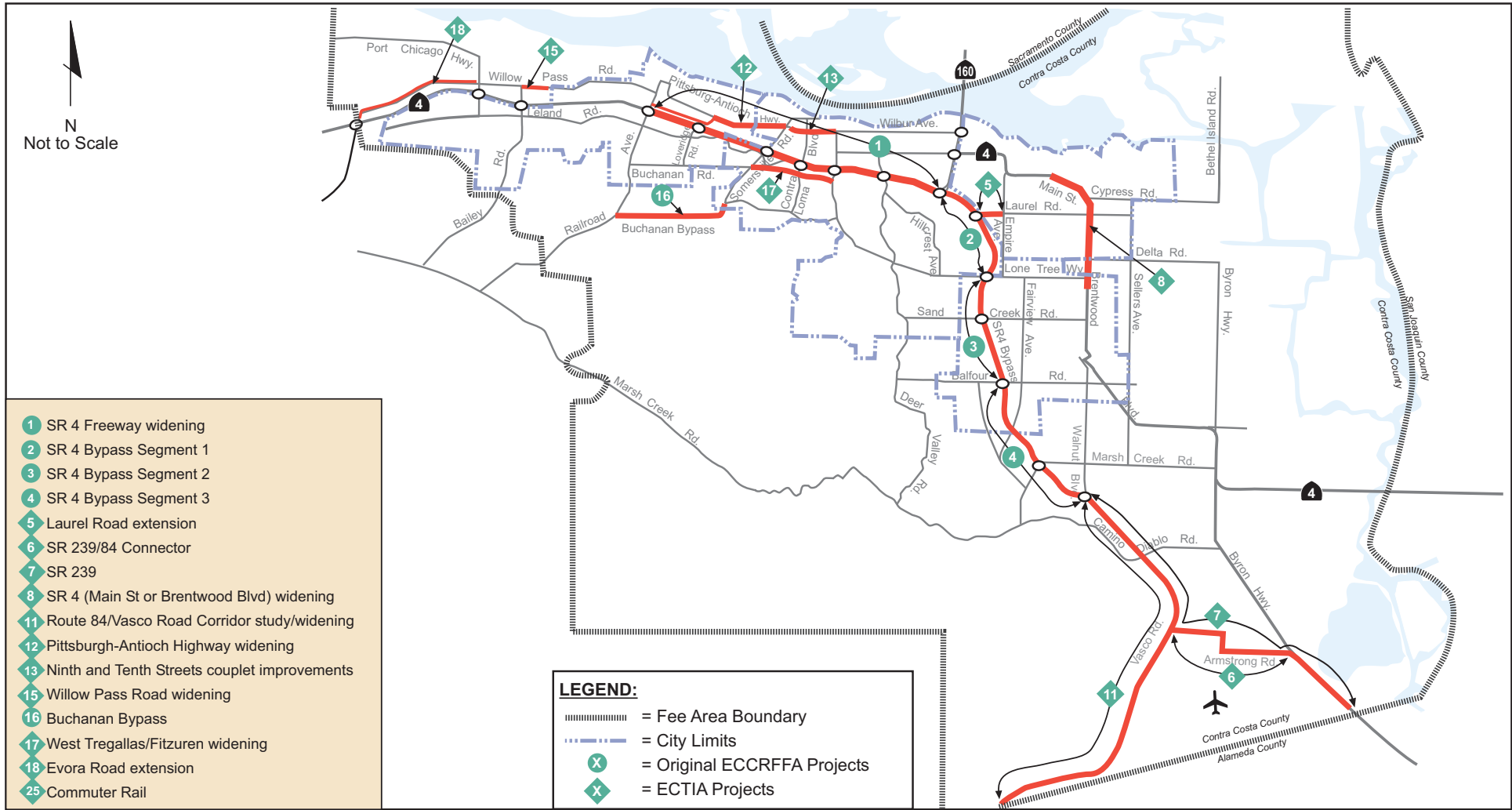
In 2001, the Authority initiated a comprehensive update of the fee program to help fund additional regional transportation improvements. During the process of updating the program, a second joint powers authority, the East County Transportation Improvement Authority (ECTIA), was established. ECTIA encompasses the Cities of Antioch, Brentwood, and Oakley, and the unincorporated areas of eastern Contra Costa County. The list of improvement projects and the fee structure for both ECCRFFA and ECTIA programs were finalized in January 2002.

THE ORIGINAL ECCRFFA PROGRAM

Figure 2 displays the location of the regional improvements encompassed by the original fee program first adopted in 1994 (as well as the projects included in ECTIA, discussed later in this chapter). The original ECCRFFA fee provided contributions toward several improvements, including:

- Widening of SR 4 to three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction from Railroad Avenue to SR 160.
- Interchange improvements on SR 4 at Railroad Avenue, Loveridge Road, Hillcrest Avenue, and SR 160.
- Construction of the SR 4 Bypass, with four lanes to Balfour Road and two lanes to Vasco Road.
- New interchanges on the SR 4 Bypass at Lone Tree Way and Laurel Road, and subsequent widenings and interchanges.
- A contribution toward the Buchanan Road Bypass.

Table 1 displays the current schedule of impact fees for each land use category based on the original ECCRFFA program.



**TABLE 1
CURRENT ECCRFFA IMPACT FEES BASED ON THE ORIGINAL PROGRAM**

Land Use	Unit	Pittsburg	Antioch	Oakley	Brentwood	Bay Point	Other County ¹
Single-Family	DU	\$1,511	\$5,986	\$5,986	\$5,986	\$1,511	\$5,986
Multi-Family	DU	\$1,973	\$4,789	\$4,789	\$4,789	\$1,209	\$4,789
Commercial	Sq. Ft.	\$0.08	\$0.69	\$0.69	\$0.69	\$0.69	\$0.69
Office	Sq. Ft.	\$0.12	\$0.71	\$0.71	\$0.71	\$0.71	\$0.71
Industrial	Sq. Ft.	\$0.37	\$0.38	\$0.38	\$0.38	\$0.38	\$0.38
Other	Unit	\$1,511	\$5,986	\$5,986	\$5,986	\$1,511	\$5,986

1. Unincorporated county areas other than Bay Point.

Source: East Contra Costa Regional Fee and Financing Authority; fees effective January 1, 2005.

THE ECTIA PROGRAM

The ECTIA program operates concurrently with the ECCRFFA program to support an expanded list of regional improvement projects that are also shown on Figure 2. The ECTIA program includes several additional improvement projects that were not part of the original ECCRFFA program, such as:

- Construction of the Laurel Road connector between the Laurel Road interchange on the SR 4 Bypass and Laurel Road in Oakley.
- Construction of a connector between Vasco Road and Byron Highway north of the Byron Airport (called the SR 239/84 Connector).
- Project development and right-of-way protection for the SR 239 Corridor.
- Construction of operational and safety improvements on Vasco Road south of the SR 4 Bypass.
- Construction of improvements to routes parallel to SR 4 in the City of Antioch and the unincorporated areas. These include the Northern Parallel Arterials (Pittsburg-Antioch Highway and 10th Street in Antioch, Willow Pass Road and the extension of Evora Road in the unincorporated areas) and the Southern Parallel Arterials (West Tregallas Road, Fitzuren Road, Delta Fair Boulevard, and Buchanan Road in Antioch).

- Widening of Main Street/Brentwood Boulevard (SR 4) between Vintage Parkway and Lone Tree Way in the Cities of Oakley and Brentwood

Table 2 displays the current schedule of impact fees for each land use category based on the ECTIA program.

Land Use Category	Unit	City Fees ¹	Bay Point Fees ¹
Single-Family Residential	DU	\$ 2,319	\$ 6,795
Multi-Family Residential	DU	\$ 306	\$ 3,886
Commercial	Sq. Ft.	\$ 0.41	\$ 0.41
Office	Sq. Ft.	\$ 0.39	\$ 0.39
Industrial	Sq. Ft.	\$ 0.72	\$ 0.72
Other	Unit	\$ 2,319	\$ 6,795

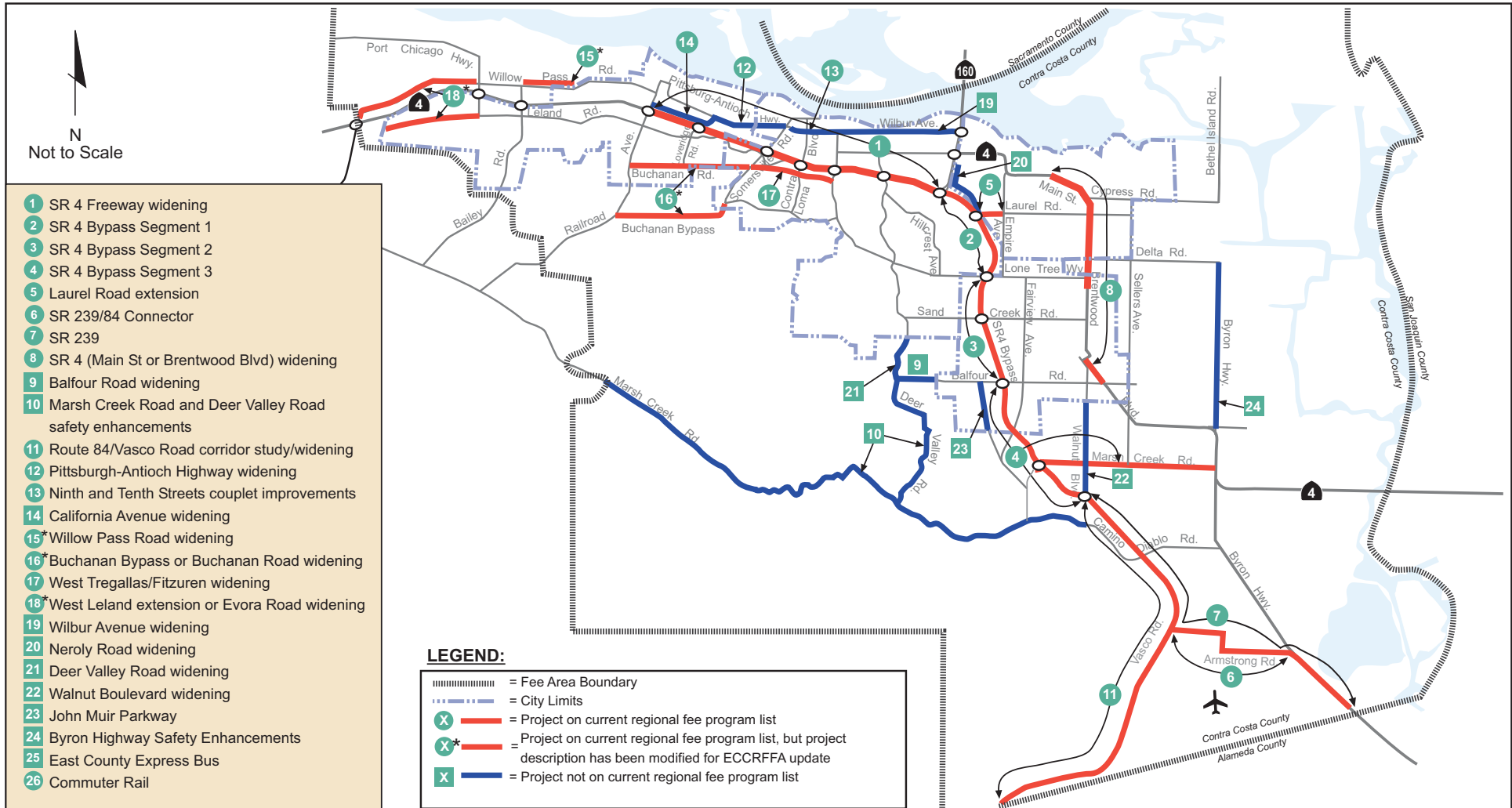
1. ECTIA program fees for the Cities of Antioch, Oakley, and Brentwood.
2. ECTIA program fees for the Bay Point Area of Benefit.
Source: East County Transportation Improvement Authority; fees effective January 1, 2005.

THE PROPOSED FEE PROGRAM

The nexus analysis presented in the subsequent chapters is based on recent interest in combining the two fee Authorities into a single entity (ECCRFFA) and expanding the list of regional improvement projects included in the fee program. Figure 3 shows the regional improvement projects to be included in the proposed fee program. Projects in this updated fee program that were not included in the previous ECCRFFA or ECTIA project lists include:

- Construction of regional arterial projects including: widening of Balfour Road between Deer Valley Road and Brentwood City limit, widening of Walnut Boulevard between SR 4 Bypass and Brentwood City limit, widening of Wilbur Avenue in Antioch, widening of Neroly Road in Oakley, and construction of a portion of John Muir Parkway in Brentwood.
- Construction of safety enhancements on Marsh Creek Road, Deer Valley Road and Byron Highway in unincorporated Contra Costa County.
- Construction of further improvements to routes parallel to SR 4 within the City of Pittsburg. The Northern Parallel Arterials would expand to include widening of portions of Pittsburg-Antioch Highway, Willow Pass Road, and California Avenue in Pittsburg. The Southern Parallel Arterials would expand to include the construction of West Leland Road between its current terminus in Pittsburg to Willow Pass Road in Concord. The Southern Parallel Arterials would be modified to remove the widening of Delta Fair Road and include either the construction of Buchanan Road Bypass in Pittsburg or the widening of existing Buchanan Road in Antioch and Pittsburg.

The nexus analysis presented in the following chapters describes how this package of regional transportation improvements was identified and calculates the regional fees that could be collected to support these projects.



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PROPOSED EAST COUNTY REGIONAL FEE PROJECTS

FIGURE 3

3. ANALYSIS METHODOLOGY

This chapter describes the methodology used to determine the nexus between the impact from new development in East County and the needed improvements. The focus of the fee program is on developing an overall regional transportation system that will accommodate the expected future traffic demand.

The technical analysis for this study was completed through a series of six steps. Each is listed below, along with a brief description. The next chapter describes how these steps were applied to the East County region and the results of the fee calculations. Further detail on modeling procedures and technical calculations is provided in the Technical Appendix (available under separate cover).

Step 1 – Determine Capacity Needs to Accommodate Future Growth

At the time this study was conducted, the East County travel demand model was the primary transportation analysis tool available for regional planning studies in East County. The East County model, developed and maintained by the Contra Costa Transportation Authority (CCTA), uses land use and transportation network inputs to produce estimates of future travel demand and usage of roadway facilities. In this study, model runs were conducted to estimate future (2025) traffic demand in East County based on official regional land use forecasts provided by the Association of Bay Area Governments (ABAG). This procedure is consistent with that used in the 2001 fee program update.

Based on the results of these model runs, a screenline analysis was prepared to summarize expected future traffic demand in the major corridors that serve regional travel in East County, namely the east-west corridor along existing SR 4 and the north-south corridor along the future SR 4 Bypass. This screenline analysis was used to determine how many lanes of additional roadway capacity would be needed to accommodate the expected future demand.

Step 2 – Identify Needed Improvement Projects and Costs

In order to achieve the future transportation capacity identified in Step 1 above, a series of improvements will be needed to regional facilities. The participating jurisdictions worked together in extensive coordination meetings to define a set of transportation projects that would provide the capacity estimated to be needed through the analysis described above. Estimated costs for each of the improvements were provided by the sponsoring agency.

Step 3 – Identify Existing Deficiencies on Regional Network

By definition, a fee program charges fees to new development in order to fund transportation improvements necessary to serve the demand and impacts generated by that new development. The following procedure was used to determine if any of the transportation projects identified in Step 2 were on facilities that experience current traffic problems, as defined by the region.

As required by Contra Costa County's Measure C, the transportation planning committee for East County (TRANSPLAN) regularly prepares an Action Plan for the Routes of Regional Significance in the subregion. The Action Plan defines quantifiable Traffic Service Objectives (TSOs) for each major regional facility and actions necessary to achieve those objectives. CCTA periodically prepares a TSO Monitoring Report to document the current status of the TSOs and progress made toward achieving them. The most recent TSO Monitoring Report was prepared in draft form in April 2004, and finalized in December 2004.

The 2004 TSO Monitoring Report was reviewed to determine the status of the facilities identified in Step 2 as needing improvement. If the report indicated that a facility identified in Step 2 was not currently meeting its applicable TSO, then that facility was flagged as an existing deficiency.

Step 4 – Calculate Project Costs Attributable to New Development

For improvement projects on facilities that are not subject to an existing deficiency (defined in Step 3), the need for the improved facility is being generated by new development rather than by existing transportation problems. Therefore, all of the estimated project costs were included in the fee program.

For projects on facilities that have been identified as experiencing existing deficiencies, the cost of the improvement was divided between existing development and new development. The cost share attributable to new development, and therefore included in the fee program, was calculated as follows:

1. Quantify the existing deficiency by determining the current traffic volumes that exceed the available capacity. For example, if a facility with a theoretical capacity of 2,000 vehicles is currently carrying 2,200 vehicles, the existing deficiency would be calculated as $2,200 - 2,000 = 200$.
2. Determine the future traffic growth by subtracting the current traffic volumes from the forecasted future traffic volumes. For example, if the future demand on that facility is projected to be 2,500 vehicles, the future traffic growth would be calculated as $2,500 - 2,200 = 300$.
3. Define the overall benefit of the project as the correction of the existing deficiency (from number 1 above) plus the accommodation of future growth (from number 2). In our example, the overall benefit of improving the road would be to correct the existing deficiency of 200 vehicles and to accommodate the future growth of 300 vehicles, for a total benefit of 500.
4. Calculate new development's share of the benefit as the result of number 2 divided by number 3. In this case, the share of the benefit to new development would be 60%, or 300 divided by 500. Therefore, 60% of the project cost would be included in the fee program. The remaining 40% of the project cost would need to be funded through other sources.

Step 5 – Summarize the Amount of New Development Expected in East County

The ABAG-based land use forecasts for East County include both residential and non-residential uses. Non-residential uses are represented in terms of numbers of employees. Because the fees are assessed on the basis of building area, the forecasts of total employees were converted to square feet of non-residential development by applying the following factors:

- Office: 275 square feet/employee
- Retail: 500 square feet/employee
- Other: 400 square feet/employee

These factors reflect relationships between employment and building area that can be derived from the *Trip Generation* publication of the Institute of Transportation Engineers, and are consistent with factors used in recent General Plan analyses and other traffic studies in East County.

All uses were then converted to dwelling unit equivalents (DUEs), to account for the fact that different development types generate traffic with different characteristics. This conversion was accomplished by applying use-specific trip rates from ITE *Trip Generation, 7th Edition*, estimates of pass-by trips from SANDAG *Brief Guide of Vehicular Traffic Generation Rates*, July 1998, and average trip lengths for each trip purpose as calculated from the East County travel demand model. For example, commercial uses tend to generate more trips per square foot than office uses, but those commercial trips tend to be shorter in length (because people tend to drive farther to work in an office than they do to buy groceries or rent videos); the DUE conversion process accounts for

these differences in impact on the transportation system. All DUEs were then normalized to the single-family residential rate.

Step 6 – Determine Fee Amounts

The total cost to be contributed by new development (Step 4) was then divided by the total number of new DUEs (Step 5) to determine the appropriate fee amount for each land use category.

4. ANALYSIS RESULTS

This chapter summarizes the results of the nexus analysis steps outlined in Chapter 3. Further detail on modeling procedures and technical calculations is provided in the Technical Appendix (available under separate cover).

Step 1 – Determine Capacity Needs to Accommodate Future Growth

The results of the model screenline analysis described in Chapter 3 are shown in Figure 4. As displayed in that figure, the projected future demand in these major regional corridors is such that the freeway facilities alone will not provide sufficient capacity, even after the planned improvement projects are implemented. A combination of improved freeways and major arterials will be needed to accommodate the future traffic demand. Through a series of coordination meetings between the participating jurisdictions, these results were reviewed and the appropriate number of highway and arterial lanes needed to accommodate the projected demand was determined.

Step 2 – Identify Needed Improvement Projects and Costs

Again, the participating jurisdictions worked extensively together to define a comprehensive set of transportation projects that would provide the capacity estimated to be needed through the analysis described above. Considerations included the feasibility of improvements, the ability to accommodate expected traffic patterns, and the appropriate locations to provide improved connections between jurisdictions. The resulting projects were presented in summary form in Figure 3. Table 3 provides a more detailed list of the improvements, along with estimated costs provided by the sponsoring agencies.

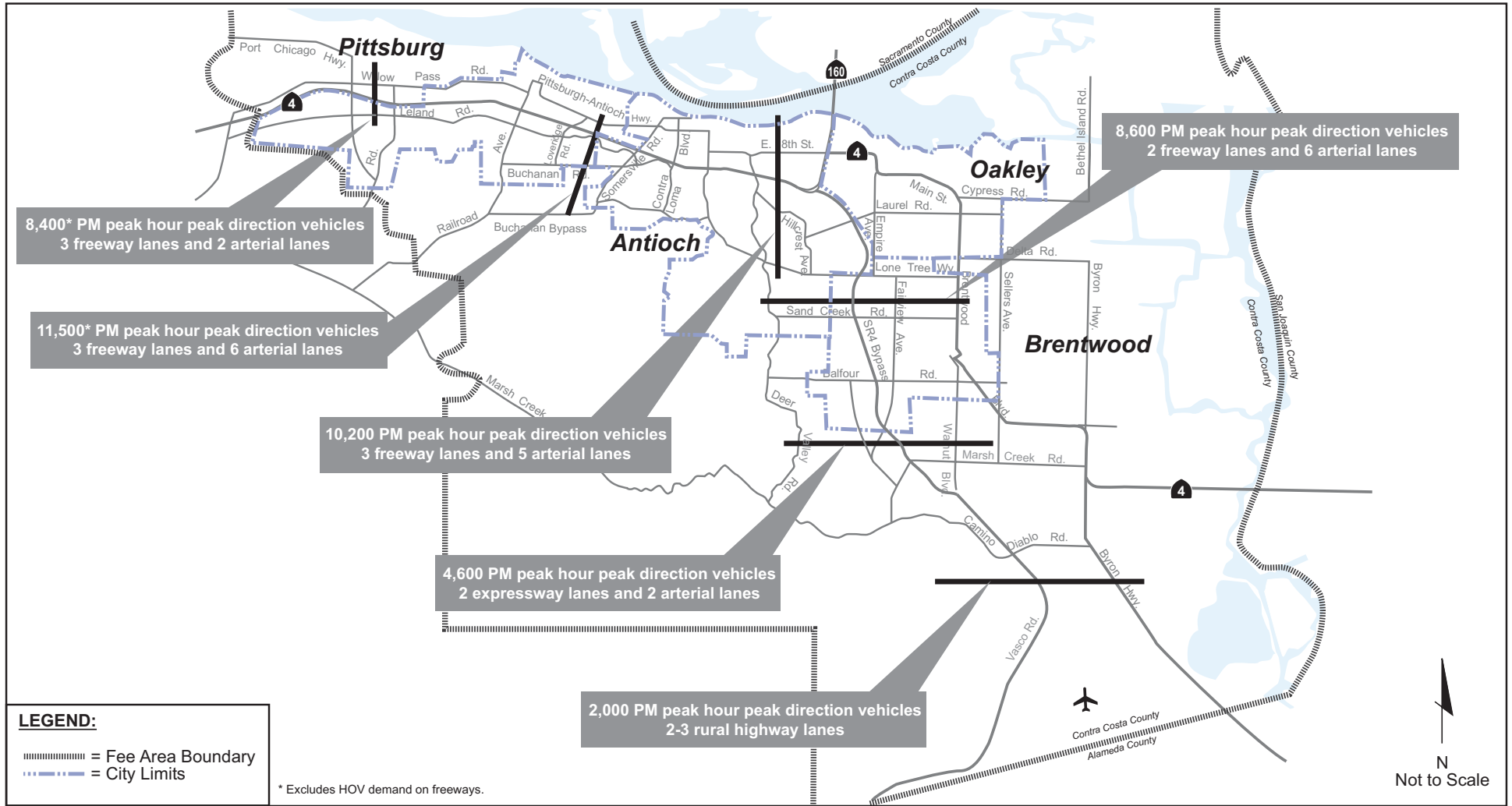
The proposed project list includes improvements to the mainline highway system (widening of SR 4 and construction of the SR 4 Bypass), to important regional arterials (such as Pittsburg-Antioch Highway, Main Street in Oakley, and Vasco Road), and to the regional transit system. Many of these projects are already included in either the existing ECCRFFA or ECTIA fee programs, as shown by an asterisk next to the project number in Table 3. The new projects were included in this list as a result of the needs identified in Step 1.

The regional benefit of the roadway improvement projects is linked to the capacity needs identified through the screenline analysis described in Step 1. For transit projects, benefits derive from improved connectivity to regional destinations and additional transportation choices for East County travelers. For example, the eBART project provides rail stations in each of the cities in East County and connects to the Bay Area's primary commuter rail system at the Pittsburg/Bay Point BART station. For further information on the eBART commuter rail project, including potential station locations and ridership estimates, please see the *SR 4 East Corridor Transit Study*, December 2002.

Step 3 – Identify Existing Deficiencies on Regional Network

As described in Chapter 3, the 2004 TSO Monitoring Report was reviewed to determine the status of the facilities identified in Step 2 as needing improvement.

In the East County area, the Delay Index is the primary TSO used to assess the performance of major road segments along regional freeways and arterials. The Delay Index is a measure of traffic congestion, and is defined as the ratio of the time required to travel between two points during the peak hour when roads are most congested, to the time required during uncongested off-peak times. On rural routes, a measure of peak hour Level of Service (LOS) for rural highways is used in addition to the Delay Index TSO. In conjunction with the participating jurisdictions, it was determined that the Delay Index and Rural Highway LOS TSOs were the appropriate measures of current transportation system performance to use in evaluating the presence of existing deficiencies in East County.



**TABLE 3
2005 ECCRFFA FEE UPDATE - PROJECT LIST**

Number	Project	Description	Jurisdiction	Total Cost (million)	Potential Fee Contribution (million)
1*	SR 4 Freeway widening	Railroad Avenue to Loveridge Road, widen to 8 lanes	CCTA	\$ 98.0	\$ 91.1 ¹
		Loveridge Road Interchange	CCTA	\$ 75.0	\$ 69.8 ¹
		Loveridge Road to Bypass (8 lanes to Hillcrest, 6 lanes to Bypass)	CCTA	\$ 240.0	\$ 223.2 ¹
		Hillcrest Avenue Interchange expansion	Antioch, CCTA	\$ 10.0	\$ 9.3 ¹
2*	SR 4 Bypass Segment 1	Phase 1: 6 lanes to Laurel Road, interchanges at Laurel Road and Lone Tree Way	Bypass Authority	\$ 103.6	\$ 103.6
		Phase 2: SR 160 Interchange	Bypass Authority	\$ 25.0	\$ 25.0
		Laurel interchange, phase 2	Bypass Authority	\$ 1.0	\$ 1.0
3*	SR 4 Bypass Segment 2	Phase 1: 2 lanes	Bypass Authority	\$ 20.0	\$ 20.0
		Phase 2: 4 lanes, Sand Creek Road to Balfour Road	Bypass Authority	\$ 16.0	\$ 16.0
		Widen to 6 lanes, Laurel Road to Sand Creek Road	Bypass Authority	\$ 38.0	\$ 38.0
		Sand Creek Road Interchange	Bypass Authority	\$ 30.0	\$ 30.0
4*	SR 4 Bypass Segment 3	Balfour to Marsh Creek Road (2 lanes) plus Marsh Creek east-west connector	Bypass Authority	\$ 44.0	\$ 44.0
		Vasco Road Extension, Marsh Creek Road to Vasco Road, 2 lanes	Bypass Authority	\$ 10.0	\$ 10.0
		Segment 3, widen to 4 lanes	Bypass Authority	\$ 38.0	\$ 38.0
		Balfour Road Interchange	Bypass Authority	\$ 36.0	\$ 36.0
		Marsh Creek Road Interchange	Bypass Authority	\$ 24.0	\$ 24.0
		Vasco Road Interchange	Bypass Authority	\$ 20.0	\$ 20.0
5*	Laurel Road Extension	SR4 Bypass to Empire Avenue, 6 lanes	Antioch, Oakley	\$ 24.2	\$ 24.2
6*	SR 239/84 Connector	Armstrong Road extension, 2 lanes (formerly Byron Airport Road)	County	\$ 6.1	\$ 6.1
7*	SR 239	Corridor study and preliminary design (no construction costs)	County	\$ 10.0	\$ 10.0
8*	SR 4 (Main Street or Brentwood Boulevard) widening	Vintage Parkway in Oakley to Marsh Creek bridge in Brentwood and Chestnut Street to Balfour Road in south Brentwood, 4 lanes	Oakley, Brentwood	\$ 31.0	\$ 31.0
9	Balfour Road widening	Deer Valley Road to Brentwood city limits, widen to 4 lanes	County	\$ 6.8	\$ 6.8
10	Marsh Creek Road and Deer Valley Road safety enhancements	Marsh Creek: Walnut Blvd to Clayton Deer Valley: Balfour to Marsh Creek Rd	County	\$ 14.2	\$ 4.7 ³
11*	Route 84/Vasco Road	Widen to 4 lanes to County line	County	\$ 209.0	\$ 209.0

**TABLE 3
2005 ECCRFFA FEE UPDATE - PROJECT LIST**

Number	Project	Description	Jurisdiction	Total Cost (million)	Potential Fee Contribution (million)
Northern Parallel Arterials					
12*	Pittsburg-Antioch Highway	Somersville Road to Loveridge Road, widen to 4 lanes	Antioch, Pittsburg	\$ 11.0	\$ 11.0
13*	Ninth and Tenth Streets	A Street to L Street, couplet improvements	Antioch	\$ 4.5	\$ 4.5
14	California Avenue	Railroad Avenue to Loveridge Road, widen to 4 lanes	Pittsburg	\$ 16.7	\$ 16.7
15	Willow Pass Road	Range Road to Loftus Road and Bailey Road to city limits, widen to 4 lanes	Pittsburg, County	\$ 6.9	\$ 6.9
Southern Parallel Arterials					
16*	Buchanan Bypass	New 4-lane arterial (perhaps 2 lanes, depending on studies)	Pittsburg	\$ 40.0	\$ 27.2 ¹
	or Buchanan Road	Railroad Avenue to Somersville Road, widen to 4 lanes	Pittsburg, Antioch		
17*	West Tregallas Road/ Fitzuren Road	Lone Tree Way to Buchanan Road, widen to 4 lanes	Antioch	\$ 25.0	\$ 25.0
18	West Leland Road	Extend from San Marco to Avila Road (Concord)	Pittsburg	\$ 11.6	\$ 11.6
	or Evora Road	Willow Pass Road (BP) to Willow Pass Road (Concord), widen to 4 lanes	County		
New Regional Arterial Projects					
19	Wilbur Avenue	Minaker Dr. to SR 160, widen to 4 lanes	Antioch, County	\$ 20.0	\$ 20.0
20	Neroly Road	Oakley Rd to Laurel Rd, widen to 4 lanes	Oakley	\$ 5.0	\$ 5.0
21	Deer Valley Road	Antioch city limits to Balfour Road, widen to 4 lanes	County	\$ 9.0	\$ 9.0
22	Walnut Boulevard	Brentwood city limits to SR 4 Bypass, widen to 4 lanes	County	\$ 12.0	\$ 12.0
23	John Muir Parkway	New roadway between Balfour Road and Fairview Avenue	Brentwood	\$ 11.4	\$ 2.6 ²
24	Byron Highway	Delta Road to SR 4, safety enhancements	County	\$ 3.6	\$ 1.2 ³
Regional Transit Projects					
25	East County Express Bus		Tri-Delta Transit	\$ 8.3	\$ 2.7 ³
26*	Commuter Rail (eBART)		CCTA	\$ 377.0	\$ 124.4 ³
Total Cost				\$1,691.9	\$1,370.7
Collected Fees⁴					(\$114.1)
Total Fee Contribution					\$1,256.6

* Projects currently in either ECCRFFA or ECTIA program.

1. For projects addressing existing deficiencies, only the cost share attributed to traffic generated by future developments is included in the fee program.
2. The remainder of the cost is provided by developers fronting John Muir Parkway.
3. For transit projects and safety enhancement projects, only the cost share proportional to new development's share of total future population (33%) is included in the fee program.
4. ECCRFFA and ECTIA fees collected to date.

The 2004 TSO Monitoring Report indicates that two of the facilities identified for improvement in the updated fee program are currently not meeting the relevant TSO. These facilities are: State Route 4 between Loveridge Road and Hillcrest Avenue, which exceeds the Delay Index TSO during the AM peak hour; and Buchanan Road between Railroad Avenue and Somersville Road, which exceeds the Delay Index TSO during both the AM and PM peak hours. These two facilities are therefore considered to have existing deficiencies, and the costs for improving them are treated differently in the proposed fee program, as described in more detail below. The remainder of the regional facilities highlighted for improvement in this program are not subject to exceedances of the established TSOs.

Step 4 – Calculate Project Costs Attributable to New Development

As described in Chapter 3, if a facility is not subject to an existing deficiency, then the need for improvement is being generated by new development rather than by existing transportation problems and so all of the estimated improvement costs are included in the fee program. For those projects that improve currently deficient facilities (State Route 4 and Buchanan Road, as described in Step 3 above), the proportion of the cost attributable to new development was calculated as detailed in Chapter 3. Table 3 shows the resulting amounts that would be included in the fee program in the column titled Potential Fee Contribution. For SR 4 (project #1), the fee program contains about 93% of the total cost. For Buchanan Road (project #16), the fee program contains 68% of the project cost.

The cost shares for a few other unique projects were addressed differently.

- For the construction of John Muir Parkway (project #23), the developments fronting that road are conditioned to provide a portion of the improvement, so only the remaining cost is included in the fee program.
- The projects to construct safety enhancements along Marsh Creek and Deer Valley Roads (project #10) and along Byron Highway (project #24) do not add lanes of capacity to the subject roads, but do correct roadway safety issues that will be exacerbated by the growth in traffic due to new development. Both existing and new traffic will benefit from improvements that address safety issues. Therefore, the fee program covers a percentage of the cost equal to the expected growth in overall development. In this case, new growth is expected to constitute 33% of the total future development in East County, so 33% of the cost of this project is included in the fee program.
- Regional transit projects (Express Bus in project #24 and eBART in project #25) are addressed similarly to the Marsh Creek/Deer Valley Roads safety enhancement project described above. Again, because new growth is expected to constitute 33% of the total future development in East County, 33% of the cost of these projects is included in the fee program. As described in Step 2, many East County residents will benefit in some way from these regional transit improvements, no matter where they live and whether they are a new resident or an existing one.

Step 5 – Summarize the Amount of New Development Expected in East County

The future land use assumptions used in these model runs were taken from the latest available zonal land use data for East County, based on ABAG *Projections 2000*. The ABAG forecasts are the official regional land use projections developed for use in regional planning applications. Table 4 shows the land use totals (households and employment) for the jurisdictions in East County for both current year and 2025.

In order to develop a fee, it is important to calculate the amount of growth expected in each land use category to determine the numbers of new development units that will be contributing to the fee program. Table 5 shows the forecasted growth by jurisdiction between the current year and 2025, as calculated from Table 4. In addition, all uses must be converted to dwelling unit equivalents (DUEs), to account for the fact that different development types generate traffic with different characteristics. Table 6 contains the conversion factors used to calculate DUEs in this study. The results of the DUE conversion are presented in the right-hand columns of Table 5.

**TABLE 4
LAND USE IN EAST COUNTY JURISDICTIONS**

Jurisdiction	Year 2005				Year 2025			
	Households	Employment			Households	Employment		
		Service	Retail	Other		Service	Retail	Other
Antioch	33,193	7,638	5,803	8,693	42,127	9,928	8,940	16,278
Brentwood	12,443	3,426	2,487	3,342	20,487	6,986	6,218	6,476
Oakley	8,753	1,550	892	3,167	12,597	5,083	2,263	9,735
Pittsburg	17,488	5,170	3,875	6,492	21,834	9,148	6,961	12,219
Unincorporated East County	15,137	1,599	1,047	4,030	19,262	2,221	1,894	5,832
Total East County	87,014	19,383	14,104	25,724	116,307	33,366	26,276	50,540

Sources: Association of Bay Area Governments (ABAG), Fehr & Peers.

**TABLE 5
FORECASTED GROWTH IN EAST COUNTY**

Jurisdiction	Estimated Growth (2005-2025)				Estimated Growth in DUEs (2005-2025)				Sum
	House-holds	Employment			Residential ¹	Non-Residential			
		Service	Retail	Other		Service ²	Retail ³	Other ⁴	
Antioch	8,934	2,290	3,137	7,585	7,796	673	1,517	2,036	12,021
Brentwood	8,044	3,560	3,731	3,134	7,019	1,046	1,804	841	10,710
Oakley	3,844	3,533	1371	6,568	3,354	1,038	663	1,763	6,818
Pittsburg	4,346	3,978	3,086	5,727	3,792	1,169	1,492	1,537	7,990
Unincorporated East County	4,125	622	847	1,802	3,599	183	409	484	4,675
Total East County	29,293	13,983	12,172	24,816	25,560	4,110	5,885	6,660	42,215

Notes:

Relationship between land use categories in the model and the fee program were assumed to be: Retail=Commercial; Service=Office; and Other=Industrial.

1. Household DUE conversion based on 67% single family and 33% multi family. The multi family units were multiplied by a DUE of 0.61.
2. Service DUE conversion based on 275 square feet per employee and a DUE per thousand square feet of 1.07. $DUE = EMP * 0.275 * 1.07$
3. Retail DUE conversion based on 500 square feet per employee and a DUE per thousand square feet of 0.97. $DUE = EMP * 0.500 * 0.97$
4. Other DUE conversion based on 400 square feet per employee and a DUE per thousand square feet of 0.67. $DUE = EMP * 0.400 * 0.67$

Source: Fehr & Peers, 2005.

**TABLE 6
DUE CONVERSION FACTORS**

Land Use Category	Unit	Peak Hour Trip Rate ¹	% New Trips ²	Average Trip Length ³	VMT per Unit	DUE per Unit
Single Family	DU	1.01	100	9.6	9.7	1.00
Multi Family	DU	0.62	100	9.6	6.0	0.61
Commercial	1,000 SF	3.75	50	5.0	9.4	0.97
Office	1,000 SF	1.49	65	10.7	10.4	1.07
Industrial	1,000 SF	0.76	80	10.7	6.5	0.67

1. PM peak hour rates from ITE *Trip Generation*, 7th Edition.
2. SANDAG *Brief Guide of Vehicular Traffic Generation Rates*, July 1998.
3. Average trip lengths for the East County area from the model, in miles.

Source: Fehr & Peers, 2005.

Step 6 – Determine Fee Amounts

Table 7 displays the calculated impact fees. The fees have been calculated on a uniform basis for all the ECCRFFA member agencies. These fees have been calculated based on the complete list of projects included in the proposed ECCRFFA program as shown in Table 3. The total fee contribution toward all the projects shown in Table 3 (\$1,256.6 million) was divided by the total number of Dwelling Unit Equivalents (DUEs) expected in East County as shown in Table 5 (42,215 DUEs), to calculate the resulting fee per DUE (approximately \$29,765). These figures do not reflect any reductions that the agency may choose to implement (for example, the fee authorities have historically reduced the fees for non-residential uses in order to promote economic development and job creation in East County). This calculation also does not consider the effects of other funding sources that may be available to some of the projects. Existing development in East County has been contributing to transportation improvements for many years, through payment of earlier regional fees, transportation-related sales taxes, gasoline taxes and other programs, and consideration of those other sources of transportation funds is addressed in the next chapter.

**TABLE 7
2005 ECCRFFA UPDATE – PRELIMINARY FEE CALCULATIONS**

Land Use Category	Current Regional Fees¹	Updated Regional Fees
Single-Family Residential (dwelling unit)	\$ 8,306.00	\$ 29,765.23
Multi-Family Residential (dwelling unit)	\$ 5,095.00	\$ 18,156.79
Commercial (square foot)	\$ 1.10	\$ 28.87
Office (square foot)	\$ 1.10	\$ 31.85
Industrial (square foot)	\$ 1.10	\$ 19.94
Other	\$ 8,306.00	\$ 29,765.23

1. Combined fees for ECCRFFA and ECTIA, as of January 1, 2005.
Source: Fehr & Peers, 2005.

5. ECCRFFA PROGRAM FINANCING CONSIDERATIONS

This chapter describes the impact of various financing considerations on the proposed ECCRFFA program. Table 8 presents a summary of the funding scenarios discussed in this chapter.

FULL FEE CALCULATIONS

As described in Chapter 4, the basic nexus calculations of the total fees that could be charged to new development result in a potentially substantial fee increase as compared to the current program. As shown in the Full Fee column in Table 8, an updated program that charged fees equivalent to those presented in Table 7 would generate an estimated \$1,256.6 million. In addition, Authority staff report that approximately \$114.1 million has been collected to date through both the ECCRFFA and ECTIA programs to support the listed improvement projects. Thus, the Full Fee scenario shows \$1,370.7 million generated by regional fees, as compared to the total project cost of \$1,691.9 million. This scenario is provided for informational purposes, to illustrate the situation if regional fees were the only sources of funding for the transportation projects listed. However, other sources of funding outside of the regional fee program are available to support some of the improvements on the project list, and these funds are described in detail in the following section.

OTHER FUNDING SOURCES

As with the original fee program, the fee revenue from the updated program will not pay the total cost of all regional improvements. Other funding will be generated, some of which has already been identified. The following describes the estimated revenue from known sources that could be applied to improvements in the program. The funding information presented here has been provided primarily by CCTA.

Measure C – Approved by Contra Costa County voters in 1988, it imposed a one-half percent sales tax to help pay for transportation improvements over a 20-year period. According to CCTA staff, a total of \$82.1 million of Measure C funds is currently programmed for the widening of SR 4 (from Railroad Avenue east). Therefore, this \$82.1 million was assumed to be allocated to the widening project included in the fee program. With the recent reauthorization of the sales tax (passed as Measure J in November 2004), additional funds estimated at \$393.5 million will be available for East County regional improvement projects such as eBART, SR 4 widening between Somersville Road and the SR 4 Bypass, and other improvements. These funds were assumed to be available to the program for purposes of this study.

Regional Measure 2 – Approved by Bay Area voters in March 2004, it imposes a \$1 surcharge on seven Bay Area toll bridges to help pay for transportation improvement projects in major travel corridors throughout the Bay Area. Currently, about \$96 million of Regional Measure 2 funds have been allocated to eBART. These funds were assumed to be available to the program for purposes of this study.

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 CCTA staff, about \$169.8 million in STIP funds are currently allocated to ECCRFFA improvement projects, including \$165.8 million for various improvements on SR 4, and \$4 million for Vasco Road improvements. These funds were assumed to be available to the program for purposes of this study.

Other Funds – This category consists of various funding for specific improvement projects. According to CCTA staff, this category includes \$25 million in state Transportation Congestion Relief Program (TCRP) funds and \$8 million in federal funds for SR 4 widening between Railroad Avenue and Loveridge Road, as well as \$7.2 million in state Highway Bridge Replacement and Rehabilitation Program (HBRRP) funds for Wilbur Avenue widening. These funds were assumed to be available to the program for purposes of this study.

Uncertain Funds – This category consists of various uncertain funding for specific improvement projects. These funds have not been allocated and may not be approved. According to CCTA staff, this category includes: \$32 million BART reimbursement, \$52 million Regional Measure 1, and \$5 million TCRP for eBART; \$14 million TCRP for SR 4 widening between Somersville Road and SR 4 Bypass; and \$11 million TCRP for Vasco Road improvements. Because of the uncertainty associated with these funds, they were not included in the revenue projections for this study; should any of these funds become available, they could be used to help offset any program deficits.

EFFECTS OF DIFFERENT FUNDING SCENARIOS

The availability of funds from other federal, state and local sources would allow for reductions in the fees charged through the updated ECCRFFA program. In addition, the ECCRFFA Board may elect to reduce the fee levels as a policy decision. Several alternatives for reducing the fee amounts have been examined, with Table 8 comparing fees and revenues generated under the following funding alternatives:

- **Alternative A:** Residential fees would remain at the levels presented in the Full Fee scenario, while fees for non-residential development would be reduced to \$1.72 per square foot for office and industrial uses, and to \$2.00 per square foot for commercial uses. Accounting for other funding sources, the fee program would break even in this scenario.
- **Alternative B:** Fees for non-residential development would be reduced to the current level of \$1.10 per square foot for office and industrial uses, and to \$1.25 per square foot for commercial uses. Residential fees would be reduced to \$15,000 for single-family and \$9,208 for multi-family developments. Accounting for other funding sources, the fee program under this alternative would experience an estimated deficit of \$389.7 million.
- **Alternative C:** Fees would be maintained at their current (January 2005) levels. Accounting for other funding sources, the fee program under this alternative would experience an estimated deficit of \$561.9 million.

At its June 16, 2005 meeting, the ECCRFFA Board considered the funding scenarios presented here and approved the fees described in Alternative B.

**TABLE 8
2005 ECCRFFA UPDATE – FINANCING CONSIDERATIONS**

	Full Fee*	Alternative A	Alternative B	Alternative C
Proposed Fee				
Single-Family Residential (per DU)	\$ 29,765.23	\$ 29,765.23	\$ 15,000.00	\$ 8,306.00
Multi-Family Residential (per DU)	\$ 18,156.79	\$ 18,156.79	\$ 9,207.92	\$ 5,095.00
Commercial (per SF)	\$ 28.87	\$ 2.00	\$ 1.25	\$ 1.10
Office (per SF)	\$ 31.85	\$ 1.72	\$ 1.10	\$ 1.10
Industrial (per SF)	\$ 19.94	\$ 1.72	\$ 1.10	\$ 1.10
Program Funding Summary				
Funding Sources	(\$ million)	(\$ million)	(\$ million)	(\$ million)
Fee Revenue Generated from Updated ECCRFFA Program ¹	\$ 1,256.6	\$ 796.2	\$ 406.5	\$ 234.3
ECCRFFA & ECTIA Funds Collected To Date	\$ 114.1	\$ 114.1	\$ 114.1	\$ 114.1
Current Measure C Funds ²		\$ 82.1	\$ 82.1	\$ 82.1
Measure J Funds ³		\$ 393.5	\$ 393.5	\$ 393.5
Estimated RM 2 Funds ⁴		\$ 96.0	\$ 96.0	\$ 96.0
STIP Funds ⁵		\$ 169.8	\$ 169.8	\$ 169.8
Other Funds ⁶		\$ 40.2	\$ 40.2	\$ 40.2
Uncertain Funds ⁷		\$ -	\$ -	\$ -
Total Program Funding	\$ 1,370.7	\$ 1,691.9	\$ 1,302.2	\$ 1,130.0
Total Program Cost	\$ 1,691.9	\$ 1,691.9	\$ 1,691.9	\$ 1,691.9
Total Surplus/Deficit	\$ (320.2)	\$ 0.0	\$ (389.7)	\$ (561.9)

1. Weighted average of the updated fees based on the amount of new development projected in each jurisdiction, and applied to the full list of projects.
2. Current Measure C Funds include \$33.1M for SR 4 widening between Railroad Avenue and Loveridge Road, \$42M for SR 4 widening between Loveridge Road and Somersville Road, and \$7M for SR 4 widening between Somersville Road and SR 4 Bypass.
3. Measure J funds include \$150M for eBART, \$125M for SR 4 improvements between Somersville Road and SR 4 Bypass, \$94.5M for various East County corridor improvements (including SR 4 Bypass, Vasco Road, Byron Highway, and the non-freeway SR 4), \$6M for Express Bus Service, and \$18M for other major street traffic flow, safety, and capacity projects.
4. RM 2 funds include \$96M for eBART.
5. STIP funds include \$30.9M for SR 4 widening between Railroad Avenue and Loveridge Road, \$30M for SR 4 widening between Loveridge Road and Somersville Road, \$102.6M for SR 4 widening between Somersville Road and SR 4 Bypass, \$2.3M for Hillcrest Avenue Interchange improvements, and \$4M for Vasco Road improvements.
6. Other Funds include \$25M TCRP and \$8M in federal funds for SR 4 widening between Railroad Avenue and Loveridge Road, and \$7.2M HBRRP funds for Wilbur Avenue widening.
7. Uncertain Funds total \$114 million, and include: \$32M BART payback, \$52M RM 1, and \$5M TCRP for eBART; \$14M TCRP for SR 4 widening between Somersville Road and SR 4 Bypass, and \$11M TCRP for Vasco Road improvements. Because of the uncertainty associated with these funding sources, these amounts were not included in the calculation of program revenues.

* As described in the text, the Full Fee scenario illustrates the situation where regional fees are the only sources of funding for the listed projects.

Sources: CCTA, SR 4 Bypass Authority, Fehr & Peers, 2005.