

# Short Range Transit Plan

FY 2007/08 - 2017/18



*We go everywhere!*





The Eastern Contra Costa Transit Authority (ECCTA)

# Tri Delta Transit

## Short Range Transit Plan

FY 2007/08 - 2017/18

January 30, 2008

Adopted on February 27, 2008 by the ECCTA Board of Directors.

The Eastern Contra Costa Transit Authority

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Federal transportation statutes require that the Metropolitan Transportation Commission (MTC), in partnership with state and local agencies, develop and periodically update a long-range Regional Transportation Plan (RTP), and a Transportation Improvement Program (TIP), which implements the RTP by programming federal funds to transportation projects contained in the RTP. In order to effectively execute these planning and programming responsibilities, MTC requires that each transit operator in its region which receives federal funds through the TIP, prepare, adopt, and submit to MTC a Short Range Transit Plan (SRTP).

The preparation of this SRTP has been funded in part by a grant from the United States Department of Transportation (USDOT), through Section 5303 of the Federal Transit Act. The contents of this SRTP reflect the views of the Eastern Contra Costa Transit Authority and are not necessarily those of USDOT, the Federal Transit Administration (FTA), or the Metropolitan Transportation Commission. The Eastern Contra Costa Transit Authority is solely responsible for the accuracy of information presented in this SRTP.

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# Executive Summary

**Chapter One** of this Short Range Transit Plan (SRTP) summarizes the purpose of the SRTP, describes characteristics of the Tri Delta Transit service area including population and development trends, commute and other travel patterns, and summarizes transit’s share of commute trips for the service area. The history of Tri Delta Transit is briefly summarized, governance arrangements outlined, and the services provided by both the fixed route and paratransit systems are described in detail. The Tri Delta Transit fare structure, revenue vehicle fleet and facilities are also summarized in Chapter One.

**Chapter Two** summarizes Tri Delta Transit’s goals, objectives and standards. The Mission Statement is also described, as are the details of supporting objectives, measures and standards.

## ECCTA Mission Statement:

No.	Statement
1.	To provide safe, reliable, friendly, high quality and economical transportation service to the Eastern Contra Costa community;
2.	To provide an organizational environment that encourages cooperation, rewards excellence, and develops a team of highly motivated staff;
3.	To empower employees to function as owners of the Eastern Contra Costa Transit Authority organization;
4.	To develop Eastern Contra Costa Transit Authority services and facilities to better serve the transit dependent community and capture a greater share of the commute market;
5.	To secure and manage funds to maintain and expand transit service and to operate Eastern Contra Costa Transit Authority according to fiscally sound business practices;
6.	To take a leadership role in developing a coherent transportation policy to deal with problems of traffic congestion, air quality, and growth management;
7.	And to build constituencies at all levels of government that support the Eastern Contra Costa Transit Authority and its programs.

ECCTA’s goals that support the adopted Mission Statement are summarized below:

- I. Provide safe, reliable and high quality public transportation to ECCTA service area residents.
- II. Provide efficient public transportation to the residents of the ECCTA service area.
- III. Provide an accessible public transportation system to the residents of the ECCTA service area.

**Chapter Three** is a comprehensive System & Service Evaluation of the Tri Delta Transit system. Overall system level fixed route and dial-a-ride trends and performance indicators are summarized and evaluated, comparing FYs 2003-04 and 2006-07 and evaluated against a number of adopted standards/measures.

Individual route performance is reviewed for the fixed route network. For the dial-a-ride (DAR) system, compliance with Americans with Disabilities Act (ADA) regulations is discussed.

Chapter Three includes an analysis of Capital Program trends, focusing on the vehicle fleet, transit centers and park & ride lots, and a coordinated local bus, BRT and eBART/BART strategy. On-board survey results are included in Chapter Three, summarizing the Tri Delta Transit/eBART survey conducted in Fall 2006, and the Metropolitan Transportation Commission (MTC)-sponsored survey completed in February 2007.

Tri Delta Transit's response and activities related to its most recent Productivity Improvement Program (PIP) is summarized, as are the response to the FY 2003-05 Triennial Performance Audit, the Federal Title VI Program, and response to the FY 2007 Federal Triennial Review.

**Chapter Four** is a discussion of potential Bus Rapid Transit (BRT) options designed to effectively supplement the existing local bus services. Examples and descriptions of potentially relevant BRT systems from Eugene-Springfield, Oregon, Las Vegas, Nevada, Miami, Florida, and Pittsburgh, Pennsylvania are presented. Potential options for BRT in East Contra Costa County are discussed, based on existing Tri Delta Transit patronage patterns and unmet transit needs in the service area.

**Chapter Five** summarizes the proposed Operations Plan and Budget for the FY 2007-08 through FY 2017-18 period. The strengths and weaknesses found in the service evaluation (Chapter Three) are summarized and complimented with a discussion of the challenges and opportunities facing the transit system. The proposed Fixed Route Operations Plan is presented, followed by the recommended Dial-A-Ride Operating Plan. Operating Statistics and Budget Projections are summarized for Fixed Route, Dial-A-Ride, and System Total (Tables 5.3, 5.4, and 5.5, respectively). A summary table of Projected Operating Characteristics and Budget is also presented (Table 5.6).

**Chapter Six** presents the recommended Capital Plan. The Planned Capital Expenditure Summary is summarized in Table 6.1. Table 6.2 outlines the Planned Fleet Capital Expenditures over the life of this SRTP. Capital project detail narrative is included.

# Introduction & Overview

## Purpose of the Short Range Transit Plan

Federal transportation statutes require that the Metropolitan Transportation Commission (MTC), in partnership with state and local agencies, develop and periodically update a long-range Regional Transportation Plan (RTP), and a Transportation Improvement Program (TIP), which implements the RTP by programming federal funds to transportation projects contained in the RTP. In order to effectively execute these planning and programming responsibilities, MTC requires that each transit operator in its region which receives federal funds through the TIP, prepare, adopt, and submit to MTC a Short Range Transit Plan (SRTP).

In keeping with MTC's SRTP guidelines, this document focuses on the following:

- Compliance with MTC and FTA planning program requirements
- Providing a comprehensive evaluation of existing services and recommendations for system improvements
- Outlining goals, objectives, performance measures and standards as applicable to ongoing system operations
- Establishing transit and paratransit service levels in a balanced budget scenario
- Offering direction for additional expansion if funding conditions improve during the planning period;
- Serving as a public information resource.

In addition to meeting the requirements of funding agencies at the regional, state and federal levels, the *Short Range Transit Plan* will provide a blueprint for transit service during the next decade, and is an implementation guide for the Plan's prioritized service improvements. The analysis must provide justification for the recommended course of action, and must also examine the "real world" feasibility of meeting various new, currently unmet transit needs, such as serving growing areas.

This report contains six chapters. The remainder of Chapter One describes ECCTA's history, the system's governance, organizational structure and funding, and outlines the transportation services provided. ECCTA provides both fixed route bus service and complementary paratransit to meet the requirements of the Americans with Disabilities Act (ADA). Additional information includes fare structure, revenue vehicle fleet and facilities, and service area characteristics.

Chapter Two, Goals, Objectives and Standards, describes the process for reviewing and updating goals, objectives, performance indicators and standards, and recommends changes based on identified strengths, weaknesses, constraints and opportunities for the transit system.

Chapter Three, Service and System Evaluation, updates and evaluates Tri Delta Transit performance since the previous SRTP, focusing on performance and financial trends during the past ten years. Chapter Three also summarizes ECCTA efforts regarding the productivity improvement program, triennial performance audit, community-based transportation planning, and Title VI compliance.

Chapter Four examines Express Bus and Bus Rapid Transit (BRT) opportunities for supplementing the proposed eBART line and the local bus system, and recommends promising options for future study.

Chapter Five, Operations Plan and Budget, outlines a recommended direction of service during the ten-year planning horizon of the SRTP, including incremental service improvements and a constrained operating budget that supports the recommended program.

Chapter Six, Capital Plan, describes the supporting ten-year capital plan including fleet plan, facilities/equipment plan and other capital investments supporting the operating plan.

## Characteristics of the Service Area

The ECCTA service area covers 225 square miles of Contra Costa County, generally bounded by the Sacramento and San Joaquin Rivers to the north, San Joaquin County to the east, Alameda County to the south and the Willow Pass grade to the west. Pittsburg and Antioch were once home to heavy industries including steel, paper and electric power generation. Historically, agriculture dominated the economies of Brentwood and Oakley. Figure 1.1 shows the location of ECCTA service area within Contra Costa County.

## Population Trends

Heavy industry declined in the ECCTA service area long before the Authority was formed. Rapid, residential growth followed which transformed Eastern Contra Costa County into low density commute suburbs of the greater Bay Area. Bay Point and Pittsburg saw rapid growth in the 1970's and 1980's, while during the 1990's population growth was concentrated in Antioch and Oakley. After 2000, Brentwood grew the most rapidly, more than doubling its population in less than seven years. Table 1.1 illustrates population growth trends for each community since the 2000 U.S. Census, and includes estimates for 2010, 2015, and 2020. Smaller rural communities such as Byron and Bethel Island are included in unincorporated totals.

Table 1.1 ECCTA Service Area Population Trends and Projections

Date:	4/1/00	1/2/01	1/2/02	1/2/03	1/2/04	1/2/05	1/2/06	1/2/07	1/2/10	1/2/15	1/2/20
Antioch	90,532	93,222	96,770	99,244	100,892	100,714	100,163	100,150	106,253	111,793	117,130
Brentwood	23,302	26,202	30,010	34,125	38,442	42,108	45,974	48,907	49,182	56,425	71,710
Oakley	25,619	26,032	27,030	27,733	28,455	29,068	29,485	31,906	31,597	34,126	36,277
Pittsburg	56,769	58,014	59,932	61,036	61,665	62,398	62,492	63,004	66,516	70,822	75,002
<b>Incorporated</b>	<b>196,222</b>	<b>203,470</b>	<b>213,742</b>	<b>222,138</b>	<b>229,454</b>	<b>234,288</b>	<b>238,114</b>	<b>243,967</b>	<b>253,549</b>	<b>273,165</b>	<b>300,120</b>
Discovery Bay	<i>8,987</i>	<i>9,092</i>	<i>9,203</i>	<i>9,314</i>	<i>9,425</i>	<i>9,538</i>	<i>9,708</i>	<i>9,878</i>	<i>10,387</i>	<i>10,873</i>	<i>11,197</i>
Bay Point	<i>21,534</i>	<i>21,801</i>	<i>22,068</i>	<i>22,335</i>	<i>22,602</i>	<i>22,869</i>	<i>23,276</i>	<i>23,683</i>	<i>24,904</i>	<i>26,071</i>	<i>26,848</i>
<b>Unincorporated</b>	<b>30,515</b>	<b>30,893</b>	<b>31,271</b>	<b>31,649</b>	<b>32,027</b>	<b>32,407</b>	<b>32,984</b>	<b>33,561</b>	<b>35,291</b>	<b>36,944</b>	<b>38,046</b>
<b>TOTAL</b>	<b>226,737</b>	<b>234,363</b>	<b>245,013</b>	<b>253,787</b>	<b>261,481</b>	<b>266,695</b>	<b>271,098</b>	<b>277,528</b>	<b>288,840</b>	<b>310,109</b>	<b>338,165</b>

Source: Association of Bay Area Governments (ABAG) Draft Projections 2007 (data in *italics* extrapolated from ABAG household projections).

Population growth in the ECCTA service area is projected to continue its growth at a significantly higher rate than Contra Costa County as a whole, despite the impact of the current (2007) housing recession. Projected growth rates reflect lower housing prices below the Contra Costa average and a relatively large supply of undeveloped land. A total of about 278,000 residents are currently estimated to live in the ECCTA service area, an increase of about 51,000 persons and 22.5% since the 2000 U.S. Census. The area's growth rate between 2007 and 2010 is projected to slow down to a net increase of about 11,000 persons, up about 4% or 1.3% per year, down from the nearly 3% annual growth rate experienced between 2000 and 2007.

By 2020, the population of Brentwood is likely to be a close third after East County's second largest city, Pittsburg. Though Table 1.1 reflects trend projections for Discovery Bay and Bay Point, both unincorporated communities, unincorporated growth rates may increase dramatically due to approved projects and ongoing construction of thousands of additional housing units in Discovery Bay and Bethel Island.

### Development Trends

Land development in East County is increasingly shaped by an Urban Limit Line (ULL), which represents a consensus among the incorporated cities and Contra Costa County to constrain growth to defined areas and thereby limit urban sprawl. The current ULL originally expired in 2010; however, revisions were approved by the voters in June 2006 and now will remain in effect through 2034. Areas outside of the ULL are precluded from intensive residential or commercial development. Therefore, these areas are unlikely to require Tri-Delta Transit service within the ten-year planning period. It should be noted that residential growth in East County peaked in 2005 and 2006; as of this writing (Fall 2007), housing starts have dropped dramatically as a result of the mortgage credit crunch, so growth trends discussed in this section may require several more years to resume the trajectories noted in the 2006 SRTP.







For purposes of discussions relative to Tri Delta Transit service, East County is distinguished into four sub areas:

North of Highway 4. The northwestern portion of the service area includes the mature neighborhoods of Pittsburg, Antioch and Bay Point east to Hillcrest Avenue. This area contains the oldest urbanized districts in Contra Costa County, including downtown Pittsburg, downtown Antioch, and Shore Acres in Bay Point. Most higher density residential neighborhoods in East County are located along the Highway 4 corridor. Current and planned future development focuses on in-fill residential housing, commercial revitalization, and reuse of obsolete industrial properties. These functions will moderately increase Density of population and jobs in the area and are projected to increase moderately during the next decade, helping improve productivity of existing fixed route service.

South of Highway 4. Beginning in the 1970's low and medium density neighborhoods began to form south of Highway 4 in Antioch and Pittsburg. Most of this development is generally north of James Donlon Drive and Buchanan Road. Somersville Towne Center (formerly County East Mall) is the major regional shopping center in East County, and is located south of Highway 4 at the Somersville Road interchange. East Leland Road between Somersville and Loveridge Road functions as a focus for transit routes due to the large number of activity centers, including Los Medanos College, County Social Services, Pittsburg Health Center and Somersville Towne Center.

Single-family houses dominate the housing stock in Antioch and Pittsburg, but there are also a significant number of multifamily housing complexes on major streets including Sycamore Drive in Antioch and East and West Leland Roads in Pittsburg. Tri Delta Transit fixed routes cover this area better than most areas dominated by a curvilinear street system, due to the presence of suitable collector streets. Transit coverage is more limited in these areas than neighborhoods with grid street networks due to the lack of throughways.

Moderate levels of population and employment growth are forecast in the area bounded by Railroad, Buchanan and Loveridge Roads and Highway 4 in Pittsburg, as well as in the commercial area surrounding the Somersville Road interchange at Highway 4 in Antioch.

Brentwood/Oakley. Rapid suburban growth has overtaken this previously rural area of East Contra Costa County since the 1980's, replacing a large percentage of the area's agricultural land. Residential and institutional growth west of Highway 4 is gradually merging with the rapid growth in southeast Antioch, except for areas designated as open space. The area between Brentwood and Antioch is projected to experience very rapid population growth during the next few decades, along with more modest employment growth. Community expectations are that Tri Delta Transit should serve this area in the short-range future, although the effectiveness of conventional fixed route service is uncertain due to the low density and demographics of the area.

Major streets in Brentwood are trending towards four-lane arterials with medians and turn pockets as construction of planned developments and subdivisions continue at a rapid pace. Brentwood Boulevard (Highway 4) is the primary north-south corridor through Brentwood and Oakley; Empire Avenue, Fairview Avenue, O'Hara Road and Walnut Boulevard also move significant north-south traffic. A bypass of existing Highway 4 has been under construction and the section between Lone Tree Way and Balfour Road was opened in 2006. The bypass follows a diagonal route parallel to existing railway alignments. Intersections are planned at Lone Tree Way, Sand Creek Road, Balfour Road, Marsh Creek Road and Walnut Boulevard. The north segment from Lone Tree Way to the existing State Routes 4/160 interchange opened in early 2008. The final segment from Balfour Road to Vasco Road is slated to open in the fall of 2008.

Major east-west travel corridors in Oakley include Main Street (Highway 4), Cypress and Laurel Roads, and Lone Tree Way. In Brentwood, major east-west corridors include Lone Tree Way west of Fairview Avenue, Sand Creek Road and Balfour Road. Planned new collector and local streets are a combination of grid and subdivision streets which can be difficult to serve with transit routes and buses.

Bethel Island/Byron/ Discovery Bay. Located northeast of Oakley, Bethel Island is a rural delta island accessed via Cypress Road, Bethel Island Road and the Bethel Island Bridge. Bethel Island is dominated by single family housing at rural densities, plus a few small businesses. Current development projects will double Bethel Island's population during the next decade, depending on the pace of new housing starts. Residential development with thousands of new units proposed is occurring along East Cypress Road, mainly east of Bethel Island Road, including retail uses and schools. Oakley's 2020 General Plan designates the area east of Bethel Island Road with higher density residential and commercial development. The plan also provides for construction of a connection between Cypress Road and Laurel Road, east of Main Street, allowing direct travel between the Cypress Road corridor and the Highway 4 bypass. This corridor has been expanded to a 50 M.P.H., four lane arterial with no turn-around sufficient for buses, thus limiting potential transit service to the area.

Byron and Discovery Bay are located south and southeast of Brentwood and accessible via Highway 4. Byron is a small rural community with about 1,000 residents and with predominantly rural infrastructure. The rapid pace of development in Brentwood and Mountain House in nearby San Joaquin County are fostering economic pressure for similar activity in Byron. Several proposals currently are under consideration by Contra Costa County.

Discovery Bay has grown to about 10,000 residents from approximately 9,000 in the 2000 Census, with additional subdivisions under construction and in the planning stage. Most original Discovery Bay housing was upscale, generating limited demand for transit. Current and future residential growth is projected to consist mainly of smaller homes on smaller lots that at some point will justify additional frequency on the currently limited transit service.

## Commute & Other Travel Patterns

As previously mentioned, the ECCTA service area has evolved from primarily industrial and agricultural communities into a spread out, low-density commuter-oriented suburban area on the periphery of the Bay Area. As shown in Table 1.2, the U.S. Census estimated that the weekday “daytime population” of East County declined by 55,539 people compared to the resident (“overnight”) population. This figure is the total of resident population, plus people commuting in, less the number of workers commuting out. As might be expected, the more heavily residential an area, the more the “daytime population” declined. While Pittsburg and Antioch contained the largest number of local jobs (74%), each community also experienced large drops in daytime population. Of the 98,600 employed residents living in the area at the 2000 U.S. Census, about 19% worked in the same community as they lived, and only about one-third worked within ECCTA service area communities.

The first priority of Tri Delta Transit is to serve the 80% of existing patrons who travel within the service area. The second priority is to provide transit connections to adjacent areas where such connections would not otherwise exist, such as to Martinez and the Tri Valley Area. The third priority is to provide connections to BART, which provides excellent access to Central Contra Costa County and the Central Bay Area including Oakland, Berkeley and San Francisco. Through other regional transit connections with BART, East County residents also can connect to employment opportunities in San Mateo, Marin and Santa Clara Counties.

Table 1.2 ECCTA Service Area - Year 2000 Daytime Population

COMMUNITY	Total resident population	Total workers working in the place	Total workers living in the place	Estimated daytime population	Daytime population change due to commuting		Workers who lived and worked in the same place		% Local Jobholders / Local Jobs
					Number	Percent	Number	Percent	
Discovery Bay CDP	8,981	973	4,503	5,451	(3,530)	-64.8%	560	12.4%	22.0%
Brentwood	23,302	6,073	9,229	20,146	(3,156)	-15.7%	2,267	24.6%	66.0%
Oakley	25,619	2,957	11,729	16,847	(8,772)	-52.1%	1,330	11.3%	25.0%
Antioch	90,532	17,862	40,712	67,682	(22,850)	-33.8%	9,728	23.9%	44.0%
Pittsburg	56,769	13,637	23,942	46,464	(10,305)	-22.2%	4,541	19.0%	57.0%
Bay Point CDP	21,534	1,588	8,514	14,608	(6,926)	-47.4%	596	7.0%	19.0%
<b>TOTAL</b>	<b>226,737</b>	<b>43,090</b>	<b>98,629</b>	<b>171,198</b>	<b>(55,539)</b>	<b>-24.5%</b>	<b>19,022</b>	<b>19.3%</b>	<b>43.7%</b>
Jobs Held by Area Residents (Table 1.3)							<b>31,640</b>	<b>32.1%</b>	<b>73.4%</b>
Martinez	35,866	16,472	18,820	33,518	(2,348)	-6.5%	3,665	22.2%	87.5%
Concord	121,780	54,245	58,700	117,325	(4,455)	-3.7%	16,719	30.8%	92.4%
Walnut Creek	64,296	49,581	29,901	83,976	19,680	30.6%	8,507	17.2%	165.8%

Source: Census 2000 PHC-T-40. Estimated Daytime Population and Employment-Residence Ratios: 2000

As summarized in Table 1.3, about 30% of East County employed residents commuted to Central Contra Costa County (Martinez, Concord, Walnut Creek, and elsewhere). About 7% commuted to the

Berkeley, Oakland, Alameda, Albany and Emeryville area of the Central East Bay; 8.5% to San Francisco and San Mateo Counties; 4% to Dublin, Pleasanton, and Livermore; 3% to the North Bay (Marin, Napa, Solano and Sonoma Counties); 2.5% to Santa Clara County, 2.5% to West Contra Costa County (Richmond, Pinole, El Sobrante, El Cerrito, Hercules and Rodeo); and about 10% to other locations (out of the Bay Area, rural communities not identified, etc.)

As mentioned in the Development Trends section above, most jobs in Antioch are concentrated around the Highway 4/Somersville Road shopping area, with smaller concentrations in downtown Antioch, the northeast industrial area between downtown and Highway 4, and the remainder scattered throughout the community.

In Pittsburg, most jobs are located in the Loveridge Road and Leland Road area in the vicinity of Los Medanos College, primarily south of the Highway 4 freeway.

Brentwood has the third largest concentration of jobs, primarily located in the central areas of the community.

**Table 1.3 ECCTA Community to Community/ Area Commuters**

<b>TO/FROM</b>	<b>Discov- ery Bay</b>	<b>Brent- wood</b>	<b>Oakley</b>	<b>Antioch</b>	<b>Pittsburg</b>	<b>Bay Point</b>	<b>TOTAL</b>
Discovery Bay	560	50	60	30	15	0	<b>715</b>
Brentwood	375	2,260	705	685	135	60	<b>4,220</b>
Oakley	170	205	1,310	440	105	485	<b>2,715</b>
Antioch	85	575	1,445	9,720	1,345	330	<b>13,500</b>
Pittsburg	70	240	600	3,400	4,550	555	<b>9,415</b>
Bay Point	0	15	35	220	210	595	<b>1,075</b>
Martinez	40	90	280	1,110	830	340	<b>2,690</b>
Concord	125	440	1,405	4,545	3,470	1,485	<b>11,470</b>
Walnut Creek	145	300	715	3,025	2,050	740	<b>6,975</b>
Other Central Contra Costa	259	454	735	3,625	2,460	1,115	<b>8,648</b>
West CC County	45	124	300	965	790	234	<b>2,458</b>
Oakland-Berkeley-Alameda- Albany-Emeryville	225	480	570	2,845	1,724	730	<b>6,574</b>
Dublin-Pleasanton-Livermore	615	1,055	690	699	560	265	<b>3,884</b>
San Francisco	65	310	310	2,645	2,040	840	<b>6,210</b>
San Mateo Co.	114	159	143	1,340	329	118	<b>2,203</b>
Solano-Napa	34	120	250	1,384	469	154	<b>2,411</b>
Sonoma-Marin	0	61	10	149	164	35	<b>419</b>
Santa Clara Co.	444	480	433	735	303	55	<b>2,450</b>
Other	1,095	1,540	1,692	2,942	2,305	353	<b>9,927</b>
<b>TOTAL</b>	<b>4,466</b>	<b>8,958</b>	<b>11,688</b>	<b>40,504</b>	<b>23,854</b>	<b>8,489</b>	<b>97,959</b>

Source: 2000 U.S. Census Journey to Work data

## Transit Share of Commute Trips

According to the 2000 U.S. Census, transit's share of total commuter trips in each East Contra Costa County community gradually declines as access distance increases to the Pittsburg/Bay Point BART station.

This data is presented in Table 1.4. Transit share of total commuter trips exceeds 8% in Bay Point and Pittsburg within 0-4 miles of the BART station. Transit share is about 4% in Antioch, which is located between 7 and 13 miles away from BART. Transit share declines further to only about 2% in both Oakley and Brentwood, between 15 and 21 miles from BART. Discovery Bay's transit mode share is only 1.4%, at a distance of 28 to 31 miles from Pittsburg/Bay Point BART.

This direct relationship between mode share and distance from BART suggests that high quality transit service, whether rail such as the proposed eBART line, or "bus rapid transit" (BRT) could potentially increase overall transit usage. The potential for BRT to supplement existing BART service and the proposed eBART route is examined in Chapter Four.

Table 1.4 Transit Share of Work Trips

Community	Typical Mileage to Bay Point BART	Transit Commute Share
Discovery Bay	28-31 miles	1.4%
Brentwood	20-21 miles	2.3%
Oakley	15-16 miles	2.1%
Antioch	7-13 miles	4.4%
Pittsburg	3-4 miles	8.3%
Bay Point	<1 mile	8.6%

Source: 2000 U.S. Census Journey to Work data

## Description of Tri Delta Transit

### System History

The Eastern Contra Costa Transit Authority (ECCTA) was created in 1977 as a joint exercise of powers agency (JPA) by the cities of Antioch, Brentwood, Pittsburg, and the County of Contra Costa, covering a 225-square mile service area as previously illustrated in Figure 1.1. ECCTA was formed to provide local transit service and to provide connections to BART express bus service, which began in 1975 as a "rubber tire extension" of BART. The Metropolitan Transportation Commission (MTC) funded the first two years of ECCTA operations as a demonstration project. Once the demonstration project was over in 1979, ECCTA became a claimant for Transportation Development Act (TDA) funds.

Tri Delta Transit, ECCTA's adopted marketing and system identity, began service on June 6, 1977. Routes 380 and 381 provided local service in Antioch and Pittsburg and feeder connections to BART express bus service, which in turn linked Eastern Contra Costa County residents to the Concord BART station. AC Transit provided the service under contract to ECCTA. Paratransit service began in January 1979 to serve older residents and persons with disabilities, and was provided under contract to ECCTA by Community Transit Service (CTS), a private contractor. The paratransit system was expanded in 1981 to serve rural residents of Eastern Contra Costa County. In 1991, Dial-a-Ride eligibility policies were changed to limit service to the elderly and persons with disabilities.

ECCTA terminated the AC Transit contract in 1984, consolidating both fixed route and paratransit operations under its agreement with CTS. The CTS operating and maintenance facility was located at a former U.S. Steel facility in Pittsburg, while ECCTA administrative offices were located on Sycamore Drive in Antioch. In 1986, ECCTA replaced CTS with Laidlaw Transit Services, Inc. as its service contractor. Laidlaw or, it's successor organization continues in this capacity today (Laidlaw was purchased by First Transit in late 2007). The current service agreement was renewed effective July 2006 for a three year term with three, one-year optional extensions.

The existing ECCTA facility at 801 Wilbur Avenue in Antioch was constructed and occupied in 1987, consolidating operations, maintenance and administrative functions of ECCTA and its service contractor at a single location. This facility was expanded in February 2004 and additional bus parking was occupied across Minaker Drive from the facility in July 2004.

Beginning in the mid 1980's and continuing through the 1990's, ECCTA expanded local fixed route service, adding neighborhoods in Pittsburg and southeast Antioch, and improved service coverage in Brentwood, Oakley and rural East County. When BART rail service was extended from North Concord to the Bay Point station in December 1996, ECCTA revised a number of routes to provide BART feeder service and improved express service along the Highway 4 corridor. The City of Oakley incorporated in 1999 and joined the JPA.

In 2001, ECCTA began operation of Delta Express commuter express service to the Lawrence Livermore/Sandia Laboratory, and the Dublin BART station area. A Delta Express service to downtown Martinez was added in March of 2004. In August 2007, local transit service was extended from Bay Point over Willow Pass to Concord. This new Route 201 provides direct, no transfer service for the hundreds of Bay Point students who attend high school in Concord, and links with other needed services such as health care in northeast Concord.

## Governance

ECCTA is governed by an eleven-member board of directors composed of two appointed representatives from each of the JPA member jurisdictions and a single, member at large selected by the other ten board members on a biennial basis. The appointed representatives are selected by the mayor and/or city council of each of the four cities with two more appointed by the county Board of Supervisors. There is currently no term of expiration for the ten, city/county appointed board members. The Board meets once a month at ECCTA's administrative office. In addition, two formal subcommittees are convened as needed:

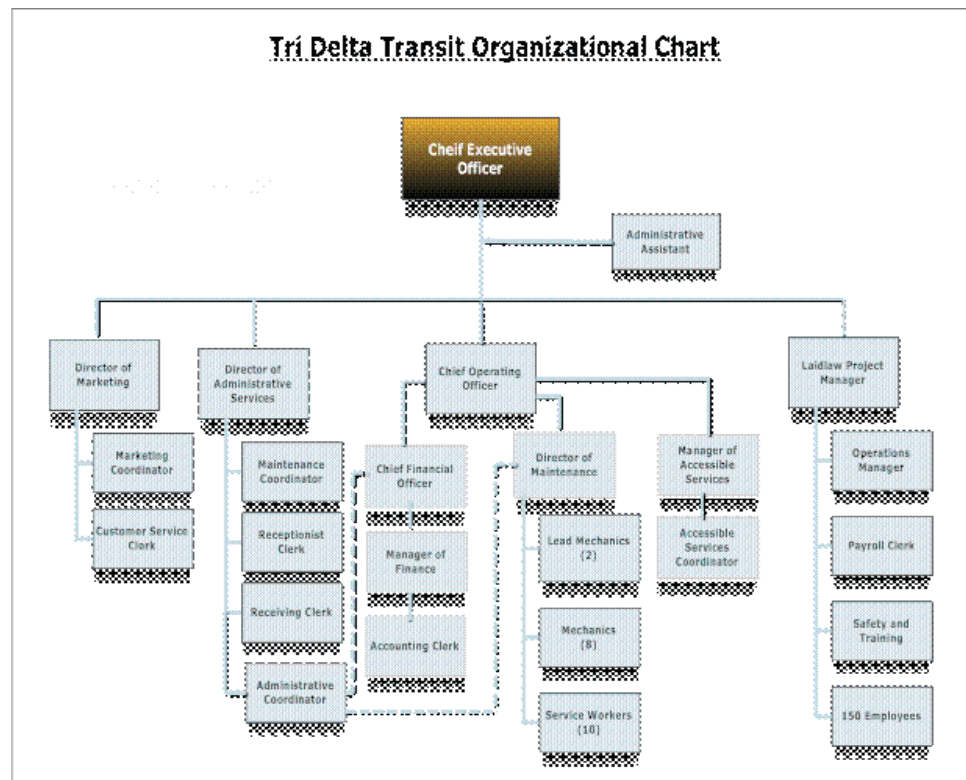
- Administration and Budget Committee - oversees financial activities of the organization, including purchasing, contracts, bookkeeping and accounting, grant applications, and fare policy.

- Marketing and Operations Committee - oversees service planning, public information, customer service, and advertising policies.

The Board may also convene special ad-hoc committees to consider personnel matters, handle contract negotiations and conduct other business as required on an "as necessary" basis.

ECCTA directly employs more than 30 personnel for administrative, maintenance, finance, marketing, customer service, contract management and transit planning. ECCTA contracts with First Transit, a private for-profit company, for the services of more than 150 bus operators, supervisors and operations management. First Transit is responsible for screening, hiring, testing and supervision of all operations staff and the booking, scheduling and dispatching of all paratransit trips. The Board of Directors appoints a Chief Executive Officer (CEO), who in turn is supported by the Chief Operating Officer, Chief Financial Officer, Director of Administrative Services, Director of Marketing, other administrative staff, as well as a Project Manager employed by the operations contractor.

Figure 1.2





## Fixed Route System

The Tri Delta Transit fixed route network consists of 11 local weekday routes, five express routes, two weekday community routes, and three local weekend routes providing coverage between Bay Point and Brentwood through Pittsburg, Antioch and Oakley. Selected routes operate beyond the boundaries of the ECCTA service area into Martinez and the Tri-Valley cities of Dublin, Livermore and Pleasanton as well as the new, successful Route 201 between Bay Point and Central Concord. The County Connection Route 930, operated by the neighboring Central Contra Costa Transit Authority (CCCTA), also operates a weekday express route between the Hillcrest Park & Ride lot and the Walnut Creek BART station. Tri Delta Transit bus routes are illustrated in Figures 1.2a and 1.2b.

Local service includes long-established routes covering the mature communities of Antioch, Pittsburg and unincorporated Bay Point, and more recent extensions into rapidly developing southeast Antioch, Oakley and Brentwood. Most of existing Route 380 and segments now covered by Routes 387, 388 and 389 have been operating since the late 1970's.

Service coverage, frequency and span improvements were implemented incrementally in Antioch and Pittsburg during the mid-1980s and 1990s. Brentwood Dimes-a-Ride service began as a circulator route subsidized by the City of Brentwood in 1987 and expanded somewhat in 1995. The local network was partially restructured in 1994, and again in 1996 following the opening of the Pittsburg/ Bay Point BART station. The Route 70 community service in Pittsburg was added in 1999, and Route 383 serving Oakley was added in April 2001. Routes 384, 385 and 386 serving Brentwood and Byron were added in August of 2005. Route 201 between Bay Point and Concord began operations in August 2007.

Tri Delta Transit first introduced express bus service in 1996 upon opening of the Pittsburg/Bay Point BART station. In 1997, Tri Delta Transit assumed responsibility for BART Express bus service between Pittsburg/Bay Point BART and Brentwood via the Highway 4 corridor. Express service between county medical facilities in Martinez and Pittsburg was added in 1998 through a contract between ECCTA and Contra Costa County and continues today without the contract. Delta Express routes to the Tri Valley area were initiated in 2000 and 2001. Presently there are five express routes in the network:

Three Delta Express (DX) routes provide a total of five one-way trips per peak period, or a total of ten one-way trips per weekday. Schedules include two trips per peak to Dublin and Hacienda Business Park, two to Lawrence Livermore Labs, and one to downtown Martinez. The Livermore route was implemented in 2000, and Dublin was added in 2001. Dublin service was discontinued due to low patronage in FY 2003, but reinstated one year later. Over-the-road coaches are assigned to DX operations.







Route 200 -Martinez/Pittsburg links the Contra Costa County Medical Clinic on East Leland Road in Pittsburg with medical facilities in Martinez, including Veterans Hospital, the Contra Costa Regional Medical Center and the Summit Building. Route 200 also serves downtown Martinez, inter-connecting with County Connection, Westcat, and Amtrak Capitol Corridor trains. This service has operated since 1998 and was partially supported by a funding agreement with Contra Costa County until December of 2006. The weekday-only schedule consists of 11 round trips per day running at frequencies ranging from 60 to 75 minutes.

Route 300 - East County Express provides limited stop service between the BART station and existing park-and-ride lots in Antioch and Brentwood via Highway 4. This service originated in 1996. Currently, buses operate on weekdays at 20-minute frequencies during peak periods, and 30 minute headways during midday and night hours.

Tri Delta Transit also provides express bus service to all San Francisco 49er's home football games. Buses leave from the park-ride lots in Brentwood, Antioch (Hillcrest), and Pittsburg (Bliss), and arrive at the game up an hour before kick off time. They leave 30 minutes after the game is over.

Most Tri Delta Transit routes operate between 4:30 a.m. and 9:30 p.m., with selected routes beginning service at 3:14 a.m. and ending at 1:14 a.m. Route 390 and the three DX routes operate peak-only schedules. Routes 392 and 393 operate on Saturday between 5:30 a.m. and 1:30 a.m., and between 6:15 a.m. and 1:30 a.m. on Sundays and holidays. Route 394 operates between 7:00 a.m. and 8:30 p.m. on weekends and holidays.

BART and the Central Contra Costa Transit Authority (CCCTA) also serve East Contra Costa County. On weekdays, BART trains leave the Pittsburg/Bay Point station at least every 15 minutes from 04:00 A.M. The last departing BART train is at midnight all week. Eastbound trains arrive on 15 minute headways from 5:17 A.M. weekdays, 7:30 A.M. Saturdays, 9:00 A.M. on Sundays until 1:20 A.M. all days. Approximately 15% to 20% of BART patrons boarding or arriving at the Pittsburg/Bay Point BART station transfer to/from Tri Delta Transit.

CCCTA operates County Connection Route 930 between the Hillcrest park-and-ride and the downtown Walnut Creek BART station. Four morning westbound and six afternoon eastbound trips are offered on 30-60 minute frequencies. This route serves employment centers in East Concord, along Ygnacio Valley Road and downtown Walnut Creek.

Table 1.5 summarizes the areas served and average frequencies by time period for all Tri Delta Transit fixed routes.

Table 1.5 Tri Delta Transit Fixed Routes

Route	Destinations	Peak Frequency	Midday Frequency	Evening Frequency	Span of Service
<b>Express Routes</b> (all routes operate weekdays only)					
DX	Pittsburg-Antioch to Martinez	1 trip each peak	n.a.	n.a.	Mon-Fri peak periods
DX	Delta Express Antioch-Oakley-Brentwood to Lawrence Livermore /Sandia Lab	2 trips each peak	n.a.	n.a.	Mon-Fri peak periods
DX	Delta Express Antioch-Oakley-Brentwood to Pleasanton-Dublin BART & Hacienda Business Park	2 trips each peak	n.a.	n.a.	Mon-Fri peak periods
200	Pittsburg-Bay Point – Martinez (Hospitals, Medical clinics and Offices, downtown Martinez)	60-75 min	60 min	n.a.	6:23 a.m.-7:36 p.m.
300	Brentwood-Oakley-Antioch (Hillcrest P&R)- BART	20 min.	30 min.	30 min.	4:15 a.m.-10:06 p.m.
<b>Local Routes, Weekday</b>					
70	Pittsburg – Marina to Buchanan Loop	60 min.	60 min.	68 min.	6:23 a.m.-7:36 p.m.
201	Bay Point BART to Concord BART via Bay Point and downtown Concord	30 min.	60 min.	30 min.	6:10 a.m.-7:30 p.m.
BDR	Brentwood Dimes-A-Ride (Brentwood circulator route)	60 min.	60 min.	n.a.	7:00 a.m.-4:59 p.m.
380	Bay Point BART-Antioch via Bay Point, Pittsburg, central Antioch, Lone Tree Way, Hillcrest P&R, Tri Delta Transit	28-33 min.	28-33 min.	28-33 min.	3:14 a.m.-11:19 p.m.
383	Antioch (Hillcrest) Park & Ride-Oakley via East 18 <sup>th</sup> , Main St (Oakley), O'Hara, Lone Tree Way, and Deer Valley Rd.	55-60 min.	55-60 min.	n.a.	5:24 a.m.-6:58 p.m.
384	Antioch-Brentwood via Deer Valley, Balfour Rd, Sand Creek, Central, Dainty to downtown via Brentwood P&R	60 min.	60-75 min.	57-63 min.	6:40 a.m.-7:56 p.m.
385	Antioch-Brentwood via Hillcrest, Lone Tree, Fairview, Balfour to Brentwood Park & Ride Lot	60-63 min.	60-85 min.	n.a.	6:45 a.m.-6:57 p.m.
386	Brentwood Park & Ride Lot-Discovery Bay via Highway 4, Balfour, and Sellers Avenue.	1 trip each peak	3 trips every 3.5 hours	n.a.	6:27 a.m.-6:16 p.m.
387	Pittsburg/Bay Point BART-Antioch via Willow Pass, downtown Pittsburg via Harbor, Leland, Delta Fair, Somersville, L St, downtown Antioch, A Street, Wilbur to ECCTA	50-75 min.	60-100 min.	2 trips	4:48 a.m.-9:12 p.m.
388	Bay Point BART-Antioch Kaiser Clinic via Leland, Harbor, 14 <sup>th</sup> , Century, downtown Antioch, Hillcrest P&R, Long Tree, Dallas Ranch, Prewett Ranch to Kaiser Clinic	20-37 min.	24-87 min.	30-71 min.	5:06 a.m.-11:27 p.m.
389	Bay Point – Bay Point Local Loop	60-69 min.	60 min.	60 min.	4:55 a.m.-10:09 p.m.
390	Antioch (Hillcrest) Park & Ride-Pittsburg/Bay Point BART, via south Antioch, Buchanan, Leland (Pittsburg)	30 min.	30 min.	30 min.	4:00 a.m.-7:56 a.m., 4:13 p.m.-8:24 p.m.
391	Brentwood Park & Ride – Bay Point BART via Oakley, Antioch (Hillcrest P&R), Pittsburg via Leland.	27-42 min.	52-60 min.	34-60 min.	4:06 a.m.-1:14 a.m.
<b>Local Routes, Saturdays &amp; Sundays</b>					
392	Antioch (Hillcrest) Park & Ride – Pittsburg/Bay Point BART via South Antioch, Somersville shopping area, downtown Pittsburg.	60 min.	60 min.	60 min.	5:23 a.m. Sat 6:23 a.m. Sun – 1:12 a.m.
393	Brentwood-Bay Point BART via Oakley, Antioch, Pittsburg, Pittsburg/Bay Point BART, and Bay Point local service.	60 min.	60 min.	60 min.	5:22 a.m. Sat 6:18 a.m. Sun 1:35 a.m.
394	Antioch (Hillcrest) Park & Ride-Pittsburg/Bay Point BART via central Antioch, James Donlon/Contra Loma, Somersville and Century shopping areas, Leland, Willow Pass to BART	60 min.	60 min.	n.a.	7:05 a.m.-8:23 p.m.

## ECCTA Dial-a-Ride

Dial-a-Ride is the name of ECCTA's ADA complementary paratransit service. It provides a door-to-door, demand response service throughout the ECCTA service area during fixed route coverage hours. A two-tier service is provided, one serving persons eligible for ADA service and the second serving non-ADA passengers. Regular Dial-a-Ride service covers the majority of local trip requests. Express Dial-a-Ride service is provided under a contract with BART on Sundays and outside of regular, ECCTA service coverage hours. ECCTA also provides Dial-a-Ride service for non-emergency trips to medical appointments. The Antioch Senior Bus Service is operated by the Antioch Senior Citizens Club on weekdays from 8:00 A.M. to 5:00 P.M. ECCTA reports their operational activities, claims Transportation Development Act (TDA) and Contra Costa County Measure C transportation sales tax funds for the service, and has purchased vehicles for the program using County Measure C funds.

- Regular Dial-a-Ride serves provides 275 weekday trips and 45 passenger trips on Saturdays.
- "Express Dial-a-Ride" serves about 40 daily trips on Saturdays and 50 passenger trips on Sundays.
- The Med Van service carries more than 10 round trip passengers per day all week.
- The Antioch Senior Bus carries about 50 round trip passengers per weekday.

Dial-a-Ride is a door-to-door transportation service for eligible seniors and disabled individuals traveling in Eastern Contra Costa County. There are two eligibility categories; ADA-eligible and non-ADA-eligible. Individuals with disabilities who, because of their disability, cannot use regular fixed route bus service are eligible to use the ADA service. Non-ADA eligible disabled persons and seniors 65 years and older who have completed Tri Delta Transit's Travel Training Program are eligible to use the Non-ADA service.

There are distinct service areas for ADA Dial-a-Ride and Non-ADA Dial-a-Ride. ADA Dial-a-Ride is provided within  $\frac{3}{4}$  mile of scheduled fixed routes, while non-ADA Dial-a-Ride service covers the entire ECCTA service area beyond the  $\frac{3}{4}$  mile distance from fixed routes. The eligibility status of each patron determines what service can be used and available service times. ADA service is available throughout the ECCTA service area during all hours that the fixed route system is in operation, on weekdays between 3:00 a.m. and 1:00 a.m.; Saturdays between 6:00 a.m. and 1:00 a.m., and Sundays between 7:00 a.m. and 1:00 a.m. General Dial-A-Ride service operates between 6:30 a.m. and 5:30 p.m. Monday through Friday, 10:00 a.m. to 6:00 p.m. on Saturdays, with no service on Sundays. A higher fare is also charged for service to and from locations in the Non-ADA Dial-a-Ride area.



## **Eligibility Process**

The ADA-eligible certification process incorporates an explanation of how the applicants' disability limits their ability to use regular bus service completed by a medical professional, and if necessary, a functional assessment conducted by Tri Delta Transit's Accessible Services Manager. The functional assessment was introduced to help manage demand. An applicant may still qualify for Non-ADA eligibility, and be able to use the more limited Non-ADA Dial-a-Ride service if denied ADA service for any reason.

Approximately 2,000 persons are registered to use the Dial-a-Ride system, including 1,700 ADA-eligible registrants and 300 non-ADA Eligible registrants (mostly seniors). Five hundred registrants use a wheelchair or scooter (25% of the total registrants). The registration database is updated regularly. All registrants must re-apply every three years. Tri Delta Transit utilizes an "Integrated Voice Response" (IVR) telephone system that automatically dials and notifies customers one month prior to expiration of their eligibility.

### **Dial-A-Ride Operations**

Driver duties include assisting Dial-a-Ride passengers on and off the bus, securing wheelchairs, escorting passengers to-and-from the front door at the point of trip origin or destination, and assisting riders with reasonably-sized parcels and no more than three trips between the bus and a patron's door. A maximum of 16 buses are used for Dial-A-Ride service at any one time.

Dial-a-Ride allows for a 30-minute "window" for each pickup and drop-off, e.g., a bus can arrive up to 15 minutes before or 15 minutes after the confirmed pick up time.

The IVR system automatically notifies customers via telephone 15 minutes prior to the projected actual bus arrival time based on "real time" operations processes. Mobile Data Terminals (MDTs) and Automatic Vehicle Location (AVL) equipment have been installed on each Dial-A-Ride vehicle. Maximum onboard travel times are scheduled to be less than one hour.

Passengers must meet the Dial-a-Ride driver within three minutes of arrival during the 30-minute window, or risk becoming a "no show." If a passenger must cancel an already-scheduled trip, ECCTA requests that they do so at least one day in advance. Trips cancelled less than an hour before a scheduled pickup time is recorded as a "no show." Service may be suspended for one month if a rider is a "no show" more than 3 times in 6 months.

Approximately 50% of Dial-A-Ride trips are scheduled through a subscription request. These trips are initially booked as a recurring series and only revised as needed. The ADA allows the assignment of trips within a two hour window – up to 60 minutes before or after the originally requested pick up or drop off time. With the exception of subscription or standing orders, trips can be booked from one to three days in advance. Same day bookings are accepted on a space available basis.

## Fare Structure

The ECCTA Board of Directors establishes and periodically adjusts transit fares as necessary to maintain the financial viability of the system. The present fare structure was enacted in January 2007. Current rates are summarized in Table 1.6. In addition to cash fares, a number of prepaid fare instruments are offered, including 20-ride punch passes, coupon books and monthly passes for local, bus-rail feeder and express services. In January 2007, Tri Delta Transit successfully introduced day passes to replace system transfers.

Tri Delta Transit also participates in the BART Plus Ticket program in cooperation with BART and eight other Bay Area transit systems. The BART Plus Ticket allows transit customers to use BART and connecting local buses at participating agencies without paying bus fares directly or using a transfer. The BART Plus Ticket is not accepted on Tri Delta Transit's DX routes or the 49ers service.

The current Dial-a-Ride cash fare is \$2.00 per one-way passenger trip between locations within the ADA service area. Service to and from locations in the Non-ADA service area are \$4.00 per one-way passenger trip. Personal care attendants (PCA) can ride free and companions are charged the full fare. There are no discounted Dial-a-Ride fares. Ten ticket booklets priced at \$20.00 each are available for passenger convenience.

## Revenue Vehicle Fleet

ECCTA owns a total of 91 revenue vehicles and has procured two suitable vans for the Antioch Senior Bus program. Most of the fixed route fleet is comprised of 45 Gillig Phantom standard high-floor, 40' heavy-duty transit buses manufactured between 1995 and 2001. The remaining fixed route vehicles include 2 Gillig 30' low-floor buses; 10 MCI over-the-road coaches, 9 ABI small buses acquired from the Columbus Ohio Transit Authority in 2004, and 3 vintage rubber-tired imitation "trolleys." As of June 30, 2007 average fleet age is 7.0 years. Most fixed route vehicles have a 12-year useful life, except the MCIs which are assigned a 16-year life and the low-floors and the trolleys which are assigned a 10-year useful life according to FTA standards.

The paratransit fleet consists of 18 small, light-duty body-on-chassis buses, 4 specialized med-vans and two 2 cutaway vans owned by the City of Antioch and operated by the Antioch Senior Center. Twenty of the ECCTA paratransit fleet, including two supervisor vans, were replaced in 2007 and have an average age of only one year.

Table 1.7 summarizes the current ECCTA fleet roster.

Table 1.6 Tri Delta Transit Fare Structure—Effective July 2007

<b>Local Route Fares</b>	
Single ride, no transfers (general public age 6 years to 64)	\$1.25
Single ride, no transfers (Seniors 65+/Passengers with disabilities)	\$0.50
Day Pass - Unlimited rides and transfers all day (general public age 6-64)	\$2.25
Day Pass - Unlimited rides and transfers all day (Seniors*/Passengers with disabilities)	\$1.00
Children 5 and under (with paying customer)	\$0.00
Bart Transfer (general public age 6-64)	\$0.75
Bart Transfer (Seniors 65+/Passengers with disabilities)	\$0.25
*to receive a reduced fare, a passenger is required to show one of the following: drivers license, Regional Transit Discount Card, or Medicare card	
<b>Discount Passes</b>	
Monthly Pass - Unlimited rides on all Tri Delta Transit fixed route buses for an entire month (general public age 6-64):	\$40.00
Fixed Route Punch Pass (general public age 6-64) - 20 single rides	\$22.00
Fixed Route Punch Pass Senior Citizens and Passengers with Disabilities - 20 ride pass	\$10.00
Fixed Route Commuter Punch Pass - 20 single rides, ten at full fare (\$1.25) and ten BART transfers	\$18.00
<b>Brentwood Dimes-a-Ride</b>	
Punch Pass All passengers - 20 ride punch pass	\$4.00
<b>49ers Express Shuttle Fares</b>	
General Public (age 16+) advanced purchase	\$10.00
General Public (age 16+) if purchased on bus on game day	\$12.00
Youth 6-15	\$5.00
Kids 5 and under**	\$0.00
Season Pass (general public age 16+)	\$80.00
Season Pass (youth age 6-15)	\$50.00
*when accompanied by fare paying adult. One free kid fare per paying adult.	
<b>Delta Express Fares</b>	
Martinez Delta Express One way ticket	\$1.50
Martinez Delta Express Monthly Pass	\$55.00
Dublin/Pleasanton BART Delta Express & LLNL/Sandia Lab Delta Express One way ticket	\$5.00
Dublin/Pleasanton BART Delta Express 20 ride Punch Pass	\$65.00
Dublin/Pleasanton BART Delta Express Monthly Pass	\$110.00
LLNL/Sandia Lab Delta Express 20 ride Punch Pass	\$65.00
LLNL/Sandia Lab Delta Express Monthly Pass	\$110.00
<b>Dial-a-Ride Fares and Passes</b>	
One-way trip starting and ending in Tri Delta Transit's ADA service area	\$2.00
One-way trip starting and/or ending outside Tri Delta Transit's ADA service area (e.g., Central Contra Costa County)	\$4.00
Dial-a-Ride Coupon Book Ten \$2.00 coupons	\$20.00



Table 1.7 Roster of Active Revenue Vehicles—June 2007

Model Year	Number	Make/Model	Seats (WCs)	Useful Life	Replacement Funding Year
<b>Fixed Route</b>					
1995	6	Gillig Phantom 40-foot	44 (2)	12	2007
1997	12	Gillig Phantom 40-foot	44 (2)	12	2009
1998	7	Gillig Phantom 40-foot	44 (2)	12	2010
1999	2	Gillig Low-Floor 30-foot	27 (2)	12	2011
2000	6	MCI Series E 45-foot	56 (2)	16	2016
2001	20	Gillig Phantom 40-foot	44 (2)	12	2013
2001	3	Classic Cable Car Vintage Trolley	29 (2)	10	2013
2001	9	ABI Model TSV 30-foot	23 (2)	10	2011
2002	4	MCI Series D 45-foot	56 (2)	16	2018
<b>69 Subtotal</b>					
<b>Paratransit</b>					
2006	18	Ford Aerotech	16 (5)	5	2012
2002	2	Chevrolet Venture	3 (1)	4	2006
2007	2	Chevrolet Uplander	3 (1)	4	2012
<b>22 Subtotal – ECCTA-operated</b>					
1999	1	Goshen GC2	16 (4)	5	2004
2004	1	Ford	16 (4)	5	2009
<b>2 Subtotal – Antioch Senior Center owned &amp; operated</b>					
<b>93 GRAND TOTAL</b>					

## Facilities

ECCTA opened a consolidated facility to house administrative, maintenance and contract operations functions in 1987. Located at 801 Wilbur Avenue in northeast Antioch, the facility includes a dispatch center, “gilley” (driver) room and locker area, a fully equipped maintenance shop, outdoor service lanes, a fenced vehicle storage area, and administrative offices housing both ECCTA and contractor personnel. This facility was expanded in February 2004 and additional bus parking was occupied across Minaker Drive from the facility in July 2004.

Tri Delta Transit owns more than 30 and maintains a maximum of 75 standard passenger shelters located at the busiest bus stops throughout the service area.

ECCTA currently does not own nor maintain off-street passenger facilities. However, Tri Delta Transit buses utilize a large bus transfer center at the Pittsburg/Bay Point BART station and three park-ride lots. The first park & ride lot is located in Pittsburg on the north side of Bliss Avenue between Railroad Avenue and Harbor Street south of Highway 4. The facility contains approximately 100 parking spaces and an off-street bus stop equipped with standard shelters and benches.

The second BART owned lot is located in Antioch near the site of a proposed eBART station, on the east side of Hillcrest Avenue between Sunset Drive and Highway 4. This facility contains approximately 200 parking spaces in a fenced lot. Bus stops with passenger shelters are located in the eastbound curb lane of Sunset Drive adjacent to the parking lot. The Hillcrest lot is the second most active origin and destination point in the Tri Delta Transit system and needs major enhancements to match the current level of service.

The 80-space Brentwood park and ride lot is located on the east side of Walnut Boulevard opposite Dainty Avenue on the west side of downtown. The facility includes an off-street bus stop equipped with standard passenger shelters and bench seating.

As previously mentioned, the main hub of Tri Delta Transit operations is the large multi-space bus transfer facility at the Pittsburg-Bay Point BART station. Tri Delta provides nearly 200 bus arrivals and departures daily at this location, serving 15 to 20 percent of the total Pittsburg/Bay Point BART station entries and exits.

# Goals, Objectives & Standards

## Background

Realistic goals and practical objectives and service standards are key elements of an SRTP, serving as a foundation for development of service strategies and delivery of transit service. Transit is a means to an end. Transit serves the travel needs of persons without automobiles, helps control congestion, and addresses many other community goals such as equity, improving the environment, economic development, and improved land use. Objectives and policy statements supporting goals should be achievable and supported by realistic service standards providing measurable benchmarks of transit system performance.

According to the 2000 U.S. Census, more than 90% of households in the Tri Delta Transit/ECCTA service area have access to a motor vehicle, and only about five percent of commuters used transit. Attracting choice transit users in a dispersed, suburban and partially rural low-density environment such as East Contra Costa County is a very difficult task. Public transit generally is most successful where trip destinations and travel patterns are concentrated, and transit can offer frequent services and travel times competitive with driving.

Even with the Bay Area's severe congestion problem, it is very difficult both operationally and economically to provide a transit alternative that meets these criteria, particularly in widely dispersed communities such as East Contra Costa County. As a result, Tri Delta Transit's primary existing patronage is comprised of "transit dependent" persons. That is, the system primarily serves those who don't own motor vehicles or live in a household with a vehicle, but lack reliable regular access. These markets include seniors, persons with disabilities, youth, and low-income persons.

ECCTA has made effective use of performance indicators and standards, both in its internal evaluation process and incorporating meaningful measures in its operating contracts. Accordingly, this chapter emphasizes improving adopted performance measures, based on actual operational and financial performance, as well as incorporating the perceptions and expectations of bus riders and the general public. Measuring transit system performance has four elements:

- Goals are broad statements of purpose that are grounded in the basic values and aims of the community as reflected by the ECCTA Board of Directors through an organizational mission statement. Goals are usually achieved over several years. Often goals are not quantifiable, but are needed to validate that the transit program is meeting the need for which it was originally intended.

- Objectives are specific statements that describe the desired results of pursuing stated goals, and are the means by which goal attainment is measured. Objectives should be measurable over time, and subject to periodic adjustment in response to actual results.
- Measures are the quantifiable criteria through which attainment of objectives is determined. Selected performance measures are usually calculated and monitored on a monthly basis.
- Standards are thresholds that measure how an objective is being met. Standards are usually quantitative (e.g., 20 passengers per revenue hour) or sometimes qualitative (e.g., minimizing chargeable accidents).

## Mission Statement and Goals

ECCTA is guided by the mission statement adopted by the ECCTA Board of Directors in previous years. The mission statement is restated in Table 2.1 below.

Table 2.1 ECCTA Mission Statement

No.	Statement
1.	To provide safe, reliable, friendly, high quality and economical transportation service to the Eastern Contra Costa community;
2.	To provide an organizational environment that encourage cooperation, rewards excellence, and develops a team of highly motivated staff;
3.	To empower employees to function as owners of the Eastern Contra Costa Transit Authority organization;
4.	To develop Eastern Contra Costa Transit Authority services and facilities to better serve the transit dependent community and capture a greater share of the commute market;
5.	To secure and manage funds to maintain and expand transit service and to operate Eastern Contra Costa Transit Authority according to fiscally sound business practices;
6.	To take a leadership role in developing a coherent transportation policy to deal with problems of traffic congestion, air quality, and growth management;
7.	And to build constituencies at all levels of government that support the Eastern Contra Costa Transit Authority and its programs.

ECCTA's goals that support the adopted Mission Statement are summarized below:

- I. Provide safe, reliable and high quality public transportation to ECCTA service area residents.
- II. Provide efficient public transportation to the residents of the ECCTA service area.
- III. Provide an accessible public transportation system to the residents of the ECCTA service area.

Adopted objectives, performance indicators and standards are summarized in Table 2.2. These measures serve as the framework of Chapter Three's evaluation of operational and financial performance.

Table 2.2 Summary of ECCTA Objectives, Measures, and Standards

	Objective	Measure	Standard
I.A.	Safe Transit	Miles between preventable accidents	Average 50,000-70,000 miles
		CHP Safety Compliance Report	Satisfactory rating annually
		RVM* between road calls	Average 4,000-7,000 miles
		Preventative Main. Inspections (PMI)	PMIs within 500 miles of scheduled
		Contractor accident & loss reporting	Next day verbal report by 9:00 a.m. Written report within 5 working days
I.B.	Reliable Transit	Fixed route schedule adherence-late	90%+ within 5 minutes of schedule
		Fixed route schedule adherence-early	No trip ahead of published schedule
		Fixed route-missed trips	Less than 1% of scheduled trips
		Dial-A-Ride – pick-up time deviations	90% of pickups within 15 minutes of the time promised to riders
		Dial-A-Ride – early	No pickups more than 30 minutes of the time promised to riders
		Dial-A-Ride – denials	Less than 4% of non-ADA trips. No denials of trips for ADA passengers
1.C.	High-Quality Transit	Clean Buses	Daily-every bus washed and cleaned Weekly-every bus detailed Monthly-every bus “super cleaned”
		Uniformed Operators	100% compliance contract dress code
		Road Supervisors	At least one road supervisor to be on duty at all times.
		Air-Conditioned Buses	100% of revenue vehicles in service with functioning air conditioning when temperature is above 80 degrees.
		Customer Complaints	<0.02% of passengers complain
		Telephone response time Average abandoned call time	Fixed Route – Average 0:54 to 1:12 sec Dial-A-Ride – Average 1:26 to 1:46 sec Abandoned call time of 1:26 to 1:46 sec
		Telephone reliability – lost calls	Less than 20% of all calls
II.	Efficient System	Productivity (passengers per RVH**)	Fixed Route-average 15 pass/RVH At least 10 pass/RVH on any route Dial-A-Ride-average 3 pass/RVH
		Farebox Cost Recovery (Percent)	Fixed Route-minimum 20% system wide Dial-A-Ride-minimum 10% system wide
III.A.	Accessible System-Disabilities	Customer Travel Training Wheelchair Lift Reliability	Minimum 3 passengers per month 100% of lifts functional at all times
III.B.	Accessible system-transit dependents	Bus Benches & Shelters	Install benches at all stops with 25+ boardings per day. Install shelters-top 5% of bus stops.
III.C.	Accessible system-choice riders & commuters	BART Schedule Coordination	Less than 15 min. wait time transfer from BART train to buses. Coordinate schedule on key routes to arrive/depart 5 min. before/after BART.
* Revenue vehicle miles ** Revenue vehicle hours			

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## System & Service Evaluation

This chapter summarizes recent Tri Delta Transit operating and financial trends, presents the results of onboard surveys completed in 2006 and 2007, and evaluates these results in terms of system strengths and weaknesses, opportunities and constraints in reference to Tri Delta Transit’s key objectives and the primary transit markets that the system serves.

### Fixed Route Trends

Table 3.1 summarizes overall Tri Delta Transit fixed route operating trends from FY 1994-95 through FY 2006-07.

Tri Delta Transit ridership has steadily increased during the past decade, growing rapidly after the opening of the Pittsburg/Bay Point BART station at the end of 1996. Within three years (FY 2000-01), Tri Delta Transit patronage more than doubled to almost 2.1 million passengers in part due to the assumption of service for the BART Express program by ECCTA. Patronage growth leveled off as the Bay Area economy slowed and overall employment stagnated after 2001. Tri Delta Transit service levels have ranged from 148,000 to 161,000 annual service hours between FY 2002 and FY 2007. Ridership has leveled off at 2.2 to 2.3 million riders annually through FY 2005, with slight increases to 2.4 million in FY 2006 and to 2.5 million during FY 2007. Modest declines in local route ridership were generally offset by increases in express route patronage. Delta Express commute service to Livermore began during FY 2001, and to Dublin in FY 2002.

Table 3.1 Fixed Route Operating Trends

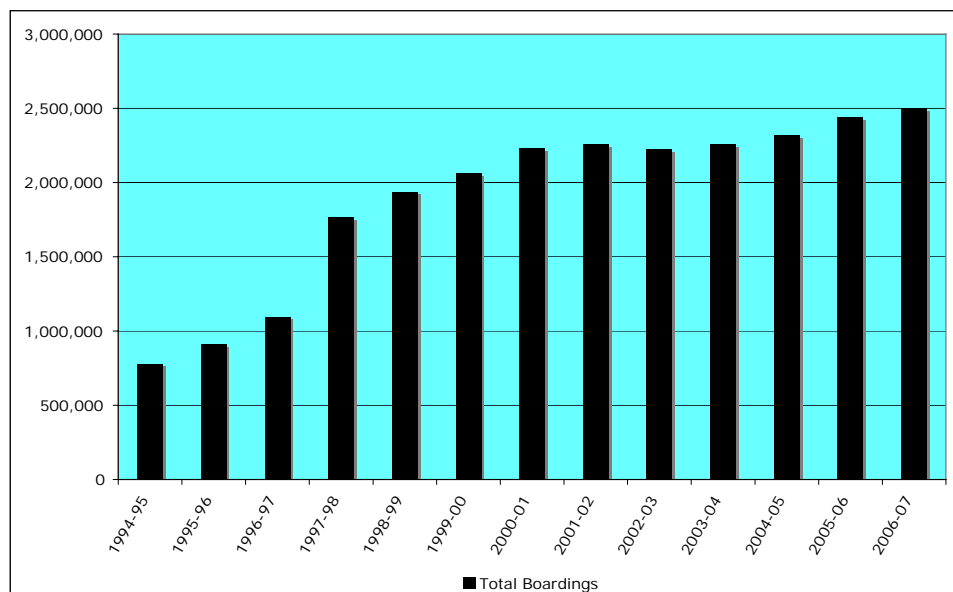


Figure 3.1 Total Boardings, FY 1994-95 to FY 2006-07

Fiscal Year	Total Boardings	Revenue Vehicle Hours (RVH)	Operating Expense	Operating Revenues	Net Subsidy	Boardings Per RVH	Farebox Cost Percent	Operating Expense Per RVH	Rate of Operating Cost Increase	Subsidy Per Pass.	Change Percent
1995	778,437	40,775	\$2,445,944	\$416,060	(\$2,029,884)	19.1	17.0%	\$59.99	--	(\$2.61)	
1996	913,576	58,082	\$2,970,354	\$503,553	(\$2,466,801)	15.7	17.0%	\$51.14	-14.7%	(\$2.70)	3.5%
1997	1,095,163	65,786	\$3,661,652	\$593,605	(\$3,068,047)	16.6	16.2%	\$55.66	8.8%	(\$2.80)	3.8%
1998	1,768,883	108,427	\$5,396,058	\$959,117	(\$4,436,941)	16.3	17.8%	\$49.77	-10.6%	(\$2.51)	-10.5%
1999	1,940,345	113,559	\$5,769,434	\$1,113,283	(\$4,656,151)	17.1	19.3%	\$50.81	2.1%	(\$2.40)	-4.3%
2000	2,063,708	122,970	\$6,409,709	\$1,278,921	(\$5,130,788)	16.8	20.0%	\$52.12	2.6%	(\$2.49)	3.6%
2001	2,231,073	129,000	\$7,449,000	\$1,401,000	(\$6,048,000)	17.3	18.8%	\$57.74	10.8%	(\$2.71)	9.0%
2002	2,258,400	153,649	\$8,985,000	\$1,429,000	(\$7,556,000)	14.7	15.9%	\$58.48	1.3%	(\$3.35)	23.4%
2003	2,224,859	148,333	\$9,790,028	\$1,724,000	(\$8,066,028)	15.0	17.6%	\$66.00	12.9%	(\$3.63)	8.4%
2004	2,258,331	157,371	\$10,272,051	\$1,886,175	(\$8,385,876)	14.4	18.4%	\$65.27	-1.1%	(\$3.71)	2.4%
2005	2,319,606	159,125	\$11,585,902	\$1,884,848	(\$9,701,054)	14.6	16.3%	\$72.81	11.5%	(\$4.18)	12.6%
2006	2,441,212	160,776	\$12,297,424	\$1,930,543	(\$10,366,881)	15.2	15.7%	\$76.49	5.1%	(\$4.25)	1.5%
2007	2,500,930	160,909	\$14,255,957	\$2,250,068	(\$12,005,820)	15.5	15.8%	\$88.60	13.1%	(\$4.68)	10.2%

Total Tri Delta Transit fixed route patronage increased by 11% between FY 2004 and 2007, as summarized in Table 3.2. Patronage on express routes grew 29% during this three-year period, followed closely by 27% growth on weekend routes. In contrast, local Tri Delta Transit patronage grew 6.3% while overall service remained about the same.

Patronage grew most dramatically on express Route 300, increasing from 206,487 boardings in FY 2003-04 to 269,851 during FY 2006-07, in response to peak period headways increasing from every 20 to every 15 minutes at selected times. During the same time, patronage on the Delta Express route to Dublin BART nearly tripled. During this time, total express service levels only increased 2% from 31,209 revenue vehicle hours (RVH) during FY 2003-04 to 31,930 RVH in FY 2006-07. Service provision by Route 300 actually declined slightly, while service on the two Delta Express routes increased a total of 475 RVH or 17%. Due to budget constraints, Tri Delta Transit has an unofficial policy of reducing non-productive service and shifting resources to more promising routes while maintaining the same total service level.

Local patronage increased the most in Southeast Antioch, Brentwood, Discovery Bay and Oakley through the introduction of local circulator Routes 384, 385, and 386. Collectively these routes carried about 82,000 boardings, accounting for the majority of local patronage growth between FY 2003-04 and FY 2006-07. Ridership on local routes was static in other parts of the service area, e.g., Bay Point, Pittsburg and older portions of Antioch.



Table 3.2 Patronage and Service Levels, FY 2003-04 and FY 2006-07

Destinations	FY 2003-04					FY 2006-07				
	Total Boardings	Total RVH	Pass/RVH	Days	Average Daily Riders	Total Boardings	Total RVH	Pass/RVH	Days	Average Daily Riders
<b>Express Routes (all routes operate weekdays only)</b>										
DX Pittsburg-Antioch to Martinez	0	0	0.0	254	0	0	0	0.0	253	0
DX-1 Delta Express Livermore /Sandia Lab	17,616	1,460	12.1	254	69	14,978	1,558	9.6	253	59
DX-2 Delta Express Dublin BART	4,003	1,367	2.9	254	16	11,544	1,744	6.6	253	46
200 Martinez/Antioch	40,714	6,411	6.4	254	160	47,976	6,613	7.3	253	190
300 BART - Brentwood Park & Ride	206,487	21,098	9.8	254	813	269,851	20,765	13.0	253	1,067
Shuttles (49ers, Special Functions)	16,862	873	19.3	8	2,108	19,085	1,250	15.3	8	2,917
<b>Subtotal</b>	<b>285,682</b>	<b>31,209</b>	<b>9.2</b>	<b>254</b>	<b>1,125</b>	<b>363,434</b>	<b>31,930</b>	<b>11.4</b>	<b>253</b>	<b>1,436</b>
<b>Local Routes, Weekday</b>										
70 Pittsburg – Marina to Buchanan Loop	23,283	2,513	9.3	254	92	14,916	1,929	7.7	253	59
201 Pittsburg BART - Concord BART	0	0	0.0	254	0	0	0	0.0	253	0
BDR Brentwood Dimes-A-Ride	67,448	6,597	10.2	254	266	34,843	2,766	12.6	253	138
380 BART – Antioch	594,127	32,404	18.3	254	2,339	622,027	33,456	18.6	253	2,459
383 Antioch (Hillcrest) Park & Ride - Oakley	44,894	4,684	9.6	254	177	53,015	4,083	13.0	253	210
384 Antioch-Brentwood (via Deer Valley)	0	0	0.0	254	0	46,981	7,614	6.2	253	186
385 Antioch-Brentwood (via Hillcrest)	0	0	0.0	254	0	29,225	3,107	9.4	253	116
386 Brentwood - Discovery Bay – Byron	0	0	0.0	254	0	5,721	1,201	4.8	253	23
387 BART – Antioch	221,217	12,010	18.4	254	871	229,406	10,062	22.8	253	907
388 BART - Antioch Park & Ride (Hillcrest)	316,422	23,625	13.4	254	1,246	306,691	20,007	15.3	253	1,212
389 BART – Bay Point	144,010	7,716	18.7	254	567	144,385	6,068	23.8	253	571
390 BART - Antioch P & R (Hillcrest) PEAK	64,796	4,917	13.2	254	255	63,767	4,713	13.5	253	252
391 BART - Brentwood Park & Ride	305,474	19,359	15.8	254	1,203	344,289	19,200	17.9	253	1,361
<b>Subtotal</b>	<b>1,781,671</b>	<b>113,825</b>	<b>15.7</b>	<b>254</b>	<b>7,014</b>	<b>1,895,266</b>	<b>114,206</b>	<b>16.6</b>	<b>253</b>	<b>7,491</b>
<b>Subtotal, M-F Express &amp; Local</b>	<b>2,067,353</b>	<b>145,034</b>	<b>14.3</b>	<b>254</b>	<b>8,139</b>	<b>2,258,700</b>	<b>146,136</b>	<b>16.1</b>	<b>253</b>	<b>8,927</b>
<b>Saturdays</b>										
BDR Brentwood Dimes-A-Ride	1,360	362	3.8	52	26	0	0	0.0	53	0
392 BART - Antioch Park & Ride (Hillcrest)	72,361	4,216	17.2	52	1,392	58,408	3,361	17.4	53	1,102
393 Bay Point - Brentwood Park & Ride	40,839	1,565	26.1	52	785	61,379	3,229	19.0	53	1,158
394 BART - Antioch Park & Ride (Hillcrest)	0	0	0.0	52	0	9,831	598	16.4	53	185
<b>Subtotal</b>	<b>114,560</b>	<b>6,143</b>	<b>18.6</b>	<b>52</b>	<b>2,203</b>	<b>129,618</b>	<b>7,188</b>	<b>18.0</b>	<b>53</b>	<b>2,446</b>
<b>Sundays/Major Holidays</b>										
392 BART - Antioch Park & Ride (Hillcrest)	53,938	4,431	12.2	59	914	53,768	3,368	16.0	59	911
393 Bay Point - Brentwood Park & Ride	22,167	1,666	13.3	59	376	51,342	3,528	14.6	59	870
394 BART - Antioch Park & Ride (Hillcrest)	0	0	0.0	59	0	7,502	689	10.9	59	127
<b>Subtotal</b>	<b>76,105</b>	<b>6,097</b>	<b>12.5</b>	<b>59</b>	<b>1,290</b>	<b>112,612</b>	<b>7,585</b>	<b>14.8</b>	<b>59</b>	<b>1,909</b>
<b>GRAND TOTAL, Fixed Routes</b>	<b>2,258,018</b>	<b>157,274</b>	<b>14.4</b>	<b>365</b>		<b>2,500,930</b>	<b>160,909</b>	<b>15.5</b>	<b>365</b>	

Overall productivity following the opening of the Pittsburg/Bay Point BART station peaked in FY 2000-01 at 17.3 passengers/RVH. Since 2002, Tri Delta Transit productivity has ranged between 14.5 and 15.5 passengers/RVH, with a modest trend towards express routes as a larger proportion of overall patronage. While this gradual shift has reduced overall productivity due to increased mileage and revenue hours incurred by express routes, in the past three years, overall average trip length has been increasing back to the levels of FY's 2000 to 2002 after declining to about 6.0 passenger miles per RVH, as summarized in Table 3.3.

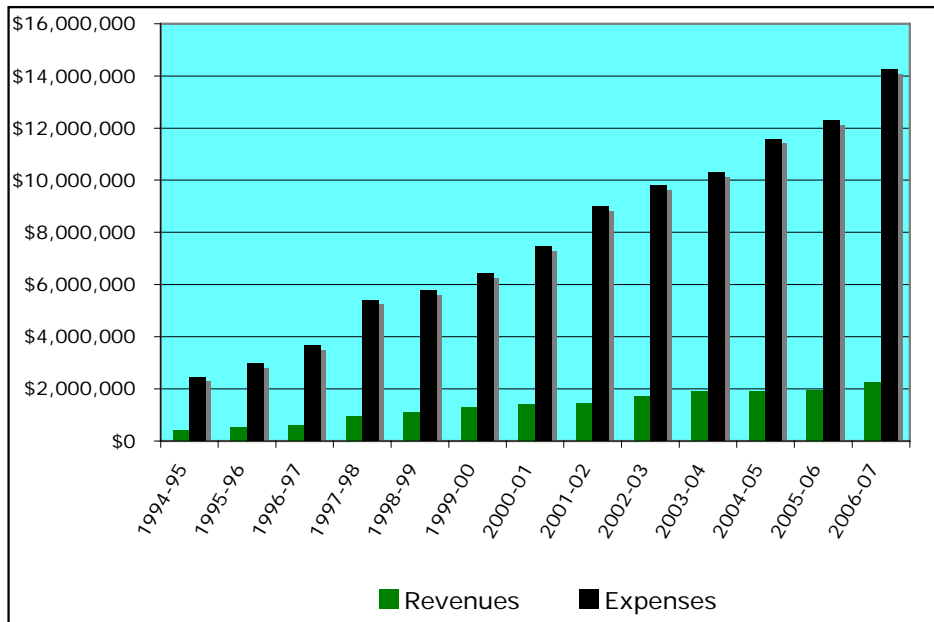
Table 3.3 Fixed Route Average Occupancy, FY 1995-FY 2007

Fiscal Year	Passenger Miles	Revenue Vehicle Miles	Average Load	Total Boardings	Average Trip, mi.
1997	5,131,696	624,387	8.2	1,095,163	4.7
1998	7,344,973	1,464,360	5.0	1,768,883	4.2
1999	11,806,561	1,506,282	7.8	1,940,345	6.1
2000	12,448,217	1,704,245	7.3	2,063,708	6.0
2001	13,550,839	1,765,722	7.7	2,231,073	6.1
2002	13,618,152	2,041,989	6.7	2,258,400	6.0
2003	13,415,900	2,082,169	6.4	2,224,859	6.0
2004	13,617,736	2,252,311	6.0	2,258,331	6.0
2005	15,657,361	2,251,495	7.4	2,319,606	6.8
2006	16,478,181	2,391,900	6.9	2,441,212	6.8
2007	17,006,324	2,460,562	6.9	2,500,930	6.8

Average trip length for the system has been in the range of 6.0 to 6.8 miles per passenger, also summarized in Table 3.2.

Operating revenues and expenses followed trajectories similar to patronage and overall service levels, expanding dramatically in years immediately following Tri Delta Transit's assumption of BART express bus services, and leveling off after the turn of the century. From FY 2001-02 to FY 2006-07, operating expenses increased about 55% in absolute dollars while service levels increased 4.7%, resulting in a unit operating cost increase of 48%. This reflects the many kinds of cost increases generally out of the control of transit operators including fuel and other energy prices, as well as employee benefits (especially health care), increasing materials and supply prices.

Figure 3.2 Operating Expense and Revenue Trends



In FY 2002-03, increases in unit operating expenses reflected fuel price and health care inflation at that time, then moderating the following year. In contrast, fuel, health care, and other material expenses resumed their strong upward trend in FY's 2004-05, 2005-06, and 2006-07.

Operating revenues have consistently grown faster than patronage since the turn of the century. Average fare per passenger was \$0.62 in FY 1999-2000 and \$0.89 during FY 2006-07. This included purchase of transit passes by the County of Contra Costa for Route 200 and other user-side subsidies. Fares were also increased during FY 2006-07, which contributed to revenue growth. Overall fare revenue growth lagged the operating expense rate of increase, with Tri Delta Transit's farebox recovery ratio declining from 20% during FY 1999-2000 to a low of 15.7% in FY 2005-06, and stabilizing at 16.0% during FY 2006-07.

Overall subsidy per passenger was \$2.49 during FY 1999-2000, increasing to \$4.68 in FY 2006-07, up 88% in eight years. During this time as previously mentioned, the cost factors contributing to transit operating expenses increased 48%, while the official inflation rate reflected in the government's Consumer Price Index (CPI) increased by about 16%-17%. If inflation had been calculated by the methods used before 1993, the CPI would have increased close to the rate actually experienced by Tri Delta Transit (see <http://www.shadowstats.com> for one private sector analyst's discussion of this issue).

Figure 3.3 Farebox/Operating Revenue Cost Recovery Trends

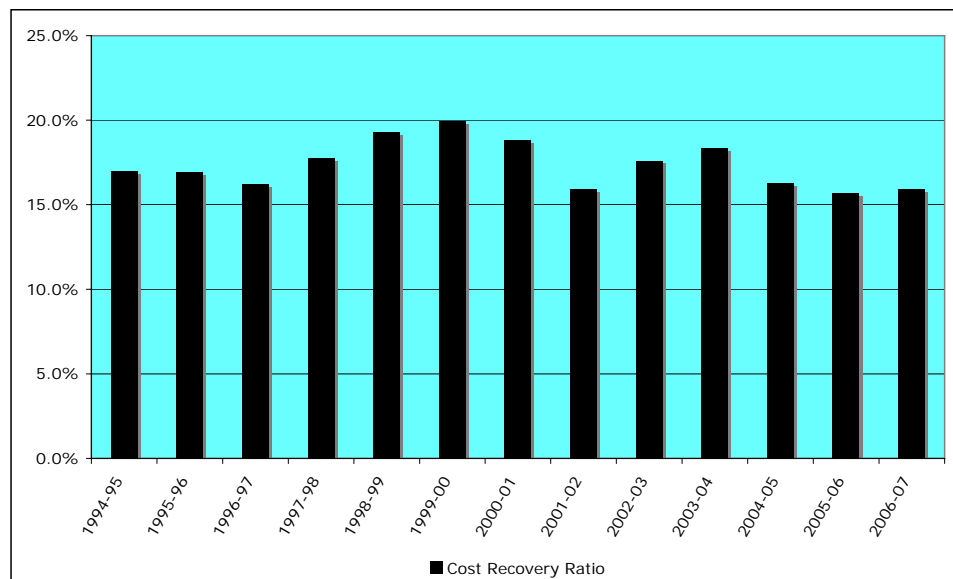
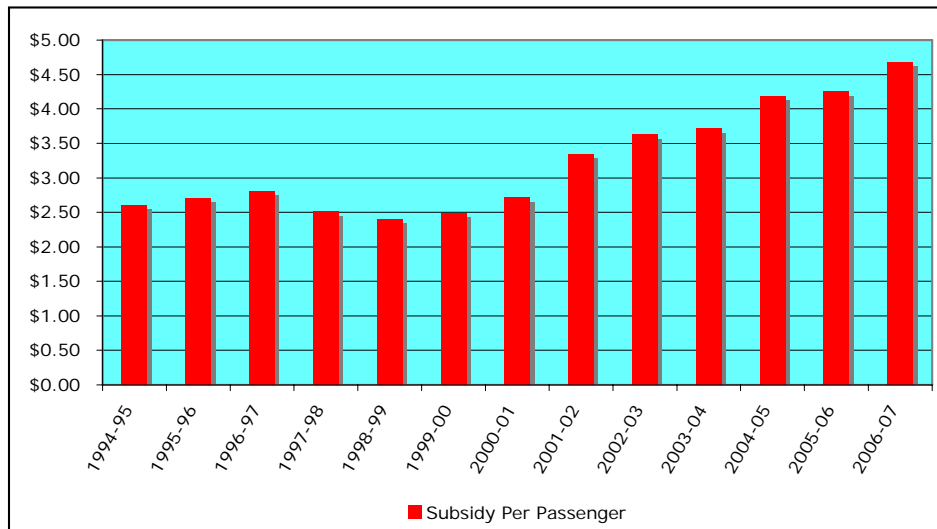


Figure 3.4 Subsidy Per Passenger Trends



Tri Delta Transit introduced an all-day pass fare instrument effective January 2007, replacing the previous system of bus-to-bus transfers while retaining the BART to bus transfer. See Table 3.4 which summarizes total usage of each fare instrument (not revenues). This resulted in a 20.6% reduction in the use of adult cash fares, and a 26.0% decline in senior/disabled cash fare instrument use. From January to June 2007, almost 300,000 riders used the day pass, and dramatic jumps in usage of prepaid punch passes which increased from 118% to 157%. Use of BART to bus transfers increased 56% while bus-to-bus transfer usage declined 30%. Transfers from BART account for 8.5% of total boardings; this implies total bus ridership to and from BART is approximately 20% of daily Tri Delta Transit patronage.

Table 3.4 Passengers by Type Fare Paid, FY 2003-04 vs. FY 2006-07

Payment Type	Fare Type	FY 2003-04		FY 2006-07		Change in Proportion
		Total Passengers	Percent	Total Passengers	Percent	
Cash	Adult	1,190,032	52.7%	1,045,740	41.8%	-20.6%
	Full Fare Day Pass	0	0.0%	141,659	5.7%	n/a
	Senior/Disabled	167,957	7.4%	137,627	5.5%	-26.0%
	S/D Day pass	0	0.0%	27,731	1.1%	n/a
	BART Transfer	123,479	5.5%	213,366	8.5%	56.0%
	Special	271,169	12.0%	23,335	0.9%	-92.2%
<b>Subtotal</b>		<b>1,752,637</b>	<b>77.6%</b>	<b>1,589,458</b>	<b>63.6%</b>	<b>-18.1%</b>
Prepaid	Adult Punch	192,330	8.5%	465,140	18.6%	118.4%
	S/D Punch	26,323	1.2%	75,037	3.0%	157.4%
	<b>Subtotal</b>	<b>218,653</b>	<b>9.7%</b>	<b>540,177</b>	<b>21.6%</b>	<b>123.1%</b>
	Zero Fare	72,012	3.2%	205,148	8.2%	157.2%
	Bus Transfer	215,029	9.5%	166,147	6.6%	-30.2%
	<b>Subtotal</b>	<b>287,041</b>	<b>12.7%</b>	<b>371,295</b>	<b>14.8%</b>	<b>16.8%</b>
<b>TOTAL</b>		<b>2,258,331</b>	<b>100.0%</b>	<b>2,500,930</b>	<b>100.0%</b>	<b>0.0%</b>

## Individual Fixed Route Performance

Performance by individual fixed route for FY 2003-04 is summarized in Table 3.5; FY 2006-07 is summarized in Table 3.6.

Figure 3.5 below compares the average productivity in boardings (passengers) per revenue vehicle hour (RVH for Tri Delta Transit routes for both FY 2003-04 and 2006-07. In FY 2003-04, system productivity averaged 14.4 boardings/RVH and 15.5 boardings/RVH in FY 2006-07. Route 300 was the best performing express route with around 13 boardings/RVH in FY 2006-07; Route 200 to Martinez averaged about 7.3 boardings/RVH, a slight improvement from FY 2003-04. DX-1 and DX-2 averaged 9.6 and 6.6 boardings/RVH, respectively. Special shuttles and 49er shuttles also had relatively good performance. No service was provided on the new Delta Express route to Martinez and Route 201, the latter which began August 26, 2007 during FY 2007-08.

All local routes except Route 70 and Saturday Route 393 improved their performance in FY 2006-07 compared to FY 2003-04. As a result, service on Route 70 was reduced somewhat, and Saturday service on the Brentwood Dimes-A-Ride was discontinued completely due to low productivity.

Since FY 2003-04, Tri Delta Transit began operation of four new routes, 384, 385, and 386 on weekdays, and new route 394 on Saturdays and Sundays. Routes 384 and 385 are community shuttle routes covering Southeast Antioch and Brentwood; Route 386 is a "lifeline" route connecting Discovery Bay and Brentwood. Given the sprawling low density, affluent suburban nature of this area and many vacant parcels of land still to be developed, the relatively low productivity of Routes 384 and 385 (6.2 and 9.4 boardings/RVH, respectively) is to be expected. Patronage on both routes is expected to mature over the next few years as the area continues to develop

Figure 3.5 Route Productivity, FY 2003-04 and FY 2006-07

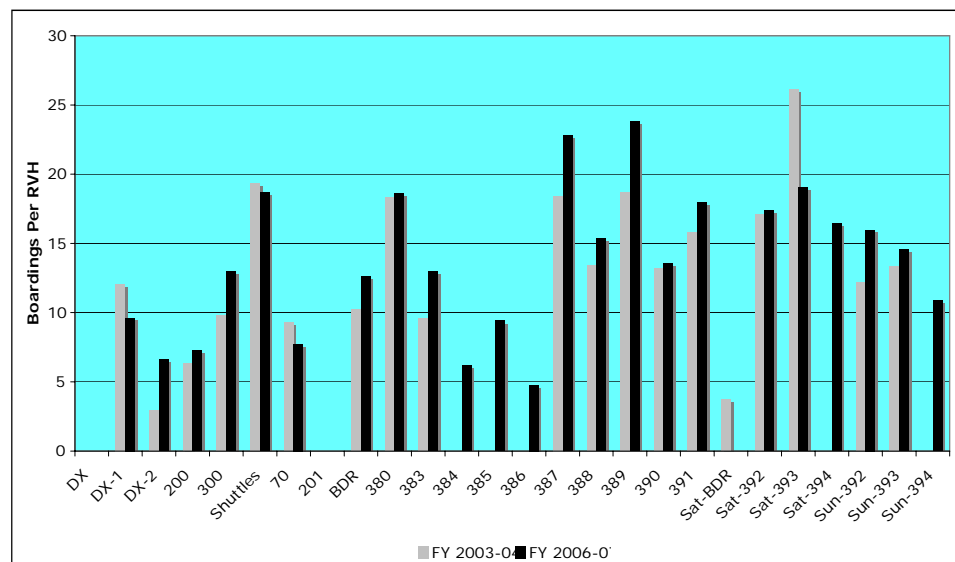




Table 3.5 Route Performance & Productivity, FY 2003-04

Destinations		Total Boardings	Total Revenue Hours	Expense/RVH	Total Route Expense	Expense/Passenger	Average Revenue/Pass.	Allocated Operating Revenues	Subsidy Per Pass.	Farebox Percent
<b>Express Routes (all routes operate weekdays only)</b>										
DX	Pittsburg-Antioch to Martinez	0	0	\$65.27	\$0	\$0.00	\$0.80	\$0.00	\$0.00	0.0%
DX-1	Delta Express Livermore /Sandia Lab	17,616	1,460	\$65.27	\$95,289	\$5.41	\$2.75	\$48,444	(\$2.66)	50.8%
DX-2	Delta Express Dublin BART	4,003	1,367	\$65.27	\$89,219	\$22.29	\$2.75	\$11,008	(\$19.54)	12.3%
200	Martinez/Antioch	40,714	6,411	\$65.27	\$418,423	\$10.28	\$0.80	\$32,646	(\$9.48)	7.8%
300	Pittsburgh BART - Brentwood Park & Ride	206,487	21,098	\$65.27	\$1,376,992	\$6.67	\$0.80	\$165,570	(\$5.87)	12.0%
	Shuttles (49ers Express, Special Functions)	16,862	873	\$65.27	\$56,978	\$3.38	\$0.47	\$7,856	(\$2.91)	13.8%
	<b>Subtotal</b>	<b>285,682</b>	<b>31,209</b>	<b>\$65.27</b>	<b>\$2,036,902</b>	<b>\$7.13</b>	<b>\$0.93</b>	<b>\$265,524</b>	<b>(\$6.20)</b>	<b>13.0%</b>
<b>Local Routes, Weekday</b>										
70	Pittsburg - Marina to Buchanan Loop	23,283	2,513	\$65.27	\$164,015	\$7.04	\$0.80	\$18,669	(\$6.24)	11.4%
201	BART - Concord BART	0	0	\$65.27	\$0	\$0.00	\$0.80	\$0	\$0.00	0.0%
BDR	Brentwood Dimes-A-Ride	67,448	6,597	\$65.27	\$430,563	\$6.38	\$1.00	\$67,448	(\$5.38)	15.7%
380	BART - Antioch	594,127	32,404	\$65.27	\$2,114,895	\$3.56	\$0.80	\$476,395	(\$2.76)	22.5%
381	Discontinued 8/17/03	313	97	\$65.27	\$6,331	\$20.23	\$0.80	\$251	(\$19.42)	4.0%
383	Antioch (Hillcrest) Park & Ride - Oakley	44,894	4,684	\$65.27	\$305,708	\$6.81	\$0.80	\$35,998	(\$6.01)	11.8%
384	Antioch-Brentwood (via Deer Valley)	0	0	\$65.27	\$0	\$0.00	\$0.80	\$0	\$0.00	0.0%
385	Antioch-Brentwood (via Hillcrest)	0	0	\$65.27	\$0	\$0.00	\$0.80	\$0	\$0.00	0.0%
386	Brentwood - Discovery Bay - Byron	0	0	\$65.27	\$0	\$0.00	\$0.80	\$0	\$0.00	0.0%
387	BART - Antioch	221,217	12,010	\$65.27	\$783,850	\$3.54	\$0.80	\$177,381	(\$2.74)	22.6%
388	BART - Antioch Park & Ride (Hillcrest)	316,422	23,625	\$65.27	\$1,541,921	\$4.87	\$0.80	\$253,720	(\$4.07)	16.5%
389	BART - Baypoint	144,010	7,716	\$65.27	\$503,596	\$3.50	\$0.80	\$115,473	(\$2.70)	22.9%
390	BART - Antioch Park & Ride (Hillcrest) PEAK	64,796	4,917	\$65.27	\$320,915	\$4.95	\$0.80	\$51,956	(\$4.15)	16.2%
391	BART - Brentwood Park & Ride	305,474	19,359	\$65.27	\$1,263,494	\$4.14	\$0.80	\$244,941	(\$3.33)	19.4%
	<b>Subtotal</b>	<b>1,781,984</b>	<b>113,922</b>	<b>\$65.27</b>	<b>\$7,435,288</b>	<b>\$4.17</b>	<b>\$0.81</b>	<b>\$1,442,232</b>	<b>(\$3.36)</b>	<b>19.4%</b>
	<b>Subtotal, Weekdays Express &amp; Local</b>	<b>2,067,666</b>	<b>145,131</b>	<b>\$65.27</b>	<b>\$9,472,190</b>	<b>\$4.58</b>	<b>\$0.83</b>	<b>\$1,707,755</b>	<b>(\$3.76)</b>	<b>18.0%</b>
<b>Saturdays</b>										
BDR	Brentwood Dimes-A-Ride	1,360	362	\$65.27	\$23,626	\$17.37	\$0.80	\$1,062	(\$16.57)	0.0%
392	BART - Antioch Park & Ride (Hillcrest)	72,361	4,216	\$65.27	\$275,163	\$3.80	\$0.80	\$58,022	(\$3.00)	21.1%
393	Baypoint - Brentwood Park & Ride	40,839	1,565	\$65.27	\$102,142	\$2.50	\$0.80	\$32,746	(\$1.70)	32.1%
394	BART - Antioch Park & Ride (Hillcrest)	0	0	\$65.27	\$0	\$0.00	\$0.80	\$0	\$0.80	0.0%
	<b>Subtotal</b>	<b>114,560</b>	<b>6,143</b>	<b>\$65.27</b>	<b>\$400,932</b>	<b>\$3.50</b>	<b>\$0.80</b>	<b>\$91,830</b>	<b>(\$2.70)</b>	<b>22.9%</b>
<b>Sundays/Major Holidays</b>										
392	BART - Antioch Park & Ride (Hillcrest)	53,938	4,431	\$65.27	\$289,196	\$5.36	\$0.80	\$44,255	(\$4.56)	15.3%
393	Baypoint - Brentwood Park & Ride	22,167	1,666	\$65.27	\$108,734	\$4.91	\$0.80	\$42,334	(\$4.10)	38.9%
394	BART - Antioch Park & Ride (Hillcrest)	0	0	\$65.27	\$0	\$0.00	\$0.80	\$0	\$0.00	0.0%
	<b>Subtotal</b>	<b>76,105</b>	<b>6,097</b>	<b>\$65.27</b>	<b>\$397,930</b>	<b>\$5.23</b>	<b>\$0.80</b>	<b>\$86,589</b>	<b>(\$4.43)</b>	<b>21.8%</b>
	<b>GRAND TOTAL, Fixed Routes</b>	<b>2,258,331</b>	<b>157,371</b>	<b>\$65.27</b>	<b>\$10,271,051</b>	<b>\$4.55</b>	<b>\$0.84</b>	<b>\$1,886,175</b>	<b>(\$3.71)</b>	<b>18.4%</b>

**Table 3.6 Route Performance & Productivity, FY 2006-07**

Destinations		Total Boardings	Total Revenue Hours	Expense/RVH	Total Route Expense	Expense/Passenger	Average Revenue/Pass.	Allocated Operating Revenues	Subsidy Per Pass.	Farebox Percent
<b>Express Routes (all routes operate weekdays only)</b>										
DX	Pittsburg-Antioch to Martinez	0	0	\$88.59	\$0	\$0.00	\$0.88	\$0.00	\$0.00	0.0%
DX-1	Delta Express Livermore /Sandia Lab	14,978	1,558	\$88.59	\$138,042	\$9.22	\$3.25	\$48,679	(\$5.97)	35.3%
DX-2	Delta Express Dublin BART	11,544	1,744	\$88.59	\$154,491	\$13.38	\$3.25	\$37,518	(\$10.13)	24.3%
200	Martinez/Antioch	47,976	6,613	\$88.59	\$585,825	\$12.21	\$0.88	\$41,984	(\$11.34)	7.2%
300	Pittsburgh BART - Brentwood Park & Ride	269,851	20,763	\$88.59	\$1,839,379	\$6.82	\$0.88	\$236,147	(\$5.94)	12.8%
	Shuttles (49ers Express, Special Functions)	19,085	1,250	\$88.59	\$110,736	\$5.80	\$0.88	\$16,592	(\$4.93)	15.0%
<b>Subtotal</b>		<b>363,434</b>	<b>31,928</b>	<b>\$88.59</b>	<b>\$2,828,472</b>	<b>\$7.78</b>	<b>\$1.05</b>	<b>\$380,919</b>	<b>(\$6.73)</b>	<b>13.5%</b>
<b>Local Routes, Weekday</b>										
70	Pittsburg - Marina to Buchanan Loop	14,916	1,929	\$88.59	\$170,898	\$11.46	\$0.88	\$13,053	(\$10.58)	7.6%
201	BART - Concord BART	0	0	\$88.59	\$0	\$0.00	\$0.88	\$0	\$0.00	0.0%
BDR	Brentwood Dimes-A-Ride	34,843	2,776	\$88.59	\$245,964	\$7.06	\$1.00	\$34,843	(\$6.06)	14.2%
380	BART - Antioch	622,027	33,455	\$88.59	\$2,963,759	\$4.76	\$0.88	\$544,336	(\$3.89)	18.4%
381	Discontinued 8/17/03	0	0	\$88.59	\$0	\$0.00	\$0.88	\$0	\$0.88	0.0%
383	Antioch (Hillcrest) Park & Ride - Oakley	53,015	4,082	\$88.59	\$361,639	\$6.82	\$0.88	\$46,393	(\$5.95)	12.8%
384	Antioch-Brentwood (via Deer Valley)	46,981	7,612	\$88.59	\$674,337	\$14.35	\$0.88	\$41,113	(\$13.48)	6.1%
385	Antioch-Brentwood (via Hillcrest)	29,225	3,107	\$88.59	\$275,261	\$9.42	\$0.88	\$25,575	(\$8.54)	9.3%
386	Brentwood - Discovery Bay - Byron	5,721	1,201	\$88.59	\$106,422	\$18.60	\$0.88	\$5,006	(\$17.73)	4.7%
387	BART - Antioch	229,406	10,067	\$88.59	\$891,822	\$3.89	\$0.88	\$200,753	(\$3.01)	22.5%
388	BART - Antioch Park & Ride (Hillcrest)	306,691	20,009	\$88.59	\$1,772,557	\$5.78	\$0.88	\$268,385	(\$4.90)	15.1%
389	BART - Baypoint	144,385	6,068	\$88.59	\$537,540	\$3.72	\$0.88	\$126,351	(\$2.85)	23.5%
390	BART - Antioch Park & Ride (Hillcrest) PEAK	63,767	4,713	\$88.59	\$417,504	\$6.55	\$0.88	\$55,803	(\$5.67)	13.4%
391	BART - Brentwood Park & Ride	344,289	19,201	\$88.59	\$1,701,016	\$4.94	\$0.88	\$301,287	(\$4.07)	17.7%
<b>Subtotal</b>		<b>1,895,266</b>	<b>114,221</b>	<b>\$88.59</b>	<b>\$10,118,721</b>	<b>\$5.34</b>	<b>\$0.88</b>	<b>\$1,662,899</b>	<b>(\$4.46)</b>	<b>16.4%</b>
<b>Subtotal, Weekdays Express &amp; Local</b>		<b>2,258,700</b>	<b>146,149</b>	<b>\$88.59</b>	<b>\$12,947,194</b>	<b>\$5.73</b>	<b>\$0.90</b>	<b>\$2,043,818</b>	<b>(\$4.83)</b>	<b>15.8%</b>
<b>Saturdays</b>										
BDR	Brentwood Dimes-A-Ride	0	0	\$88.59	\$0	\$0.00	\$0.88	\$0	\$0.88	0.0%
392	BART - Antioch Park & Ride (Hillcrest)	58,408	3,361	\$88.59	\$297,761	\$5.10	\$0.88	\$51,113	(\$4.22)	17.2%
393	Baypoint - Brentwood Park & Ride	61,379	3,229	\$88.59	\$286,040	\$4.66	\$0.88	\$53,713	(\$3.79)	18.8%
394	BART - Antioch Park & Ride (Hillcrest)	9,831	598	\$88.59	\$53,013	\$0.00	\$0.88	\$8,603	\$0.88	16.2%
<b>Subtotal</b>		<b>129,618</b>	<b>7,188</b>	<b>\$88.59</b>	<b>\$636,814</b>	<b>\$4.91</b>	<b>\$0.88</b>	<b>\$113,429</b>	<b>(\$4.04)</b>	<b>17.8%</b>
<b>Sundays/Major Holidays</b>										
392	BART - Antioch Park & Ride (Hillcrest)	53,768	3,368	\$88.59	\$298,384	\$5.55	\$0.88	\$44,255	(\$4.67)	14.8%
393	Baypoint - Brentwood Park & Ride	51,342	3,528	\$88.59	\$312,531	\$6.09	\$0.88	\$42,264	(\$5.21)	13.5%
394	BART - Antioch Park & Ride (Hillcrest)	7,502	689	\$88.59	\$61,035	\$8.14	\$0.88	\$6,302	(\$7.26)	10.3%
<b>Subtotal</b>		<b>112,612</b>	<b>7,585</b>	<b>\$88.59</b>	<b>\$671,950</b>	<b>\$5.97</b>	<b>\$0.88</b>	<b>\$92,821</b>	<b>(\$5.09)</b>	<b>13.8%</b>
<b>GRAND TOTAL, Fixed Routes</b>		<b>2,500,930</b>	<b>160,923</b>	<b>\$88.59</b>	<b>\$14,255,957</b>	<b>\$5.70</b>	<b>\$0.90</b>	<b>\$2,250,068</b>	<b>(\$4.80)</b>	<b>15.8%</b>



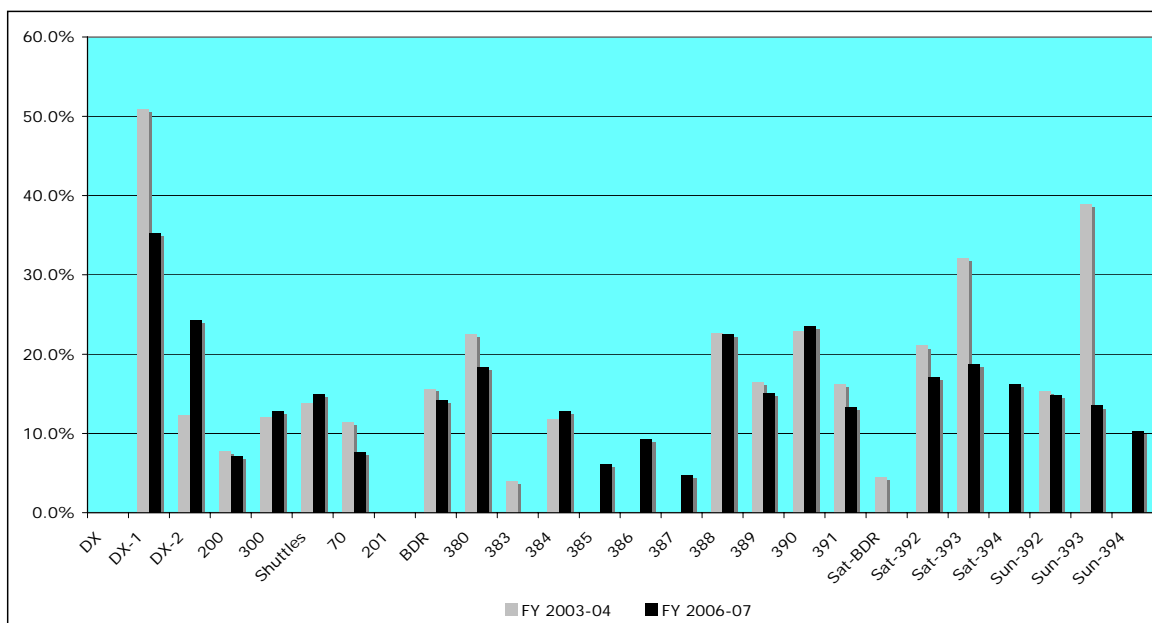
and the many vacant parcels continue to be developed. The expected opening of the Highway 4 bypass directly serving this area will also allow introduction of direct express bus service, a factor that may increase connecting patronage on these local routes if a reliable local transfer point can be established.

In contrast, Route 386 is a lifeline connector route between Discovery Bay, an affluent exurban development, and Brentwood, a rapidly growing suburban city. Route productivity is low compared to the Tri Delta Transit system average, but is comparable to many rural transit systems and is significantly higher than the dial-a-ride system. Productivity is likely to increase as more planned development occurs in the Discovery Bay area.

Figure 3.6 summarizes the average cost recovery ratio from operating revenues (fares and other related revenues) for each Tri Delta Transit route in 2003-04 and FY 2006-07. The system average was 18.4% during FY 2003-04 and 15.8% in FY 2006-07. The 49'er football game specials covered more than all their expenses, while all other shuttles were free. Neither productivity nor fares/other operating revenues recovery ratio is necessarily useful as a performance indicator by itself. In contrast to their productivity performance, in FY 2006-07, Routes DX-1 and DX-2 had the highest fare box cost recovery ratios of any regular Tri Delta Transit routes, at 36.1% and 24.9%, respectively.

Route 300 was the most productive express route, but had a fare box cost recovery ratio (12.1%) below the system average. Route 300 passengers pay the estimated average fare, but travel much farther than the overall Tri Delta Transit average trip length. Route 200 had both low productivity, as measured by boardings/RVH (7.3) and fare box cost recovery ratio (6.9%).

Figure 3.6 Operating Revenue Cost Recovery Ratios FY 2006-07



The best performing local routes during in terms of operating revenues to cost ratio were: Route 389 (23.5%), Route 387 (22.5%), Route 380 (18.4%), Route 391 (17.7%), and the Brentwood Dimes-A-Ride (14.6% including City of Brentwood fare subsidies of \$0.80 per ride) and Route 388 (14.2%). Except for the Dimes-A-Ride route, these overall best performers are located in the older, more densely developed portions of the Tri Delta Transit service area, e.g., Bay Point, Pittsburg and Antioch generally north of the Highway 4 freeway. These areas also have the highest density of transit dependence as shown by data from the *Contra Costa County Low Income Transportation Plan*.

The next best performers were Route 390 (13.4%) and Route 383 (12.8%). All other routes (70, 384, 385, 386) had operating revenue cost recovery ratios of less than 10%, matching their relatively low productivity in terms of boardings/RVH. As previously noted, Route 70 provides a community shuttle within Pittsburg. Routes 384 to 386 serve the newest, most affluent and least densely developed portion of the service area. Productivity and fare box cost recovery on these latter routes should increase over time as vacant areas are developed and more people are served.

### Other Fixed Route Statistics & Performance Indicators

Table 3.7 summarizes other operating statistics and performance indicators for fixed route service.

Most of these standards were met. In one case, Average Miles Between Road calls, Tri Delta Transit greatly exceeded the standard adopted in the previous Short Range Transit Plan.

**Table 3.7 Fixed Route Operating Statistics & Performance Indicators**

Statistic/ or Measure	Value	Meet Standard?	Comment
Number of Late Buses	2,028	--	Used to calculate performance measure
Number of Lift Passengers	25,334	--	Less expensive to carry on FR buses than DAR
Number of Bicycles Carried	16,685	--	Bicycles carried on fixed route buses only.
Preventable Accidents	41	--	Used to calculate performance measure
Customer Complaint Calls Received	458	--	Used to calculate performance measure
Number of Mechanical Failures	71	--	Used to calculate performance measure
Number of Road Calls	46	--	Used to calculate performance measure
FTA Road Calls – Other	31	--	Used to calculate performance measure
Total Road Calls	148	--	Used to calculate performance measure
On-Time Performance – Fixed Route	90.07%	Yes	Standard is 90%
Miles Between Preventable Accidents	68,239	Yes	Nearly meets high end of standard (70,000 miles)
Percentage of Riders Complaining	0.018%	Yes	Measure changed from 2005 SRTP
Average Miles Between Road calls (based on RVM)	16,625	Yes	Previous SRTP standard exceeded by a wide margin; recommend increasing the standard.

## Dial-A-Ride (DAR)/Paratransit Trends

Table 3.8 summarizes overall Tri Delta Transit dial-a-ride (DAR)/paratransit operating trends from FY 1994-95 through FY 2005-07, including key operating statistics, e.g., total boardings (Figure 3.7), revenue vehicle hours (RVH), operating expenses and revenues (Figure 3.8), and net subsidies. Key performance measures are also summarized, including boardings/RVH, operating expense per RVH, cost inflation from year to year, farebox cost recovery ratio (Figure 3.9) subsidy per passenger (Figure 3.10), and year-to-year change in subsidy per passenger.

Between FY 1995 and FY 2007, total Tri Delta Transit paratransit boardings increased 75%, while total service provided (RVH) increased 210%, and operating expenses increased 250% in unadjusted dollars. In contrast, fare revenues increased 401%, resulting in only modest net growth in subsidy per passenger from \$19.10 in FY 1994-95 to \$22.86 during FY 2006-07. Fare box cost recovery grew from 6.2% during FY 1994-05 to 10.2% in FY 2006-07. This includes no allowance for non-fare, operating revenues from contractual services provided.

The Transportation Development Act (TDA) requires that a minimum of 10% of paratransit operating expenses be recovered from fares, or a combination of fares and "local support." Although Tri Delta Transit met this minimum in FY07, the difference between actual fares collected and the 10% requirement are waived due to an existing half-cent sales tax for transportation levied in Contra Costa County.

Table 3.8 DAR Operating Trends, FY 1995-2007

Fiscal Year	Total Boardings	Revenue Vehicle Hours (RVH)	Operating Expense	Operating Revenues	Net Subsidy	Boardings Per RVH	Farebox Cost Ratio	Operating Expense Per RVH	Rate of Operating Cost Increase	Subsidy Per Passenger	Change Percent
1995	60,996	19,583	\$1,212,944	\$48,149	(\$1,164,795)	3.1	4.0%	\$61.94	--	(\$19.10)	--
1996	83,994	25,550	\$1,301,412	\$59,958	(\$1,241,454)	3.3	4.6%	\$50.94	-17.8%	(\$14.78)	22.6%
1997	92,685	28,677	\$1,300,437	\$63,341	(\$1,237,096)	3.2	4.9%	\$45.35	-11.0%	(\$13.35)	-9.7%
1998	110,105	27,676	\$1,300,922	\$72,375	(\$1,228,547)	4.0	5.6%	\$47.01	3.7%	(\$11.16)	-16.4%
1999	93,928	31,565	\$1,314,000	\$64,000	(\$1,250,000)	3.0	4.9%	\$41.63	-11.4%	(\$13.31)	19.3%
2000	98,442	35,776	\$1,382,000	\$62,000	(\$1,320,000)	2.8	4.5%	\$38.63	-7.2%	(\$13.41)	0.8%
2001	105,000	36,946	\$1,642,000	\$83,000	(\$1,559,000)	2.8	5.1%	\$44.44	15.1%	(\$14.85)	10.7%
2002	84,294	30,433	\$1,443,000	\$74,000	(\$1,369,000)	2.8	5.1%	\$47.42	6.7%	(\$16.24)	9.4%
2003	80,185	33,109	\$2,076,938	\$123,289	(\$1,953,649)	2.4	5.9%	\$62.73	32.3%	(\$24.36)	50.0%
2004	99,909	36,829	\$2,070,230	\$128,576	(\$1,941,654)	2.7	6.2%	\$56.21	-10.4%	(\$19.43)	20.2%
2005	104,090	41,457	\$2,403,331	\$183,775	(\$2,219,556)	2.5	7.6%	\$57.97	3.1%	(\$21.32)	9.7%
2006	102,678	43,928	\$2,518,750	\$215,701	(\$2,303,049)	2.3	8.6%	\$57.34	-1.1%	(\$22.43)	6.3%
2007	106,850	41,749	\$2,720,946	\$278,102	(\$2,442,844)	2.6	10.2%	\$65.17	13.7%	(\$22.86)	0.8%

Figure 3.7 DAR Total Boardings, FY 1994-95 to FY 2006-07

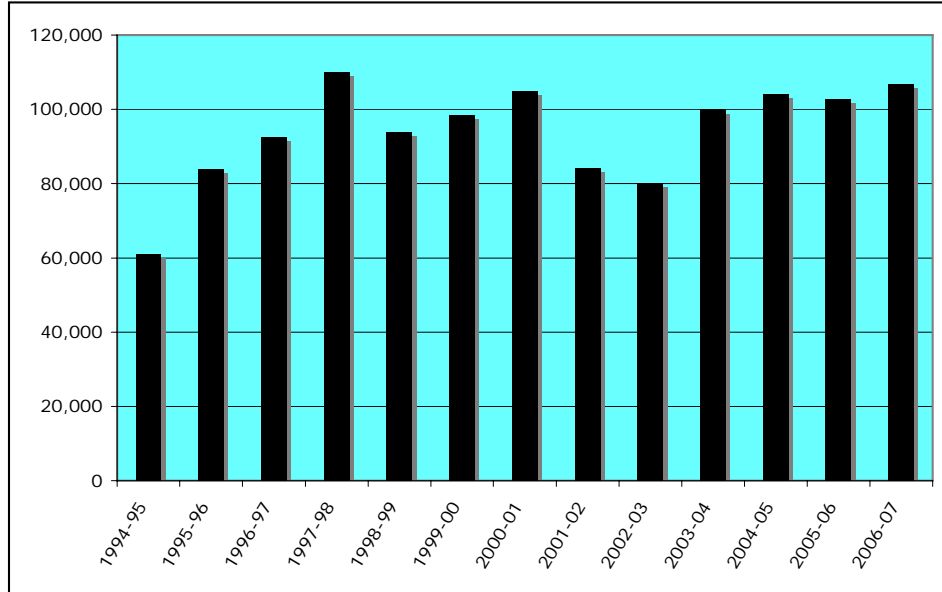
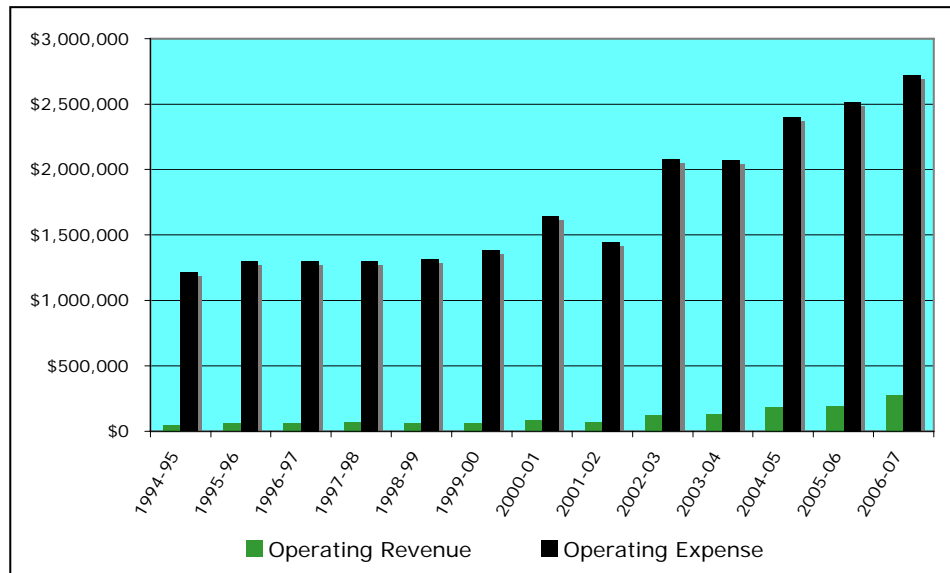


Figure 3.8 DAR Operating Expense and Revenue Trends



Between FY 2002 and FY 2007, total dial-a-ride/paratransit boardings increased 26.7%, total RVH by 37%, and operating expenses by 212%. Operating expenses/RVH increased 54%. This reflects many of the same cost increases as encountered for fixed route service that are generally out of the control of transit operators. As with fixed route service, FY03 cost increases in unit operating expenses reflected fuel price and health care benefits costs then moderated the following year. In contrast, fuel, health care, and other material expenses resumed their strong upward trend in FY's 2004-05, 2005-06, and 2006-07.

Figure 3.9 DAR Farebox Cost Recovery Trends

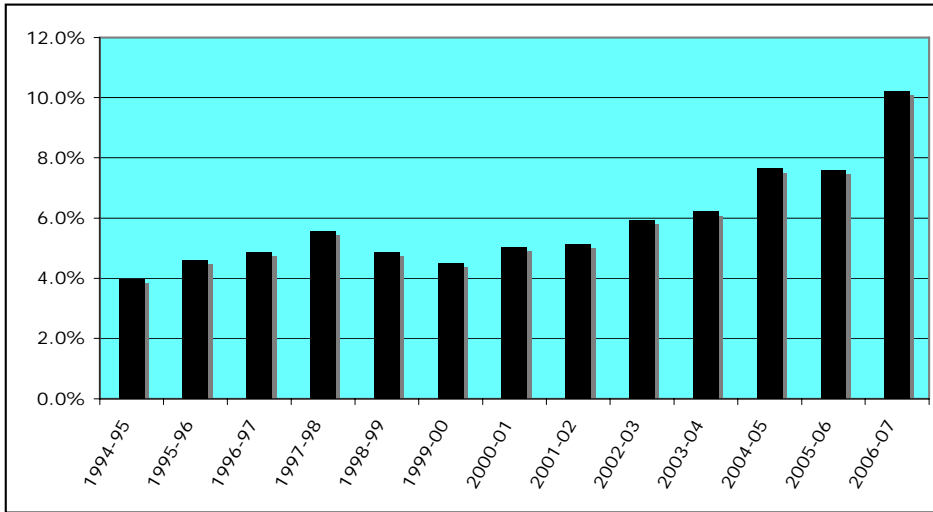
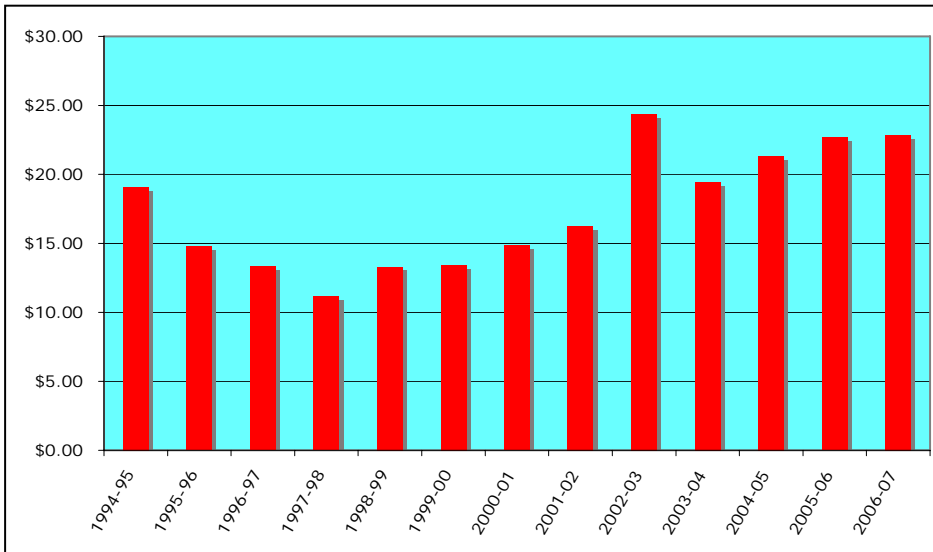


Figure 3.10 DAR Subsidy Per Passenger Trends



Operating revenues have consistently grown much faster than patronage since the mid-1990's. Average fare per passenger was \$0.79 in FY 1994-95 and \$2.60 during FY 2006-07. DAR fares were increased during FY 2004-05 in line with the fixed route/paratransit fare differentials allowed under the Americans With Disabilities Act, contributing to revenue growth.

Dial-A-Ride subsidy per passenger was \$19.10 during FY 1994-95, increasing to \$22.86 in FY 2006-07, up by 20% in 13 years, well below inflation. Fare box cost recovery grew from 4.0% to 10.2% over the same time frame. This trend reflects below-inflation increases in operating subsidy per passenger, and regular fare increases.

## Dial-A-Ride/Paratransit Trends by Type of Service

Performance by individual dial-a-ride service for FY 2003-04 is summarized in Table 3.9, and for FY 2006-07 in Table 3.10. During FY 2006-07 the most productive dial-a-ride/paratransit service was the Antioch Senior Bus with 6.3 boardings/RVH. The Antioch Senior Bus has relatively high productivity because it picks up regular passengers almost on a fixed schedule. Antioch Senior Bus is more a “subscription” service than a pure demand responsive transit system.

The second most productive service during FY 2006-07 was “Regular Dial-A-Ride”, serving the broadest category of ridership with productivity averaging 2.4 boardings/RVH. This service carried both ADA and non-ADA passengers on both weekdays and Saturdays. Trip length averaged 6.0 miles per trip. “Express” Dial-A-Ride averaged 1.7 boardings/RVH. This service has a reimbursable cost portion under contract with BART and operates on Sundays, serving ADA passengers only.

Tri Delta Transit’s Medical Van service had the lowest productivity of 1.2 boardings (passengers)/RVH. This is due to the single passenger, governmental requirements for this service and is offset by the much higher per passenger reimbursement rate that this service engenders compared to the other paratransit services.

Table 3.9 DAR Patronage/Service Level by Service, FY 2003-04

	Total Boardings	Total Revenue Hours	Pass/RVH	Weekday Boardings	Days of Service	Average Daily Riders
Regular DAR	74,104	29,737	2.5	71,372	253	282
Express DAR	3,141	1,962	1.6	84	253	0
Medical Vans	1,243	1,163	1.1	1,013	253	4
Antioch Senior Bus	21,421	3,967	5.4	21,421	253	85
<b>TOTAL, Demand Responsive</b>	<b>99,909</b>	<b>40,414</b>	<b>2.5</b>	<b>93,890</b>	<b>253</b>	<b>371</b>
	Saturday Boardings	Days of Service	Average Daily Riders	Sunday Boardings	Days of Service	Average Daily Riders
Regular DAR	2,732	53	52	0	0	0
Express DAR	1,080	53	20	1,977	59	34
Medical Vans	222	53	4	8	59	0
Antioch Senior Bus	0	0	0	0	0	0
<b>TOTAL, Demand Responsive</b>	<b>4,034</b>	<b>53</b>	<b>75</b>	<b>1,985</b>	<b>59</b>	<b>34</b>

Table 3.10 DAR Patronage/Service Level by Service, FY 2006-07

	Total Boardings	Total Revenue Hours	Pass/RVH	Weekday Boardings	Days of Service	Average Daily Riders
Regular DAR	72,751	30,157	2.4	69,902	253	276
Express DAR	4,562	2,705	1.7	3	253	0
Medical Vans	6,280	5,201	1.2	5,149	253	20
Antioch Senior Bus	23,257	3,685	6.3	23,257	253	92
<b>TOTAL, Demand Responsive</b>	<b>106,850</b>	<b>41,749</b>	<b>2.6</b>	<b>98,311</b>	<b>253</b>	<b>389</b>
	Saturday Boardings	Days of Service	Average Daily Riders	Sunday Boardings	Days of Service	Average Daily Riders
Regular DAR	2,849	53	54	0	0	0
Express DAR	1,723	53	33	2,836	59	48
Medical Vans	1,060	53	20	71	59	1
Antioch Senior Bus	0	0	0	0	0	0
<b>TOTAL, Demand Responsive</b>	<b>5,632</b>	<b>53</b>	<b>106</b>	<b>2,907</b>	<b>59</b>	<b>49</b>

Table 3.11 DAR Expense, Revenue & Farebox Recovery FY 2003-04

	Total Boardings	Total Revenue Hours	Expense/RVH	Total Route Expense	Expense/Passenger	Average Revenue/Pass.	Allocated Operating Revenues	ECCTA Subsidy Per Pass.	Farebox Percent
Regular DAR	74,104	29,737	\$56.21	\$1,671,517	\$22.56	\$1.26	\$93,357	(\$21.30)	5.6%
Express DAR	3,141	1,962	\$56.21	\$110,284	\$35.11	\$1.26	\$3,957	(\$33.85)	3.6%
Medical Vans	1,243	1,163	\$56.21	\$65,372	\$52.59	\$17.35	\$31,261	(\$35.24)	47.8%
Antioch Senior Bus	21,421	3,967	\$49.52	\$196,461	\$9.17	\$0.00	\$0	(\$9.17)	0.0%
<b>TOTAL, DAR</b>	<b>99,909</b>	<b>32,829</b>	<b>\$56.21</b>	<b>\$2,070,230</b>	<b>\$20.72</b>	<b>\$1.29</b>	<b>\$128,576</b>	<b>(\$19.43)</b>	<b>6.2%</b>

Table 3.12 DAR Expense, Revenue & Farebox Recovery FY 2006-07

	Total Boardings	Total Revenue Hours	Expense/RVH	Total Route Expense	Expense/Passenger	Average Revenue/Pass.	Allocated Operating Revenues	ECCTA Subsidy Per Pass.	Farebox Percent
Regular DAR	72,751	30,157	\$65.17	\$1,965,450	\$27.02	\$1.55	\$113,070	(\$25.46)	5.8%
Express DAR	4,562	2,706	\$65.17	\$176,361	\$38.66	\$1.55	\$7,090	(\$37.10)	4.0%
Medical Vans	6,280	5,201	\$65.17	\$338,949	\$53.97	\$17.35	\$157,942	(\$36.62)	46.6%
Antioch Senior Bus	23,257	3,685	\$70.42	\$259,500	\$11.16	\$0.00	\$0	(\$11.16)	0.0%
<b>TOTAL, DAR</b>	<b>106,850</b>	<b>41,749</b>	<b>\$65.17</b>	<b>\$2,720,946</b>	<b>\$25.47</b>	<b>\$2.60</b>	<b>\$278,102</b>	<b>(\$22.86)</b>	<b>10.2%</b>

Operating expenses, operating revenues and the farebox cost recovery ratio for DAR during FY 2003-04 and FY 2006-07 are summarized in Tables 3.12 and 3.13, respectively. During FY 2006-07 Antioch Senior Bus had the best overall financial performance, reflecting its relatively high productivity. It should be noted that the cost for this service as shown reflects only the Tri Delta Transit subsidy portion of the cost and not the entire cost of operating the service which is provided by the



City of Antioch. The farebox cost recovery ratio is 0% because donations are requested and retained by the operator and not remitted to ECCTA.

DR service met most of its objectives, but missed meeting the 90% standard for on-time performance. See Table 3.13. DAR on-time performance was 75% in FY 2003 and 78% in FY 2004, less than the adopted Tri Delta Transit measure of 90%. That performance increased to 87% for FY07 due in part to the implementation of an MDT/IVR (Mobile Data Terminal/Integrated Voice Response) system and updated, scheduling software as part of a major, Intelligent Transportation System (ITS) project undertaken several years ago.

**Table 3.13 DAR Operating Statistics & Performance Indicators**

Statistic/ or Measure	Value	Meet Standard?	Comment
Number of Late Buses	84	--	Used to calculate performance measure
Number of Lift Passengers	27,386	--	Less expensive to carry on FR buses than DAR
Preventable Accidents	4	--	Used to calculate performance measure
Customer Complaint Calls Received	137	--	Used to calculate performance measure
Number of Mechanical Failures	4	--	Used to calculate performance measure
Number of Road Calls	8	--	Used to calculate performance measure
FTA Road Calls - Other	1	--	Used to calculate performance measure
Total Road Calls	9	--	Used to calculate performance measure
On-Time Performance – Fixed Route	87.2%	No	Standard us 90% and was nearly met
Miles Between Preventable Accidents	144,282	Yes	Nearly meets high end of standard (70,000 miles)
Percentage of Riders Complaining	0.164%	Yes	Measure changed from 2005 SRTP
Average Miles Between Road calls (based on RVM)	64,125	Yes	Previous SRTP standard exceeded by a wide margin; recommend increasing the standard.

### Characteristics of Dial-A-Ride Trips & Service

A detailed analysis of the characteristics of Dial-A-Ride trips can be summarized as follows:

- Of total DAR reservations requested, 84% were completed, and 16% cancelled. Riders cancelled 12% of the time, and 3% were “no shows.” At the time of the previous SRTP, the cancellation rate was relatively high for a system restricting advance bookings to three days in advance.
- Less than 1% of trip requests were denied, including requests for alternative trip times, same day trip denials, and denials of non-ADA service requests. No advance bookings by ADA-eligible registrants were denied, though same-day requests can be denied under ADA regulations if space is not available.
- Almost 13% of DAR passengers were classified as “personal care attendants,” (PCAs) a relatively high rate. 2% of the passengers were fare-paying companions traveling with a registered passenger; the high rate of PCAs may indicate that some are actually companions avoiding paying the fare.

- 34% of DAR trips were subscription trips, i.e., pre-scheduled trips that tend to repeat at the same times on the same days. All other trips were “on demand,” including advance and same-day bookings. About 30 same-day bookings were requested, of which about 70% were accommodated.
- 30% of DAR passengers use a wheelchair or scooter. Most DAR passengers do not require a wheelchair-accessible vehicle, although many are mobility limited and cannot walk far.
- As summarized in Table 3.8, daily DAR ridership averaged 389 boardings on weekdays, 106 on Saturdays and 49 on Sundays.
- Peak travel times are between 8:30 a.m. and 10:00 a.m. and from 2:30 p.m. to 4:00 p.m. Individual drivers indicated peak times between 7:00 a.m. and Noon, and from 3:00 p.m. to 5:00 p.m. DAR peaks start later and end earlier than traditional transit peak periods.
- Most DAR trips were within the same communities, with trip origins and destinations scattered throughout each community and the service area. No destinations dominated, but important locations served included Los Medanos Community College, Kaiser Medical Clinic (Antioch), the Antioch Dialysis Clinic, Pittsburg Health Center, Somersville Towne Center, Contra Costa County Social Services, Commercial Support, and BART.

## DAR Compliance with ADA Regulations

The Americans With Disabilities Act (ADA) of 1990 requires transit agencies that provide fixed route service to operate complementary demand responsive service to potential transit users who are unable to use fixed route transit due to a disability. This service must be “equivalent” to the FR service as much as possible. ADA regulations define the minimum level of service required only apply to demand responsive services when delivered to ADA-eligible persons, and have no effect on demand-responsive services when also provided to non-ADA eligible patrons. Many paratransit systems including Tri Delta Transit provide a level of service exceeding minimum ADA requirements. However, in cases where agencies provide service exceeding these requirements, it is important to closely review compliance with ADA regulations in order to avoid liability under those rules. In most cases, close adherence to ADA requirements can often reduce operating expenses and more effectively manage paratransit demand.

Tri Delta Transit met applicable ADA requirements, and exceeded them in a number of cases, including (1) a service area exceeding the  $\frac{3}{4}$  mile radius from fixed routes in a number of areas; (2) providing service to non-ADA clients; (3) accommodating same day bookings; (4) providing “door to door” service rather than just “curb to curb”, e.g., drivers are allowed to assist passengers to/from the door of their origins and destinations, and to assist with a limited number of packages.

## DAR Evaluation Summary

Tri Delta Transit DAR service productivity peaked in FY 1997-98 at 4.0 boardings/RVH and declined by about 1/3 to 2.6 overall boardings/RVH during FY 2006-07. The system has managed demand by tightening restrictions on trips made by non-ADA eligible persons, and by periodic fare increases to bring DAR fares into line with what is allowed under ADA requirements.

Compared to the fixed route system, DAR subsidy per passenger has been relatively stable and actually declined relative to inflation since FY 1995. Dispatcher performance has been improved even though not all the features of the automated "Trapeze" software paratransit dispatching system have been utilized. Further opportunities may exist through improved utilization of software dispatching capabilities.

## Capital Program Trends & Analysis

ECCTA's key capital assets include its operations and administrative complex located at 801 Wilbur Avenue, 69 fixed route and 22 paratransit (total 91) active revenue vehicles, support vehicles, and passenger amenities installed at selected bus stops. The three park-and-ride lots currently used by Tri Delta Transit are owned by BART.

The existing facility houses transit operations, maintenance and ECCTA administration at a single location. As originally completed in 1987, the maintenance shop contained three bays and capacity for 40 buses. Expansion plans to a design capacity of 110 vehicles were developed when ECCTA assumed responsibility for BART express bus routes in 1997. Work began in 2003 to increase the shop to six bays, enclose the bus wash area, improve the bus parking lot and reconfigure the employee/visitor lot. Over \$6.9 million was programmed between FY 2001-022 and FY 2004-05. The facility expansion project was completed during FY 2004-05. These improvements are expected to meet Tri Delta Transit's needs through FY 2015.

74 Tri Delta Transit bus stops are equipped with passenger shelters and bench seating. 50 of these are standard metal frame shelters purchased and installed in FY 2003. The remaining units include a number of shelters installed independently by an advertising sales company, many constructed or placed by developers as part of local commercial and residential projects, and two older wooden shelters built by local organizations for the public good. ECCTA maintains all shelters, except for major repairs and repainting of those owned by other entities.

## Transit Vehicles

The fixed route revenue vehicle fleet is in generally good condition with effective maintenance and replacement programs in place. The 69-vehicle fixed route fleet has an average age of 7.5 years as of June 30, 2007, and a combined fleet average useful life of about 13 years.

These buses are diesel powered heavy-duty vehicles that ultimately must be replaced by a combination of low emission and zero-emission vehicles under rules promulgated by the California Air Resources Board (CARB) in 2000. These rules require retrofitting existing Diesel engines installed before 2004 must be retrofitted to yield lower nitrogen oxide (NOx) and particulate (PM) emissions during remaining vehicle life. To comply, ECCTA programmed more than \$1.6 million in federal and local funds to purchase and install bus catalyst devices on the existing fixed route fleet. Nineteen buses were retrofitted in FY07.

CARB rules mandate transit systems to replace current diesel technology with vehicles propelled by natural gas, hybrid-electric, battery-electric, or fuel cells. Six 1995 Gillig Phantoms were scheduled for replacement during FY 2006-07 and the replacements will be diesel-electric hybrids from Gillig. This purchase of hybrid-electric buses manufactured by Gillig was delayed resulting in the replacements being 2007 model year coaches. This created a technical difficulty where these buses met CARB requirements for 2006, but may not for the 2007 model year. The "medium duty" engines used are not certified by CARB for 2007, though larger "heavy duty" engines are. This is problematic since use of heavier duty engines negates the fuel and maintenance savings inherent in hybrid bus designs. Gillig has committed to resolving this issue.

Twelve additional 1997 Gillig buses will be eligible for replacement in FY 2009, and will comply with CARB rules as they exist that year. In 2006, the 20-vehicle paratransit fleet (including 2 supervisor vans) had an average age of 6.8 years, despite an average useful life of about 5 years for such vehicles. These buses were replaced in FY 2006-07.

## Transit Centers and Park & Ride Lots

Three park & ride lots owned by BART are currently in use by Tri Delta Transit: (1) at the Hillcrest Avenue /Highway 4 interchange in Antioch; (2) the Brentwood Park and Ride Lot near downtown Brentwood, and (3) on Bliss Avenue between Railroad Avenue and Harbor Street in central Pittsburg. Each of these lots is deficient in some aspect resulting in less than optimum bus operations, passenger security, etc.

The most immediate concern is with the Hillcrest facility. Buses experience significant delays accessing the bus stops situated on the south side of Sunset Drive east of Hillcrest Drive. Departing buses must continue eastbound to turn around in a cul de sac at the end of Sunset to return westbound to the Hillcrest intersection. The intersection is signalized, but also prone to congestion caused by traffic queuing on Hillcrest to cross over or merge onto, Highway 4. The intersection design further reduces transit speeds, particularly for the MCI coaches running DX and peak period Route 300 trips. The park-ride lot is almost full on weekdays. Parking aisles are narrow and not well marked and may pose safety issues.

The Brentwood park-ride lot is physically adequate to meet current capacity requirements and aesthetic standards. However, while the location may be suitable for a future eBART/BART station, travel times to the Pittsburg/Bay Point BART station are very long due to indirect bus routings and traffic congestion, resulting in relatively low use. Current one-way travel time from the Brentwood facility to the Pittsburg/Bay Point BART station is 64 minutes, which is 9 minutes longer than BART trains between Pittsburg/Bay Point BART and Montgomery Street in downtown San Francisco.

The Bliss Avenue park and ride lot in Pittsburg was constructed in an industrial area with poor security and less than optimum transit access to and from Highway 4. The lot is also less than 4 miles from BART, giving a weak incentive for its use compared to driving directly to the existing BART station. Once considered as a possible eBART station, local officials would prefer the station to be closer at Railroad Avenue, in the freeway median with better access and egress to Highway 4.

Up until 2005, Tri Delta Transit had plans to construct a bus transfer center and park-ride lot at a site on the south side of East Leland Road adjacent to Los Medanos Community College. However, the City of Antioch owns the property, and did not want a park and ride lot at this location. An alternative location has been identified in Oakley and ECCTA has gotten two, FTA Section 5309 earmarks totaling \$1,083,000 appropriated to acquire the property along with additional, local funds. The funding applications and the acquisition process are in process at this time.

Two major transportation capacity expansion projects not directly controlled by Tri Delta Transit will have a significant impact on the future location and construction of transfer facilities and park and ride lots. Original plans for eBART were based on purchase of a portion of the existing Union Pacific railroad right-of-way between Bay Point, Pittsburg, Antioch and Brentwood, with proposed eBART stations located at Railroad Avenue in Pittsburg, Somersville Road and Hillcrest Avenue in Antioch, and downtown Brentwood. However, Union Pacific declined to sell its right-of-way on the terms offered. As a result BART has revised eBART planning to place the proposed rail line in the median of Highway 4 between the Pittsburg/Bay Point BART station and Hillcrest Avenue.

This re-conceptualization of eBART plans has delayed the programmed and funded expansion of Highway 4 between Pittsburg to east of Hillcrest Avenue for 18-24 months, in order to accommodate eBART tracks in the freeway median. Due to continuing cost overruns, current eBART plans call for only two new eBART stations, in Pittsburg at Highway 4/Railroad Avenue, and in Antioch at Highway 4/Hillcrest Avenue. An eBART station at Highway 4 and Somersville Road would be deferred, as would the extension to Brentwood and additional stations at the Highway 4 extension/Lone Tree Way, and in downtown Brentwood.

## A Coordinated Local Bus, BRT and eBART/BART Strategy

Given the delays in eBART, the need for improved transfer facilities and additional park & ride space in Eastern Contra Costa County, an interim approach may be called for. Low cost forms of Bus Rapid Transit (BRT) need to be considered, both as a means of building future patronage for eBART and/or BART, but also to serve the many portions of the Tri Delta Transit service area that will never be directly served by rail transit. Unlike rail, building a BRT network can begin almost immediately, even with existing rolling stock.

The extension of Highway 4 between Antioch and Brentwood (segment 1 of the SR4 Bypass) opened recently, reducing travel times by 15-20 minutes in each direction for both automobiles and buses. Given this new roadway, Route 300 could be restructured to provide much faster service on a new branch between Brentwood and Pittsburg/Bay Point BART during peak periods on 30-minute headways, and every 30 minutes to Oakley. Midday and weekend service could operate every 60 minutes to Oakley and Brentwood, respectively. The Brentwood branch should also stop in the vicinity of Highway 4 and Lone Tree Way, a large retail center and central to many residential areas in southeastern Antioch, western Brentwood, and southern Oakley.

An East Contra Costa BRT strategy should also connect BART, eBART and local Tri Delta Transit routes at the existing BART station but also future eBART/BART stations. Permanent transit centers and sufficient park and ride capacity should be constructed at proposed and potential eBART station locations. While eBART will not stop at Somersville Road, Lone Tree Way and downtown Brentwood in the near future, these sites are extremely well located to serve as major transit hubs, and have areas available with the potential for transit-oriented development (TOD). This approach and its potential benefits are discussed in Chapter 4, Bus Rapid Transit Options.

### On Board Survey Results

Two onboard surveys of Tri Delta Transit fixed route passengers were conducted, the first in October-November 2006 and the second in February 2007. The 2006 survey was specifically developed for the eBART study and Tri Delta Transit use. The February 2007 survey was sponsored by the Metropolitan Transportation Commission (MTC) and included 22 Bay Area transit systems. The MTC survey was intended to assist in developing Short Range Transit Plans by each Bay Area transit operator.

### Tri Delta Transit/eBART Survey

A total of 1,522 on-board surveys were filled out and collected on Tri Delta Transit vehicles between October 16, 2006 and the third week of November 2006. The purpose of the survey was to collect base data needed to restructuring Tri Delta Transit fixed routes to coordinate service with the proposed eBART line. Survey results also contain useful information for marketing purposes and profiles typical users of Tri Delta Transit.

Each completed survey provides information regarding one distinct “linked” trip. A “linked trip” represents a complete journey that may have involved use of several distinct modes of travel between a person’s origin and final destination. For example, someone may drive from home to a park & ride lot, transfer to a bus to BART, and then take BART to their final destination. Each trip segment is a distinct “unlinked” trip, but the entire journey is one linked trip.

Respondents were also asked if the trip they were being surveyed about was one direction of a round trip, but details regarding the “second” (return) part of the trip were not collected. All Tri Delta Transit routes were sampled approximately in proportion to their share of total system patronage. Not all respondents answered all questions, so responses to a particular question may not add up to the total number of surveys collected.

The results of the survey provided empirical confirmation of assumptions that ECCTA staff has been using for some time based on their daily observations and work on the Tri Delta Transit system. None of the data was significantly different from the concepts that staff had already developed through observation. There was one surprising dichotomy in the responses: While less than 20% of respondents were using Tri Delta Transit buses to get to or come from the existing BART station (I), 81% of patrons responded that that they would use eBART if and when that service materializes.

A composite profile of a Tri Delta Transit rider can be summarized from these survey results. The “average” rider would be:

- Between twelve and thirty years old.
- Is transit dependent with limited access to an automobile.
- Lives in a low to very low income household.
- Generally pays cash when riding the bus.
- Regards their ethnicity as non-white.

The survey also shows that most Tri Delta Transit patrons:

- Begin and end their trips by bus within East County.
- Make their trips without transferring between bus routes.
- Use Tri Delta Transit buses for round trips.
- Walk to and from the bus.

The number of surveys collected on each route was proportional to each route’s share of total ridership, (Figures 3.11 and 3.12).



Figure 3.11

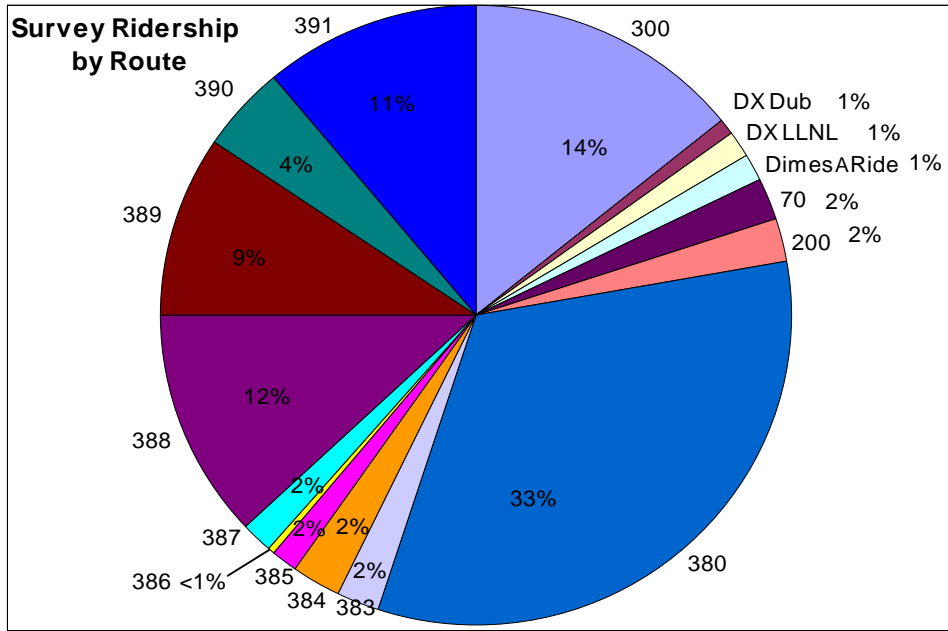
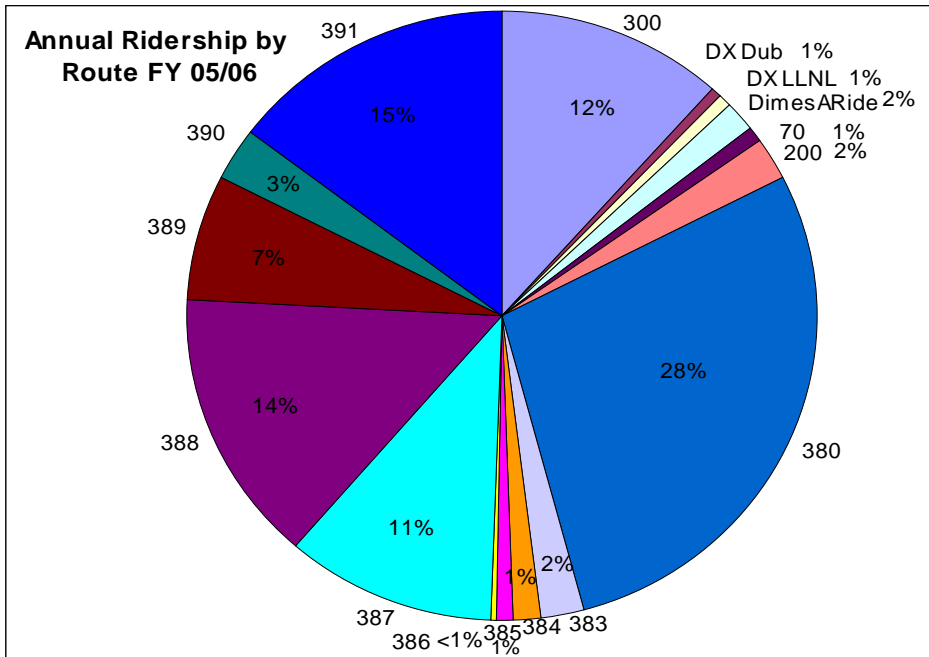


Figure 3.12



Those aged 12 to 30 constitute 60% of total Tri Delta Transit patronage, but are only 25% of the East County population, as shown in Figures 3.13 and 3.14. Females are more likely to use the bus than males, constituting 56% of total bus ridership, but only 50% of the area population.

Figure 3.13

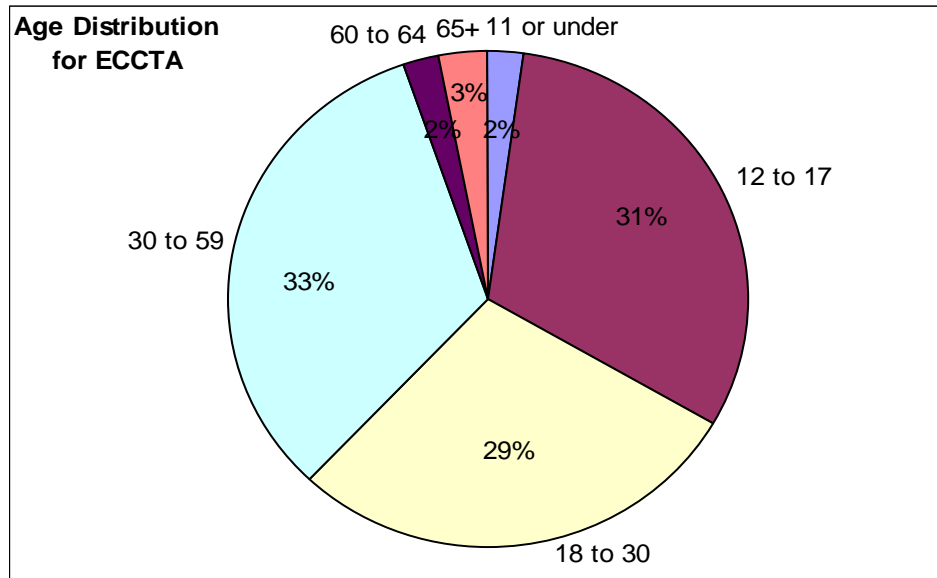
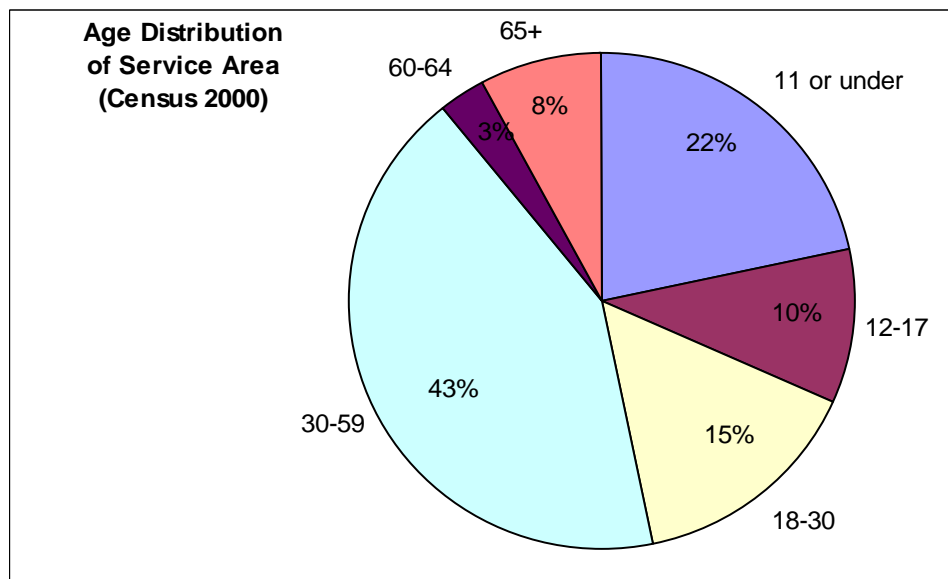
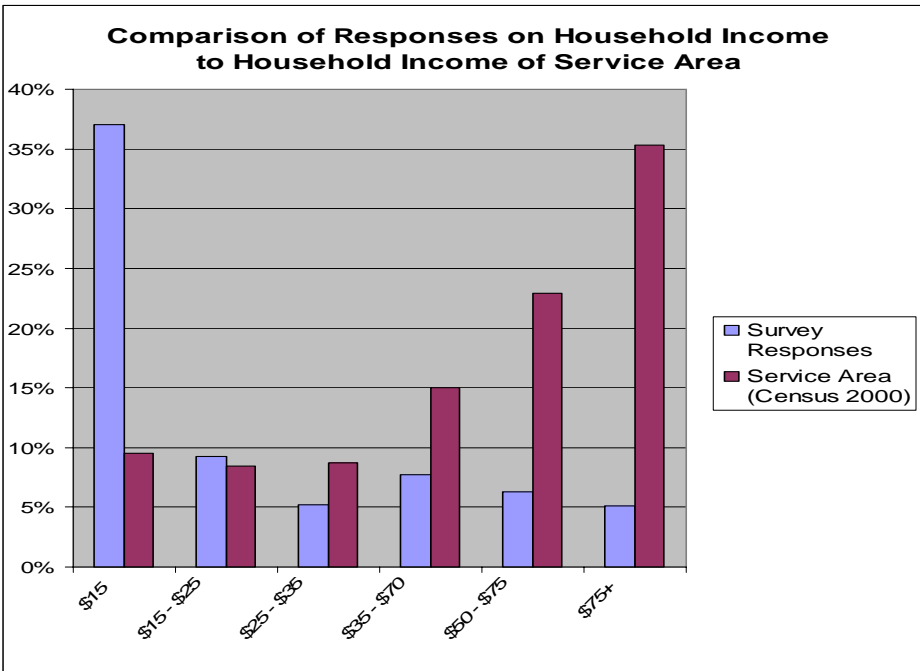


Figure 3.14



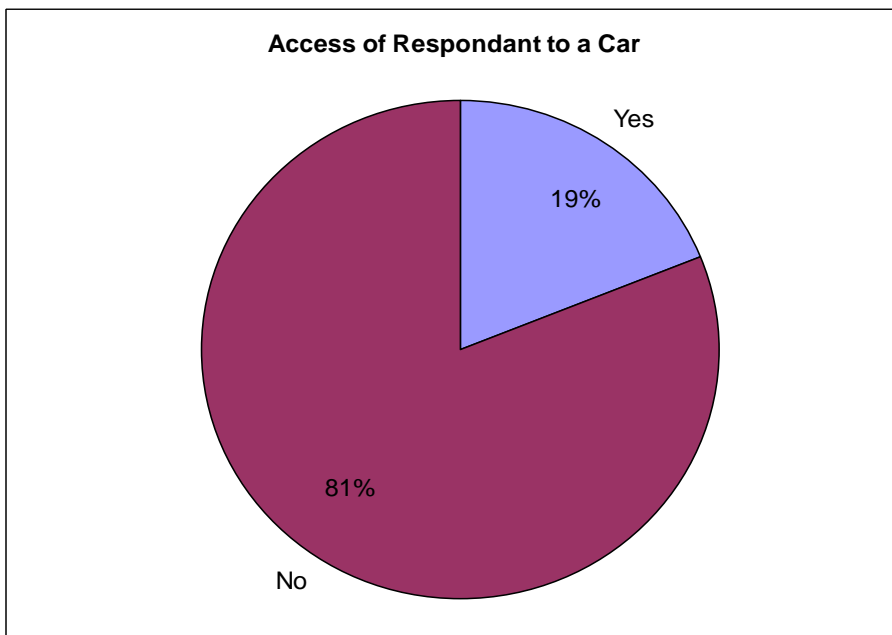
The majority of Tri Delta ridership comes from low to very low-income households while most East County residents do not belong to this grouping. See Figure 3.15.

Figure 3.15



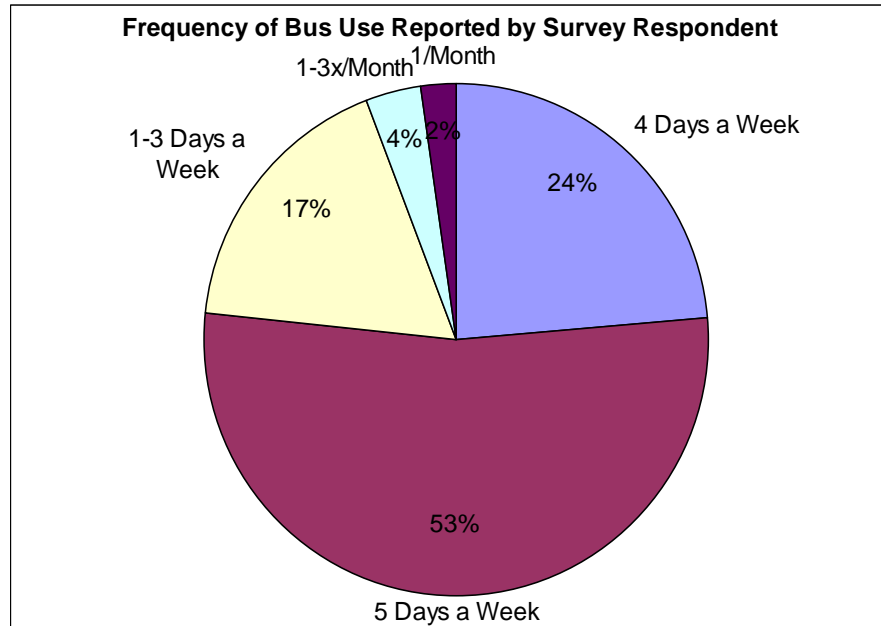
Seventy five percent of bus users are "transit dependent;" that is, lacking access to a motor vehicle for making the trip on the bus

Figure 3.16



Most transit users (77%) ride the bus four days or more per week.

Figure 3.17



Seniors and persons with disabilities constitute about 12% of Tri Delta Transit patronage. Most Tri Delta Transit riders use the bus for local trips. Only 20% of Tri Delta Transit patrons are using the West Pittsburg/Bay Point BART station. Please refer to Figures 3.18, 3.19 and 3.20 illustrating the origins and destinations of bus riders.

Figure 3.18

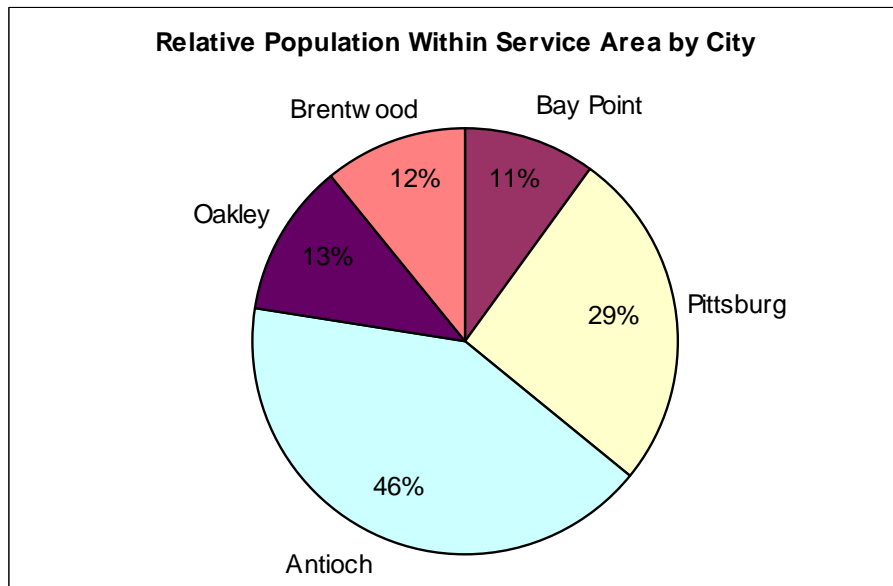


Figure 3.19

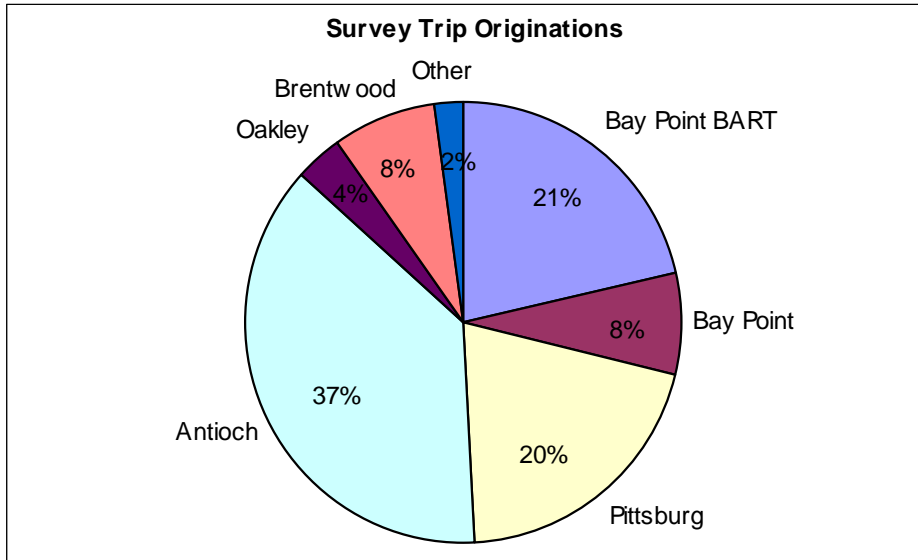
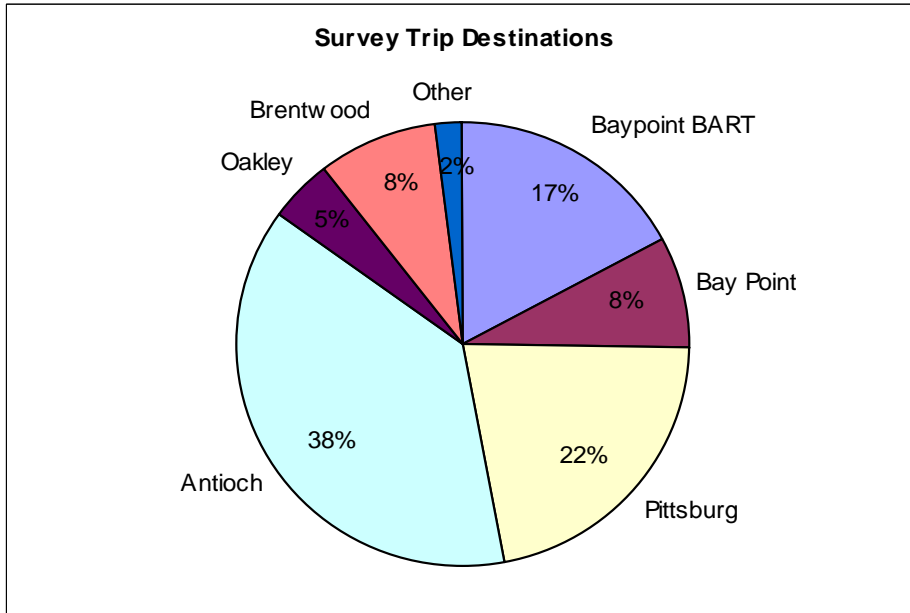


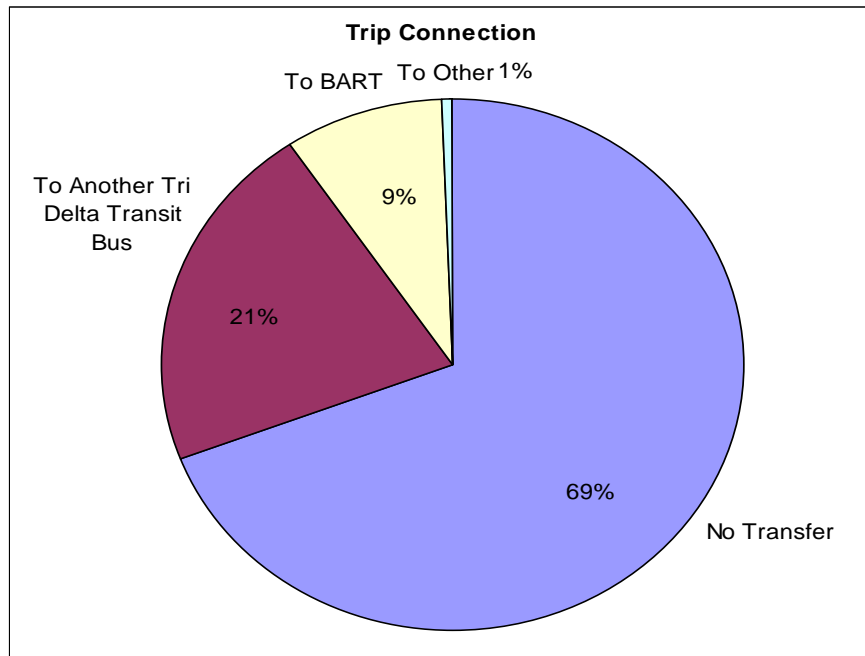
Figure 3.20



About 40% of survey respondents used the bus to make a one-way trip, while 60% used the bus in both directions. About 60% of riders used only one bus, 35% used two buses, and 5% used three or more buses. Most passengers are able to make their trips with a single bus. Those who transfer generally make only one transfer.

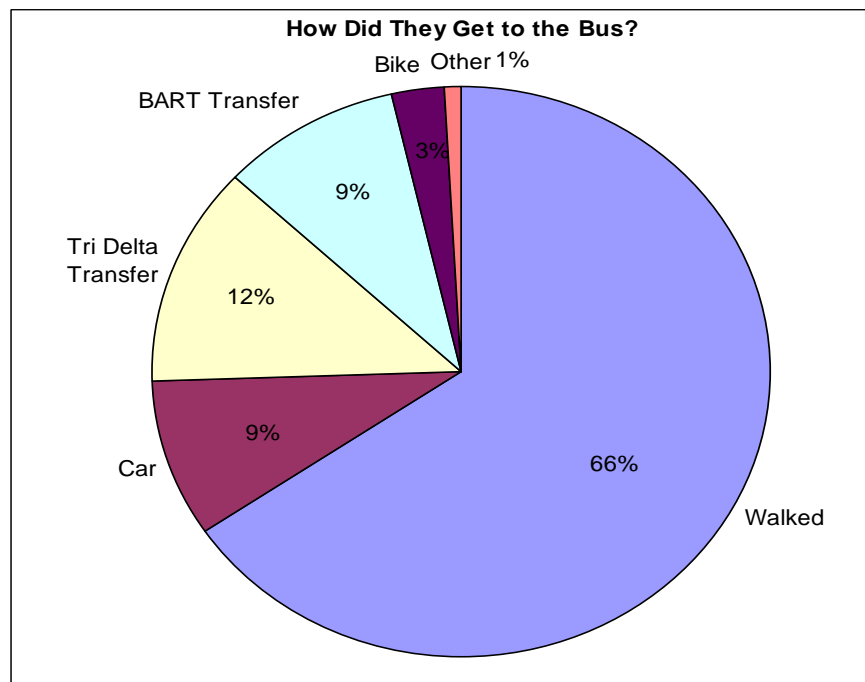
Figure 3.21 shows in another way that most transit users are able to reach their destination on a single bus, without needing to transfer.

Figure 3.21



As expected, walking was the most frequent means of access to the bus, followed by transferring from another transit vehicle. Please refer to Figure 3.22.

Figure 3.22



Non-whites make up a disproportionate number of Tri Delta Transit patrons when compared to East County demographics. See Figures 3.22 and 3.23.

Figure 3.23

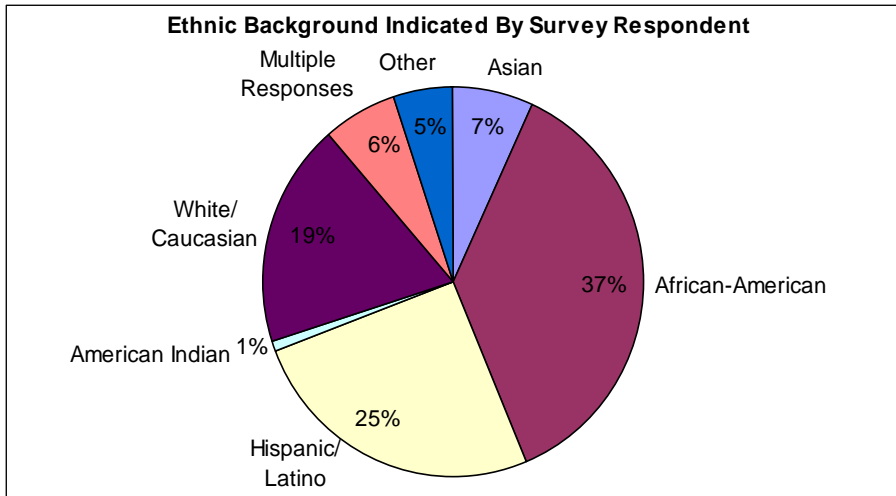
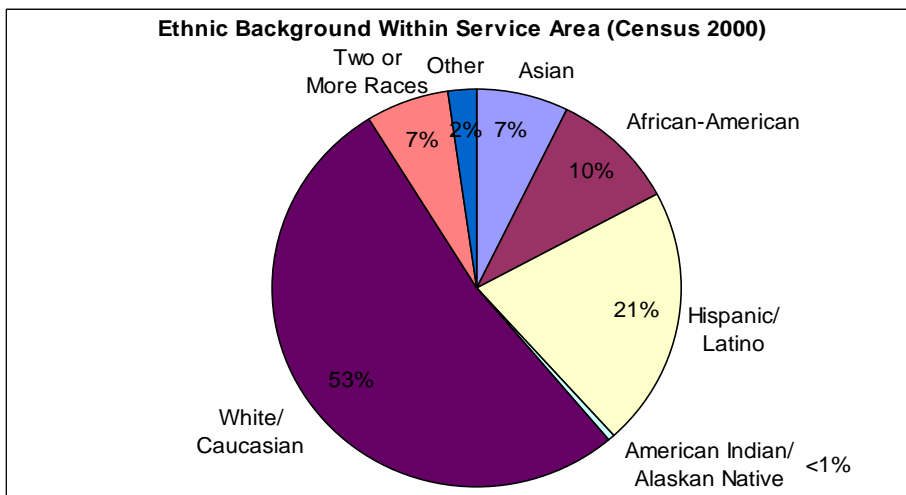


Figure 3.24



## Potential Usage of eBART Rail Service

According to the survey, 81% of respondents said they would use the proposed eBART route, while 19% would not. This is almost the exact reverse of the percentage whom currently use Tri Delta Transit buses to access or transfer from BART (around 80% of all bus trips are strictly local). Therefore, there is a contradiction: why would most riders say they need a service providing out of area trips when most stay within East County?



## MTC Sponsored Survey, February 2007

The MTC-sponsored survey was conducted from January 23, 2007 to February 2, 2007, covering the busiest fixed routes. A total of 612 interviews were completed on Routes 380, 391, 388, 300, 387, and 389. The MTC survey used in-person interviews of each transit user surveyed rather than written surveys. For the Tri Delta Transit survey work, each routes' share of interviews was determined by its share of system ridership, as was the distribution on weekend days.

The detailed responses for Tri Delta Transit by the MTC survey are summarized in Chapter 4.14 of the document MTC 2006 Transit Passenger Demographic Survey, which is not duplicated here for the sake of brevity, but is available on the MTC website.

Table 3.14 Parts 1 and 2 compares the findings of the earlier onboard survey conducted by Tri Delta Transit with the results of the MTC effort, and highlights major differences.

**Table 3.14 Part 1 Tri Delta Transit & MTC Survey Results**

Responses	eBART Survey	MTC Survey ECCTA	MTC Survey Region	Significant Difference (±5%)
<b>What is your fare category</b>				
Adult	84.6%	74.0%	79.5%	X
Senior or Disabled	12.4%	7.5%	7.5%	
Youth or student	n/a	18.5%	12.8%	
DN/NA	3.0%	0.0%	0.2%	
<b>Car Availability</b>				
Yes	17.9%	51.3%	34.1%	X
No	76.8%	47.7%	64.6%	X
DK	5.3%	1.0%	1.3%	
<b>Race or ethnic identification</b>				
White	17.7%	24.7%	39.0%	X
Hispanic/ Latino	24.2%	33.8%	20.5%	X
Black/ African-American	35.1%	33.8%	19.2%	
Asian	6.6%	9.8%	18.2%	
American Indian or Alaskan Native	1.0%	1.5%	1.4%	
Other	10.8%	5.2%	5.7%	X
DK/ NA	4.5%	1.7%	1.3%	
<b>Annual Income</b>				
\$15,000 or less	37.0%	18.3%	14.0%	X
\$15,000 to \$24,000	9.3%	13.7%	12.7%	
\$25,000 to \$49,999	12.9%	27.0%	22.3%	X
\$50,000 to \$75,000	6.3%	20.3%	17.7%	X
\$75,000 or more	5.1%	9.3%	21.6%	
DK/NA/Refused	29.4%	11.4%	11.7%	

Table 3.14 Part 2 Tri Delta Transit & MTC Survey Results

Responses	eBART Survey	MTC Survey ECCTA	MTC Survey Region	Significant Difference
				(±5%)
<b>Gender</b>				
Male	43.0%	46.9%	51.3%	
Female	53.9%	52.9%	48.0%	
Not Known	3.0%	0.2%	0.7%	
<b>Interview Language</b>				
English	92.3%	93.0%	93.5%	
Spanish	7.7%	6.5%	4.5%	
Other	n/a	0.5%	2.0%	
<b>Point of Origination</b>				
Home	36.5%	51.8%	47.3%	X
Work	22.1%	17.3%	21.2%	
School	22.7%	17.5%	10.0%	X
Shopping	5.8%	7.8%	10.7%	
Social or Recreation	2.8%	3.4%	7.1%	
Medical or Dental	2.3%	1.5%	1.5%	
Other	6.4%	0.6%	2.2%	X
DK/NA	1.7%	0.0%	0.0%	
<b>Point of Destination</b>				
Home	63.5%	35.1%	33.6%	X
Work	13.5%	24.7%	28.7%	X
School	12.5%	17.6%	8.8%	X
Shopping	3.1%	12.1%	14.2%	X
Social or Recreation	3.1%	7.3%	10.2%	X
Medical or Dental	1.0%	2.1%	1.5%	
Other	2.4%	1.0%	2.9%	
DK/NA	0.8%	0.0%	0.0%	

ECCTA staff believes that the significant differences in results from the two surveys were the result of differences in methodology. They also find the results of the eBART study to be more in line with their own observations and thus a more accurate profile of Tri Delta Transit ridership.

### Productivity Improvement Program (PIP)

ECCTA has a formal productivity improvement plan (PIP) to guide ongoing efforts to operate transit services that meet or exceed minimum performance standards. Current productivity standards include 15 passengers (boardings) per revenue vehicle hour (RVH) for the fixed route network and three passengers (boardings) per RVH for Dial-A-Ride. During FY 2006-07, the fixed route system as a whole averaged 16 boardings/RVH, while the Dial-A-Ride system averaged 2.6 boardings/RVH. Routes DX-1 and DX-2 operated significantly below

the adopted productivity standard, but each route had a farebox cost recovery ratio well above the Tri Delta Transit fixed route average due to the higher fares for these subscription services.

Several options may be considered to restore service productivity to defined standards. On the fixed route side where current productivity is within 10% of standard, the approach suggested is to trim back on unproductive service hours or discontinue marginal routes.

Four Tri Delta Transit routes currently operate with less than 10 passengers/RVH, the suggested "cutoff" where a route should be considered deficient in productivity, excluding DX-1 and DX-2 as previously noted:

- 70 Pittsburg Loop – 23% below suggested minimum
- 200 Martinez/Antioch – 34% below suggested minimum
- 384, 385, 386 – Antioch-Brentwood-Oakley 6% to 52% below suggested minimum

There currently is no plan to address the relatively low productivity of Routes 70 and 200. Until recently, Route 200 was partly subsidized by Contra Costa County to ensure access to health care facilities in Martinez for low-income residents. Route 200 is a "lifeline" transportation service and is unlikely to be eliminated or curtailed significantly, and remains considerably more cost-effective than alternative Dial-A-Ride service. And, lifeline funding in the amount of \$92,000 per year has been obtained for Route 200 for the next three years.

Route 70 service has been reduced about 25%, as recommended in the previous SRTP document. This route is currently at a minimum level of service and also functions as a lifeline service, serving areas not covered by busier local routes, and remains considerably more cost-effective than Dial-A-Ride service.

Routes 384, 385, and 386 are relatively new routes in operation for less than two years, and have not yet achieved optimum ridership levels. Route 386 is a rural connecting route serving Byron and Discovery Bay, and perhaps should be evaluated on that basis. With the opening of the Highway 4 bypass to Southeast Antioch and Brentwood, Route 300 could be restructured into a more efficient configuration by increasing the potential for patronage on these routes.

The PIP for FY 2006-07 included improving the on-time performance of the Dial-A-Ride system, which was 80% in FY 2003-04. The objective indicated in Chapter 2 was 90%, which was almost met with 89.7% during FY 2006-07.

## Response to FY 2003-05 Performance Audit

In California, a performance audit must be conducted every three years of any transit operator receiving Transportation Development Act (TDA) Article 4 funds, to determine whether the operator is in compliance with certain statutory and regulatory requirements, and to assess the efficiency and effectiveness of the operator's services.

In June 2006, the triennial performance audit of Tri Delta Transit covering FY 2002-03, FY 2003-04, and FY 2004-05 was completed. Tri Delta Transit was found to be in compliance with applicable statutory and regulatory requirements. The document also found that Tri Delta Transit had implemented one of four recommendations from the previous audit, and partially implemented the other three. The system had taken steps to reduce preventable accidents by incorporating additional safety incentives in the purchase of service contract, and strengthened oversight and training requirements in its new contract effective July 2006.

The second, partially implemented recommendation was to compare performance standards on an annual basis. Changes were made to the performance measurement system to comply.

The third partially implemented recommendation was to improve the on-time performance of the Dial-A-Ride system. This The objective indicated in Chapter 2 was 90%, which was almost met with 89.7% during FY 2006-07. Tri Delta Transit made major progress to meeting this performance audit recommendation. The fourth, partly implemented recommendation was to improve Dial-A-Ride productivity to the adopted standard of 3.0 boardings/RVH. This measure has not been met, with 2.6 boardings/RVH in FY 2006-07. Further improvements are being addressed.

The FY 2003-05 Triennial Performance Audit's recommendations built on the previous document:

1. Continue the process for redefining performance standards to meet goals and objectives.
2. Continue efforts to compare performance with adopted standards on an annual basis.

The goals, objectives, policies and standards discussed in Chapter 2 were reviewed in response to these recommendations, and are included in recommendations for revisions in that Chapter. No recommendations were made in other areas. Tri Delta Transit has responded to these recommendations by developing an extremely detailed monthly operations report that tracks detailed operating statistics and performance indicators, and compares with adopted goals and objectives on a monthly and annual basis.

## Federal Title VI Program

ECCTA has established an ongoing internal management practice to assure that all Tri Delta Transit services and federally-funded assets are deployed in a manner consistent with the U.S. Civil Right Act. The most recent FTA Triennial Review found that the most recently updated Title VI program had not been submitted to FTA on a timely basis. This deficiency was corrected within the 90 day period indicated by the Triennial Review. ECCTA has no active or closed lawsuits or complaints alleging discrimination, and is not involved in construction or other projects that pose environmental justice concerns.

As noted earlier, Route 200 is a positive example of cooperation with the County of Contra Costa to address the specific needs of low-income persons as intended by Title VI. New Route 201 between West Pittsburg/Bay Point and Concord also addresses these concerns, eliminating the required payment of fares on both buses and BART for the many persons traveling to school and other activities in Central Concord. Route 201 was established in late August 2007, but is already exceeding 11 boardings/RVH and serving a very high percentage of passengers who transfer to/from the various County Connection routes available at the Concord BART station.

## Response to FY 2007 Federal Triennial Review

Chapter 53 of Title 49, United States Code, requires the Federal Transit Administration (FTA) to review and evaluate how FTA grant recipients have used Urbanized Area Formula Grants (FTA Section 5307 funds) and complied with relevant statutory and administrative requirements at least every three years. This requirement is enumerated in 49 U.S.C. 5307(i), as follows:

- (2) At least every three years, the Secretary [of Transportation] shall review and evaluate completely the performance of a recipient in carrying out the recipient's program, specifically referring to compliance with statutory and administrative requirements and the extent to which actual program activities are consistent with the activities proposed under subsection (d) of this section and the planning process required under section 5303-5306 of this title.
- (3) The Secretary may take appropriate action consistent with the review, audit and evaluation under this subsection, including making an appropriate adjustment in the amount of a grant or withdrawing the grant.

The Triennial Review analyzes and evaluates grantee performance and compliance in 23 distinct areas, which are not listed here for brevity. The latest review of the Tri Delta Transit system, conducted in August 2006, included the following findings and corrective actions, which mainly consist of updating documentation and complying with recent changes in emphasis in administrative requirements by FTA. Tri Delta Transit staff took corrective action in Fall 2006 to comply with the following findings:

1. Accurately report un-liquidated obligations for Grant CA 90 Y30800 and provide assurances to FTA that ECCTA understands the correct method for reporting on un-obligated funds (within 60 days).
2. Complete development of service standards and policies, and submit Title VI program to FTA (within 90 days).

## Bus Rapid Transit (BRT) Options

The term “bus rapid transit” (BRT) refers to bus systems that provide higher quality service compared to standard local bus service. Potential BRT strategies include a wide variety of options: upgraded vehicles and stations, improved scheduling with faster more frequent service usually at least every 10-15 minutes all day, and infrastructure improvements giving buses their own right-of-way (ROW) separate from congestion. Strategies for insulating buses from traffic include dedicated, off-street and/or grade-separated bus lanes, traffic engineering improvements such as traffic signal preemption, “queue jumpers,” etc. The objective behind BRT is to provide transit users with as close to the high speed service of rail transit as possible, while keeping capital costs significantly lower with greater operational flexibility.

BRT may be a worthwhile investment in East Contra Costa County since eBART/BART rail extensions will take many years to construct, and even with completion of these extensions, the vast majority of East County residents will be outside easy walking distance to stations. By considering BRT, Tri Delta Transit may be able to provide high quality transit to within walking distance of a significant portion of residents compared to eBART/BART. Even with proposed transit-oriented development (TOD) densities, about 90% of residents would still live more than a half mile from an eBART station. In turn, this may stimulate bus transit ridership to levels substantially higher than possible with the current local bus system and rail transit alone.

### BRT Examples

Bus Rapid Transit capital costs can range from several hundred thousand dollars per mile in the case of surface BRT service on existing arterial (non-freeway) streets mainly through improved stops and traffic signal priorities, to tens of millions per mile with full grade separation comparable to rail rapid transits. There are numerous examples of BRT systems in the United States that have taken low, medium and high cost approaches.

The least expensive BRT systems tend to operate on existing streets with little or no dedicated ROW or lanes for buses, with most investment in improved vehicles, upgraded bus stops and traffic signal preemption. Such “rapid bus” examples on mixed flow arterial roadways in Northern California include AC Transit’s Route 72R on San Pablo Avenue between downtown Oakland, Emeryville, West Berkeley, Albany, El Cerrito, and Richmond; and Valley Transit Authority’s Route 22 along El Camino Real between downtown San Jose, Santa Clara, Sunnyvale, and Palo Alto. Sacramento Regional Transit’ Route 50 operates along Stockton Blvd. between downtown Sacramento and Florin Mall; the San Joaquin Regional Transit District’s operates a new BRT route between north-central and downtown Stockton. The Los

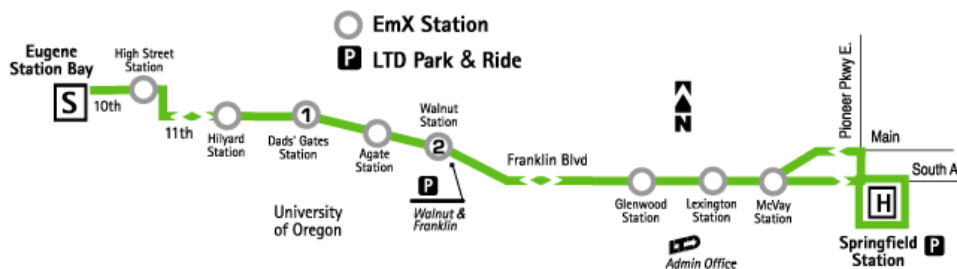


Angeles Metropolitan Transportation Authority also operates an extensive network of surface “Metro Rapid” BRT routes throughout the Los Angeles Basin. Most of these systems have experienced patronage increases of 20%-30% compared to previous local bus service. The Livermore-Amador Valley Transit Authority (LAVTA) is in the process of deploying a \$15 million surface BRT route that operates in mixed traffic connecting Dublin, the Dublin-Pleasanton BART station and Livermore.

### Eugene-Springfield *EmX*

This 4.5 mile, \$23 million BRT line is operated by the Lane Transit District (LTD), between Springfield and Eugene, via the University of Oregon. About two-thirds of the EmX route has exclusive bus lanes, or about \$10 million per mile excluding mixed-traffic portions of the corridor. Prior to the start of EmX service, the former LTD route in this corridor operated every 15 minutes, serving approximately 2,800 daily boardings. Since EmX startup in December 2006, patronage has grown to more than 4,500 daily boardings. EmX buses operate every 10 minutes on weekdays, and every 20 minutes evenings and weekends. Stops are located on average 0.5 miles apart. EmX buses require 16-18 minutes each way, averaging 14-17 m.p.h.

Figure 4.1 Eugene-Springfield *EmX* Bus Rapid Transit



EmX has a number of unique features not used by other BRT projects. The most distinctive is that the six custom-built, \$950,000 EmX buses have wide boarding doors on both the right (“curb”) side and left side.

Figure 4.2 Lane Transit District’s *EmX* BRT Vehicle



While left-hand doors reduce EmX vehicle seating, the design allows much greater station design flexibility, particularly in areas with limited space. Combined with some sections of exclusive, single bus lanes that are used in both directions, a number of EmX stations were built with only one boarding platform but are served both eastbound and westbound. See Figure 4.3; note “Bus Only” pavement markings in both directions (that to right is oriented westbound). One disadvantage of the two-way single lanes is that EmX service restricted to 10-minute frequencies; installing an additional exclusive lane would be costly.

Figure 4.3 EmX Single Platform Station Looking Eastbound



Figure 4.4 EmX Approaching the Center-Island Agate Station





A few EmX stations were also built in the median of Franklin Boulevard with a “center island” design common to most rail systems. The Pittsburg/Bay Point BART station has a center island between the tracks. This design saves considerable space compared to conventional “right hand only” stops, and also reduced capital expenses somewhat.

Figure 4.4 shows a center island EmX station, along with the unique concrete guide way design that tends to discourage automobiles from driving on the bus way. The station platform is on the left side of this eastbound vehicle, and it is also on the left side of westbound vehicles, on the right of the photo.

Currently, EmX operations over the “single lane” segments are controlled by a custom-designed signal system, similar to that used by rail systems on single-track stretches. Currently, no fares are charged on EmX, partly as an introductory marketing incentive but also due to the small size of the operation, with a maximum four EmX vehicles in service during weekdays and two evenings and weekends.

Figure 4.5 illustrates the low floor, level boarding used by EmX and a number of other BRT projects.

Figure 4.5 EmX Vehicle Low Floor Level Boarding



### **Las Vegas Metropolitan Express (MAX)**

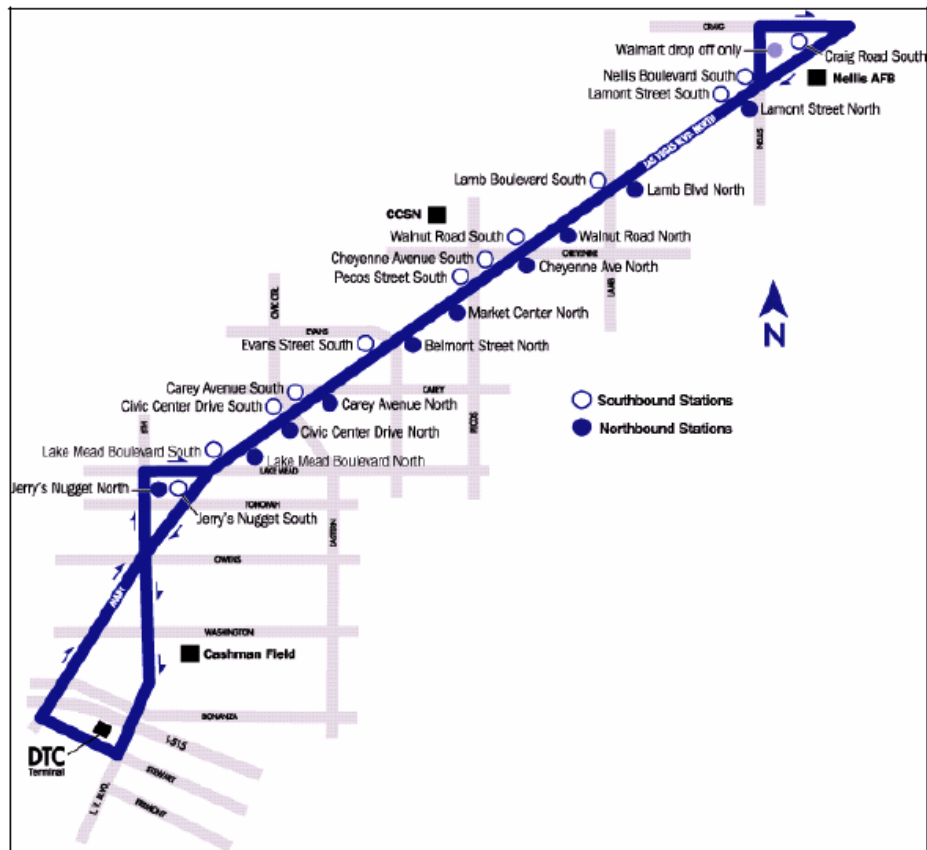
This 7.5 mile, \$20.3 million BRT route began operation in June 2004 along North Las Vegas Boulevard North between the Downtown Transportation Center in downtown Las Vegas, North Las Vegas and Nellis Air Force Base. Of the 7.5-mile route length, 4.5 miles are in surface lanes dedicated to MAX buses. There are 22 stations, 11 in each direction.

According to the FTA report “Las Vegas Metropolitan Area Express (MAX) BRT Demonstration Project Evaluation (August 2005)”:

MAX is an advanced rubber-tire rapid transit system that integrates some design and operational characteristics typically associated with Light Rail Transit (LRT) into a flexible mass transit vehicle. MAX system features include:

- *A dedicated transit only lane*
- *Optical guidance system (OGS)*
- *100% low floor vehicles*
- *In-vehicle bicycle racks*
- *Enhanced passenger stations, with elevated platforms for level boarding*
- *Multiple entry boardings*
- *Traffic signal priority (TSP)*
- *Automated Passenger Counters (APCs)*
- *Off-board fare collection*
- *CAD/AVL system*

Figure 4.6 Las Vegas MAX Route



MAX is part of the Citizens Area Transit (CAT) system, with 48 bus routes serving the Las Vegas Valley and Clark County. In 2004, CAT operated over 1.2 million vehicle service hours and carried 52 million passenger trips. RTC Southern Nevada contracts out all fixed route transit services under CAT to ATC/Vancom, one of the nation's largest transit service providers. As part of the CAT system, ATC Vancom also operates and maintains MAX.

The MAX vehicle is similar to those operated on the Eugene-Springfield EmX route (Figure 4.7), but lacks left-hand doors and also operates with an optical guidance system. CAT purchased a total of 10 French-designed Irisbus vehicles at a cost of \$1 million each. A total of eight MAX buses are in service during weekdays, providing 12-minute frequencies between 5:00 a.m. and 7:00 P.M., and every 15 minutes until the end of service around 10:00 P.M. The end-to-end operating times are approximately 28 minutes northbound and 31 minute southbound. The optical guidance system is currently not in use due to its complexity and the inability to keep the bus lanes clean so the optical system can read the pavement markings.

Figure 4.7 Las Vegas MAX BRT Vehicle



Unlike EmX, the Las Vegas MAX system has implemented off-vehicle fare collection. See Figure 4.8 for an example of a MAX fare machine. As pointed out by the FTA report:

All 22 MAX stations have Ticket Vending Machines (TVMs)...that enable passengers to purchase a valid fare prior to boarding MAX.

Ticket vending machines accept both cash and credit/debit cards and dispense a variety of fare media. The base adult fare is \$1.25. CAT offers a variety of multi-day fare pass media. Day passes can be purchased for \$5.00 at the farebox or TVMs located at stations and the Downtown Transportation Center. CAT also offers a 30-day CAT pass for \$30.00. Transfers between CAT routes are free. The same fare structure is applied to MAX as the CAT system as a whole.

Figure 4.8



Figure 4.9 Typical MAX Station

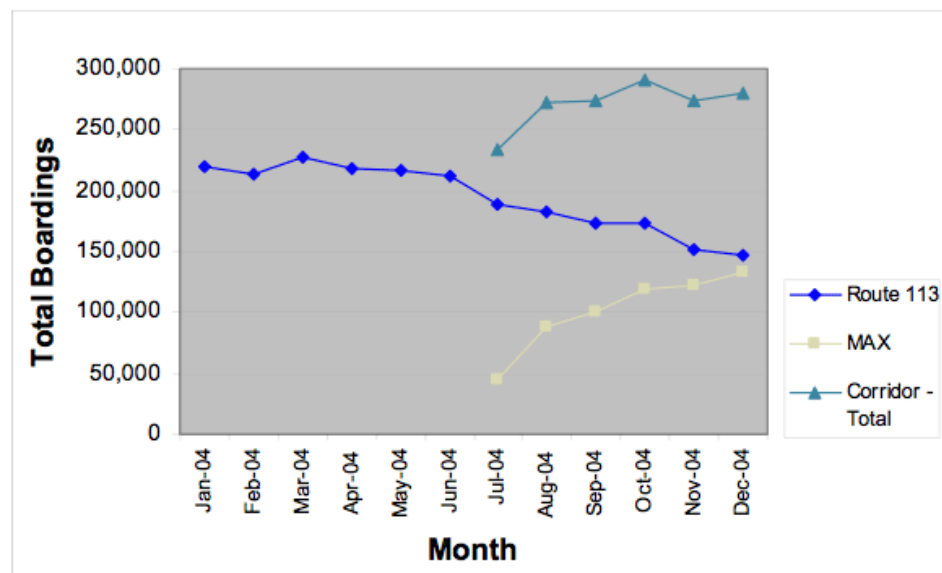


Each station cost approximately \$265,000 each to construct. A typical station platform is shown in Figure 4.9. Unlike EmX stations in Eugene-Springfield, each MAX station has a large station canopy to protect patrons from the intense sun experienced in desert conditions. Introduction of MAX service in July 2004 increased total transit ridership in the Las Vegas Boulevard North corridor by 25% during the first six months to more than 10,000 boardings daily for both Route 113 and MAX, as shown in Figure 4.10.

According to the FTA report:

Prior to MAX, the 7.5 mile segment of Las Vegas Boulevard North was served by CAT Route 113, one of RTC's most heavily patronized routes. In the twelve months prior to MAX's opening in July 2004, Route 113 averaged approximately 7,300 passengers per day. In the months after MAX's opening, there was steady and gradually increasing ridership defection from Route 113 to MAX, as the transit customer base gained more familiarity with the MAX system.

Figure 4.10 Las Vegas MAX Ridership Trends



## Off-Street Bus ways with Level Crossings

The Eugene-Springfield EmX and Las Vegas MAX BRT projects operate in a combination of mixed flow traffic and separate bus lanes within an existing arterial street. This section discusses two BRT systems that take a different approach, with ground-level bus ways on off-street rights-of-way with level grade crossings similar to most light rail transit (LRT) systems.

### San Fernando Valley Orange Line Bus way

The 14-mile, \$300 million+ Orange Line bus way in Los Angeles's San Fernando Valley opened on October 9, 2005. The Orange Line is operated by the Los Angeles Metropolitan Transportation Authority (MTA), operating every 3-5 minutes during peak periods, and every 10-15 minutes at other times.

This route reached its projected Year 2030 patronage of approximately 24,000 daily boardings by April 2007, and now operates at its maximum feasible capacity. Bus way capacity is essentially limited by the large number of signalized level crossings with major north-south arterials severely limits the bus way's capacity; the maximum frequency that ensures reliable service without bus "bunching" has proven to be every 3 minutes, i.e., twice the typical traffic signal cycle at each intersection. While more frequent service is technically possible on the Orange Line Bus way, buses operating less than every 3 minutes on any given route tend to experience delays at signals. Bus headways are no longer evenly spaced and buses often "bunch," leading to increasingly uneven frequencies that degrade service quality.

The many mixed traffic Metro Rapid routes operated by the Los Angeles Metropolitan Transit Authority (MTA) in the Los Angeles Basin have also experienced this frequency limitation phenomenon. The large number of bus way crossings also limits the bus way's operating speeds. Original plans projected 28-minute travel time over the length of the bus way, but in practice running times are usually 40-45 minutes. After a spate of accidents, crossing speeds were reduced to 10 m.p.h. See Figure 4.13 for a typical Orange Line crossing of a major arterial.

Figure 4.11 Orange Line Bus way Route

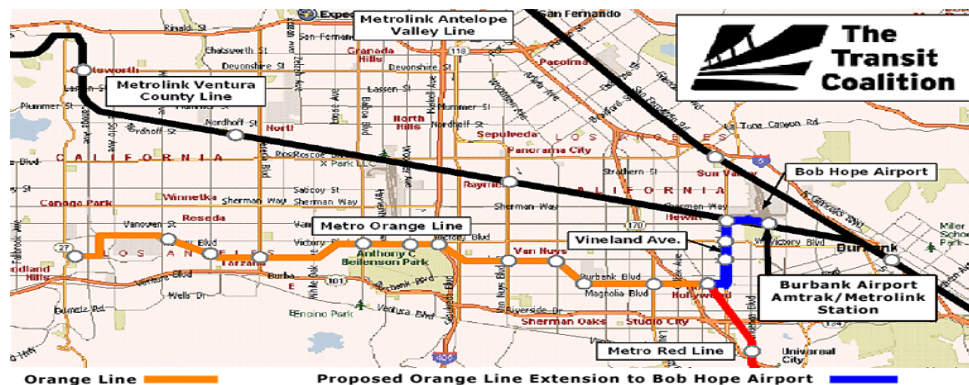




Figure 4.12 Orange Line BRT Vehicle



Figure 4.13 Orange Line Level Crossing

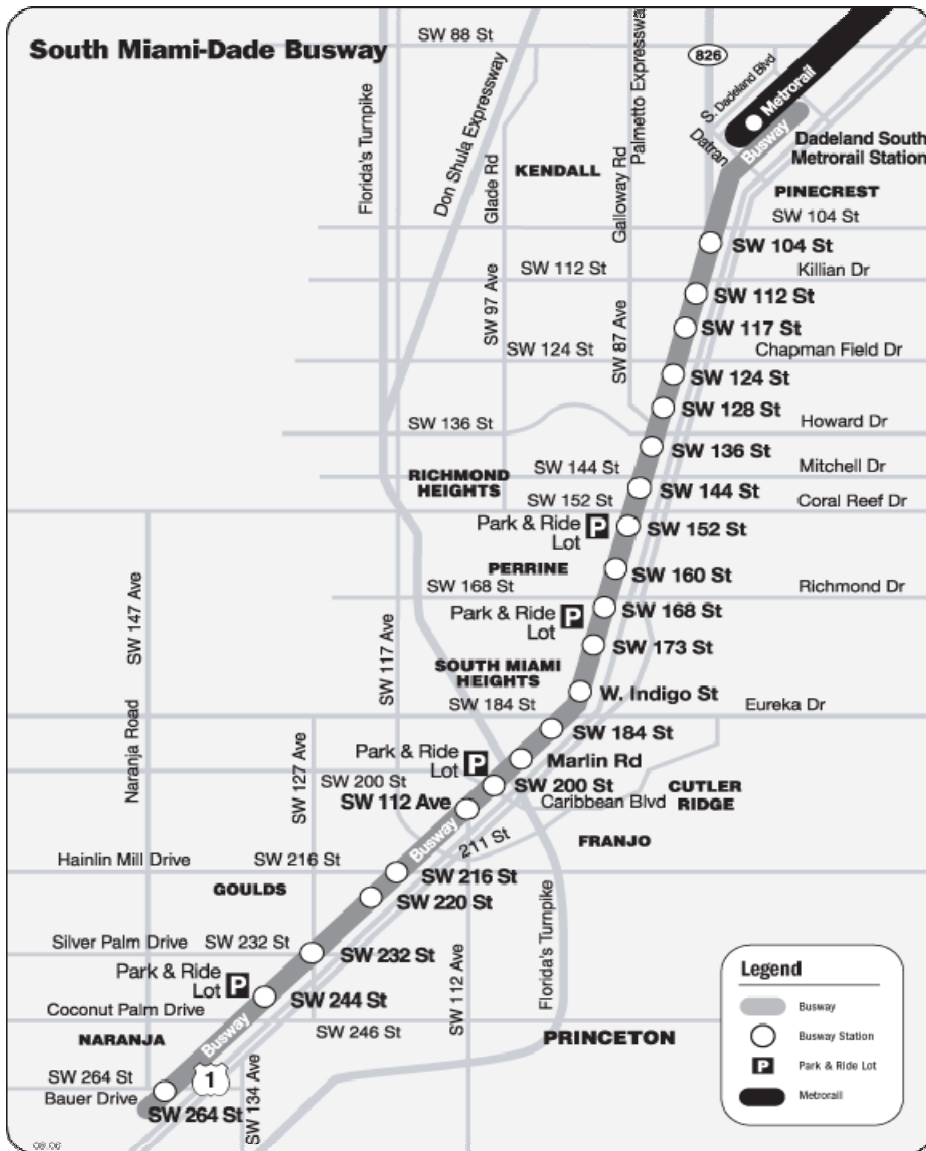


A proposed 6-mile, \$135 million extension north from Warner Center to the Chatsworth Metrolink (commuter rail) station was approved by the LAMTA board on September 28, 2006. A local transit advocacy group, The Transit Coalition, has also proposed a 3.5 mile northern extension of the bus way from the east end of the Orange Line at the North Hollywood Metrolink (heavy rail) station.

### South Miami-Dade County Bus way

The first phase of the South Miami-Dade County Bus way opened in 1997 over a \$60 million, 8.5-mile route operating southwest from the Dadeland South Metrolink station to Florida City. A 5-mile extension opened in 2005, and an additional 6.5-mile extension is likely to open in 2008.

Figure 4.14 South Miami-Dade Bus way Route



The Bus way has suffered from many accidents, which has forced buses to slow down to 15 MPH. Operating speeds are comparable to the Orange Line Bus way in Los Angeles. Unlike the Orange Line, several routes use the Bus way, averaging 8,000 daily boardings (2002).

### Grade Separated Bus ways

Fully grade-separated bus ways have been built in a handful of North American cities including the El Monte Bus way in Los Angeles, three bus ways in Pittsburgh and the well-known Ottawa Transitway in Canada. According to Wikipedia, the El Monte Bus way:

Opened in 1974 to buses only, then became open to carpools in 1976. The eastern terminus of the bus way was near El Monte Bus Station in El Monte at Baldwin Avenue, until it was extended 2 miles in 2005 to I-605. The western terminus of the bus way is at Alameda St. near Union Station. The resulting carpool roadway is one of the few indisputably successful mass transit projects undertaken in Southern California. Bus ridership is approximately 18,000 [boardings per day], and in addition to the 100 buses an hour along the bus way during peak periods, the roadway carries 1,600 carpools and vanpools during peak hours.

Bus service is provided with a mix of Foothill Transit and Metro Express buses. There are two classes of bus service on the bus way: Metro Express and Foothill Transit's Silver Streak and Line 481 service make all bus way stops and allow boarding and alighting at all stops along the route, while Foothill Transit's Commuter Express service only drops off passengers heading westbound during the morning rush hour and only boards passengers heading eastbound during the afternoon rush hour; Commuter Express buses do not stop at El Monte Bus Station, continuing along the HOV lanes of I-10.

Bus service operates from various points in the San Gabriel Valley and Pomona Valley, as well as the San Bernardino County cities of Chino and Montclair, for those going to and from Downtown Los Angeles; Foothill Transit Line 481 continues to Korea town to the Wilshire/Western Red Line Station. The El Monte Bus Station is believed to be the busiest bus terminal west of the Mississippi River, although the San Francisco Transbay Terminal may be busier.

Figure 4.15 El Monte Bus way Map



The first bus way constructed in Pittsburgh, Pennsylvania was the \$115 million, 6.8 mile Martin Luther King, Jr. East Bus way that opened in February 1983 between Wilkinsburg and downtown Pittsburgh. This facility was constructed parallel to a major railroad right-of-way, and carries about 28,000 daily passengers. Ridership projections made in the 1970's predicted up to 80,000 daily passengers on the bus way, but the Pittsburgh area continued to decline in population and the required level of bus service has never been provided. Prior to the bus way transit trips required 45 minutes from Wilkinsburg to downtown, compared to 15 minutes after the bus way opened. In 2003 a \$68.8 million, 2.3 mile, 3-station bus way extension opened to Swissdale.

Figure 4.16 Pittsburgh Martin Luther King, Jr. East Bus way



The \$27 million South Bus way was the first bus way to open in Pittsburgh in 1977. This 4-mile, 9 stop facility carries about 11,000 daily passengers on 552 daily bus trips operated on 16 express bus routes between South Hills suburbs and downtown, and shares a tunnel with Pittsburgh's light rail system. Original ridership estimates predicted around 30,000 daily passengers, but Pittsburgh's ongoing population and employment declines have ensured that the original ridership estimates will probably never be met.

Figure 4.17 Pittsburgh South Bus way



The 5-mile, \$326.8 million West Bus way in Pittsburgh opened in September 2000, and currently carries more than 9,500 daily passengers on 413 weekday bus trips operated on 11 routes. This facility has six on-line stations with 560 park and ride spaces, and six remote sites with a total of 1,000 parking spaces.

The original patronage projections for the West Bus way estimated about 50,000 daily passengers on a longer and more elaborate facility. Major elements in the overall program, including a full bus way treatment into downtown Pittsburgh, were deferred due to cost escalation. The West Bus way has the distinction of being one of the most expensive bus ways ever built in the U.S. of \$65 million per mile, mainly due to the cost of grade-separated construction in the very hilly areas of Western Pennsylvania and total rehabilitation of an old railroad tunnel.



Figure 4.18 Pittsburgh West Bus way, as Built



For a detailed analysis/evaluation of the Ottawa, Canada bus way, see [www.publictransit.us/ptlibrary/specialreports/sr8.OttawaTransit.pdf](http://www.publictransit.us/ptlibrary/specialreports/sr8.OttawaTransit.pdf).

### **BRT Congestion-Avoiding Strategies**

The least expensive BRT projects operate in mixed traffic with signal and other traffic engineering priorities. Examples previously discussed include AC Transit Route 72R along San Pablo Avenue, a number of Metro Rapid routes in the Los Angeles Basin, Route 22 along El Camino Real in Santa Clara County, Route 50 along Stockton Boulevard in Sacramento, and Route 40 in Stockton. Other examples include three B-Line BRT routes in Vancouver, British Columbia and proposals to extend mixed traffic BRT routes in Los Angeles, Oakland, San Diego and other West Coast cities.

Mixed traffic BRT routes with transit priorities and longer stop spacing compared to local service stops speeds up service, but are still often subject to congestion delays though such BRT routes are more reliable than local bus routes. In some cities, transit priorities include “queue jumpers” and other traffic engineering treatments designed to favor buses, and in selected areas with exclusive lanes designated by pavement markings such as along several major bus routes into downtown San Francisco. However, pavement markings by themselves are notoriously hard to enforce against double-parking and other automobile encroachment.

A handful of cities have resorted to considerably more costly separate bus guide ways in boulevard medians, or exclusive lanes indicated by special pavement markings and textures on surface streets in congested areas, with mixed flow operations elsewhere. The Eugene-Springfield EmX BRT project has developed a guide way design that is more likely to discourage illegal usage by automobile drivers than the Las Vegas MAX BRT, which mainly relies on exclusive bus lanes indicated by road striping, as opposed to distinct EmX lanes designated by separate, concrete lanes and curbed lanes distinct from the mixed flow traffic lanes (Refer to Figure 4.4). As previously mentioned, about two-thirds of the 4.5 mile of EmX route is separated from mixed flow traffic. The Las Vegas MAX route has a similar mix of designated bus lanes and mixed flow operation. The Vancouver B-Line to the Richmond suburb of Richmond also includes long portions of boulevard median bus lanes, but unlike Eugene and Portland, operates conventional vehicles.

A number of grade-level boulevard median bus ways are operated by very high volume BRT systems in Curitiba, Brazil, Lima, Peru, Bogota, Columbia and other South American cities. However, these examples aren't directly applicable to the U.S. for several reasons: (1) the U.S. has much higher labor and capital costs so the comparison with rail transit is at considerably different price points (2) compared to South America, it is probably not politically possible to obtain nearly as much space for buses as was possible in Bogota, where an authoritarian government was able to construct many stretches four exclusive bus lanes wide, e.g., exclusive bus expressways! Existing and potential BRT volumes in South America are one to two orders of magnitude greater than the U.S. due to very high urban densities, and (3) and U.S. residents, given the widely available choice of driving, will not tolerate the level of transit crowding that transit dependents in less affluent countries such as Brazil, Peru and Columbia must endure.

The next, generally more expensive step up in separating BRT vehicles from mixed flow congestion is constructing bus ways along off-street alignments that have at-grade crossings with cross streets. The most prominent examples include the Orange Line Bus way in Los Angeles and the South Miami-Dade Bus way in South Florida. An earlier example is Philadelphia's Ardmore Bus way in the western suburbs, which was converted from a former trolley line in 1967.

Generally, the most expensive but also most effective strategy for separating BRT operations from traffic congestion is constructing fully



grade-separated bus ways. This kind of bus way tends to have the greatest ridership, as demonstrated by the bus ways in Pittsburgh, the Ottawa Transitway, and the El Monte Bus way in Los Angeles. A variation on grade-separation is operation of extensive express bus services over high occupancy vehicle (HOV) lanes along freeways. Numerous examples exist in the Bay area including Tri Delta Transit Route 300; the Vallejo Baylink express buses along I-80 serving the El Cerrito Del Norte BART station and supplementing the Baylink ferries; the Golden Gate Transit commuter bus network serving Sonoma and Marin County commuters to downtown San Francisco; AC Transit transbay buses; Samtrans express buses operating along U.S. 101; and a number of other operations. Numerous examples also exist in other U.S. cities, the most prominent in New York City and New Jersey (e.g., the Lincoln Tunnel bus lanes into the Port Authority Bus Terminal); the Shirley Highway from Virginia into Washington, D.C.; the Houston Transit ways serving buses to downtown Houston and very large volumes of carpools and vanpools; HOV lanes/bus ways in Denver; and other U.S. cities.

One drawback of HOV lanes along freeways for transit service is that midday transit volumes will be relatively low, mainly because freeways are not located optimally for transit-oriented, walk able development, and such “all day” destinations favorable to transit are often well beyond walking distance from freeway alignments even in cases where transit stations are provided.

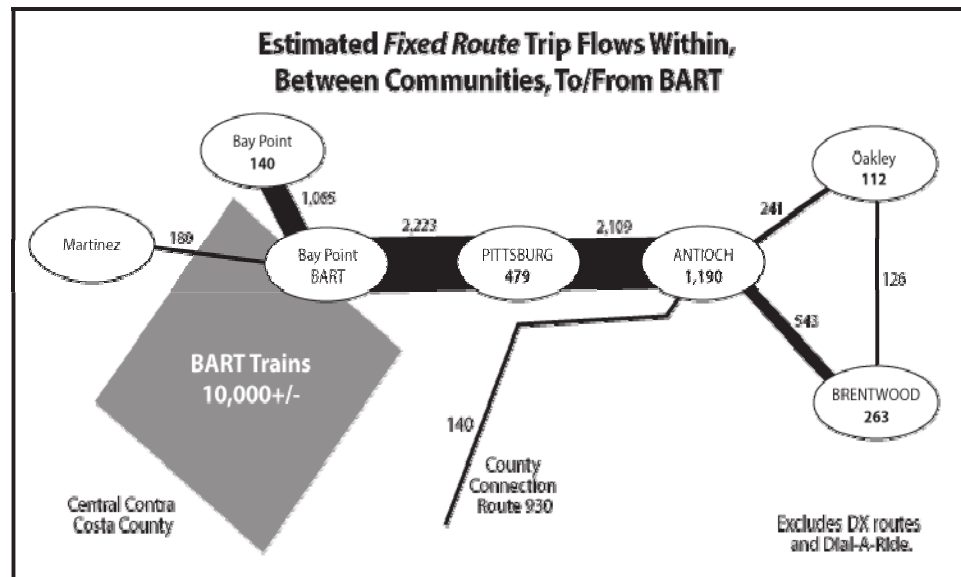
## BRT Options for Eastern Contra Costa County

Determining what BRT options may be feasible in the Tri Delta Transit service area first requires understanding the context of local transit travel patterns. According to the analysis in Table 4.1 developed from on-board survey origin and destination data for “linked” transit trips, about 30% of Tri Delta Transit patrons stay within their immediate community of origin, about 30% begin and end their trips at BART or transfer between routes at BART, and the remaining 40% travel between communities within East County. These patterns, including trips to and from the Pittsburg/Bay Point BART station are shown graphically in Figure 4.19.

**Table 4.1 Estimated Weekday Transit Trip Origins & Destinations**

FROM / TO	Brentwood	Oakley	Antioch	Pittsburg	Bay Point	BART	Other	TOTAL
Brentwood	263	56	78	78	11	56	17	<b>559</b>
Oakley	70	112	48	34	0	31	0	<b>295</b>
Antioch	95	48	1,190	405	119	309	214	<b>2,380</b>
Pittsburg	133	40	226	479	133	293	67	<b>1,371</b>
Bay Point	35	0	70	210	140	280	35	<b>770</b>
BART	120	40	519	333	253	0	67	<b>1,332</b>
Other	0	0	168	84	38	0	0	<b>290</b>
<b>TOTAL</b>	<b>716</b>	<b>296</b>	<b>2,299</b>	<b>1,623</b>	<b>694</b>	<b>969</b>	<b>400</b>	<b>6,997</b>

Figure 4.19 Tri Delta Transit Fixed Route Trip Patterns



As expected Tri Delta Transit trip patterns between communities mostly occur along Highway 4. The vast majority of transit trips between communities and to/from Pittsburg/Bay Point BART occur along this corridor, primarily on surface streets that parallel Highway 4. Patronage estimates of 10,000 total boardings, and 5,000-6,000 net new transit boardings, for the proposed 9-mile eBART/BART rail extension along Highway 4 to Hillcrest Avenue in Antioch also appear to be plausible, considering current bus volumes.

However, total bus patronage volumes between Antioch and Brentwood are only one-eighth of the transit traffic between BART and Antioch, and between Antioch and Brentwood, only one-quarter the BART-Antioch travel volume. Based on this, the most productive application of BRT concepts appears to be generally east of Antioch, particularly in 2008 after Highway 4 bypass opens.

A first step towards BRT-type service would be to restructure Route 300 to provide faster service between Brentwood, Hillcrest Park and Ride, and Pittsburg/Bay Point BART once the Highway extension opens. Operation of Route 300 service via this new roadway is likely to reduce inbound travel times by 12-15 minutes, and 15-20 minutes outbound, particularly in the congested afternoon peak period. It appears possible to provide 30-minute peak period frequencies between Brentwood and Bay Point BART, with operating times of 40-45 minutes, and a similar level of service to Oakley. Another possibility would be for the BART BRT-type feeder routes serving Oakley and Brentwood to skip (“leapfrog”) the Hillcrest Park & Ride Lot altogether, serving that location with a new route or a peak period extension to BART of an existing local route.

Midday, evening and weekend service to both communities could operate on 60-minute headways, and/or in a two way loop via the Highway 4 freeway, Main Street in Oakley, Brentwood Boulevard, Balfour Road returning to the Hillcrest Park and Ride lot via SR4.

## Multiple Transfers & Overall Transit Patronage Potential

While construction costs for the proposed eBART line between the Pittsburg/Bay Point BART station are estimated to be about half (\$400 million) that of an extension using conventional BART technology (\$800-\$900 million), a conventional BART extension would have advantage of a direct, one-seat ride between proposed stations at Railroad Avenue in Pittsburg, a future Somersville Road station, and at Hillcrest Avenue. For those using Tri Delta Transit buses to access regional rail service originating in communities east of Pittsburg, the eBART proposal would require a minimum of two transfers in each travel direction.

While many heavily patronized transit systems such as the San Francisco Municipal Railway or Toronto Transit Commission (TTC) in Canada have very large volumes of passengers who transfer twice or even more often, it is counterproductive to force passengers to transfer if unnecessary. Given this potential drawback of eBART to existing and future Tri Delta Transit riders originating east of Pittsburg, it is reasonable to expect that, initially, most eBART users will either park & ride or would be dropped off rather than take the bus.

In the short-term, a few riders would also be “walk-ins” coming from within a 0.5 mile radius of the eBART stations; in the longer run, the number of walk-in eBART passengers would grow dramatically as transit-oriented development occurred around the stations. However, only a moderate share of eBART ridership is likely to transfer from buses due to the requirement to transfer again at Pittsburg/Bay Point BART. A majority of those transferring at eBART stations are likely to be between local routes.

## BRT Implementation Strategy

There are a number of BRT/express bus strategies that warrant much more detailed study beyond the scope of an SRTP. However, this document suggests a number of these strategies that may have particular utility for Tri Delta Transit. These recommendations are briefly discussed in the remainder of this chapter.

**First**, soon after the late 2007 opening of the Highway 4 extension to East Antioch and Brentwood, Route 300 should be restructured into a line with two branches: one serving Brentwood more directly with dramatically reduced running times, and the second branch continuing to serve Oakley. It should be possible to run more peak period service with the same number of vehicles currently assigned to Tri Delta Transit Route 300, e.g., every 30 minutes on both the Brentwood and Oakley branch, with a combined headway of every 15 minutes between Hillcrest Avenue and the Pittsburg/Bay Point BART station. To minimize travel times, a preferred option would be to “leapfrog” e.g., skip, the Hillcrest Park & Ride Lot during peak hours.

**Second**, transit centers and park and ride lots should be constructed relatively soon at potential eBART station sites, even at future station locations that may not receive eBART service for decades. In addition

to the proposed Railroad Avenue and Hillcrest Avenue eBART stations, transit centers should be constructed at Somersville Road, at the Highway 4 extension and Lone Tree Way in southeast Antioch, and expand the existing Brentwood Park & Ride into a full transit center with a sufficient park & ride spaces to meet likely demand. It is important to purchase land, determine each facility's location and minimize capital costs at an early date. Each proposed transit center should also include easy bus access to/from local arterial roadways, but also easy access on/off Highway 4, for the reasons enumerated above. Tri Delta Transit should work with BART and the Contra Costa Transportation Authority (CCTA) to ensure that these four proposed transit centers are constructed in a timely manner. Such transfer centers along with reduced travel times may also make express buses to Discovery Bay and Byron feasible.

**Third,** Tri Delta Transit should work with the Contra Costa Transportation Authority (CCTA) additional funding should be obtained to extend the Highway 4 bypass HOV lanes another six miles to Balfour Road in Brentwood. This \$60- \$80 million project would not only enhance BRT service in the long run, but carpoolers and vanpoolers would also benefit. This facility would allow BRT vehicles to travel non-stop between the Brentwood transit center and the Pittsburg/Bay Point BART station in 25-30 minutes, less than half current travel times. Comparable time-savings are also possible from the area around Lone Tree Way.

**Fourth,** the possibilities for bus rapid transit on arterial roadways to speed up local the most heavily used Tri Delta Transit routes should not be neglected, e.g., following the Eugene/Springfield and Las Vegas models in addition to the freeway-oriented BRT discussed above. While East County traffic is likely to be less congested once Highway 4 expansion of Highway 4 from Pittsburg through Antioch is completed, arterial-based BRT routes are still likely to require separated bus right-of-way over 10% to 20% of potential BRT routes, in addition to standard signal priorities and BRT stop upgrades. This most likely would be in the form of "queue jumpers" at locations with significant backups at traffic signals, separate lanes similar to Eugene-Springfield and Las Vegas in congested areas and/or to bypass the most congested segments of major streets, dedicated bus entries to transit centers and key traffic generators, freeway access, etc.

A cursory examination reveals a number of corridors that may be suitable for arterial street BRT:

- Pittsburg/Bay Point BART to Antioch via Leland, Somersville Road, downtown Antioch, A Street, East 18<sup>th</sup> Street, to Hillcrest Avenue eBART station/transit center.
- Pittsburg/Bay Point BART to Antioch via Willow Pass Road, downtown Pittsburg, East 14<sup>th</sup> Street, a new BRT connector to Century Boulevard, then to future Somersville Road eBART station and transit center.

- From Somersville Road future eBART and transit center to Southeast Antioch and perhaps Brentwood via Highway 4, Lone Tree Way, Lone Tree Way/Highway 4 transit center, Fairview Avenue, and Balfour Road to Brentwood transit center.
- From Somersville Road transit center to Hillcrest transit center via Highway 4, new BRT connection to Oakley Road, downtown Oakley, then Brentwood Boulevard to Brentwood transit center.

**Fifth**, improved vehicle designs such as the EmX design with left-side doors may maximize BRT design flexibility as it has in Eugene-Springfield. While detailed BRT design issues will be site-specific, the ability to use platforms on either side of a bus may allow installation of stations in locations otherwise precluded due to narrow rights of way, otherwise awkward traffic circulation, etc. Potential BRT patronage could also warrant purchase of articulated vehicles (there is no design limitations on 40-foot vehicles with left-sided doors, such as used by standard electric trolley coaches in a Boston tunnel). See Figure 4.20.

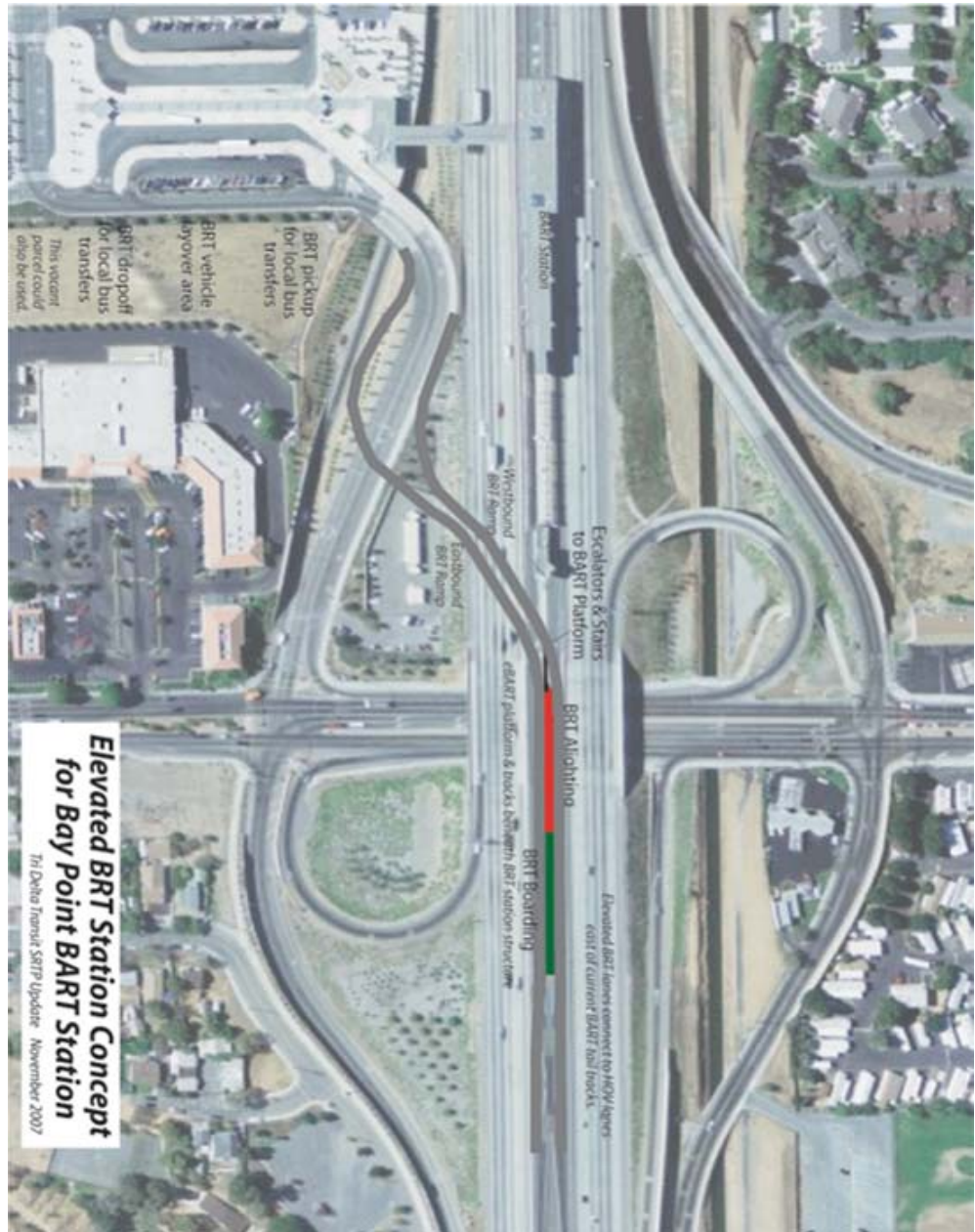
Figure 4.20 EmX Vehicle with Left-Side Doors



**Finally**, use of BRT vehicles with doors on both sides of the vehicle increases the feasibility and cost-effectiveness of an elevated BRT station over the current BART tail tracks at the Bay Point station, with direct escalator access to the BART station platform. With only right-side doors, a BRT station would have to be at least 60 feet wide; the current BART right-of-way is only 50-feet wide. By staggering the BRT arrival and departure areas, with left-hand alighting and boarding from an island platform, a structure less than 40 feet wide is possible. Together with 2 bus bays for alighting and 2 boarding bays—with a BRT bridge to the existing bus transfer area to allow a second stop for connections to local routes and sufficient space for BRT vehicle layovers—this concept would be much less massive than a facility constructed to conventional roadway standards. While such a concept would require about 0.6 miles of two-way elevated bus way connecting to the existing HOV lanes, it may be worth the \$100 million cost+ due to a capacity of over 100 bus arrivals and 100 departures per hour, and significantly shorter access times to the BART station platform, compared to walking times from the existing bus transfer facility. Please refer to Figure 4.21 for a drawing of this concept.



Figure 4.21 Elevated BRT Station Concept at Pittsburg/Bay Point BART



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## Operations Plan and Budget

This chapter presented the recommended 10-year transit operations plan for Tri Delta Transit. Based on geography and demographics alone, significant fixed route service expansion seems warranted to address growing commute travel congestion on Highway 4, rapid development in southeast Antioch and communities east and south to the Alameda County line, and in-fill residential and commercial activities occurring in the mature communities of Antioch, Pittsburg and unincorporated Bay Point. Eastern Contra Costa County leads the Bay Area in the pace of residential growth projected through 2020 despite the current slump in the housing market. The once-rural communities of Brentwood, Byron, Discovery Bay and Oakley are experiencing dramatic suburban expansion more or less simultaneously, while densities in Bay Point and other developed communities are also increasing.

Recommended service changes and improvements are based on the findings described in Chapter 3 and the potential of bus rapid transit (BRT) described in Chapter 4, and take into account the various constraints on the transit system as well as available opportunities. This chapter also provides the basis for the recommended Capital Plan discussed in Chapter 6. Service recommendations have also been developed consistent with Federal Transit Administration (FTA) and Metropolitan Transportation Commission (MTC) guidelines requiring a Short Range Transit Plan to be “financially constrained,” e.g., with a balanced budget every year.

The proposed operating budget and projections is discussed at the end of this Chapter. The major assumption is that the total level of bus service, as measured by revenue vehicle hours (RVH), will remain at current levels over the 10-year period.

### Tri Delta Transit Strengths & Weaknesses

Based on the findings outlined in Chapter 3, the major strengths of Tri Delta Transit include:

- Tri Delta Transit fixed route operating performance is comparable to other transit systems operating in dispersed, low-density suburban environments. Overall occupancy rates were typical of such areas, given the nature of the service area.
- Tri Delta Transit has reasonable operating expenses. in the mid-range of peer suburban transit systems in the Bay Area. Average utilization rates are comparable to other suburban bus systems, but are generally lower than “mainline” transit systems catering to longer trips such as BART.

- Tri Delta Transit fixed route patronage is increasing, ridership increased 10% between FY 2003-04 and FY 2006-07, despite the fact that overall service levels remained the same. Patronage reacted positively to the various reallocation of operating resources between 2004 and 2007.
- Tri Delta Transit is increasingly productive. Overall fixed route productivity increased by about 10% increasing from 14.4 boardings/revenue vehicle hour (RVH) in FY 2003-04 to 16.0 boardings/RVH during FY 2006-07.
- Tri Delta Transit is reliable and safe. During FY 2006-07, there were 16,625 miles between road calls, compared to a much lower adopted standard, and one preventable accident every 68,239 revenue vehicle miles, near the high end of the adopted range, e.g., between 40,000 and 70,000 RVH.
- Paratransit productivity remains consistent. Paratransit productivity declined only slightly from 2.7 to 2.6 passengers/RVH between FY 2003-04 and FY 2006-07, respectively despite the fact that regional growth is creating longer, average trip lengths.
- Tri Delta Transit is succeeding at one of its main missions to serve the transit dependent. A composite profile of a Tri Delta Transit rider can be summarized from on-board survey results. The "average" rider would be between twelve and thirty years old, is transit dependent with limited access to a vehicle, lives in a low to very low income household, mainly pays cash when riding the bus, and regards their ethnicity as non-white.
- Most Tri Delta Transit patrons are making local trips. Most Tri Delta Transit patrons begin and end their bus trips within East County, make their trips without transferring, also use Tri Delta Transit buses for round trips, and walked to and from the bus.
- Tri Delta Transit's recent introduction of a day pass to replace most bus-to-bus transfers has been successful. A large proportion of fixed route passengers adopted this new fare instrument very quickly.

The major weaknesses of and constraints on Tri Delta Transit include:

- Existing Tri Delta Transit Routes 70 and 200, and new routes 384, 385, 386, all had productivity well below the fixed route mean, but productivity is still well above that of paratransit.
- Highway 4 traffic congestion between Pittsburg and Antioch where eight freeway lanes converge down to four continues to severely constrain Tri Delta Transit express bus operations, particularly the fixed route system on weekdays after 2:00 p.m.
- Individual trips with low productivity are still a problem. For example, Route 70 has gradually been cut back in order to improve productivity. Many local routes are productive during peak commute and school travel times, but have are far less productive during the midday, particularly routes that have a large proportion of student ridership.

## Transit Challenges

Tri Delta Transit faces a number of challenges to continued transit system growth and increasing overall efficiency. But the system also can take advantage of several potential opportunities to improve service and increase patronage.

Like most transit systems, available financial resources for Tri Delta Transit are increasingly limited while the cost of basic inputs, such as fuel, maintenance parts, insurance, and other necessary supporting services are generally increasing faster than inflation. The prices paid for bus diesel fuel are very close to \$3.00 per gallon, nearly doubling over the past few years. Costs for various kinds of insurance have also increased, particularly for health and California workman's compensation. The general rise in fuel prices has also increased costs for a myriad of other materials and services, ranging from engine parts to tires to utilities.

In contrast, transit's various sources of tax revenues have not increased nearly as quickly as expenses during the past few years. Contra Costa County retail sales have increased and overall County population has continued to increase steadily. However, the major source of operating subsidies, Transportation Development Act (TDA) sales taxes has been growing more slowly than operating expenses. Other revenue sources, such as Federal Transit Administration (FTA) Section 5307 formula funds for the Bay Point-Pittsburg-Antioch urbanized area have been growing about 3.5% annually, a rate below the increases in operating expenses. And, MTC's Transit Capital Priorities Program forces Tri Delta Transit to compete with 27 other local operators for capital funds in the region based on a project scaling criterion that is not favorable to suburban operators.

Tri Delta Transit is also constrained due to the nature of the community it serves, a relatively affluent, dispersed, low-density suburban community. Less than 5% of East County households do not own an automobile; in other words, 95% of households do own at least one motor vehicle. This very high vehicle ownership rate is typical for U.S. suburban areas, and it is considerably higher than more densely urban areas with greater transit usage rates such as San Francisco, Oakland, or Richmond.

Ridership and productivity on new Tri Delta Transit service such as Routes 383, 384, 385 and 386 has been relatively low during the first few years of operation, but is still substantially more productive than experienced on demand responsive systems. Routes 383, 384 and 385 serve still developing dispersed low-density, highly auto-oriented suburban areas, while Route 386 function as a rural route serving Discovery Bay. Each of these routes may ultimately average between 10-15 boardings/RVH depending on how quickly additional development occurs.

## Transit Opportunities

While the Tri Delta Transit operating environment imposes many constraints that limit long-term transit potential, nonetheless there are a number of focused opportunities to significantly increase patronage and improve system efficiency and productivity.

The first opportunity is to streamline operations of express Route 300 between Brentwood and the Pittsburg/Bay Point BART station after the late 2007 opening of the Highway 4 extension. This extension will reduce transit travel times by at least 15 minutes in each direction, perhaps more if Route 300 “leapfrogs” (bypasses) the Hillcrest Park & Ride Lot during peak hours. This reduced travel time, in turn, may allow increasing peak period frequencies on Route 300 to every 15 minutes, with two route segments running every 30 minutes between Oakley and BART and every 30 minutes between Brentwood and BART. This route revision could also be the first step towards development of a bus rapid transit (BRT) network serving East Contra Costa County, particularly serving portions of the ECCTA service area not be served directly by the proposed eBART extension to Hillcrest Avenue.

In the short term, other opportunities for improving express bus service are limited, mainly due to the excessive use of limited operating resources caused by the consistently severe congestion experienced on Highway 4 between Pittsburg and Antioch. Once the programmed widening of Highway 4 from two to four lanes in each direction is completed in the next few years, additional opportunities for improving express service may be available, including possible development of BRT strategies. The pending widening of Highway 4 may also open opportunities for improving local routes as congestion in the corridor would be relieved on parallel roadways as well as on the widened freeway.

Tri Delta Transit maintains overall fixed route service levels in the range of 160,000-162,000 revenue vehicle hours (RVH) per year, consistent with the increasingly limited financial resources available to transit in East Contra Costa County. Over the past few years, poorly performing services have been reduced, and the freed transit resources reallocated to more productive services. Recent examples include previous service adjustments that allowed introduction of Routes 383, 384, 385, and 386 in 2005.

Tri Delta Transit also began operation of Route 201 between Pittsburg/Bay Point BART, Bay Point and central Concord to meet a need for direct service to a large high school attended by many Bay Point students, and health care, shopping, and other opportunities “over the hill” not available in Bay Point. Though Route 201 has been operating for less than two months at this writing (late October 2007), productivity already exceeds 12 boardings/RVH, indicating that it is likely to be among Tri Delta Transit’s most productive routes once patronage levels mature in 18-24 months. Given the immediate success of Route 201, there are probably a number of other opportunities to reallocate Tri Delta Transit’s limited resources from underperforming services to more productive routes.

Another potential opportunity for improved service is based on Tri Delta Transit's willingness to consider information technology improvements to increase customer service, productivity, improved management information, and other aspects of transit operations can be improved. Recently, Tri Delta Transit has successfully implemented new Computer Aided Dispatching/Automatic Vehicle Location (CAD/AVL) technology. Computer software compatible with CAD/AVL systems, designed specifically for flexible fixed route services—as distinct from paratransit-specific software such as Trapeze or Routematch—has been demonstrated in daily service by the Potomac and Rappahannock Transportation Commission (PRTC) in suburban Virginia outside Washington, D.C. While PRTC is currently the only transit system in the U.S. known to use this specific type of flex-route software (though the City of Santa Clarita in Southern California has specified the capability to add this capability to their pending CAD/AVL system), such software is routinely used by a number of European transit systems for flex routes in areas where regular fixed route operations are not justified by patronage. Given the low density of much of the Tri Delta Transit service area, flex routes using this sort of state-of-the-art software may help improve productivity and could also help reduce ADA paratransit expenses.

## Fixed Route Operations Plan

Table 5.1 summarizes projected fixed route service levels during the FY 2007-08 through FY 2017-18 period. Annual service levels are expected to increase by about 15% in FY 2007-08 at about 190,000 annual revenue vehicle hours (RVH) with little variation, due to added service on new Route 201, improvements to the Route 300 schedule, the addition of DX commute service to Martinez, and expansion of midday service to every 30 minutes on selected routes. The total number of peak period buses remain at 57 vehicles. These estimates assume continuing availability of all existing revenues including BART feeder bus funds. Service recommendations focus on incremental, revenue-neutral opportunities to reduce or eliminate poorly performing services, and shifting resources to more productive areas in order to improve overall system performance.

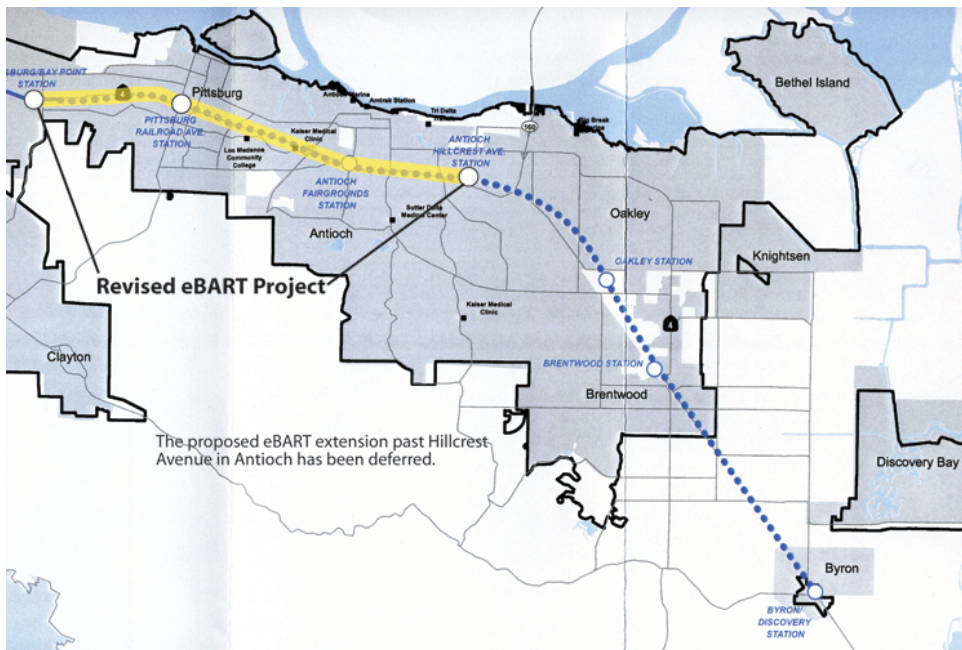
The previous SRTP document based many of its service proposals on the assumption that BART would implement “eBART” diesel commuter rail service over a 23-mile route between the BART Bay Point station to Byron via the Highway 4 freeway median and the Union Pacific Railroad’s “Mococo” right-of-way through Pittsburg, Antioch, Oakley and Brentwood. That proposal included seven potential stations including Pittsburg (Railroad Avenue), two in Antioch (L Street/Fairgrounds and east of the existing Hillcrest park-ride lot, one

Table 5.1 Projected Tri Delta Transit Fixed Route Service Levels

Fiscal Year	Fixed Route Revenue Vehicle Hours	Fixed Route Revenue Vehicle Miles
2006-07	160,909	2,460,563
2007-08	190,000	2,850,000
2008-09	190,000	2,850,000
2009-10	190,000	2,850,000
2010-11	190,000	2,850,000
2011-12	190,000	2,850,000
2012-13	190,000	2,850,000
2013-14	190,000	2,850,000
2014-15	190,000	2,850,000
2015-16	190,000	2,850,000
2016-17	190,000	2,850,000
2017-18	190,000	2,850,000

in Oakley (Empire Avenue & Neroly Road), and one in downtown Brentwood near the existing park-ride lot. Figure 5.1 shows this original proposal with recent project down scoping shown in yellow. eBART plans have been substantially revised since the previous S RTP due to rapidly rising capital cost estimates and a change in the proposed project alignment. The original proposal has been cut back to a \$400 million 9-mile line in the Highway 4 freeway median between the Pittsburg/Bay Point BART station and Hillcrest Avenue.

Figure 5.1 Revised eBART Proposal





The original eBART proposal would have operated in the median of Highway 4 through Pittsburg, and then transitioned to an alignment along the Union Pacific Railroad through Antioch, Oakley and Brentwood as shown in Figure 5.1. However, the Union Pacific Railroad did not agree to the terms offered by BART for the proposed right-of-way purchase, so the eBART proposal was revised to operate in the median of Highway 4. In turn, this necessitated design changes for the proposed Highway 4 widening from 4 to 8 lanes, delaying the start of widening construction and construction of eBART for several years.

Since 2004, costs for construction materials such as concrete and steel have also increased nearly 50%, necessitating reduction of eBART stations from three to two, with stations remaining at Railroad Avenue in Pittsburg and at Hillcrest Avenue in Antioch. At some future date, a third station would be built at Somersville Road or the Antioch Fairgrounds.

As discussed in detail in Chapter 3, Tri Delta Transit fixed routes carried about 2.5 million passengers during FY 2006-07, and ridership is expected to grow during FY 2007-08 due to the addition of Route 201, streamlining of Route 300 to better serve Brentwood, and other service additions. While total fixed route ridership has grown 25% since 2000, the share of total trips within the ECCTA service area has consistently been around 80% of all riders. This is the primary reason that Tri Delta Transit's highest priority is to serve local passengers. Half of these are either senior citizens or students that are more highly dependent on public transit than the general population.

Tri Delta Transit passengers travel in a complex pattern of origins and destinations, not all of which would be better served by eBART feeder service. The remaining 20% of Tri Delta Transit riders travel to destinations outside ECCTA service area boundaries. Most connect with BART at the Pittsburg/Bay Point station, with smaller volumes traveling to Martinez, the Lawrence Livermore/Sandia Laboratories and Dublin/Pleasanton BART, and via The County Connection Route 930 serving Ygnacio Valley Road.

Given the dominance of local passengers on the Tri Delta Transit system, the following principles should be incorporated into the revisions of the Tri Delta Transit fixed route network to interface with the planned startup of the revised eBART project.

## Principles for Tri Delta Transit Restructuring

**First**, Tri Delta Transit currently owns 69 fixed route buses, which support a maximum peak vehicle requirement of 57 buses with current spare ratio policies. MTC Resolution 3688 (Transit Capital Priorities Process and Criteria) effectively precludes ECCTA from increasing the total fixed route fleet size for the foreseeable future. Future service plans should be based on a maximum 57-bus peak requirement. If BART feeder bus funding is not continued, ECCTA would need to downsize the fixed route system to a maximum 49-bus peak.



**Second**, given recent down scoping of the eBART project, those choosing the bus to access BART from areas that would not be directly served by eBART should not be forced to transfer twice, e.g., first at the Hillcrest eBART station, then from eBART to BART. Requiring two transfers when not strictly necessary reduces patronage and increases travel times. Streamlining of Route 300 to speed up service between Oakley, Brentwood and Pittsburg/Bay Point BART by using the new Highway 4 bypass and “leapfrogging” the Hillcrest station would reduce travel times for most patrons while not directly competing with eBART.

**Third**, Tri Delta Transit services that parallel Highway 4 and the proposed eBART route, but carry very large numbers of local passengers should be revised as required to speed up service, but also provide connections to eBART stations where feasible. Some of the current route alignments could form the basis of arterial-based bus rapid transit (BRT) similar to that operated in Los Angeles, Eugene and Las Vegas.

**Fourth**, service changes that negatively impact the large majority of Tri Delta Transit passengers that travel locally should be avoided. Potential impacts should be measured using specific criteria, such as comparative transit travel time, system span and coverage, and fares. New routes and schedules should maintain or improve service quality for current Tri Delta Transit customers as well as future users. A full load check of the Tri Delta Transit fixed route network will be required at some point, to determine exactly where ridership is occurring and to help avoid major disruptions to the 80% of bus users who don't use BART or travel outside East County.

**Fifth**, land for future eBART station locations should be purchased at an early date, and bus transfer facilities and park and ride facilities constructed, though the recently down scoped eBART proposal doesn't include stations near Somersville Road or the Antioch Fairgrounds, nor at earlier proposed locations in Oakley, Brentwood and Discovery Bay/Byron. Such facilities would facilitate operations of BRT services connecting to eBART and Pittsburg/Bay Point BART, provide connections between local and regional bus routes, and help build the patronage base for future eBART services when an extension can be financed.

A bus rapid transit (BRT) systems study should be conducted, examining ways of complementing the recently down scoped eBART project, but also to potentially speed up service to local riders on the most heavily-traveled local routes. Proposed revisions to Route 300 could also be the basis of new and revised services based on bus rapid transit (BRT) planning principles in an area unlikely to have direct rail service for many years, thereby complementing BART and eBART.

**Finally**, paratransit service plans need to be consistent with revisions to the fixed route system. For example, additional Dial-A-Ride service would be required if planned fixed route extensions or new routes expand the paratransit service area as defined by the ADA 3/4-mile rule.

Based on the principles listed above, three significant fixed route service initiatives are proposed for implementation before FY 2010:

- Realign Route 300 Highway 4 Express service via the Highway 4 bypass upon completion south to Balfour Road.
- Refine and expand Route 201 operations based on ridership and productivity trends.
- Increase midday service to every 30 minutes on selected routes, as shown in the FY 2007-08 budget.

### **Route 300 Realignment via Highway 4 Bypass**

Incremental improvements as affordable are recommended for express bus services operating to Pittsburg/Bay Point BART. As noted earlier, express bus ridership accounts for most of the system ridership gains since 1997. The basic premise for rerouting is to reshape Route 300 to more of a BRT-style service when the Highway 4 bypass opens between Hillcrest Avenue and Lone Tree Way in late 2007. More frequent service may be justified, and some increment of increased service would be funded in the FY 2007-08 budget. The unconstrained frequency design guideline is to meet every peak period BART train arrival and departure at Bay Point. Current ridership at first may only support 30-minute headways on a Brentwood branch and every 30 minutes to/from Oakley, with combined frequencies of 15 minutes to BART.

Route 300 buses presently run non-stop west of the Hillcrest Avenue park-ride lot to BART, and make various stops east of Hillcrest on main arteries through Oakley and Brentwood. Most Route 300 trips should be realigned east of the Hillcrest park & ride to use the bypass to Lone Tree Way and Balfour Road. Existing route segments on Main Street and Brentwood would continue to be covered in Brentwood, Oakley and Byron by Route 391.

These changes likely would reduce scheduled bus travel time between downtown Brentwood and BART by 15 minutes or more. Express bus travel times will further improve when planned HOV lanes are completed with the widening of Highway 4 east of Somersville Road after 2010. Travel times would be reduced further by leapfrogging Route 300 buses past Hillcrest during peak periods, saving about 5-7 minutes in each direction.

In cooperation with BART, new park and ride opportunities should be sought in the vicinity of future eBART station locations but most immediately near the Highway 4 bypass and Lone Tree Way. There is some reluctance to develop extensive parking capacity at future station locations beyond the current eBART project scope. However, ample parking near future stations is needed to help build a patronage base on bus connections to eBART and BART, and thus ensuring success over the long term.

Under less constrained fiscal conditions, the short-term objective should be to expand Route 300 weekday schedules to meet every BART train arriving and departing Bay Point. Currently, BART trains

depart Bay Point every 15 minutes on weekdays beginning at 4:02 a.m. until approximately 7:30 p.m., and thereafter every 20 minutes until midnight. The FY 2007-08 BART operating budget includes funds to increase evening and weekend train frequencies to every 15 minutes, thus providing a base for 30-minute bus frequency when patronage is unlikely to support every 15-minutes.

On weekdays, this would require three additional buses during weekday peak periods, and four additional buses during weekday base periods. Nominal operational savings could result from the shorter running times on the bypass compared to the existing alignment on Main Street and Brentwood Boulevard. This savings could be combined with new resources to incrementally implement increased frequencies as Tri Delta Transit can afford. Express buses currently do not operate on weekends. BART trains currently run every 20 minutes on weekends, but will soon be transitioning to 15-minute service. Half hour frequencies on Route 300 would require 4 buses.

### **Refine and Expand Route 201 Operations**

Route 201 began operation on August 27, 2007 between Bay Point and Central Concord. During the first full month of operations, route productivity exceeded 11 boardings/RVH, indicating that mature ridership levels after 18-24 months are likely to exceed the Tri Delta Transit system average productivity by a substantial margin. Possible improvements to Route 201—to be developed in detail by transit staff—may include midday service every 30 minutes, and hourly service on weekends. Additional midday service would require about 2,500 additional annual revenue vehicle hours; hourly weekend service would require adding about 3,000 annual RVH for Route 201 service between 7:00 a.m. and 8:00 p.m.

### **Midday Service Every 30 Minutes on Selected Routes**

The FY 2007-08 Tri Delta Transit operating budget has sufficient funding to increase fixed route services by about 15%. Many of the proposed improvements focus on improving midday service on weekdays to every 30 minutes on selected routes. Specific recommendations for these selective service increases are currently being developed by Tri Delta Transit staff.

## **Service Planning Beyond 2010**

As noted earlier, introduction of eBART and supporting/complementary bus rapid transit (BRT) to East Contra Costa County would have significant impacts on the transit network serving Tri Delta Transit customers and other commuters. BART currently provides about \$2.0 million annually to support bus connections to the Bay Point station. Additional State Transit Assistance (STA) funds are received from the BART coordination program; in effect, these two funding sources are functionally equivalent. Should these funding sources be discontinued when the current eBART project opens, weekday Tri Delta Transit peak service levels would have to be reduced proportionately.

Future Tri Delta Transit route revisions designed to accommodate improved access to new eBART stations, the current BART station, and to provide service where BRT strategies are appropriate, requires a systems level evaluation of the current system and development of scenarios and plans to evaluate the best strategies for meeting these disparate needs. BRT strategies in particular may be suited to Federal Transit Administration (FTA) "Small Starts" funding, e.g., projects that cost no more than \$250 million and request a maximum of \$75 million from FTA New Starts funding. Should Tri Delta Transit decide to pursue federal funding opportunities, a major study consistent with FTA planning guidelines would be needed. In addition to standard transit planning capabilities, this potential \$300,000 to \$500,000 study process would require detailed traffic engineering expertise to evaluate suitable locations for transit signal priorities, queue jumpers, potential stop locations, and other improvements.

### Dial-a-Ride Operating Plan

Projected Dial-a-Ride and Antioch Senior Bus Program service levels are summarized in Table 5.2. Dial-A-Ride demand is projected to grow by 12% between FY 2007 and FY 2008, primarily due to an anticipated 16% increase in service provided, paralleling projected increases in fixed route operations in FY 2008. Productivity is projected to increase slightly over the life of the plan. Similarly, Antioch Senior Bus Program ridership is projected to remain at current levels while service hours will remain flat.

Table 5.2 Projected Tri Delta Transit Dial-A-Ride Service Levels

Fiscal Year	Dial-A-Ride	
	Revenue Vehicle Hours	Revenue Vehicle Miles
2006-07	41,748	577,127
2007-08	48,400	670,000
2008-09	48,400	670,000
2009-10	48,400	670,000
2010-11	48,400	670,000
2011-12	48,400	670,000
2012-13	48,400	670,000
2013-14	48,400	670,000
2014-15	48,400	670,000
2015-16	48,400	670,000
2016-17	48,400	670,000
2017-18	48,400	670,000

## Operating Statistics & Budget Projections

Fare revenues tend to follow patronage; in FY 2007-08, a 10%-12% increase in total fixed route revenue is projected. Fixed route patronage is projected to increase 2% annually in 2008-09 and beyond. All other revenue sources including TDA, STA, FTA and other sources are projected to grow at the MTC-sanctioned rate of 3.5% annually except for Regional Measure 2 bridge tolls, which are projected to grow 1.5% annually. Operating expenses are also projected to grow 3.5% annually, roughly at the rate of inflation except for fuel, which is projected to increase at 6% annually.

Transit funding sources include passenger fares, on-vehicle advertising revenues, state Transportation Development Act (TDA) funds, State Transit Assistance (STA) funds, Bay Air Quality Management District (BAQAMD) special project funds, Regional Measure 2 (RM02) bridge tolls for Route 70, Federal Transit Administration (FTA) Section 5307 formula and 5303 planning funds.

There may be capacity within the existing Dial-a-Ride operation to absorb up to 25% more passengers than presently are scheduled, particularly if Tri Delta Transit takes full advantage of improving automated dispatching capabilities. The Antioch Senior Bus Program may have capacity for approximately 10% more passengers without significantly increasing revenue hours. The 10-year operating plan projected that peak vehicles operated will increase from 19 during FY 2006-07 to 23 during FY 2007-8, then remaining the same during the remainder of the 10-year period.

A 10-year revenue and expense analysis is provided in Tables 5.3 through 5.6. Total annual revenues available for operations are projected to increase from \$20.2 million in FY 2007-08 to over \$29.3 million in FY 2018. TDA, STA and Measure C revenues, which together provide nearly 70% of the operating budget, are forecast by MTC to grow 3.5% annually through FY 2018. The average annual growth rate all revenue sources combined is 3.8% over the ten-year period.

Operating expenses are projected to increase from \$20.2 million in FY 2008 to \$29.3 million in FY 2018. This assumes an average 3.8% increase in the cost per hour above FY 2007 actual expenses, allowing for service increases during FY 2007-08. This is considered a "best case" inflation assumption, barring unforeseen increases in employee health benefits, fuel and insurance costs. Higher inflation rates from year to year could necessitate minor service reductions to maintain a balanced budget. While ECCTA maintains a 20% farebox recovery objective for the fixed route system, an expectation of 15%-16% reflects a more realistic expectation of performance in the next several years. Triennial fare increases yielding 20% net higher farebox revenues are suggested in FY 2010 and FY 2015 to remain above the 15% farebox recovery threshold. It may be appropriate to revise the fare structure entirely when eBART begins operating, though what year this will occur is not yet certain.



**Table 5.3 Projected FIXED ROUTE Operating Budgets, FY 2008-FY 2018**

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	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18
<b>ESTIMATED OPERATING EXPENSES</b>												
1. Vehicle Operations (010)	\$9,013,839	\$11,695,000	\$12,163,975	\$12,652,943	\$13,162,819	\$13,694,562	\$14,249,178	\$14,827,724	\$15,431,309	\$16,061,097	\$16,718,308	\$17,404,226
2. Vehicle Maintenance (041)	\$3,030,459	\$2,879,000	\$2,979,765	\$3,084,057	\$3,191,999	\$3,303,719	\$3,419,349	\$3,539,026	\$3,662,892	\$3,791,093	\$3,923,781	\$4,061,114
3. Non-Vehicle Maintenance (042)	\$346,921	\$300,000	\$310,500	\$321,368	\$332,615	\$344,257	\$356,306	\$368,777	\$381,684	\$395,043	\$408,869	\$423,180
4. General Administration (160)	\$1,864,738	\$2,421,000	\$2,505,735	\$2,593,436	\$2,684,206	\$2,778,153	\$2,875,389	\$2,976,027	\$3,080,188	\$3,187,995	\$3,299,574	\$3,415,060
5. Adjustment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>6. TOTAL, Functional Class</b>	<b>\$14,255,957</b>	<b>\$17,295,000</b>	<b>\$17,959,975</b>	<b>\$18,651,803</b>	<b>\$19,371,639</b>	<b>\$20,120,690</b>	<b>\$20,900,221</b>	<b>\$21,711,554</b>	<b>\$22,556,073</b>	<b>\$23,435,227</b>	<b>\$24,350,533</b>	<b>\$25,303,580</b>
7. Memo Item (514, 515, 516)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8. Labor, Operators (501.01)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9. Labor, Others (501.02)	\$2,070,676	\$2,040,000	\$2,111,400	\$2,185,299	\$2,261,784	\$2,340,947	\$2,422,880	\$2,507,681	\$2,595,450	\$2,686,290	\$2,780,311	\$2,877,621
10. Fringe Benefits (502)	\$698,594	\$1,008,000	\$1,043,280	\$1,079,795	\$1,117,588	\$1,156,703	\$1,197,188	\$1,239,089	\$1,282,457	\$1,327,344	\$1,373,801	\$1,421,884
11. Services (503)	\$742,090	\$900,000	\$931,500	\$964,103	\$997,846	\$1,032,771	\$1,068,918	\$1,106,330	\$1,145,051	\$1,185,128	\$1,226,608	\$1,269,539
12. Fuel and Lubricants (504.01) - 6%	\$1,601,890	\$2,386,000	\$2,529,160	\$2,680,910	\$2,841,764	\$3,012,270	\$3,193,006	\$3,384,587	\$3,587,662	\$3,802,922	\$4,031,097	\$4,272,963
13. Tires and Tubes (504.02)	\$149,374	\$150,000	\$155,250	\$160,684	\$166,308	\$172,128	\$178,153	\$184,388	\$190,842	\$197,521	\$204,435	\$211,590
14. Other Materials and Supplies (504.99)	\$1,316,671	\$1,130,000	\$1,169,550	\$1,210,484	\$1,252,851	\$1,296,701	\$1,342,086	\$1,389,059	\$1,437,676	\$1,487,994	\$1,540,074	\$1,593,977
15. Utilities, Propulsion Power (505.01)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
16. Utilities, Other (505.02)	\$163,207	\$175,000	\$181,125	\$187,464	\$194,026	\$200,817	\$207,845	\$215,120	\$222,649	\$230,442	\$238,507	\$246,855
17. Casualty and Liability (506)	\$375,517	\$423,000	\$437,805	\$453,128	\$468,988	\$485,402	\$502,391	\$519,975	\$538,174	\$557,010	\$576,506	\$596,683
18. Purchased Transportation (508)	\$6,563,781	\$8,426,000	\$8,720,910	\$9,026,142	\$9,342,057	\$9,669,029	\$10,007,445	\$10,357,705	\$10,720,225	\$11,095,433	\$11,483,773	\$11,885,705
19. Interest Expense (511)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
20. Leases and Rentals (512)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
21. Other (507, 509, 510) including NVM	\$574,157	\$657,000	\$679,995	\$703,795	\$728,428	\$753,923	\$780,310	\$807,621	\$835,887	\$865,144	\$895,424	\$926,763
22. Adjustment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>23. TOTAL, Object Class</b>	<b>\$14,255,957</b>	<b>\$17,295,000</b>	<b>\$17,959,975</b>	<b>\$18,651,803</b>	<b>\$19,371,639</b>	<b>\$20,120,690</b>	<b>\$20,900,221</b>	<b>\$21,711,554</b>	<b>\$22,556,073</b>	<b>\$23,435,227</b>	<b>\$24,350,533</b>	<b>\$25,303,580</b>
<b>REVENUES - OPERATING</b>												
26. Fares (401, 402) - 2%	\$2,136,289	\$2,269,000	\$2,314,380	\$2,360,668	\$2,407,881	\$2,456,039	\$2,505,159	\$2,555,263	\$2,606,368	\$2,658,495	\$2,711,665	\$2,765,898
27. Periodic Fare Increases	\$0	\$0	\$0	\$542,954	\$553,813	\$564,889	\$576,187	\$587,710	\$1,120,738	\$1,143,153	\$1,166,016	\$1,189,336
28. Advertising & Other Op Revenues	\$113,779	\$153,000	\$158,355	\$163,897	\$169,634	\$175,571	\$181,716	\$188,076	\$194,659	\$201,472	\$208,523	\$215,822
<b>TOTAL OPERATING REVENUES</b>	<b>\$2,250,068</b>	<b>\$2,422,000</b>	<b>\$2,472,735</b>	<b>\$3,067,519</b>	<b>\$3,131,327</b>	<b>\$3,196,498</b>	<b>\$3,263,062</b>	<b>\$3,331,049</b>	<b>\$3,921,765</b>	<b>\$4,003,120</b>	<b>\$4,086,204</b>	<b>\$4,171,056</b>
<b>REVENUES - NON-OPERATING</b>												
Federal Operating Grant Funds	\$197,603	\$307,000	\$317,745	\$328,866	\$340,376	\$352,290	\$364,620	\$377,381	\$390,590	\$404,260	\$418,409	\$433,054
Transportation Development Act (TDA)	\$8,384,958	\$9,190,999	\$9,512,684	\$9,845,628	\$10,190,225	\$10,546,883	\$10,916,024	\$11,298,084	\$11,693,517	\$12,102,791	\$12,526,388	\$12,964,812
State Transit Assistance (STA)	\$2,255,101	\$2,265,362	\$2,344,650	\$2,426,712	\$2,511,647	\$2,599,555	\$2,784,708	\$2,882,173	\$2,983,049	\$3,087,456	\$3,195,517	\$3,307,517
Regional Measure 2 Funds (Bridge Tolls)	\$653,034	\$532,000	\$550,620	\$569,892	\$589,838	\$610,482	\$631,849	\$653,964	\$676,853	\$700,542	\$725,061	\$750,439
Measure C Operating Grant Funds	\$273,250	\$480,000	\$496,800	\$514,188	\$532,185	\$550,811	\$570,089	\$590,043	\$610,694	\$632,068	\$654,191	\$677,087
BART Feeder Bus Funds	\$0	\$2,078,639	\$2,151,391	\$2,226,690	\$2,304,624	\$2,385,286	\$2,468,771	\$2,555,178	\$2,644,609	\$2,737,171	\$2,832,972	\$2,932,126
Other Income	\$4,056	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interest Income - Measure C	\$0	\$19,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interest Income	\$35,811	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>TOTAL REVENUE - NON-OPERATING</b>	<b>\$11,803,813</b>	<b>\$14,873,000</b>	<b>\$15,373,890</b>	<b>\$15,911,976</b>	<b>\$16,468,895</b>	<b>\$17,045,307</b>	<b>\$17,641,892</b>	<b>\$18,259,359</b>	<b>\$18,898,436</b>	<b>\$19,559,881</b>	<b>\$20,244,477</b>	<b>\$20,953,034</b>
<b>TOTAL REVENUE - ALL SOURCES</b>	<b>\$14,053,881</b>	<b>\$17,295,000</b>	<b>\$17,846,625</b>	<b>\$18,979,495</b>	<b>\$19,600,223</b>	<b>\$20,241,805</b>	<b>\$20,904,954</b>	<b>\$21,590,408</b>	<b>\$22,820,201</b>	<b>\$23,563,001</b>	<b>\$24,330,682</b>	<b>\$25,124,090</b>
Surplus/Deficit	(\$202,076)	\$0	(\$113,350)	\$327,692	\$228,584	\$121,115	\$4,733	(\$121,147)	\$264,127	\$127,774	(\$19,852)	(\$179,489)
From ECCTA Reserves	\$202,076	\$0	\$113,350	\$0	\$0	\$0	\$0	\$121,147	\$0	\$0	\$19,852	\$179,489



**Table 5.4 Projected DIAL-A-RIDE Operating Budgets, FY 2008-FY 2018**

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	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18
<b>ESTIMATED OPERATING EXPENSES</b>												
1. Vehicle Operations (010)	\$2,259,255	\$2,346,000	\$2,436,585	\$2,530,849	\$2,628,951	\$2,731,058	\$2,837,345	\$2,947,993	\$3,063,195	\$3,183,150	\$3,308,068	\$3,438,169
2. Vehicle Maintenance (041)	\$317,963	\$466,000	\$482,310	\$499,191	\$516,663	\$534,746	\$553,462	\$572,833	\$592,882	\$613,633	\$635,110	\$657,339
3. Non-Vehicle Maintenance (042)	\$82,439	\$75,000	\$77,625	\$80,342	\$83,154	\$86,064	\$89,076	\$92,194	\$95,421	\$98,761	\$102,217	\$105,795
4. General Administration (160)	\$61,288	\$50,000	\$51,750	\$53,561	\$55,436	\$57,376	\$59,384	\$61,463	\$63,614	\$65,840	\$68,145	\$70,530
5. Adjustment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>6. TOTAL, Functional Class</b>	<b>\$2,720,945</b>	<b>\$2,937,000</b>	<b>\$3,048,270</b>	<b>\$3,163,943</b>	<b>\$3,284,203</b>	<b>\$3,409,244</b>	<b>\$3,539,267</b>	<b>\$3,674,483</b>	<b>\$3,815,112</b>	<b>\$3,961,384</b>	<b>\$4,113,541</b>	<b>\$4,271,833</b>
7. Memo Item (514, 515, 516)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8. Labor, Operators (501.01)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9. Labor, Others (501.02)	\$155,781	\$216,000	\$223,560	\$231,385	\$239,483	\$247,865	\$256,540	\$265,519	\$274,812	\$284,431	\$294,386	\$304,689
10. Fringe Benefits (502)	\$45,143	\$139,000	\$143,865	\$148,900	\$154,112	\$159,506	\$165,088	\$170,866	\$176,847	\$183,036	\$189,443	\$196,073
11. Services (503)	\$113,968	\$40,000	\$41,400	\$42,849	\$44,349	\$45,901	\$47,507	\$49,170	\$50,891	\$52,672	\$54,516	\$56,424
12. Fuel and Lubricants (504.01)	\$371,678	\$339,000	\$359,340	\$380,900	\$403,754	\$427,980	\$453,658	\$480,878	\$509,731	\$540,314	\$572,733	\$607,097
13. Tires and Tubes (504.02)	\$3,103	\$8,000	\$8,280	\$8,570	\$8,870	\$9,180	\$9,501	\$9,834	\$10,178	\$10,534	\$10,903	\$11,285
14. Other Materials and Supplies (504.99)	\$138,023	\$107,000	\$110,745	\$114,621	\$118,633	\$122,785	\$127,082	\$131,530	\$136,134	\$140,899	\$145,830	\$150,934
15. Utilities, Propulsion Power (505.01)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
16. Utilities, Other (505.02)	\$39,148	\$42,000	\$43,470	\$44,991	\$46,566	\$48,196	\$49,883	\$51,629	\$53,436	\$55,306	\$57,242	\$59,245
17. Casualty and Liability (506)	\$12,477	\$18,000	\$18,630	\$19,282	\$19,957	\$20,655	\$21,378	\$22,127	\$22,901	\$23,703	\$24,532	\$25,391
18. Purchased Transportation (508)	\$1,827,053	\$1,927,000	\$1,994,445	\$2,064,251	\$2,136,499	\$2,211,277	\$2,288,672	\$2,368,775	\$2,451,682	\$2,537,491	\$2,626,303	\$2,718,224
19. Interest Expense (511)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
20. Leases and Rentals (512)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
21. Other (507, 509, 510) including NVM	\$14,271	\$101,000	\$104,535	\$108,194	\$111,981	\$115,900	\$119,956	\$124,155	\$128,500	\$132,998	\$137,653	\$142,470
22. Adjustment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>23. TOTAL, Object Class</b>	<b>\$2,720,645</b>	<b>\$2,937,000</b>	<b>\$3,048,270</b>	<b>\$3,163,943</b>	<b>\$3,284,203</b>	<b>\$3,409,244</b>	<b>\$3,539,267</b>	<b>\$3,674,483</b>	<b>\$3,815,112</b>	<b>\$3,961,384</b>	<b>\$4,113,541</b>	<b>\$4,271,833</b>
<b>REVENUES - OPERATING</b>												
26. Fares (401, 402) - 2%	\$278,102	\$350,000	\$357,000	\$364,140	\$371,423	\$378,851	\$386,428	\$394,157	\$402,040	\$410,081	\$418,282	\$426,648
27. Periodic Fare Increases	\$0	\$0	\$0	\$83,752	\$85,427	\$87,136	\$88,879	\$90,656	\$92,466	\$94,302	\$96,163	\$98,050
28. Advertising & Other Op Revenues	\$90,547	\$15,426	\$15,966	\$16,525	\$17,103	\$17,702	\$18,321	\$18,962	\$19,626	\$20,313	\$21,024	\$21,760
<b>TOTAL OPERATING REVENUES</b>	<b>\$368,649</b>	<b>\$365,426</b>	<b>\$372,966</b>	<b>\$464,417</b>	<b>\$473,953</b>	<b>\$483,689</b>	<b>\$493,628</b>	<b>\$503,775</b>	<b>\$514,122</b>	<b>\$524,496</b>	<b>\$534,928</b>	<b>\$545,468</b>
<b>REVENUES - NON-OPERATING</b>												
Federal Operating Grant Funds	\$444,079	\$457,000	\$472,995	\$489,550	\$506,684	\$524,418	\$542,773	\$561,770	\$581,432	\$601,782	\$622,844	\$644,644
Transportation Development Act (TDA)	\$375,231	\$523,758	\$542,090	\$561,063	\$580,700	\$601,024	\$622,060	\$643,832	\$666,366	\$689,689	\$713,828	\$738,812
State Transit Assistance (STA)	\$590,076	\$611,816	\$633,230	\$655,393	\$678,331	\$702,073	\$726,645	\$752,078	\$778,401	\$805,645	\$833,842	\$863,027
Regional Measure 2 Funds (Bridge Tollis)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Measure C Operating Grant Funds	\$623,240	\$833,000	\$862,155	\$892,330	\$923,562	\$955,887	\$989,343	\$1,023,970	\$1,059,809	\$1,096,902	\$1,135,293	\$1,175,029
BART Feeder Bus Funds	\$0	\$85,000	\$87,975	\$91,054	\$94,241	\$97,539	\$100,953	\$104,487	\$108,144	\$111,929	\$115,846	\$119,901
Other Income	\$39,900	\$34,000	\$35,190	\$36,422	\$37,696	\$39,016	\$40,381	\$41,795	\$43,257	\$44,772	\$46,339	\$47,960
Interest Income - Measure C	\$24,463	\$27,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interest Income	\$1,266	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>TOTAL REVENUE - NON-OPERATING</b>	<b>\$2,098,255</b>	<b>\$2,571,574</b>	<b>\$2,633,634</b>	<b>\$2,725,811</b>	<b>\$2,821,215</b>	<b>\$2,919,957</b>	<b>\$3,022,156</b>	<b>\$3,127,931</b>	<b>\$3,237,409</b>	<b>\$3,350,718</b>	<b>\$3,467,993</b>	<b>\$3,589,373</b>
<b>TOTAL REVENUE - ALL SOURCES</b>	<b>\$2,466,904</b>	<b>\$2,937,000</b>	<b>\$3,006,600</b>	<b>\$3,190,228</b>	<b>\$3,295,168</b>	<b>\$3,403,646</b>	<b>\$3,515,784</b>	<b>\$3,631,707</b>	<b>\$3,819,891</b>	<b>\$3,945,144</b>	<b>\$4,074,613</b>	<b>\$4,208,440</b>
Surplus/Deficit	(\$253,741)	\$0	(\$41,670)	\$26,285	\$10,964	(\$5,599)	(\$23,484)	(\$42,777)	\$4,779	(\$16,240)	(\$36,928)	(\$63,393)
From ECCTA Reserves	\$253,741	\$0	\$41,670	\$0	(\$10,964)	\$5,599	\$23,484	\$42,777	\$0	\$16,240	\$36,928	\$63,393

**Table 5.5 Projected SYSTEM Operating Budgets, FY 2008-FY 2018**

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	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18
<b>ESTIMATED OPERATING EXPENSES</b>												
1. Vehicle Operations (010)	\$11,273,094	\$14,041,000	\$14,600,560	\$15,183,792	\$15,791,770	\$16,425,620	\$17,086,523	\$17,775,718	\$18,494,505	\$19,244,247	\$20,026,377	\$20,842,396
2. Vehicle Maintenance (041)	\$3,348,422	\$3,345,000	\$3,462,075	\$3,583,248	\$3,708,661	\$3,838,464	\$3,972,811	\$4,111,859	\$4,255,774	\$4,404,726	\$4,558,892	\$4,718,453
3. Non-Vehicle Maintenance (042)	\$429,360	\$375,000	\$388,125	\$401,709	\$415,769	\$430,321	\$445,382	\$460,971	\$477,105	\$493,803	\$511,087	\$528,975
4. General Administration (160)	\$1,926,026	\$2,471,000	\$2,557,485	\$2,646,997	\$2,739,642	\$2,835,529	\$2,934,773	\$3,037,490	\$3,143,802	\$3,253,835	\$3,367,719	\$3,485,590
5. Adjustment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>6. TOTAL, Functional Class</b>	<b>\$16,976,902</b>	<b>\$20,232,000</b>	<b>\$21,008,245</b>	<b>\$21,815,746</b>	<b>\$22,655,842</b>	<b>\$23,529,935</b>	<b>\$24,439,489</b>	<b>\$25,386,038</b>	<b>\$26,371,186</b>	<b>\$27,396,612</b>	<b>\$28,464,074</b>	<b>\$29,575,412</b>
7. Memo Item (514, 515, 516)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8. Labor, Operators (501.01)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9. Labor, Others (501.02)	\$2,226,457	\$2,256,000	\$2,334,960	\$2,416,684	\$2,501,268	\$2,588,812	\$2,679,420	\$2,773,200	\$2,870,262	\$2,970,721	\$3,074,696	\$3,182,311
10. Fringe Benefits (502)	\$743,737	\$1,147,000	\$1,187,145	\$1,228,695	\$1,271,699	\$1,316,209	\$1,362,276	\$1,409,956	\$1,459,304	\$1,510,380	\$1,563,243	\$1,617,957
11. Services (503)	\$856,058	\$940,000	\$972,900	\$1,006,952	\$1,042,195	\$1,078,672	\$1,116,425	\$1,155,500	\$1,195,943	\$1,237,800	\$1,281,124	\$1,325,963
12. Fuel and Lubricants (504.01)	\$1,973,568	\$2,725,000	\$2,888,500	\$3,061,810	\$3,245,519	\$3,440,250	\$3,646,665	\$3,865,465	\$4,097,392	\$4,343,236	\$4,603,830	\$4,880,060
13. Tires and Tubes (504.02)	\$152,477	\$158,000	\$163,530	\$169,254	\$175,177	\$181,309	\$187,654	\$194,222	\$201,020	\$208,056	\$215,338	\$222,875
14. Other Materials and Supplies (504.99)	\$1,454,694	\$1,237,000	\$1,280,295	\$1,325,105	\$1,371,484	\$1,419,486	\$1,469,168	\$1,520,589	\$1,573,809	\$1,628,893	\$1,685,904	\$1,744,911
15. Utilities, Propulsion Power (505.01)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
16. Utilities, Other (505.02)	\$202,355	\$217,000	\$224,595	\$232,456	\$240,592	\$249,012	\$257,728	\$266,748	\$276,085	\$285,748	\$295,749	\$306,100
17. Casualty and Liability (506)	\$387,994	\$441,000	\$456,435	\$472,410	\$488,945	\$506,058	\$523,770	\$542,102	\$561,075	\$580,713	\$601,038	\$622,074
18. Purchased Transportation (508)	\$8,390,834	\$10,353,000	\$10,715,355	\$11,090,392	\$11,478,556	\$11,880,306	\$12,296,116	\$12,726,480	\$13,171,907	\$13,632,924	\$14,110,076	\$14,603,929
19. Interest Expense (511)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
20. Leases and Rentals (512)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
21. Other (507, 509, 510)	\$588,428	\$758,000	\$784,530	\$811,989	\$840,408	\$869,822	\$900,266	\$931,776	\$964,388	\$998,141	\$1,033,076	\$1,069,234
22. Adjustment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>23. TOTAL, Object Class</b>	<b>\$16,976,602</b>	<b>\$20,232,000</b>	<b>\$21,008,245</b>	<b>\$21,815,746</b>	<b>\$22,655,842</b>	<b>\$23,529,935</b>	<b>\$24,439,489</b>	<b>\$25,386,038</b>	<b>\$26,371,186</b>	<b>\$27,396,612</b>	<b>\$28,464,074</b>	<b>\$29,575,412</b>
<b>REVENUES - OPERATING</b>												
26. Fares (401, 402)	\$2,414,391	\$2,619,000	\$2,671,380	\$2,724,808	\$2,779,304	\$2,834,890	\$2,891,588	\$2,949,419	\$3,008,408	\$3,068,576	\$3,129,947	\$3,192,546
27. Periodic Fare Increases	\$0	\$0	\$0	\$626,706	\$639,240	\$652,025	\$665,065	\$678,366	\$1,281,554	\$1,307,185	\$1,333,329	\$1,359,996
28. Advertising & Other Op Revenues	\$204,326	\$168,426	\$174,321	\$180,422	\$186,737	\$193,273	\$200,037	\$207,039	\$214,285	\$221,785	\$229,547	\$237,582
<b>TOTAL OPERATING REVENUES</b>	<b>\$2,618,717</b>	<b>\$2,787,426</b>	<b>\$2,845,701</b>	<b>\$3,531,935</b>	<b>\$3,605,281</b>	<b>\$3,680,187</b>	<b>\$3,756,690</b>	<b>\$3,834,824</b>	<b>\$4,504,247</b>	<b>\$4,597,546</b>	<b>\$4,692,824</b>	<b>\$4,790,123</b>
<b>REVENUES - NON-OPERATING</b>												
Federal Operating Grant Funds	\$641,682	\$764,000	\$790,740	\$818,416	\$847,060	\$876,708	\$907,392	\$939,151	\$972,021	\$1,006,042	\$1,041,254	\$1,077,697
Transportation Development Act (TDA)	\$8,760,189	\$9,714,757	\$10,054,773	\$10,406,691	\$10,770,925	\$11,147,907	\$11,538,084	\$11,941,917	\$12,359,884	\$12,792,480	\$13,240,217	\$13,703,624
State Transit Assistance (STA)	\$2,845,177	\$2,877,178	\$2,977,879	\$3,082,105	\$3,189,979	\$3,301,628	\$3,417,185	\$3,536,786	\$3,660,574	\$3,788,694	\$3,921,298	\$4,058,544
Regional Measure 2 Funds (Bridge Tolls)	\$653,034	\$532,000	\$550,000	\$569,892	\$589,838	\$610,482	\$631,849	\$653,962	\$676,853	\$700,542	\$725,051	\$750,439
Measure C Operating Grant Funds	\$896,490	\$1,313,000	\$1,358,955	\$1,406,518	\$1,455,747	\$1,506,698	\$1,559,432	\$1,614,012	\$1,670,503	\$1,728,970	\$1,789,484	\$1,852,116
BART Feeder Bus Funds	\$0	\$2,163,639	\$2,239,366	\$2,317,744	\$2,398,865	\$2,482,826	\$2,569,724	\$2,659,665	\$2,752,753	\$2,849,099	\$2,948,818	\$3,052,026
Other Income	\$43,956	\$34,000	\$35,190	\$36,422	\$37,696	\$39,016	\$40,381	\$41,795	\$43,257	\$44,772	\$46,339	\$47,960
Interest Income - Measure C	\$24,463	\$46,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interest Income	\$37,077	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>TOTAL REVENUE - NON-OPERATING</b>	<b>\$13,902,068</b>	<b>\$17,444,574</b>	<b>\$18,007,524</b>	<b>\$18,637,787</b>	<b>\$19,290,110</b>	<b>\$19,965,264</b>	<b>\$20,664,048</b>	<b>\$21,387,290</b>	<b>\$22,135,845</b>	<b>\$22,910,599</b>	<b>\$23,712,470</b>	<b>\$24,542,407</b>
<b>TOTAL REVENUE - ALL SOURCES</b>	<b>\$16,520,785</b>	<b>\$20,232,000</b>	<b>\$20,853,225</b>	<b>\$22,169,723</b>	<b>\$22,895,391</b>	<b>\$23,645,451</b>	<b>\$24,420,738</b>	<b>\$25,222,114</b>	<b>\$26,640,092</b>	<b>\$27,508,145</b>	<b>\$28,405,294</b>	<b>\$29,332,530</b>
Surplus/Deficit	(\$455,817)	\$0	(\$155,020)	\$353,977	\$239,548	\$115,516	(\$18,751)	(\$163,923)	\$268,906	\$111,534	(\$58,780)	(\$242,882)
From ECCTA Reserves	\$455,817	\$0	\$155,020	\$0	(\$239,548)	\$0	\$18,751	\$163,923	\$0	\$0	\$58,780	\$242,882



**Table 5.6 Projected Operating Characteristics & Budget Summary**

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	Preliminary 2006-2007	Projected 2007- 2008	Projected 2008- 2009	Projected 2009- 2010	Projected 2010- 2011	Projected 2011- 2012	Projected 2012- 2013	Projected 2013- 2014	Projected 2014- 2015	Projected 2015- 2016	Projected 2016- 2017
<b>FIXED &amp; FLEX ROUTE OPERATIONS</b>											
<b>FLEET CHARACTERISTICS</b>											
Active Fleet Size	69	69	69	69	69	69	69	69	69	69	69
Peak Hour Fleet Size	50	56	56	56	56	56	56	56	56	56	56
Spare Vehicles	19	13	13	13	13	13	13	13	13	13	13
Spare Ratio	28%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
Expected Service Expansion	YES										
Expected Service Reduction											
<b>OPERATING CHARACTERISTICS</b>											
Estimated Operating Expense	\$14,255,957	\$17,295,000	\$17,959,975	\$18,651,803	\$19,371,639	\$20,120,690	\$20,900,221	\$21,711,554	\$22,556,073	\$23,435,227	\$24,350,533
Estimated Operating Revenues	\$2,250,068	\$2,422,000	\$2,472,735	\$3,067,519	\$3,131,327	\$3,196,498	\$3,263,062	\$3,331,049	\$3,421,765	\$4,003,120	\$4,086,204
Total Passengers	2,500,930	2,900,000	2,958,000	3,017,160	3,077,503	3,139,053	3,201,834	3,265,871	3,331,188	3,397,812	3,465,768
Revenue Vehicle Miles	2,460,563	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000
Revenue Vehicle Hours	160,929	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000
<b>PERFORMANCE CHARACTERISTICS</b>											
Estimated Cost Per Passenger	\$5.70	\$5.96	\$6.07	\$6.18	\$6.29	\$6.41	\$6.53	\$6.65	\$6.77	\$6.90	\$7.03
Estimated Operating Ratio	15.8%	14.0%	13.8%	16.4%	16.2%	15.9%	15.6%	15.3%	17.4%	17.1%	16.8%
Passengers Per Revenue Mile	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
Passengers Per Revenue Hour	15.5	15.3	15.6	15.9	16.2	16.5	16.9	17.2	17.5	17.9	18.2
<b>PARATRANSIT/TAXI SUBSIDY OPERATIONS</b>											
<b>FLEET CHARACTERISTICS*</b>											
Active Fleet Size	27	27	27	27	27	27	27	27	27	27	27
Peak Hour Fleet Size	19	22	22	22	22	22	22	22	22	22	22
Spare Vehicles	8	5	5	5	5	5	5	5	5	5	5
Spare Ratio	42%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
Expected Service Expansion		YES									
Expected Service Reduction											
<b>OPERATING CHARACTERISTICS</b>											
Estimated Operating Expense	\$2,720,645	\$2,937,000	\$3,048,270	\$3,163,943	\$3,284,203	\$3,409,244	\$3,539,267	\$3,674,483	\$3,815,112	\$3,961,384	\$4,113,541
Estimated Operating Revenues	\$368,649	\$365,426	\$372,966	\$464,417	\$473,953	\$483,689	\$493,628	\$503,775	\$582,482	\$594,426	\$606,619
Total Passengers	106,850	118,000	120,360	122,767	125,223	127,727	130,282	132,887	135,545	138,256	141,021
Revenue Vehicle Miles	577,127	670,000	670,000	670,000	670,000	670,000	670,000	670,000	670,000	670,000	670,000
Revenue Vehicle Hours	41,748	48,400	48,400	48,400	48,400	48,400	48,400	48,400	48,400	48,400	48,400
<b>PERFORMANCE CHARACTERISTICS</b>											
Estimated Cost Per Passenger	\$25.46	\$24.89	\$25.33	\$25.77	\$26.23	\$26.69	\$27.17	\$27.65	\$28.15	\$28.65	\$29.17
Estimated Operating Ratio	13.6%	12.4%	12.2%	14.7%	14.4%	14.2%	13.9%	13.7%	15.3%	15.0%	14.7%
Passengers Per Revenue Mile	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Passengers Per Revenue Hour	2.6	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.9	2.9

## Capital Plan

This chapter summarizes the proposed 10-year transit capital plan for the Tri Delta Transit system for Fiscal Years 2007-08 through 2017-18. Necessary capital improvements include revenue vehicle and non-revenue vehicle replacements, upgrades to existing vehicles to meet California air quality regulations, improvements to fixed facilities such as bus stops, and other supporting projects. Proposed capital improvements are constrained by future funding allocations. From a planning perspective, a constrained capital plan that doesn't include full funding for capital projects will not meet all identified needs. Table 6.1 below summarizes the projected 10-year Tri Delta Transit capital plan. Total projected capital needs total \$63 million through FY18.

### Tri Delta Transit Fleet Plan

Table 6.2 summarizes particulars of the Tri Delta Transit vehicle fleet over the 10-year planning horizon of this SRTP. The objective of the fleet plan is to maintain a fleet of 69 fixed route buses and 26 small buses for the paratransit operation during the 10-year horizon of the SRTP. A total of 69 fixed route buses and 26 dial-a-ride vehicles will be replaced under the plan, consistent with a full useful life for each vehicle consistent with FTA requirements.

The California Air Resources Board (CARB) has established air pollution rules that required retrofitting or retirement of pre-2006 transit buses that didn't meet specified, increasingly stiff emissions requirements. Tri Delta Transit has already retrofitted many of its fixed route fleet buses to meet the stringent CARB requirements and has approved funding to retrofit the rest of the fleet as approved devices become available. The cost of these retrofits is included in the FR Fleet Enhancement Projects line in Table 6.1. All future revenue vehicle purchase will be made with full consideration of the fleet emissions requirements, starting with the upcoming purchase of diesel/electric hybrid buses to replace six, model year 1995 FR buses before the end of FY09.

The 2006 SRTP document indicated that a total of 40 heavy-duty fixed route replacement buses would use fuel cell propulsion. However, the state of fuel cell technology is increasingly uncertain, and it is not clear whether the technology is cost-effective for transit use. It is also not completely clear whether hybrid or future "clean diesel" technology is most suitable for transit buses but hybrid technology is currently available and that is what is indicated in Table 6.2 for replacements.

Table 6.1 ECCTA Planned Capital Expenditure Summary

	Prior	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	Total
FR Fleet Enhancement Projects	1,308	1,029	625	-	-	-	-	-	-	-	-	-	-	2,962
FR Fleet Replacements	-	2,538	607	5,733	656	5,675	6,398	7,301	6,483	3,803	3,918	2,035	2,035	47,182
FR Fleet Additions	-	-	-	1,190	-	-	-	-	-	-	-	-	-	1,190
DR Fleet Replacements	-	-	-	96	-	701	105	1,689	1,769	-	118	-	-	4,478
Non-Revenue Vehicle Replacements	-	-	-	250	-	-	75	-	-	-	-	-	157	482
Field Amenities	694	500	2,775	50	50	50	50	50	50	50	50	50	50	4,469
Administration & Maintenance Facility	184	25	1,025	100	100	100	100	100	100	100	100	100	100	2,234
<b>Total Capital Expenditure:</b>	<b>2,186</b>	<b>4,092</b>	<b>5,032</b>	<b>7,419</b>	<b>806</b>	<b>6,526</b>	<b>6,729</b>	<b>9,140</b>	<b>8,402</b>	<b>3,953</b>	<b>4,186</b>	<b>2,185</b>	<b>2,341</b>	<b>62,997</b>

Table 6.2 ECCTA Planned Fleet Capital Expenditure Summary

FR Fleet	Qty	Current Size	Class	Fuel	Model Year	Service Year	Life	Prior	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	TOTAL	
Bus Catalysts								1,263	350												1,613	
ITS Project										640	610											1,250
Bus Security & Farebox Replacements								45	39	15											99	
Replace FR Buses	6	Bus - Transit - 40'	Heavy-Duty	Dsl Hybrid	1995	1995	12		2,538	607												3,145
Replace FR Buses	12	Bus - Transit - 40'	Heavy-Duty	Dsl Hybrid	1997	1998	12				5,733	656										6,389
Replace FR Buses	7	Bus - Transit - 40'	Heavy-Duty	Dsl Hybrid	1998	1999	12						4,731									4,731
Replace FR Buses	20	Bus - Transit - 40'	Heavy-Duty	Dsl Hybrid	2001	2001	12								3,586	3,691	3,803	3,918				14,998
Replace FR Buses	9	Bus - Transit - 35'	Medium-Duty	Dsl Hybrid	2001	2006	10							5,912								5,912
Replace FR Buses	2	Bus - Transit - 35'	Heavy-Duty	Dsl Hybrid	2001	2001	12								1,002							1,002
Replace FR Buses	3	Bus - Transit - 30'	Medium-Duty	Dsl Hybrid	2000	2001	10						944	486								1,431
Replace FR Buses	6	Bus-Over-the-Road 45'	Heavy-Duty	Dsl Hybrid	2000	2001	12							2,713	2,792							5,505
Replace FR Buses	4	Bus-Over-the-Road 45'	Heavy-Duty	Dsl Hybrid	2001	2003	16															4,070
Addl Coaches for Express Bus project	2	Bus-Over-the-Road 45'	Heavy-Duty	Diesel	2010	2010	16				1,190											1,190
<b>Total FR</b>								1,308	3,667	1,232	5,733	656	5,675	6,398	7,301	6,483	3,803	3,918	2,035	2,035		<b>51,334</b>
<b>DR Fleet</b>																						
Replace DR Buses	20	Cutaway - 29'	Medium-Duty	Diesel	2006	2006	5								1,610	1,657						3,268
Replace Med Vans	2	Auto/Minivan	Light-Duty	Gasoline	2002	2003	4				96					111						207
Replace Med Vans	2	Auto/Minivan	Light-Duty	Gasoline	2007	2007	4							105				118				223
Replace DR Buses (Antioch St.)	1	Cutaway - 29'	Medium-Duty	Gasoline	2004	2004	5						701									701
Replace DR Buses (Antioch St.)	1	Cutaway - 29'	Medium-Duty	Gasoline	2006	2006	5				96				79							79
<b>Total DR</b>											96		701	105	1,689	1,769		118				<b>4,478</b>
<b>Non-Revenue Vehicles</b>																						
Driver exchange cars	5	Auto	-	Gas Hybrid	2001	2001	5				130											130
Admin Auto	1	Auto	-	Gas Hybrid	2001	2001	5							23								23
Admin Van	1	Van	-	Gasoline	1996	1996	5							52								52
Shop Truck	1	Truck	Light	Gasoline	2001	2001	5				60											138
Shelter Truck	1	Truck	Light	Gasoline	1996	1996	5				60											138
<b>Total Non-Revenue Vehicle</b>											250			75								<b>482</b>
<b>TOTAL FLEET CAPITAL COSTS</b>								1,308	3,667	1,232	6,079	656	6,376	6,579	8,990	8,252	3,803	4,036	2,035	2,035		<b>56,294</b>



## Capital Project Details

### FR Fleet Enhancement Projects

#### Bus Catalyst Devices (\$1.6 million)

This project was previously discussed in the "Fleet Plan" section.

#### Bus Security & Fare box Enhancements (\$99 thousand)

This project being completed during FY 2008-09 will add digital camera equipment and enhanced fare boxes to the fixed route fleet. The goal is to enhance passenger access, safety & security.

#### Intelligent Transportation Systems Project (\$1.3 million)

This project will upgrade Tri Delta Transit's fixed route system to the same level of ITS technology that is already present on the Dial-a-Ride service. Components will include GPS locaters, Mobile Data Terminals and Automatic Stop Enunciation and Automatic Passenger counters.

### FR & DR Fleet Replacements (\$52 million)

Covered in "Fleet Plan" previously.

### Fixed Route Fleet Additions (\$1.2 million)

Two additional express buses for service outlined in "Park and Ride Acquisition & Development" below. This will be STIP funded.

### Non-revenue Vehicle Replacements (\$482 thousand)

Mostly local fund sourced replacements for driver exchange cars and shop and field maintenance trucks.

### Field Amenities

#### Park and Ride Acquisition & Development (\$4 million)

In FY 2004-05, Tri Delta Transit obtained a federal capital funding earmark for the purchase of land for a park & ride lot near the proposed eBART station in Oakley. In FY08 that earmark was extended and another was added. Tri Delta Transit is currently applying for these funds and has identified a property. There are additional STIP funds of \$14 million outside of the scope of this SRTIP to use for adding additional satellite park and ride lots throughout the service area that will feed eBART when it is built and serve as inter-modal transfer points for enhanced express bus service in the meantime. Two additional over-the-road coaches will need to be purchased as mentioned above in "Fixed Route Fleet Additions" to add service to these PnR lots.

Bus Stop Enhancements (\$500 thousand)

The Tri Delta Transit capital plan earmarks \$50m per year from local funds to improve and upgrade the amenities at bus stops as needed.

**Administration and Maintenance Facility (\$2.2 million)**

These are capitalized expenditures for maintenance of the administrative and maintenance facility as well as office and shop equipment. There is a general allowance of \$100 thousand/year. The total also includes \$184 thousand for a recently completed bus wash replacement and a \$1M, TDA funded, major capital facility enhancement that has been deferred indefinitely.

# Appendix

**RESOLUTION #080123c  
Bay Area Strategic Vision for Transit in MTC's 2035 Plan**

**Resolution #080123c supports the Bay Area Strategic Vision for  
Transit in the 2035 Plan.**

**WHEREAS**, Planners from Bay Area transit systems have worked together to develop advocacy points related to the provision of transit in the upcoming 2035 Regional Transportation Plan being developed by MTC; and

**WHEREAS**, Agencies that participated in the effort are: ACTransit, LAVTA, County Connection, Marin Transit, BART, NCPTA, MUNI, Sam Trans, Cal Train, Golden Gate, VTA, WestCAT, MTA, MTC, and Tri Delta Transit; and

**WHEREAS**, attached is the strategic vision that was developed. It includes a vision statement, findings, and goals.

**NOW, THEREFORE, BE IT RESOLVED**, by the Board of Directors of the Eastern Contra Costa Transit Authority to adopt resolution #080123c supporting the Bay Area Strategic Vision for Transit in the 2035 plan.

PASSED AND ADOPTED THIS 23rd day of January 2008, by the following votes:

**EASTERN CONTRA COSTA TRANSIT AUTHORITY**

**Barney Parsons, Chair      Jeanne Krieg, Chief Executive Officer**

**AYES:** \_\_\_\_\_  
**NOES:** \_\_\_\_\_  
**ABSENT:** \_\_\_\_\_  
**ABSTENTIONS:** \_\_\_\_\_

# Bay Area Strategic Vision for Transit in the 2035 Plan

## Vision Statement

To better serve the diverse needs of the region's urban, suburban and rural residents, improve the quality of life, provide for mobility and meet climate change challenges, the Bay Area Transit Service Providers agree that the Regional Transportation Plan shall offer a family of integrated and seamless transit services, including rail and ferry transit, express/rapid/local buses, community shuttles, and paratransit and demand-responsive services. Further, the region shall preserve potential corridors so as not to preclude future transit expansion, even if the expansion is not affordable or a priority in the near term.

## Findings

**As a basis for goal-setting, we make the following findings:**

### **I. Public Transparency and Accountability Require the Establishment of Service Criteria and Performance Metrics**

Transit operators shall develop level-of-service guidelines to evaluate service supply and demand for the various categories of transit service. The performance evaluation process shall be documented in transit operators' Short Range Transit Plans.

### **II. Climate Change Challenges Require Increases in Transit Modal Share and Decreases in Transportation's Carbon Footprint.**

The region shall establish policies that promote transit beneficial investment aimed at increasing transit modal share while supporting decreases in overall emissions from transportation. Higher transit mode shares will help meet the public's demand for reductions in Greenhouse Gas Emissions, meet the mandates of AB 32, and support carbon efficient Priority Development Areas. To accomplish that, the Region shall support public transit operators in reducing their carbon footprint through an accelerated investment in cost-effective lower-carbon or zero emissions transit vehicle technologies.

### **III. Transit Systems Deserve Innovative Management Tools**

The Region and the Transit Operators shall promote the use of both existing and developing technological innovation as a method of improving the performance of the system and providing the public with access to information.

### **IV. Continuity Requires Honoring Our Prior Transit Commitments.**

The Regional Transportation Plan shall honor existing transit commitments.

## **Goals**

### **1. Everyone in the Bay Region should have a transit option that provides a reasonable and affordable alternative to single auto use.**

The Regional Transportation Plan shall establish a Useful Transit Network that provides a base level of public transit service that is competitive with private vehicle travel and includes a network of freeway HOV and arterial corridors with fast, frequent (15-minute headway or better) and all-day service to serve current or future demand. A Useful Transit Network encompasses the Lifeline network and ADA mandated paratransit, and is not separate from it. Furthermore, the region should establish an integrated and affordable regional fare structure to both encourage transit use and address mobility needs of low-income customers, customers with disabilities, seniors, and youth.

### **2. Protect and Improve Speed and Reliability for Transit Vehicles.**

The Regional Transportation Plan shall identify and fund transit priority measures, such as signal priority, bus lanes, bus bulbs and queue jumpers wherever a speed or reliability advantage for transit can be demonstrated. Local streets and roads maintenance priorities should be aligned with these transit corridors. Such measures should be planned and implemented to protect inter- and intra-jurisdictional travel.

### **3. Keep Transit Assets in a State of Good Repair.**

MTC and transit providers shall prioritize the rehabilitation and replacement of all rolling stock and fixed assets required to provide transit service.

### **4. Focus Housing and Jobs around Transit Hubs and on Transit Corridors.**

Transit operators shall support Regional Priority Development Areas and other infill development by prioritizing and focusing service planning and capital investment on existing and future transit hubs and high volume travel corridors.

### **5. Tie Pricing Strategies to Robust Transit Options.**

In order to support Regional Pricing Strategies, the Regional Transportation Plan shall include significantly improved transit options than are available today in order to provide real transit alternatives for those seeking to avoid user fees for single occupancy vehicle use. The funding for these transit services shall be included as an integral and initial component of any funding and operations plan adopted in any pricing or tolling project.

### **6. Expand Effectively**

In addition to funding the Useful Transit Network, the Regional Transportation Plan shall invest in transit service enhancements and expansions that yield patronage commensurate with high levels of transit service and connectivity, and significantly contribute to achieving regional environmental, social and economic targets.

## **7. Expand Travel Choices.**

In more suburban communities and given the rapidly aging region, the Regional Transportation Plan shall pursue and "incentivize" a greater supply and use of private and non-profit accessible taxis and vans to as an alternative to the provision of fixed route and paratransit services in areas not well suited for fixed route service.

## **8. Safely Share the Public Right of Way**

The Regional Transportation Plan shall encourage the adoption of Right-of-Way design standards by local communities that facilitate alternative modes of transportation, such as bicycling, walking and public transit. These standards shall embrace the concept of "complete streets" to encourage the balanced use of public rights of way for transit, bicycling and pedestrians to reduce automobile traffic, improve public health, air quality and safety on our streets by all users.

## **9. Better Coordinate Transit and Land Use Plans**

MTC and the transit operators shall participate with ABAG in an ongoing cycle of intergovernmental and community-based consultation and coordination between transit and land use plans. ABAG shall establish a process for transit operators to consult and coordinate with local governments, residents, transit customers, businesses, and other community stakeholders who through their respective land use-related decisions may have significant impacts on the effective provision of transit services.