

City of Rio Vista Short Range Transit Plan for Delta Breeze Transit for 2010-2011 to 2019-2020

Technical Memorandum 1



Prepared for the

City of Rio Vista

Prepared by

LSC Transportation Consultants, Inc.

RIO VISTA DELTA BREEZE SHORT RANGE TRANSIT PLAN FY 2010-2011 to 2019-2020

Technical Memorandum 1: Existing Conditions, Transit Review, and Demand Analysis

Prepared for the

City of Rio Vista
One Main Street
Rio Vista, California 94571
707 • 374-5337

Prepared by

LSC Transportation Consultants, Inc.
P.O. Box 5875
2690 Lake Forest Road, Suite C
Tahoe City, California 96145
530 • 583-4053

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 funding 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 Rio Vista Delta Breeze, and are not necessarily those of USDOT, the Federal Transit Administration (FTA), or the Metropolitan Transportation Commission. Rio Vista Delta Breeze is solely responsible for the accuracy of information presented in this SRTP.

Civil Rights Compliance: In compliance with Title VI regulations of the Civil Rights Act of 1964, no person in the United States of America shall, on grounds of race, color, or national origin, be excluded from participating in, or denied the benefits of, or be subject to discrimination under any program or activity receiving federal financial assistance. Rio Vista Delta Breeze must ensure that federally supported transit service and related benefits are distributed in an equitable manner. The City has certified that it is in compliance with Title VI regulations.

November 4, 2011

LSC#117080

TABLE OF CONTENTS

<i>Chapter</i>	<i>Page</i>
1 Introduction	1
Plan Purpose and Content	1
Study Issues	1
Stakeholder Interviews	2
Review of Previous Studies and Projects.....	5
Coordination with the MTCs Focus	7
2 Setting for Transportation Services	9
Study Area.....	9
Future 2025 No Project Conditions	5
3 Transit Service Providers	19
Public Transportation Service	19
Other Transportation Providers	41
4 Transit Goals and Objectives	45
Introduction.....	45
Review of Existing Goals and Objectives.....	45
5 Transit Demand Analysis	59
Employee Transit Demand	59
Elderly and Disabled Transit Demand	60
General Public Transit Demand	60
Demand Estimation for Middle and High School Students	60
Intercity Transit Demand	61
Future Trends in Transit Demand	62

LIST OF TABLES

<i>Table</i>	<i>Page</i>
1 Rio Vista Demographic Characteristics	13
2 Resident Commute Travel Mode	15
3 Commute Travel Time	15
4 Delta Breeze Fare Structure	24
5 Delta Breeze Vehicle Roster	25
6 Delta Breeze Historical Ridership	25
7 Delta Breeze Ridership by Month, FY 2010-2011	26
8 Delta Breeze Expenses	27
9 Delta Breeze Revenues	28
10 Delta Breeze Operating Characteristics	29
11 Delta Breeze Route Comparison with YoloBus Routes 220 and 220C	33
12 Route 50 and 52 Boarding and Alighting by Stop	34
13 Delta Breeze Onboard Survey Responses, Questions 1 to 13	36
14 Delta Breeze Onboard Survey Responses, Questions 14-24	37
15 Delta Breeze Onboard Survey Comments	38
16 Goal I: Operate an Efficient and Effective System that Maximizes Service and Minimizes Cost Impacts	47
17 Goal II: Provide Safe, Reliable, and High Quality Transportation	49
18 Goal III: Serve the Transportation Needs of the Community	51
19 Goal IV: Evaluate, Monitor, and Improve Transit Services on an Ongoing Basis	53
20 Goal V: Undertake Effective Marketing, Outreach, and Public Participation	54
21 Goal IV: Coordinate Transit System Development with Community Planning and Development Efforts and Land-Use Policy	56
22 Rio Vista Estimated Transit Demand	62

LIST OF FIGURES

<i>Figure</i>	<i>Page</i>
1 Rio Vista Site and Location Map	11
2 Historic Population of Rio Vista	13
3 Comparison of Rio Vista Population by Age – 2000 and 2010	14
4 Distance Rio Vista Workers and Residents Commute	16
5 Where Rio Vista Employed Residents Work	17
6 Where Persons Working in Rio Vista Live	17
7 Inflow-Outflow of Rio Vista Employees	18
8 Rio Vista Transit Routes	21
9 RVDB Monthly Ridership FY 2010-11	26
10 Passenger Trips per Vehicle Service Hour	29
11 Passenger Trips per Service Mile	30
12 Operating Cost per Passenger Trip	31
13 Route 51 Ridership by Day of the Week	32

PLAN PURPOSE AND CONTENT

Public transportation is a vital service to many Rio Vista residents and to the region as a whole. Transit services provide mobility to the City's residents, including access to important medical, recreational, social, educational and economic services and opportunities. In addition to being important to the quality of life of Rio Vista residents, public transit services assist in the functioning of educational programs, public and private employers, and social service programs through out the City and into neighboring areas.

This Short Range Transit Plan (SRTP) study is being conducted to assess transit and related transportation issues within Rio Vista and provide a "road map" for the improvements in public transit programs over the upcoming ten years. The intent of this study is to evaluate the specific needs for transit services, as well as to develop plans for improvements and service revisions. This will be done through the review of existing transit conditions and evaluation of operations, as well as through public outreach via on-board surveys and community-based meetings. A wide range of alternatives will be evaluated. Additionally, an important element of this study will be to identify stable funding sources for operations and capital improvements of transit services. The ultimate goal of the study will be a comprehensive strategy of short-range service, capital, and institutional improvements, with a supporting financial and implementation plan.

This *Technical Memorandum* presents and reviews the setting for transportation services, including demographic factors and the recent operating history of the public transit service supplied by the Delta Breeze and the other transit service providers in the study area. A review and evaluation of goals, objectives and performance measures is included. Survey efforts are summarized in this memorandum, and the need for transportation services is also examined. The findings of this *Technical Memorandum (Tech Memo)* will be used to develop alternatives that will be discussed in a subsequent *Tech Memo*. After any necessary changes are made to address comments and corrections, these materials will be incorporated into the Draft Final Report of this study.

STUDY ISSUES

Through discussions with transit staff, the following issues were identified for this study.

- **Prioritizing Needs** – There are three target markets that are currently served by transit, each with specific and unique needs. These needs must be prioritized and balanced:
 - **Commuters:** passengers who travel early and late in the day, with reduced needs for weekend service. Commuters tend to be discretionary passengers traveling greater distances, can afford higher fares than others, but expect minimal out-of-direction travel and a high quality service.
 - **Seniors and Disabled:** passengers who travel midday for quality of life services such as medical appointments, congregate meals and shopping. These passengers often are on limited incomes and therefore are impacted by higher fares. Seniors and disabled passengers typically prefer door-to-door service and dislike transferring; changes in

service generally require extensive outreach to make passengers comfortable with the new service.

- **Students:** these passengers are served as a group for after-school programs (per the current River Delta Union agreement).
- **Service Destinations** – There are a number of larger communities (Vacaville, Fairfield/Suisun, Pittsburg/Antioch, Stockton/Lodi) that Rio Vista residents access for services, but it is inefficient to serve them all with transit. Which destination(s) can best meet the needs of the residents, and what is the best service plan to do so?
- **Farebox Ratio** – The minimum farebox return ratio required by state law is ten percent. This is currently being met primarily through miscellaneous sales and contributions (FasTrak® and Greyhound sales, City of Isleton support, etc.) with the actual passenger fare revenue only accounting for 4.5 percent of operating revenue. The passenger fare revenues need to be increased (or operating costs reduced without fare loss) to ensure the minimum farebox return ratio is met.
- **Fiscally Sustainable Service Plan** – The service plan developed from this SRTP process will need to be financially constrained. While Delta Breeze has had an operating budget of approximately \$500,000 in recent years, projections of future revenues realistically are estimated to be closer to \$350,000.
- **Prioritize Services** – Given the likely need to reduce transit operations, what mobility needs should be served given the limited resources? Should core, lifeline services receive priority funding? Will there be funding for discretionary services? Should services only be expanded if they can be maintained with a zero or very low subsidy rate (for example, the River Delta School District funds the evening Route 51 in exchange for students receiving transportation to evening recreational programs)?
- **Funding** – What sources of revenue – public and private – can be tapped into to provide a stable transit program?
- **Capital** – What is the appropriate vehicle replacement plan for Delta Breeze? What other capital facilities and staff (if any) will be required to provide the transit services called for in the study documents?
- **Marketing and Outreach** – What marketing program can best promote transit service among both potential riders and the general public, while making effective use of a limited marketing budget? How should the capabilities of the internet be used in the marketing strategy?

These issues should be considered as part of a comprehensive look at the role of transit in Rio Vista and the service plan that best serves this role. This study will afford the leadership of the area an opportunity to take a long-range look at the transit services, and identify the optimal manner in which transit can meet both the present and the future needs of the area.

STAKEHOLDER INTERVIEWS

Stakeholder interviews were also conducted to ascertain what issues are important to the community regarding transit. Furthermore, stakeholders were asked their opinions regarding

their understanding of the role and capabilities of Rio Vista Delta Breeze. Individuals were contacted from the following sectors of the community:

- Trilogy Senior Living
- Delta Breeze Staff
- City of Rio Vista Staff and Elected Officials
- City of Isleton Staff
- Chamber of Commerce
- Neighboring Transit Program Staff
- River Delta Unified School District Staff
- Community, from City Staff
- Local Business Owners

Quite a few were contacted who chose not to call back to participate in an interview. Furthermore, several who were contacted said they had little knowledge or feedback regarding the transit system. Others provided valuable feedback, as summarized in specific comments below:

- An elected official stated the following: *“A couple of the issues facing Rio Vista are the aging population and our proximity to other cities in Solano and Contra Costa County. Transit plays an important role in that our aging residents will require alternate modes of transportation to locations for shopping, medical appointments, transportation outlets (Bart, Airport). We currently provide transit services outside of Rio Vista due to limited amenities but I foresee this need increasing in the near future until such time as Rio Vista has an emergency medical facility, or additional retail outlets.”*
- Also noted: *“Since Isleton is a remote community, being able to ensure that there are ample transit services that can provide mobility to those without transportation options is an important need. Since Isleton cannot generate significant ridership demand based on its small population, it is important that a lifeline level of transit services is available.”*
- When asked how transit affected economic growth *“I believe there is a direct correlation between transit and economic growth. Without transit opportunities to BART, medical facilities, and job sites many people may choose not to live in Rio Vista, thus having a negative effect on our economic growth. I do not foresee this changing even when the city has its own retail shopping center. Citizens will still need transportation to the center and back home.”*
- In regards to the agreement between the City of Rio Vista and Isleton and whether this relationship works well: *“Yes, since the City is not committing any Local Transportation Fund (LTF) or General Fund revenues to support providing this lifeline service. If it was not for Rio Vista providing transportation to Isleton on a local basis or even an intercity basis to Antioch or Fairfield, it is unlikely that Sacramento County would have increased or improved its level of transit service from Galt and Lodi to Isleton.”*
- Regarding the perception of Rio Vista Delta Breeze, several commented:
 - *“I believe many people feel the service provided is beneficial and necessary. Of course, there is always the balancing of an appropriate fee structure and the outcry that rates are too high.”*

- “It’s a huge benefit for shoppers. It works out well. RVDB drops customers at our store, and when they’re done shopping, we call and have them picked up. A lot of our customers don’t have any other way to get here. A lot are elderly or disabled.”
 - “It’s really great. We’re very satisfied. RVDB is great to work with. I’ve been caught up in activities and didn’t have the kids ready when they arrived, but they were patient and flexible.”
 - “The transportation allows us to provide the program to kids without a ride home, and allows kids and staff to leave at a reasonable time (instead of waiting until parents are off of work, for example).”
 - “Getting the routes to stay on schedule is an issue. All of the deviations make the routes late and less dependable.”
 - “RVDB is doing very well, though it would be nice if more people were aware of the service. It isn’t well advertised.”
- Asked what improvements are desirable, interviewees stated:
 - “I feel it is important to improve the capacity of our existing services. There are times our ridership, on a particular route, are low and we must either deadhead or eliminate the route due to its unproductiveness. Focusing on existing routes will allow the City to provide better service to our citizens and meet our fare rate recovery requirements.”
 - “Smaller buses or minivan to carry citizens on particular routes are important, yet not as busy.”
 - “There was a recent issue where a customer was told she would have to walk a significant distance to meet the vehicle. It was a very hot day and she had groceries and the bus was going to come by anyway. This seemed unreasonable so the manager called back and insisted she be picked up, and she was. She could not have walked the distance they were asking her to walk.”
 - “... some of our staff have said that it can be very difficult to get through to a dispatcher. We will be told they’re on lunch, and our customer will have to wait a long time before a bus can be arranged.”
 - “The only improvement I can think of is that it would be nice if RVDB could go further out. We’ve made special arrangements to go further on occasion, but it would be great for example if RVDB could go to Walnut Grove. There is another (bus) service, but it doesn’t cater to our needs like RVDB, which drops the kids right at their doors. Even if the bus could meet parents in Walnut Grove that would be great so the parents wouldn’t have to drive so far.”
 - “The routes need to be adjusted to incorporate the deviations and create better reliability.”
 - “Continuing to provide a lifetime type of service for Isleton residents for youth, seniors, persons with disabilities, and those that do not have the ability to drive on their own. Services must continue to be efficient, effective, and coordinated with SCT/LINK.”

- “Improve quality and capacity of existing services. It is very important to operate efficient and effective service while maintaining the farebox recovery ratio and eliminate the empty bus syndrome.”
- Regarding future needs (from several schools):
 - “We anticipate our needs will stay the same. Our program is not growing or reducing. We average probably 12 to 15 kids per day.”
 - “We anticipate an increased need due to increased enrollment. We have approximately 15 kids per day. They sign up at the beginning of the school year, and as the year goes on, other parents will request to have their child enrolled in the program, but it depends on if we have a seat available for them on the bus. Sometimes there’s a waiting list.”
 - “Demand is likely to increase as the population of Trilogy increases.”
 - “There is a need for students to be served in summer, such as getting them to the mall at an affordable fare. This would increase ridership.”

REVIEW OF PREVIOUS STUDIES AND PROJECTS

There are a number of recent studies and projects that have preceded this study which address transit issues and planning. These studies and their relevance to the current plan are described below.

1. Transit Study for the City of Rio Vista, January 2005, Urbitran

This document reviews and evaluates services of Rio Vista Transit, which was a general public Dial-a-Ride service that preceded the Delta Breeze. At the time, one vehicle was in service and fewer than 2,000 passenger-trips were provided annually. Recommendations centered on defining the role for transit, improving record-keeping, improving the service schedule, and planning for eventual growth of the system.

2. City of Rio Vista Mini Short Range Transit Plan FY 2006-2007 to 2015-2016, October 2006, Publictransit.Us

The “Mini” Short Range Transit Plan for Rio Vista Delta Breeze recommended a series of service changes designed to increase transit ridership and improve economic performance. Specific recommendations included:

- Reduce Delta Breeze Route 51 Rio Vista City Circulator hours to 10:30 a.m. - 3:30 p.m.
- Reduce Delta Breeze Route 50 - Rio Vista-Fairfield/Suisun City to one day per week
- Reduce Delta Breeze Route 52 - Rio Vista-Antioch (Hillcrest Park and Ride Lot) service to one day per week 20
- Develop alternatives to Wednesday Senior Shuttles, such as shifting some trips to Solano Paratransit, and/or substitute deviations on Routes 50 and 52 20
- Establish a firm minimum reservation time policy

The plan included a ten year capital improvement program and financial, and recommends strategies for marketing and administration.

3. Rio Vista Delta Breeze Short Range Transit Plan FY 2007/08-FY 2017/18, 2007, Moore and Associates, Inc.

The most recent previous SRTP was completed in 2007. The SRTP examined existing conditions, reviewed goals and policies, and analyzed the current transit system by type. Important recommendations from this SRTP are summarized as follows, along with the current status of the recommendation:

- Expanded Route 50 (service from Isleton to Fairfield/Suisun). This was subsequently done.
- Add timed transfers to demand responsive Route 51, and expand to Monday through Friday. This was subsequently done.
- New Route 53 between Rio Vista and Lodi via State Route 12, with three-quarter mile deviations. This was implemented bus subsequently discontinued due to expense and redundancy with Sacramento County Transit. Service from Rio Vista to Lodi is available via a transfer from Delta Breeze to SCT/LINK.
- New weekend service on Route 51 from 10:00 AM to 5:00 PM and Routes 50 and 53 with two round trips between Fairfield and Lodi between the hours of 8:30 AM and 8:05 PM. These changes have been implemented, but ridership on this new service is very low.
- It was recommended that the City assess demand for scheduled service to Vacaville. The plan stated that service would be most effective if operated once a week during the morning and early afternoon, with Saturday service introduced as a six-month demonstration project. This was not implemented.
- It was recommended that the City install additional benches, ensure all stops are signed, and have all buses feature bike racks. Several park and ride facilities were recommended including at Church Road and State Route 12, as identified in the Circulation Element of Rio Vista's General Plan as well as within downtown Rio Vista. Passenger amenities continue to be improved.

The plan also stated that the City would rehabilitate the Corporation Yard in FY 2011/12, adding transit maintenance capabilities, as well as additional parking for transit vehicles and covered maintenance. A new facility was built as a condition of development by the Rio Vista Water Treatment department.

4. Triennial Performance Audit of the City of Rio Vista (Delta Breeze), June 2009, Mundle & Associates, Inc.

A mandated Triennial Performance Review was conducted in spring of 2009. The auditor found that in general, the City is in compliance with the data collection and reporting requirements for the five TDA statistics. However, the City's performance over the five year period showed mixed results, with decreased cost efficiency and employee productivity levels and increased passenger productivity and cost effectiveness. The City's transition from demand response service to deviated fixed-route service impacted all of the performance indicators examined in the audit. Recommendations made by the auditor include the following:

- Evaluate performance measures and standards to ensure consistency, adequacy and measurability.

- Continue to refine procedures for routine performance monitoring and assessing performance against standards.

5. Coordinated Public Transit/Human Services Transportation Plan, December 2007, Metropolitan Transportation Commission

Based on requirements outlined in the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA), the Metropolitan Transportation Commission (MTC) completed a Coordinated Public Transit/Human Services Transportation Plan ("Coordinated Plan") that focuses on the transportation needs of the region's low-income, elderly and disabled populations. The plan also provides strategies for coordinating service for the three populations: elderly, disabled and low income.

6. City of Rio Vista General Plan, July 2002, City of Rio Vista, North Fork Associates and David Evans Design

The City of Rio Vista General Plan was adopted in 2001. The document, intended to be the "Constitution for Development" for the City, was created by the people of Rio Vista to establish their vision for the future development of the City. Each development project that requires discretionary review (staff or decision-maker interpretation of code) is evaluated as to whether it implements the vision set forth in the Plan. Consistent review of compliance with the Plan by staff, the Planning Commission, and the City Council ensures that the General Plan is a living document that implements the community's vision with each development decision. The General Plan is comprehensively reviewed every 20 years, with updates to the Housing Element every five years and is also updated in response to project or topic-specific items on a limited basis.

The *Circulation and Mobility* chapter of the plan discusses all modes of transportation, including transit. A list of policies is included to attain the stated goal "To provide fast, convenient, comprehensive, and dependable transit and paratransit service as Rio Vista grows."

7. Sacramento County South County Transit Link Short Range Transit Plan Update, October 2011, Sacramento Area Council of Governments

This recently completed SRTP has implications Rio Vista Delta Breeze services in that it is recommending discontinuing SCT/LINK service between Isleton and Lodi, though it will maintain service to Galt with connections to Lodi.

COORDINATION WITH THE MTC'S FOCUS

Created by the state Legislature in 1970 (California Government Code § 66500 et seq.), the Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating and financing agency for the nine-county San Francisco Bay Area, including Solano County.

"Focusing Our Vision" (FOCUS) is a Bay Area-wide effort initiated by the MTC to promote compact and equitable development that protects and enhances quality of life, and preserves open space and agricultural resources. FOCUS seeks to strengthen existing city centers, locate more housing near existing and future rail stations and quality bus lines, encourage more compact and walkable suburbs, and protect regional open space.

Rio Vista Delta Breeze serves a rural community and provides lifeline service to existing urban centers. As such, this SRTP does not play a major role in implementing the FOCUS. However, to the extent Rio Vista Delta Breeze provides an alternative means of travel between Rio Vista and those urban centers it can contribute toward strategies aimed at reducing driving and is consistent with FOCUS.

STUDY AREA

The City of Rio Vista is a small city located in the eastern portion of Solano County, bordering Sacramento County. The City is located on the Sacramento River, and is bisected by State Route 12. It is approximately 22 miles east of Fairfield and 18 miles west of Lodi. The approximately seven-square mile community was incorporated on December 30, 1893. The study area is shown in Figure 1.

The City initiated public transit service in July 1980 under the Rio Vista Transit banner. Weekday demand-response service was provided to the general public. In January 2006, Rio Vista Transit evolved into Rio Vista Delta Breeze, a deviated fixed-route service. In an effort to address low productivity and high operating costs, the City in January 2007 reduced the level of transit service to a modest "lifeline" operation while converting Route 51 (Rio Vista/Isleton City Circulator) to a general public, dial-a-ride service and eliminated the Rio Vista Vanpool program and the Rio Vista Delta Breeze Senior Shuttle.

Population

The most recent count of City population is provided by the 2010 US Census. The population of Rio Vista in 2010 was estimated to be 8,423 people. This reflects 84 percent growth over the 2000 population of 4,571. Population trends by decade from 1980 to 2010 are shown in Figure 2. A large part of the more recent growth was due to the development of a large senior community, *Trilogy at Rio Vista*, which is a planned community for ages 55 and older.

Transit-Dependent Population

Nationwide, public transit ridership is drawn in large part from the "potentially transit-dependent" population – the youths and elderly, the low-income, the disabled, and members of households with no available vehicles. Youths represent a transportation-dependent population as those less than 16 or 17 are unable to drive and may not have a parent available to transport them. In particular, junior high school students who are independent enough to attend after-school activities but are unable to drive are a representative group. The population between 10 and 17 years of age (inclusive) was 541 in the year 2000, or 11.8 percent of the population. This is estimated to have grown modestly to 649 (7.7 percent of the population) in 2010, as presented in Table 1.

Also shown in Table 1 is the population 65 years of age and older. In 2000, the senior population represented 19.7 percent of the population, but is currently at an estimated 2,492, or 29.6 percent of the population (down slightly from a 33.3 percent elderly population mid-decade). This rapid growth of the elderly population (277 percent over ten years) is largely due to the development of the Trilogy Senior community in the northeast portion of Rio Vista. Rapid growth also occurred in the adult population age 18 to 64, which increased from 2,529 in 2000 to 4,552 in 2010. A comparison of the population by percentages in 2000 versus 2010 is shown in Figure 3.

This page left intentionally blank.

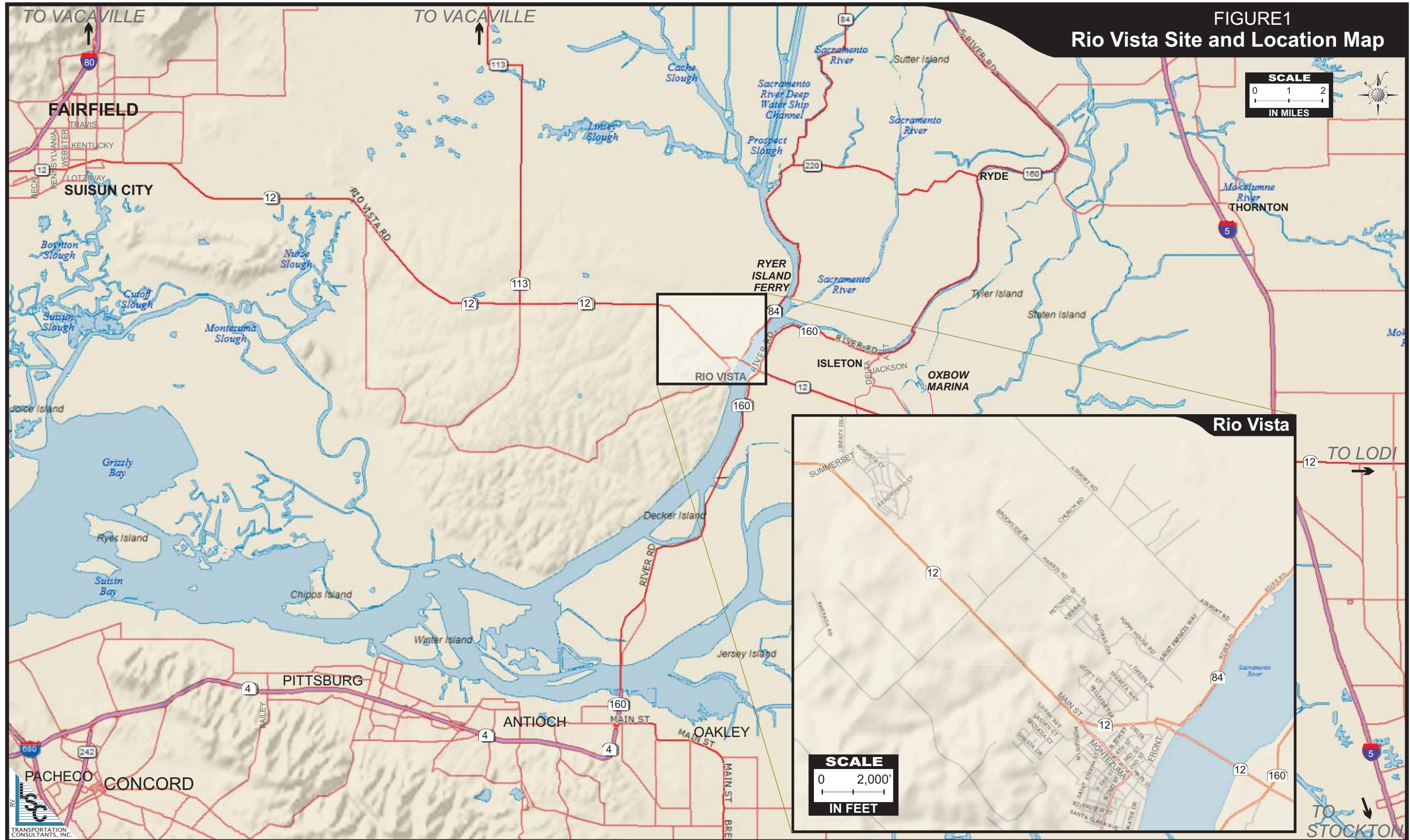
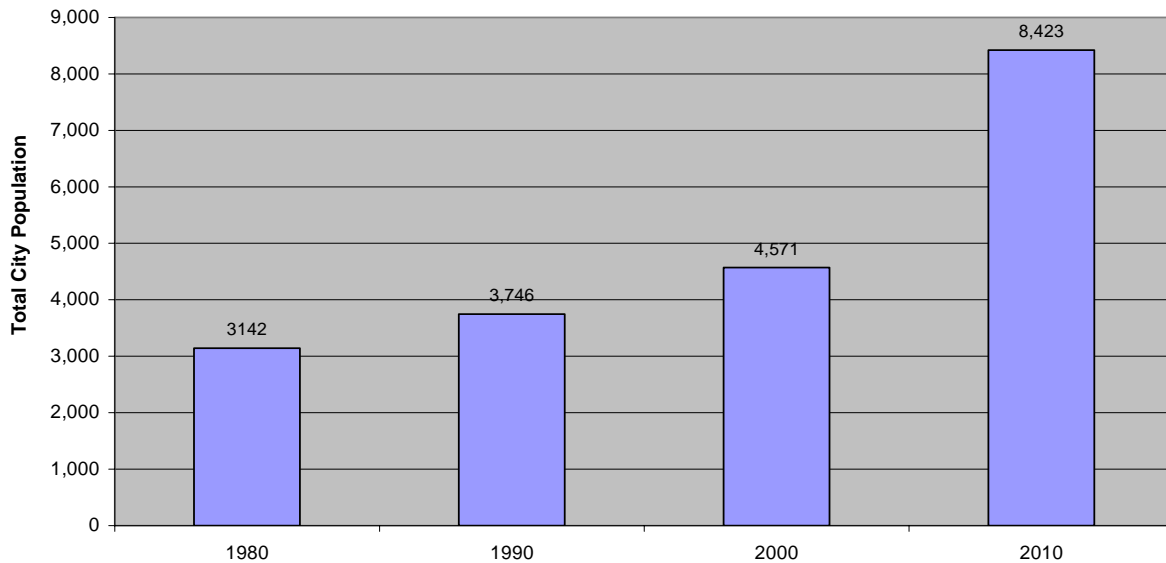


FIGURE 1
Rio Vista Site and Location Map

FIGURE 2: Historic Population of Rio Vista



Note: US Census data

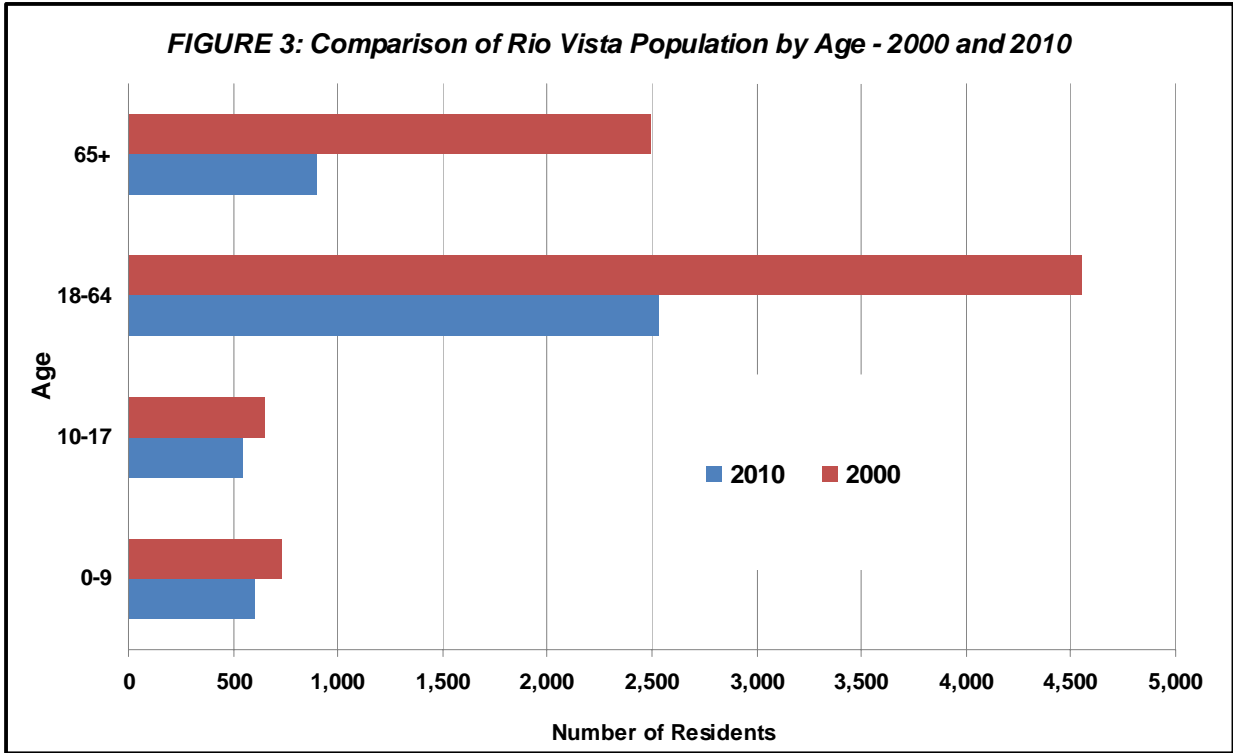
TABLE 1: Rio Vista Demographic Characteristics

Demographic Factor	2000 ¹		2005-2009 ²		2010 ³	
	#	%	#	%	#	%
Total Population	4,571	100.0%	7,460	100.0%	8,423	100.0%
Youth (10-17)	541	11.8%	557	7.5%	649	7.7%
Elderly (65+)	901	19.7%	2,488	33.3%	2,492	29.6%
Latino	522	11.4%	829	11.1%	--	--
Mobility-Limited	275	6.0%	--	--	--	--
Below Poverty	463	10.1%	717	9.6%	--	--
In Labor Force	2,055	45.0%	2,949	39.5%	2,949	35.0%
Unemployed	90	4.4%	123	4.2%	123	4.2%
Housing Units	1,974	--	3,842	--	--	--
Households	1,881	--	3,608	--	--	--
Zero Vehicle Households	93	4.9%	186	5.2%	--	--

Note 1: U.S. Census 2000

Note 2: U.S. Census, 2005-2009 American Community Survey 5-Year Estimates

Note 3: U.S. Census 2010



The U.S. Census also counts the population living below the poverty level, defined by a number of factors including household income and the number of dependent children in a household. Residents living below the poverty level comprised 9.6 percent of the City’s population in 2009 as shown in Table 1, compared to 13.2 statewide. While the 2009 poverty level dropped from the 2000 level, the current economic downturn has likely impacted this statistic.

The 2000 U.S. Census data also shows that 6.0 percent (275 persons) of the City’s population was comprised of residents reporting that they were transportation disabled due to mobility limitations, as shown in Table 1. No more recent data is currently available.

The number of households without a vehicle available is perhaps one of the strongest indicators of a transit-dependent household. As shown in Table 1, an estimated 4.9 percent (93 households) were without a vehicle in 2000, and 5.2 percent (186 households) were without a vehicle in 2009.

Employment

As shown in Table 1, the Rio Vista labor force was estimated at an average of 2,055 workers in 2000 and 2,949 in 2009, with low levels of unemployment. Since the recession has hit, unemployment is likely much higher, but current statistics are not available.

Transportation to Work

The US Census tracks data on travel mode to work, as shown in Table 2. An estimated 85 percent of workers in Rio Vista travel alone by private vehicle. Another 11 percent carpool, 2

percent use public transportation, and 2 percent use a taxi, bicycle or walk. Nearly half of employees residing in Rio Vista travel a half hour or more to get to work (47 percent), with almost 20 percent traveling an hour or more, as shown in Table 3.

Mode of Travel	Employees	
	Number	%
Car, truck, or van - drove alone:	1,945	85%
Car, truck, or van - carpooled:	258	11%
Public transportation (excluding taxicab):	45	2%
Taxicab, motorcycle, bicycle, walked, or other means:	38	2%
Total	2,286	

Source: U.S. Census, 2005-2009 American Community Survey 5-Year Estimates

Mode of Travel	Employees	
	Number	%
Less than 10 minutes	678	30%
10 to 14 minutes	96	4%
15 to 19 minutes	123	5%
20 to 24 minutes	144	6%
25 to 29 minutes	165	7%
30 to 34 minutes	256	11%
35 to 44 minutes	158	7%
45 to 59 minutes	221	10%
60 or more minutes	445	19%
Total	2,286	

Source: US Census, 2005-2009 American Community Survey 5-Year Estimates.

Additionally, the US Census provides data on where workers live in relation to where they work. This information illustrates the strong trend for residents to commute great distances out of Rio Vista to work, with 278 residents commuting over 50 miles, and another 498 residents commuting between 25 and 50 miles to work, as shown in Figure 4. This figure also illustrates the high mileage workers commute to get to Rio Vista for work, with a quarter of the workers traveling 25 miles or more to get to Rio Vista.

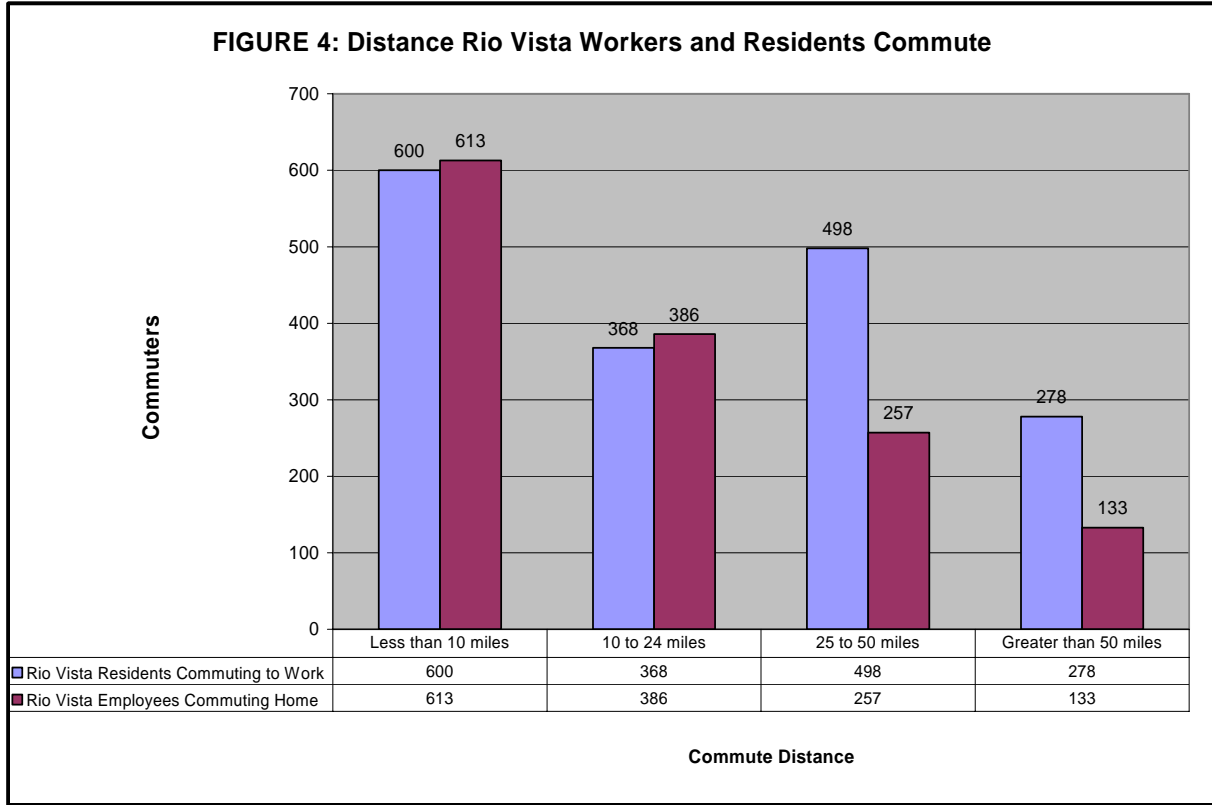


Figure 5 shows where Rio Vista residents who are employed travel for employment. As indicated, over half travel outside of the Rio Vista to unspecified areas. Only a quarter of employed residents stay within Rio Vista, illustrating how important commuting is for the local economy. Figure 6 shows where persons working in Rio Vista workers. Only a third of workers live in Rio Vista, again illustrating how important the commute is to the work force.

Figure 7 illustrates the inflow and outflow of employees. As shown, there is a small proportion of residents who also work in Rio Vista, with the majority of residents commuting out, and the majority of workers commuting into Rio Vista.

Major Activity Centers and Social Service Programs

Human service agency clients are often dependent on the local transit system for transportation. There are relatively few human service organizations located within the City of Rio Vista:

- Rio Vista C.A.R.E., located at 125 Sacramento Street, is one of ten Family Resource centers in Solano County which offer information and referral services to other health and social service programs, parental education and community activities focused on improving the health and welfare of families in the area.

Rio Vista Community Services is located at 1105 Airport Road in Rio Vista and provides homelessness prevention services such as food, transportation and shelter to low income Solano County residents. The agency offers food distribution on the first and third Monday of the month from 7:30 AM to 10:30 AM.

FIGURE 5: Where Rio Vista Employed Residents Work

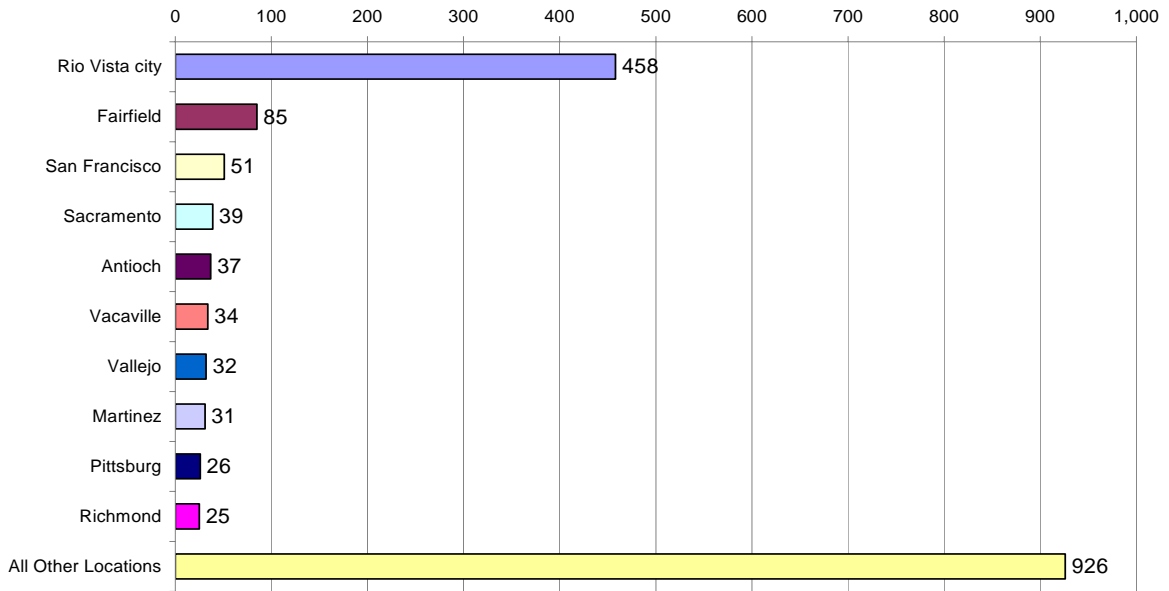


FIGURE 6: Where Persons Working in Rio Vista Live

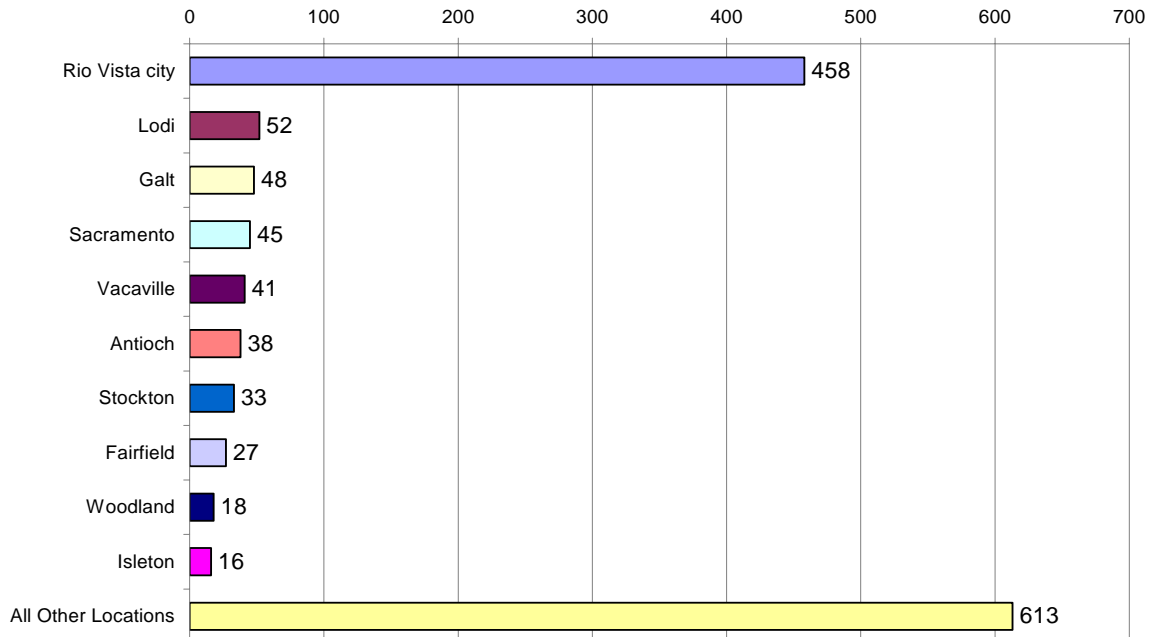
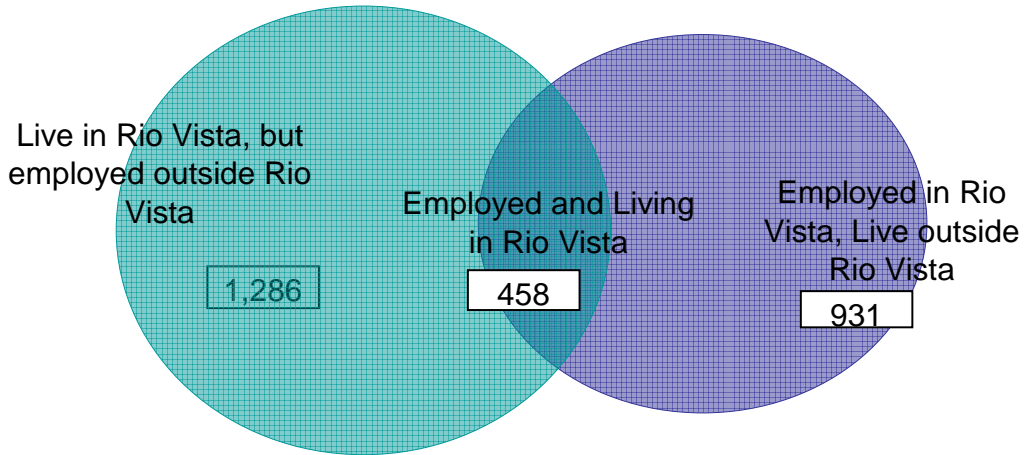


FIGURE 7: Inflow/Outflow of Rio Vista Employees



Source: US Census On The Map Longitudinal Data, 2009

- The Rio Vista Senior Center is located on Main Street and offers senior lunches.

All these agencies are accessible via Delta Breeze. Other Solano County Health and Human Services are located in neighboring communities for example: Mental Health outpatient clinics are located in Fairfield, Vacaville and Vallejo, Family Services Health clinics are located in Fairfield and Vallejo and Employment and Eligibility Services are located in Fairfield, Vacaville and Vallejo.

For major medical services, Rio Vista residents must travel to Sutter Solano Medical Center or Kaiser Hospital in Vallejo. Major commercial centers (such as big-box stores) are located in Antioch roughly 15 miles away. Another demographic that frequently uses transit is the elderly. The Trilogy at Rio Vista is a 55+ gated community and golf course located on Summerset Road off of SR 12 in Rio Vista.

PUBLIC TRANSPORTATION SERVICE

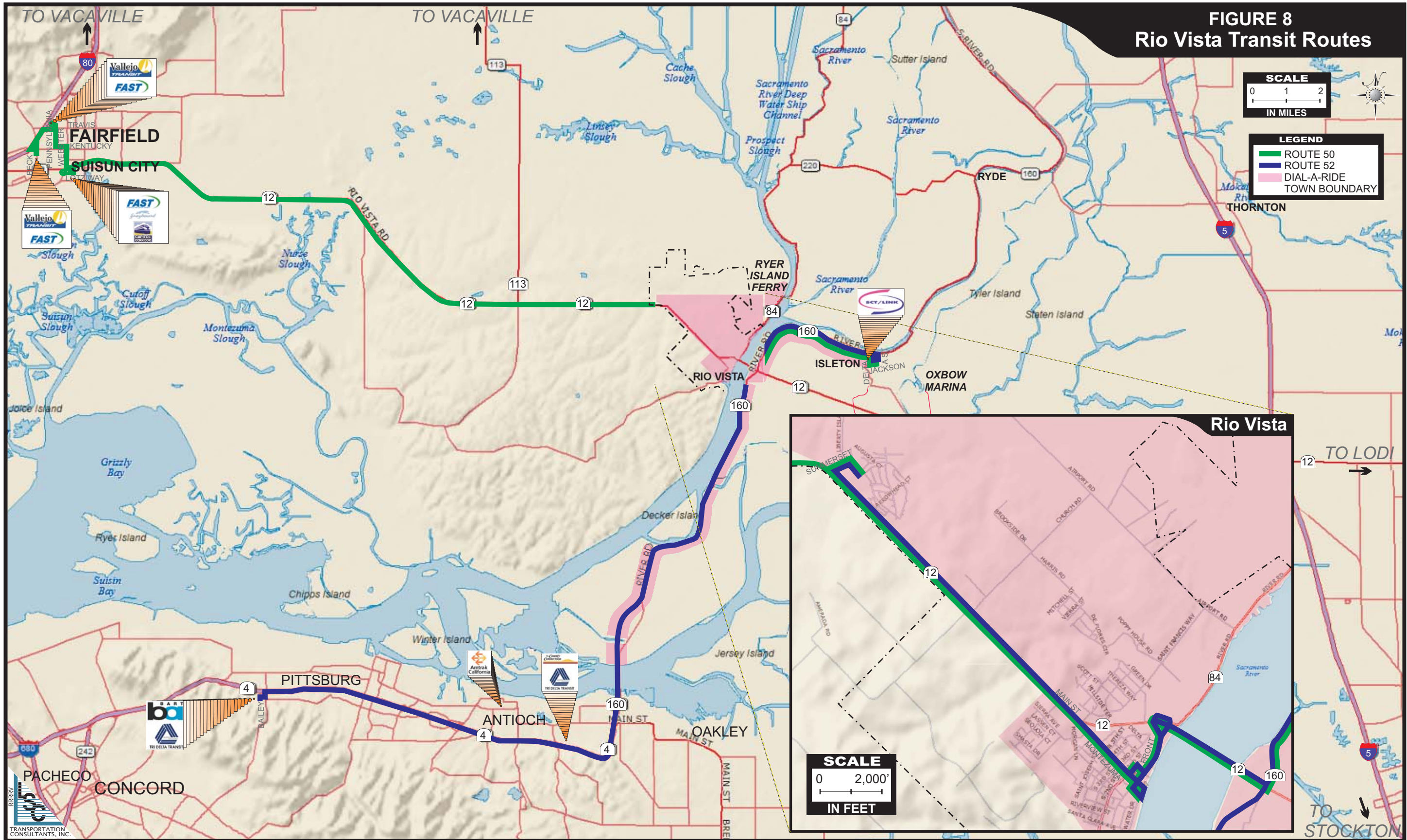
Rio Vista Delta Breeze (RVDB)

RVDB is managed by City of Rio Vista Public Works Department and operated by a transit contractor, which is currently Storer Transit Systems. Five elected members of the Rio Vista City Council serve as the policy board for RVDB. The Rio Vista Delta Breeze provides transportation to local destinations as well as connecting Rio Vista residents with regional transit services, medical and commercial services in Fairfield/Suisun City, Pittsburg, Antioch, and Isleton through a combination of fixed route, deviated fixed route and Dial-A-Ride (DAR) service. The three current RVDB routes are presented in Figure 8 and described below:

- **Route 50 SR 12 Express** – The route begins at Front St. and Main Street, serves C.A.R.E and the Senior Center, turns left on to Sacramento Street to serve the post office, turns left on to 2nd Street and right back to Main Street which becomes SR 12. Route 50 then travels west on SR 12 to the Suisun/Fairfield Amtrak Station after stopping at the Trilogy Vista Clubhouse and the Western Railway Museum. In the Fairfield/Suisun area, Route 50 stops at the Solano County offices, Fairfield library/community center/city hall, North Bay Regional Medical Center, Kaiser Permanente, and terminates at the Fairfield Transportation Center.
- Regardless of ADA eligibility, Route 50 will deviate anywhere within the city limits of Rio Vista, Isleton, Fairfield, and Suisun even though as an “intercity” route it is not required to do so under Americans with Disabilities Act (ADA) statute. Three-quarter mile deviations along the route itself are available on a space available basis. Deviation service up to two miles is available for three of the nine daily one-way trips. The route connects with regional transit services in Isleton where passengers can travel to Lodi via SCT/Link. Route 50 also connects with Fairfield and Suisun Transit (FAST), Vallejo Transit, Greyhound and Capital Corridor in Fairfield. On weekdays, Route 50 operates five westbound trips to Fairfield departing Rio Vista at: 5:00 AM, 7:00 AM, 9:15 AM, 12:15 PM (on request), and 4:40 PM (on request). Four eastbound return trips to Rio Vista depart the Fairfield Transportation Center at: 8:00 AM, 10:45 AM, 1:05 PM and 5:40 PM. On Saturdays, two round trips depart Rio Vista at 11:30 AM and 3:35 PM. No service is available on Sundays. A one-way trip takes approximately one hour.
- **Route 51 Rio Vista to Isleton City Circulator** – Route 51 is a general public door to door Dial-A-Ride which serves the entire city limits of Rio Vista and Isleton. This route operates on weekdays only, on two different schedules. Service is available from 9:30 AM to 2:30 PM on Mondays, Wednesdays and Fridays, and from 3:00 PM to 5:00 PM on Tuesdays and Thursdays. During the school year, Route 51 offers extended service between 5:15 PM and 7:00 PM. Timed transfers to SCT/Link are available upon request in Isleton at 10:50 AM to Galt and 12:40 PM to Lodi on Mondays Wednesdays and Fridays. The Tuesday/Thursday schedule allows for timed transfers to SCT/Link at 4:20 PM to Lodi. Connecting SCT/Link service to Galt is also possible at 6:10 PM Monday through Friday on school days. RVDB requests reservations are made at least 30 minutes in advance.

This page left intentionally blank.

FIGURE 8
Rio Vista Transit Routes



- **Route 52 SR 160 Express to Pittsburg/Bay Point BART Station** – This route provides an important connection to services in Antioch and Pittsburg as well as the Pittsburg/Bay Point BART station. The route begins at the Trilogy Vista Clubhouse and travels a similar path as Route 50 through Rio Vista to Isleton, where connections to Galt and Lodi are possible through SCT/Link. Route 52 then travels west and south on SR 160 to Antioch with stops at the Hillcrest Park and Ride lot, Wal-Mart, Kaiser, and Sutter Delta medical center. The route terminates at the Pittsburg/Bay Point BART Station. In general, Route 52 deviates within the city limits of Rio Vista, Isleton, and Antioch even though as an “intercity” route it is not required to do so under the ADA.
- **The Route 52 schedule varies by day of week** – On Monday through Friday, one early morning round trip departs Rio Vista Trilogy Vista clubhouse at 5:40 AM and arrives in Pittsburg at 6:50 AM in time for the 6:57 AM BART departure. Three-quarter-mile deviations are possible on a space available basis on the run to Pittsburg/Bay Point. The return trip to Rio Vista is an “express service” with only two stops: Pittsburg/Bay Point and Front Street/Main Street in Rio Vista. In the evening an express trip departs Rio Vista Front Street and Main Street at 5:05 PM and arrives at the BART Station at 5:45 PM (timed connection). The evening return trip offers three-quarter mile deviations and stops in Antioch and Rio Vista with request stops in Isleton and at the Trilogy Clubhouse. On Tuesdays one additional round trip is offered with service to all stops and two mile deviations on a space available basis. The Tuesday trip departs the Trilogy Clubhouse at 8:45 AM and arrives at the BART station at 10:05 AM. The return trip departs the BART station at 1:25 PM and arrives in Rio Vista at 2:45 PM. On Saturdays, one morning and one evening round trip are offered with two mile route deviation service.

Several RVDB services which have recently been operated but are now discontinued are listed below:

- **Route 53 to Lodi** – This route from Rio Vista to Lodi via Highway 12 was started in 2007-2009 and discontinued in 2008-2009 due to low ridership and service redundancy. The deviated fixed route was operated twice weekly, but served only 91 passenger trips during operations. Passengers can make the same trip by taking RVDB to Isleton and transferring to SCT/Link.
- **Rio Vista Delta Breeze Taxi Scrip Program** – This program was developed for ADA qualified residents to provide a transportation alternative when Delta Breeze service was unavailable (location or hours). Eligible passengers could purchase ten taxi scrip for \$5.00 with each scrip worth \$1.00 of service (equivalent to a 50 percent discount on the taxi fares). Passengers could use scrip for local or “regional” trips. The limiting factor was that \$5,000 of scrip was available annually, or \$450 per month. In 2010, 211 passenger trips were provided with scrip at an average cost to Rio Vista of \$51.30 per passenger trip. Many of the taxi trips were to the Sacramento Airport. The Taxi Scrip Program was discontinued effective May 5, 2011 at the taxi provider’s request, but a new taxi provider began the service in October, 2011.

Fare Structure

The fare structure for RVDB is presented in Table 4. The base one-way fare for local destinations in Rio Vista, Isleton and the resort communities along SR 160 north of the Antioch Bridge is \$1.50, with a 50 percent discount for seniors age 55 or older, Medicare card holders

and disabled passengers. The intercity one-way general public fare to destinations such as Antioch, Pittsburg/Bay Point, Fairfield and Lodi (through a transfer to SCT/Link in Isleton) is \$5.00, with no discount available for seniors and disabled. Passengers can purchase 10-ride passes for both local and intercity routes. Monthly passes are also available. At \$35.00 for a monthly local route pass, a general public passenger making one round-trip five days a week is provided with a discount of 42 percent. The discount for an intercity monthly pass is 57.5 percent. Deviations on intercity Routes 50 and 52 are \$0.50 for the general public, and free for ADA eligible passengers. Transfers to and from other regional transit systems such as to Tri Delta Transit, the County Connection, SCT/Link, Fairfield, and Suisun Transit and Vallejo Transit are free. RVDB accepts Greyhound and Amtrak tickets when boarding at shared bus stops. RVDB also accepts BART Plus as for a local fare. The BART Plus ticket is good on BART, County Connection, Dumbarton Express, Rio Vista Delta Breeze, SamTrans, Santa Clara County VTA, SF Muni, Tri Delta Transit, Union City Transit, West CAT and WHEELS.

Table 4: Rio Vista Delta Breeze Fare Structure		
Fare Category	General Public	Senior/Disabled
Local Fare within Rio Vista and Isleton⁽¹⁾		
One-Way Trip	\$1.50	\$0.75
10-Ride City Pass	\$15.00	\$7.50
Monthly City Pass	\$35.00	\$20.00
Intercity Fare⁽²⁾		
One Way Fare	\$5.00	\$5.00
10-Ride Intercity Pass	\$45.00	\$45.00
Monthly Intercity Pass	\$85.00	\$85.00
Intercity Route Deviations	\$0.50	\$0.50
Transfers to other transit systems	Free	Free
ADA Route Deviations	—	Free
Note 1: Includes resort communities along SR 160 between Isleton and Antioch Bridge. Note 2: To Antioch, Lodi via SCT/Link, Pittsburg/Bay Point, Suisun City or Fairfield. Source: Rio Vista Delta Breeze.		

Vehicle Fleet

The RVDB vehicle fleet consists of four cutaway transit vehicles and one van. The vehicle roster is shown in Table 5. All of the vehicles are wheelchair accessible with two wheelchair tie-down positions, and range in seating from 6 (van) to 16 passengers. All revenue vehicles are owned by the City of Rio Vista.

As indicated in Table 5, based on age, all of the cutaways will reach the end of their useful life over the span of this TDP Update. The van was recently purchased and will not need to be replaced until FY 2016-2018. The City of Rio Vista can expect to replace the vehicles within the next five years, as will be discussed in the Capital Alternatives in the next Technical Memorandum.

TABLE 5: Rio Vista Delta Breeze Vehicle Roster

Vehicle No.	Year	Chassis Make	Body Make	Fuel	Seats	Wheelchair Positions	Bike Rack Capacity	Length	4/11 Mileage	Replacement Schedule
17	2006	Ford	E450	Diesel	16	2	2	22 ft	134,236	FY 12-13
18	2006	Ford	E450	Diesel	16	2	2	22 ft	137,961	FY 11-12
19	2008	Ford	E450	Gasoline	13	2	2	24 ft	141,068	FY 13-14
20	2009	Ford	E450	Gasoline	13	2	2	24 ft	107,806	FY 14-15
21	2011	Eldo	Van	Gasoline	6	2	0	12 ft	0	FY 16-17

Source: Delta Breeze.

Ridership

Table 6 presents historical RVDB ridership from Fiscal Year (FY) 2004-05 to FY 2010-11. As shown in the table the transit system has evolved from a demand response only service in FY 2004-05 with 1,154 annual one-way passenger trips to a deviated fixed route and city circulator system with 13,181 annual one-way passenger trips in FY 2010-11. Historically since initiation of the deviated fixed route Route 51 has had the greatest ridership, though in the past year Route 50 had nearly as many passenger trips as Route 51. The drop in ridership on Route 51 from 2009-10 to 2010-11 is primarily due to no longer allowing standees on trips which primarily serve students. The category of "Other" transit services shown in the table represents shuttle services and special events.

TABLE 6: Rio Vista Delta Breeze Historical Ridership

	Fiscal Year						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Route 50 (to Fairfield)	--	135	452	1,781	5,047	5,678	5,060
Route 51 (Local Circulator/DAR)	--	810	2,578	2,920	5,884	8,030	5,816
Route 52 (to Pittsburg)	--	181	279	197	181	906	1,863
Route 53 (to Lodi)	--	--	--	41	50	--	--
Senior Shuttle	--	88	102	--	--	--	--
Dial-A-Ride	1,109	648	--	--	--	--	--
Other ¹	45	45	453	462	18	34	442
Total	1,154	1,907	3,864	5,401	11,180	14,648	13,181

Source: Rio Vista Delta Breeze.

Note 1: Other includes shuttle services and special event transportation.

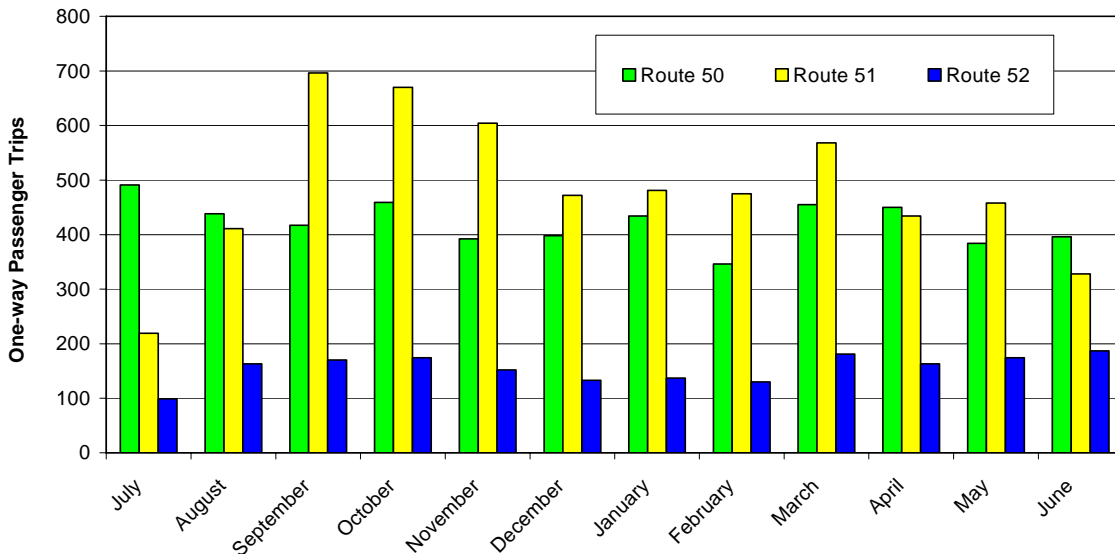
Table 7 and Figure 9 show ridership by month for FY 2010-2011. As indicated, ridership is lowest in July and February and highest in June, September and October. This may be influenced by school schedules, as Route 51 offers extended evening service during the school year. Route 51 has significantly higher ridership than the other routes during the fall months of

**TABLE 7: Rio Vista Delta Breeze Ridership by Month
FY 2010-2011**

	Route 50 to Fairfield	Route 51 Local DAR	Route 52 to Pittsburg	Other Special Events	Total	% of Total
July	491	219	99	0	809	6.1%
August	438	411	163	0	1,012	7.7%
September	417	696	170	0	1,283	9.7%
October	459	670	174	17	1,320	10.0%
November	392	604	152	0	1,148	8.7%
December	398	472	133	0	1,003	7.6%
January	434	481	137	8	1,060	8.0%
February	346	475	130	0	951	7.2%
March	455	568	181	0	1,204	9.1%
April	450	434	163	0	1,047	7.9%
May	384	458	174	0	1,016	7.7%
June	396	328	187	417	1,328	10.1%
Total	5,060	5,816	1,863	442	13,181	100.0%
% of Total	38.4%	44.1%	14.1%	3.4%	100.0%	

Source: Rio Vista Delta Breeze.

FIGURE 9: FY 2010-11 RVDB Monthly Ridership



September through November. For FY 2009-2010, Route 51 ridership represents just over 40 percent of total RVDB ridership. Overall Route 50 ridership remains relatively steady throughout the year, with just under 40 percent of total ridership. Route 52 to Pittsburg/Bay Point has the lowest monthly ridership (99 to 187 one-way trips per month), but this is an increase over the previous year, which had as few as eight passengers in a month.

RVDB Budget

The RVDB expenses are presented in Table 8 for fiscal year 2009-10 and 2010-2011. As indicated, operating expenditures in 2009-2010 totaled \$387,717, increasing to \$484,099 in 2010-2011. One large increase (\$54,000, or 11 percent of the budget) was due to increased expenses of selling Greyhound tickets. However, Greyhound ticket sales generate approximately 14 percent commission, with \$7,100 budgeted as revenue after expenses. Other significant increases include higher wages and benefits (due to increased staff time) and implementation of the Taxi Scrip program. The operations contract is the largest expense though at \$295,950, or 61 percent of expenses in 2010-2011.

Expense Items	FY 2009-2010 Budget	FY 2010-2011 Amended	Change
Wages and Benefits	\$16,464	\$44,141	\$ 27,676
Accounting Services	\$2,756	\$2,839	\$ 83
Legal Services	\$500	\$100	\$ (400)
Operations Contract (Delta Breeze) ¹	\$290,600	\$294,950	\$ 4,350
Operations Contract (Taxi)	\$0	\$10,000	\$ 10,000
Fuels and Lubricants	\$50,000	\$48,000	\$ (2,000)
Greyhound Sales ²	\$0	\$54,000	\$ 54,000
Misc. Services and Supplies	\$1,600	\$7,604	\$ 6,004
Memberships	\$450	\$1,537	\$ 1,087
Office Materials and Postage	\$1,550	\$125	\$ (1,425)
Liability Insurance	\$1,654	\$103	\$ (1,551)
Phone	\$3,542	\$3,800	\$ 258
Advertising, Brochures, Printing, Notices	\$8,500	\$10,100	\$ 1,600
Non-Capital Equipment	\$10,100	\$6,800	\$ (3,300)
Total Operating Expenses	\$387,717	\$484,099	\$ 96,382

Note 1: Based on FY 2010 (\$292,672) contract expires 6-30-2012. Fixed Cost of \$150,738. Variable Cost of \$144,212-5,385 RVSH at \$26.78 per hour.

Note 2: Approximately 14% of Greyhound ticket sales is kept as commission. Actual Greyhound Ticket Sales revenue in 2010-2011 was \$57,479 with \$49,696 remitted to Greyhound and \$7,782 kept as commission.

Source: Rio Vista Delta Breeze.

Total revenue for 2009-2010 was \$387,117, increasing to \$484,099 in 2010-11, as shown in Table 9. Again, a portion of the increase (11 percent) is from the pass-through funds of the Greyhound program. TDA funds increased from \$175,468 to \$191,906, but are expected to decrease in 2011-2012. FTA revenues decreased from \$179,706 to \$161,980 in the same period, and with increased competition for these funds in the Bay Area, these revenues may be expected to continue to decline. Fare revenues increased from \$26,000 in 2009-10 to \$62,213 in 2010-2011. The increase is primarily due to additional services to the school district (collecting fares of \$1.75 per student per day not to exceed \$45,000). The fares are paid by the district directly to the City of Rio Vista.

TABLE 9: Rio Vista Delta Breeze Revenues

Revenue Items	FY 2009-2010 Budget	FY 2010-2011 Amended	Change
Operating Revenue			
TDA Grant	\$175,468	\$191,906	\$ 16,438
FTA Grants	\$179,706	\$161,980	\$ (17,726)
Fare Revenue	\$26,000	\$62,213	\$ 36,213
Miscellaneous ¹	\$1,800	\$66,200	\$ 64,400
Interest Income	\$4,143	\$1,800	\$ (2,343)
Total Operating Revenue	\$387,117	\$484,099	\$ 96,982
Note 1: Bus Advertising (\$1,200), Newspaper Sales (\$100), Greyhound Commission (\$7,100), Misc. Sales (such as FasTrak, BART Tickets, Vallejo Transit passes, RTC Card Sales, Clipper Sales, Bikelink Sales, Greyhound Ticket Acceptance, Amtrak Ticket Acceptance). Source: Rio Vista Delta Breeze.			

Service Performance Analysis

To gain further insight into the efficiency and effectiveness of the RVDB services, it is useful to conduct an analysis of ridership and operating data on a service category basis. Ridership and operating statistics for fiscal year 2010-2011 were reviewed to identify average passenger activity, fares, and operating quantities. The service quantities, costs, and ridership for each service were used to evaluate a variety of transit service performance measures:

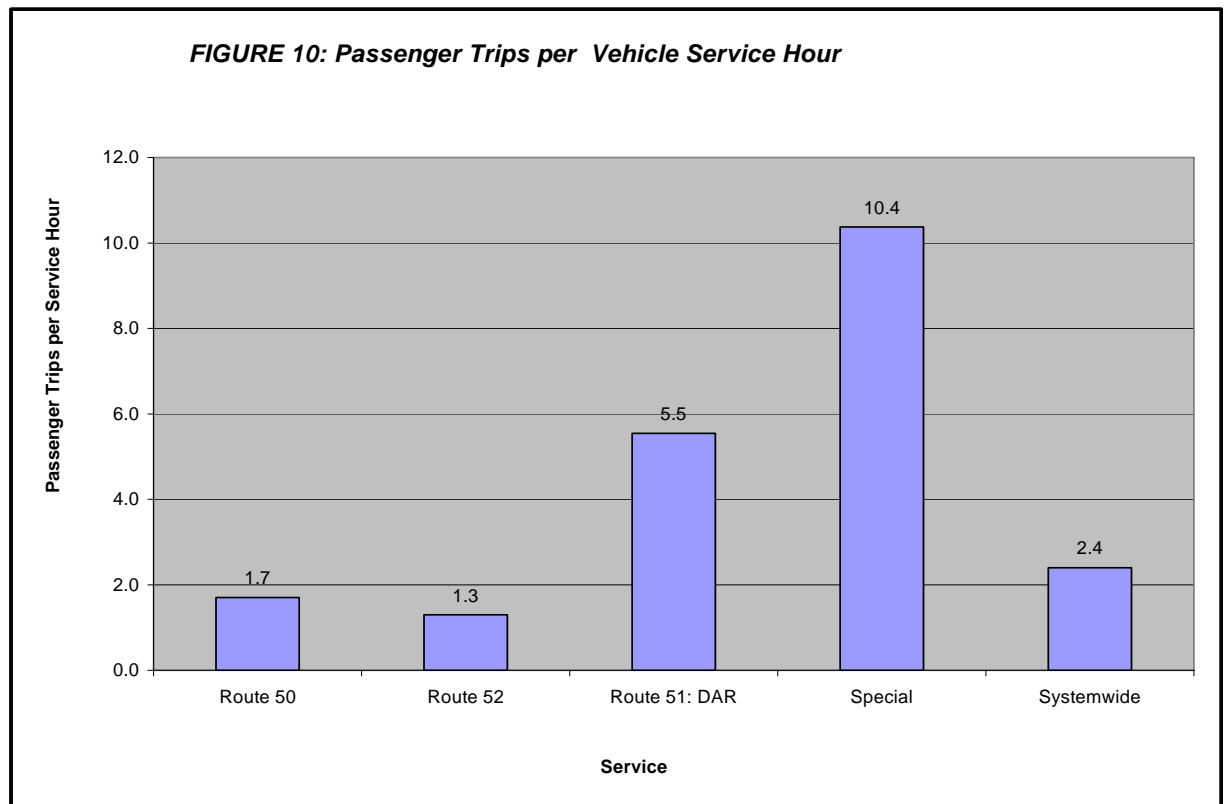
- Table 10 shows a summary of operating characteristics and performance indicators by service.
- Figure 10 graphically illustrates the service effectiveness of the RVDB system based on the number of **passenger-trips per service-hours**. Routes 51/DAR and the Special Services have the highest productivity in terms of **passenger-trips per service hour**, with 5.5 and 10.4 passengers per hour, respectively. Routes 50 and 52 show low productivity with 1.7 and 1.3 passengers per hour, respectively. This low productivity reflects the long distance of Routes 50 and 52.

TABLE 10: Rio Vista Delta Breeze Operating Characteristics
 FY 2010-2011

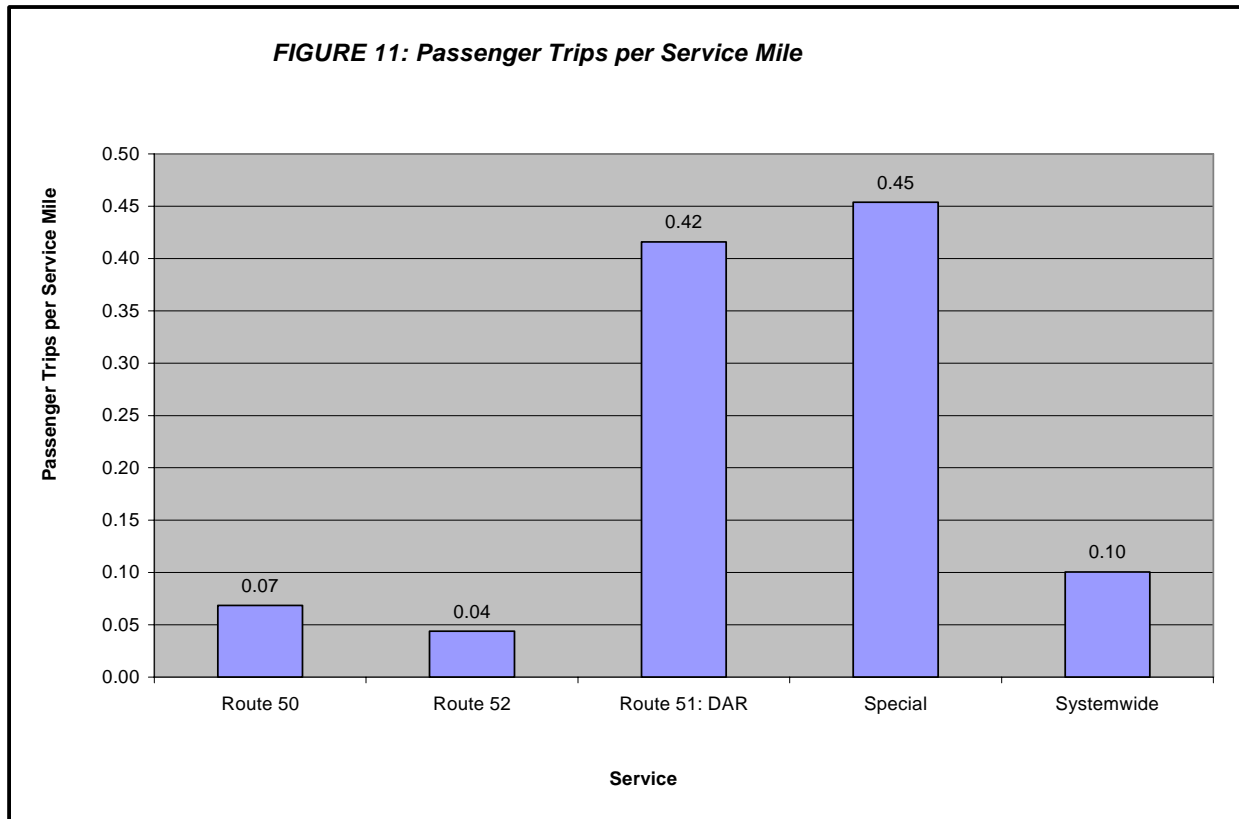
	Deviated Routes		DAR	Special	Systemwide
	50	52	51		
Ridership	5,060	1,863	5,816	442	13,181
Fares ¹	--	--	--	--	\$68,223
Operating Cost	\$129,789	\$113,706	\$53,213	\$1,141	\$297,849
Hours	2,970	1,431	1,049	43	5,493
Miles	73,738	42,435	13,985	974	131,132
Performance Measures					
Passengers per Vehicle-Hour	1.7	1.3	5.5	10.4	2.4
Passengers per Vehicle-Mile	0.07	0.04	0.42	0.45	0.10
Fare per Passenger Trip	--	--	--	--	\$5.18
Cost per Passenger Trip	\$25.65	\$61.03	\$9.15	\$2.58	\$22.60
Subsidy per Passenger Trip	--	--	--	--	\$17.42
Farebox Ratio	--	--	--	--	22.9%

Note 1: Fare data was not available by route.
 Source: Storer Monthly Reports compiled for annual data.

FIGURE 10: Passenger Trips per Vehicle Service Hour

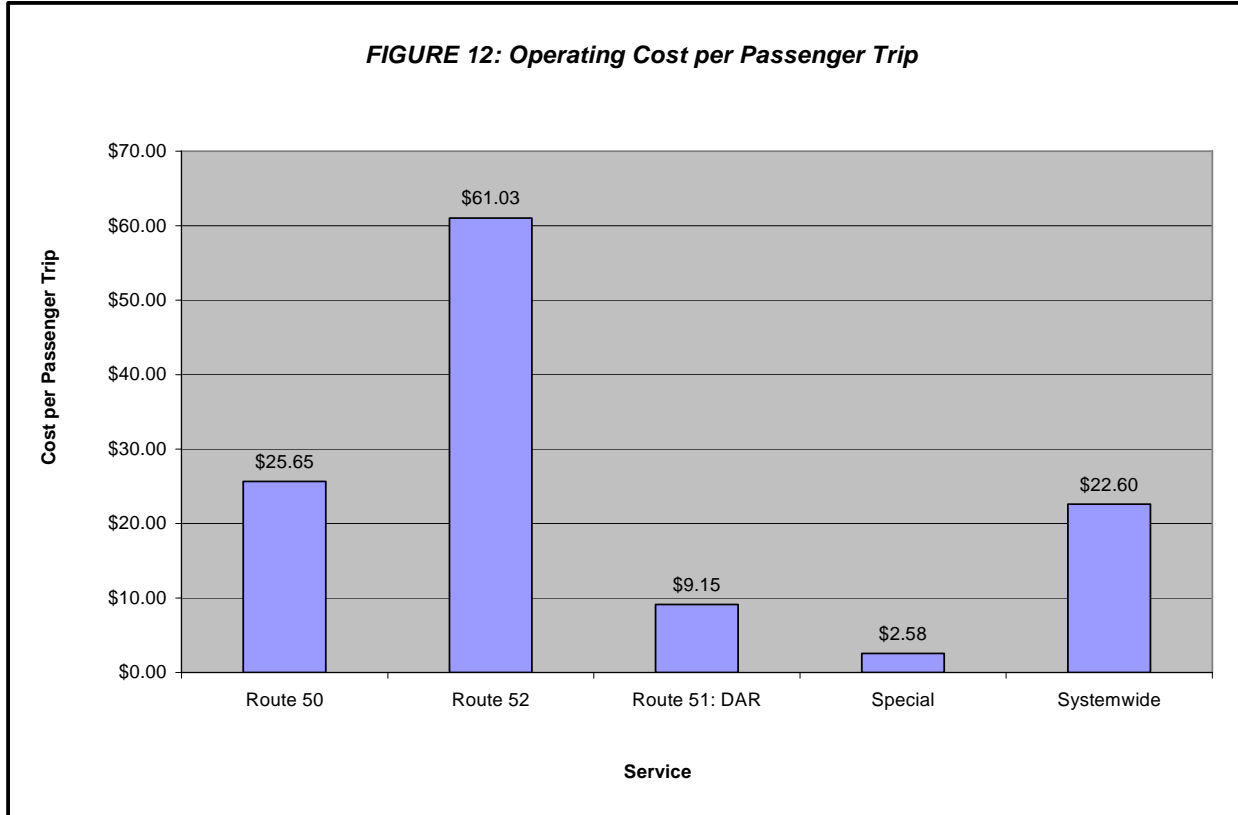


- Figure 11 graphically illustrates the service effectiveness of the RVDB system based on the number of **passenger-trips per service-miles**. As shown, as with the passenger-trips per hour, Route 51 and Special Services were more effective (0.42 and 0.45 passenger trips per service mile, respectively). Route 51 and 52 were ineffective in terms of passenger-trips carried per mile, at 0.07 and 0.04 per mile, respectively.



- Dividing the estimated operating cost by the number of passenger-trips served on each route yields the **cost per passenger-trip**. As shown in Table 10 and Figure 12, operating cost is substantially higher for Route 52 at \$61.03 per passenger-trip than all of the rest. The next highest cost per passenger-trip is for Route 50 at \$25.65. The DAR services had a cost per passenger-trip of \$9.15, while Special Service trips were only \$2.41 per passenger trip.
- The **subsidy per passenger-trip** is calculated by subtracting fare revenues from the costs of each route, and dividing by the number of passenger trips. This is a particularly useful performance measure, as it directly relates the key public input to a public transit program (subsidy funding) with the key “output” (passenger-trips). However, fare data was not available by route. Systemwide, the subsidy per passenger-trip averages \$17.42, as shown in Table 10.
- The **farebox ratio** is calculated by dividing the passenger revenues by the operating costs. Again, this data is only available systemwide. Also shown in Table 10, the farebox ratio is 22.9 percent systemwide.

FIGURE 12: Operating Cost per Passenger Trip

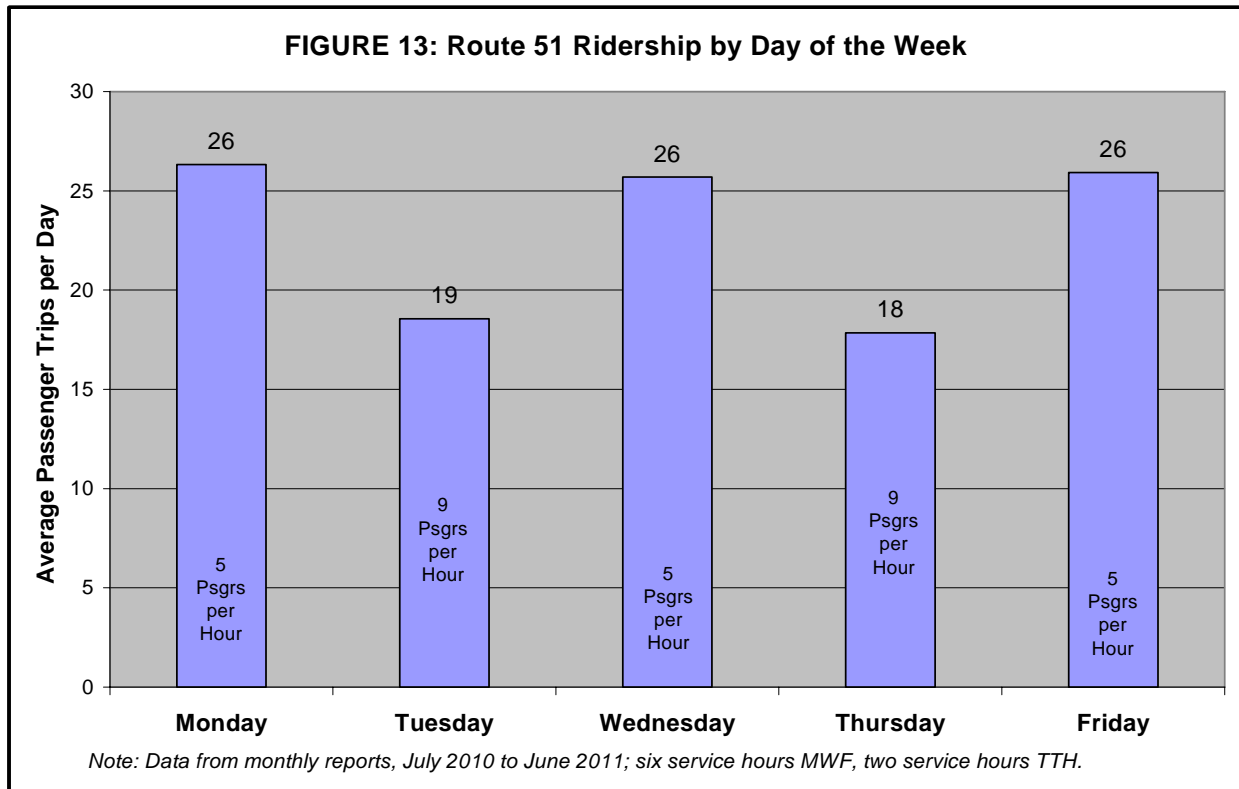


In addition to the performance indicators above, weekday ridership statistics were reviewed to determine the difference in ridership on Route 51 for the 9:30 AM to 2:30 PM Monday-Wednesday-Friday service compared to the 3:00 to 5:00 PM Tuesday-Thursday service. As shown in Figure 13, ridership averaged 26 passenger trips on Route 51 on Mondays, Wednesdays and Fridays, and 18 passenger trips on Tuesday and 19 on Thursday. However, the ridership per hour was only 5 passenger trips on Monday, Wednesdays and Fridays compared to 9 passenger trips per hour on Tuesdays and Thursdays, showing a higher productivity on Tuesdays and Thursdays.

Further analysis was conducted by comparing Routes 50 and 52 with service factors from Yolo Transit's Routes 220 and 220C. This peer comparison is useful because these transit routes are very similar in that they serve long distance trips from smaller communities (Rio Vista and Winters) to larger communities (Pittsburg/Fairfield, and Davis/Vacaville).

As shown in Table 11, the Yolobus service is much more effective in cost and productivity. The Yolobus routes carried 19,509 passengers in the past fiscal year at an operating cost of just over \$120,000 (\$6.19 per passenger trip served) while Rio Vista Delta Breeze routes carried 6,923 passengers at a cost of \$243,495 (\$35.17 per passenger trip served). Furthermore, the Yolobus service was provided over fewer hours and miles than the Delta Breeze service. (This is due in part to the fact that the length of the routes from Winters are shorter than the length of the routes from Rio Vista.) The farebox recovery ratio was 20.7 percent for Yolobus. Delta Breeze has a systemwide farebox return ratio of 22.9, which is undoubtedly highest for its DAR and after school services and substantially lower for Routes 50 and 52. The Delta Breeze routes

are fairly new, and ridership has grown significantly over the past year. This comparison indicates that the Delta Breeze service may have potential to grow and become more efficient. However, if ridership does not increase significantly in the next year, approaching the effectiveness shown in the Yolobus service, a re-evaluation of the service will be necessary.



On-time Performance

On-time performance was tracked for Routes 50 and 52 over the majority of runs as part of an onboard survey effort conducted in mid-May, 2011. Surveyors were instructed to note the time of departure from time-point stops on these routes. Departures were considered “on time” if they were not early, nor more than five minutes late. With these criteria, Route 50 was on time for 8 trips, and late for 4 trips, resulting in only a 67 percent on-time rate. Route 52 performed better, with 8 of 9 trips operating on time, almost a 90 percent on-time rate. It should be noted this data represents a small sample. On-time data is not reported in the contractors’ monthly reports.

Boarding and Alighting Survey Data

In addition to on-time data, boarding and alighting counts were conducted on Routes 50 and 52 for weekdays and Saturdays. As summarized in Table 12, the busiest stops on Route 50 on weekdays were Lira’s Market and Trilogy (multiple locations) in Rio Vista, and Social Services in Fairfield. Route 52 had only a handful of boardings and alightings, bringing people from the Pittsburg BART and Antioch Park and Ride to Trilogy, downtown Rio Vista, and Isleton. Saturday travel shows passengers accessing BART and shopping areas in Suisun and Fairfield. While 16 percent of boarding and alightings originate at Trilogy on weekdays, 37 percent of boarding and alightings originate at Trilogy on Saturday.

Transit Provider	Ridership	Annual Vehicle Service Hours	Annual Vehicle Service Miles	Annual Operating Cost	Riders Per Hour	Riders Per Mile	Operating Cost Per			Farebox Recovery Ratio
							Passenger-Trip	Hour	Mile	
Yolobus Route 220 and 220C	19,509	3,071	79,989	\$120,709	6.4	0.2	\$6.19	\$39.31	\$1.51	20.7%
Rio Vista Delta Breeze Route 50	5,060	2,970	73,738	\$129,789	1.7	0.1	\$25.65	\$43.70	\$1.76	NA
Rio Vista Delta Breeze Route 52	1,863	1,431	42,435	\$113,706	1.3	0.0	\$61.03	\$79.43	\$2.68	NA
Combined Rio Vista Routes	6,923	4,402	116,173	\$243,495	1.6	0.1	\$35.17	\$55.32	\$2.10	NA
Differences	(12,586)	1,331	36,184	\$122,786	(4.8)	(0.2)	\$28.98	\$16.01	\$0.59	NA

Note 1: The Yolobus data and RVDB data available is for Fiscal Year 2010-2011.
Source: Yolobus provided data for its routes; RVDB monthly reports were used.

TABLE 12: Route 50 and 52 Boarding and Alighting by Stop

Route	Stop	Daily Activity by Stop		
		On	Off	Total
<u>Weekday</u>				
50	More for Less Gas, Rio Vista	1	0	1
	Lira's Market, Rio Vista	5	0	5
	Main and Sierra, Rio Vista	0	1	1
	Main and 5th Streets, Rio Vista	0	1	1
	Residential Rio Vista	2	0	2
	Trilogy, Rio Vista	2	4	6
	Curry Road and Highway 12	1	0	1
	Suisun/Fairfield Amtrak Station	1	1	2
	Social Services, Fairfield	0	5	5
	Missouri/Great Jones, Fairfield	1	1	2
	Fairfield Transportation Center	0	1	1
	Bank of America, Fairfield	1	1	2
	Kaiser, Fairfield	0	1	1
	Trader Joes/Solano Mall, Fairfield	2	0	2
	Subtotal		16	16
52	Isleton City Hall	0	1	1
	Rio Vista Front and Main	0	1	1
	Rio Vista Residential	1	1	2
	Trilogy, Rio Vista	0	1	1
	Antioch (Hillcrest Park and Ride Lot)	2	0	2
	Pittsburg/Bay Point BART	2	1	3
Subtotal		5	5	10
Total		21	21	42
<u>Saturday</u>				
50	Main Street, Rio Vista	3	0	3
	Trilogy, Rio Vista	1	4	5
	Curry Road and Highway 12	1	1	2
	Merganzer Rd, Suisun City (Pet Clinic)	1	1	2
	Walmart, Fairfield	0	1	1
	Sears, Westfield Mall, Solano	1	0	1
	Subtotal		7	7
52	Main Street, Rio Vista	0	1	1
	Trilogy, Rio Vista	3	1	4
	Pittsburg/Bay Point BART	2	3	5
	Subtotal		5	5
Total		12	12	24

Source: LSC Transportation Consultants, Inc.

On-Board Surveys

Passenger surveys were available on all Delta Breeze vehicles from August 15th to September 15th, 2011. Passengers were encouraged to fill out surveys and turn them in to the driver or at several drop locations. After the month of surveying, 37 total surveys were collected. The results of the surveys are summarized in Tables 13 and 14, and highlighted below.

- Route 52 to Pittsburg BART had the most surveys (15 responses), followed by Route 50 (12 responses), with about a quarter of the surveys on the Dial-a-Ride Route 51 (8 responses).
- Surveys were received from routes throughout the day, but especially on the earliest runs, with 65 percent of responses received on runs before 8:00 AM.
- The majority of respondents walked to catch the bus, generally taking less than 15 minutes to arrive at the stop. However, 12 respondents (41 percent) were picked up at their homes. Over half were going to BART.
- Less than two thirds of respondents were traveling round trip by Delta Breeze. They were traveling for multiple purposes, including medical/dental appointments (12 respondents), work (7 respondents), personal business (7 respondents), shopping (6 respondents) and other (3 respondents).
- All but 4 of the respondents live in Rio Vista, with 3 in Homecoming, 11 in Trilogy, and 15 in other Rio Vista locations. The remaining 4 respondents lived in the Bay Area or Fairfield.
- Approximately two thirds of the respondents ride the bus multiple times per week, while one third was occasional riders (twice a month or less).
- Almost half (14 of 31 respondents) said they paid a cash fare for the trip, while 11 respondents used a monthly CityPass and 6 paid with a 10-ride punch pass.
- The respondents were a mix of long-time users (23 had used the service for more than a year), with 7 respondents having used the service for 6 months to a year, 5 had used it less than 6 months, and it was the first ride for one respondent.
- Over a third of the respondents said they would not make the trip if Delta Breeze were not available.
- Most of the respondents said they get their transit information by printed material or from the driver.
- A quarter of respondents were discretionary transit users. In other words, they had no disability, had a driver's license, and had a car available for the trip. The remainder of the respondents had one or more of these limiting factors which made them choose transit for their travels. This was fairly consistent on all of the routes surveyed.
- Approximately half of the respondents were either retired or unable to work, and half were employed full or part time.

TABLE 13: Rio Vista Delta Breeze Onboard Surveys Responses - Questions 1 to 13

Questions:		Answers:							
1.What route are you on?	50	52	51 DAR	School	Special	TOTAL			
Number of Respondents	12	15	8	0	0	35			
Percent of Respondents	34%	43%	23%	0%	0%				
3.What time did you board the bus?	5-6 AM	6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11 AM-12 PM	12-1 PM	1-2 PM
Number of Respondents	8	5	7	1	2	3	2	1	0
Percent of Respondents	26%	16%	23%	3%	6%	10%	6%	3%	0%
	2-3 PM	3-4 PM	4-5 PM	5-6 PM	SUM				
Number of Respondents	1	0	1	2	31				
Percent of Respondents	3%	0%	3%	6%					
4.How did you get to the bus?	Walked		Bicycled		Dropped off		Wheelchair		
Number of Responses	17		1		3		1		
Percent of Responses	53%		3%		9%		3%		
	Home Pick Up		Deviation		SUM				
Number of Respondents	6		4		32				
Percent of Respondents	19%		13%						
4.How long did it take? (Minutes)	< 5	5-9	10-14	15-19	20	21+	SUM		
Number of Respondents	2	2	3	1	1	0	9		
5.Where did you get on the bus?	Amtrak		Front & Main		Home		Ford in Fairfield		
Number of Responses	1		9		12		1		
Percent of Responses	3%		31%		41%		3%		
	Lira's Market		Trilogy		Trilogy Clubhouse		SUM		
Number of Respondents	1		3		2		29		
Percent of Respondents	3%		10%		7%				
6.Where will you get off?	BART		Lira's Market		Front & Main		Hillcrest PNR		
Number of Responses	13		3		1		2		
Percent of Responses	52%		12%		4%		8%		
	Home		Kaiser Antioch		Other		SUM		
Number of Respondents	2		1		3		25		
Percent of Respondents	8%		4%		12%				
7.How will you get to your destination?	Walk		Bicycle		Picked Up		Transfer		
Number of Responses	14		1		1		12		
Percent of Responses	45%		3%		3%		39%		
	Drive		Wheelchair		Other		SUM		
Number of Respondents	0		1		2		31		
Percent of Respondents	0%		3%		6%				
8. Are you traveling round trip?	Yes		No		SUM				
Number of Respondents	21		13		34				
Percent of Respondents	62%		38%						
9.What is the main purpose of this trip?	Work		Rec/Social		School/College		Medical/Dental		
Number of Responses	7		2		1		12		
Percent of Responses	20%		6%		3%		34%		
	Shopping		Personal Bus/Other		SUM				
Number of Respondents	6		7		35				
Percent of Respondents	17%		20%						
10. Do you normally take bus for this purpose?	Yes		No		SUM				
Number of Respondents	31		4		35				
Percent of Respondents	89%		11%						
11. General location of your home?	Homecoming		Rio Vista		Trilogy		Other		SUM
Number of Responses	3		15		11		4		33
Percent of Responses	9%		45%		33%		12%		
12.How often do you ride?	1st time	1x/Mo	2x/Mo	1-2x/Wk	3-5x/Wk	5+/Wk	Sum		<i>Mo = Month Wk = Week</i>
Number of Respondents	2	3	6	13	7	3	34		
Percent of Respondents	6%	9%	18%	38%	21%	9%			
13.How did you pay for your trip?	One-way Fare		10-Ride CityPass		Monthly CityPass		SUM		
Number of Respondents	14		6		11		31		
Percent of Respondents	45%		19%		35%				

Source: Data collected onboard August 15 to September 15, 2011.

TABLE 14: Responses for Rio Vista Delta Breeze Onboard Surveys - Question 14-24

Questions:			Answers:					
14. How long using the service?	1st Time	< 6 mo.	6 mo-1 yr	1 yr +	SUM			
Number of Responses	1	5	7	23	36			
Percent of Responses	3%	14%	19%	64%				
15. If no RVDB?	Get a ride	Drive	No Trip	Other	SUM			
Number of Responses	12	9	13	1	35			
Percent of Responses	34%	26%	37%	3%				
16. How do you get information?	Printed Info	Driver	Friend/Coworker	Phone				
Number of Responses	12	9	5	5				
Percent of Responses	36%	27%	15%	15%				
	Other	SUM						
Number of Responses	2	33						
Percent of Respondents	6%							
17. Did you need the wc lift?	Yes	No	SUM	21. What is your age?				
Number of Respondents	4	33	37	<18	19-24	25-44	45-64	65+
Percent of Respondents	11%	89%		0	6	6	11	13
18. Do you have a disability?	Yes	No	SUM	0%	17%	17%	31%	36%
Number of Respondents	13	24	37					
Percent of Respondents	35%	65%						
				SUM				
				36				
19. Driver's license?	Yes	No	Total					
Number of Respondents	20	17	37					
Percent of Respondents	54%	46%						
20. Car available for trip?	Yes	No	Total					
Number of Respondents	4	26	30					
Percent of Respondents	13%	87%						
22. Employment Status?	Full time	Part time	Retired	Unemployed				
Number of Responses	8	6	14	2				
Percent of Responses	22%	16%	38%	5%				
	Unable to work	Other	SUM					
Number of Responses	5	2	37					
Percent of Respondents	14%	5%						
23. Annual family income?	Under \$20K	\$20K-\$30K	\$30K-\$50K	More than \$50K	SUM			
Number of Respondents	13	4	4	11	32			
Percent of Respondents	41%	13%	13%	34%				
24. Opinion of Service?	Number of Respondents answering 1 = poor to 5 = excellent							
	1	2	3	4	5	Average		
a. Safety	1	0	1	3	29	4.7		
b. On-time performance	2	0	3	9	20	4.3		
c. Frequency	1	2	7	9	16	4.1		
d. Driver courtesy	0	0	0	4	31	4.9		
e. Trip duration	2	2	3	11	17	4.1		
f. Areas served	1	3	5	6	20	4.2		
g. Bus cleanliness	0	0	0	4	31	4.9		
h. Information available	0	0	1	8	26	4.7		
i. Bus stops and shelters	1	1	7	6	18	4.2		
j. Cost of service	1	3	11	8	12	3.8		
25. Overall	1	0	2	10	21	4.5		

Source: Data collected onboard March 18 and 19, 2011. LSC Transportation Consultants, Inc.

- Respondents were mostly either very low income (13 had annual household incomes under \$20,000) or were middle to upper income (11 had annual household incomes over \$50,000). However, breaking this data down by route, approximately half of the respondents had household incomes lower than \$20,000 on Routes 50 and 51, while only a quarter of respondents on Route 52 had incomes this low.
- Passengers were asked to rank their opinion of service factors on the Delta Breeze, with 1 being poor and 5 being excellent. The average score was 4.4. The highest scores were for driver courtesy and bus cleanliness (averages of 4.9) followed by safety and information available (4.7). The lowest scoring service factors were for the cost of the service (3.8), frequency of service (4.1), and trip duration (also 4.1). Passengers rated the overall service fairly high at 4.5.

In addition to the specific questions, passengers were asked to list improvements they would like to see, as well as general comments. A total of 43 specific comments were provided, as summarized in Table 15. In general, the most common suggestion was for increased frequency of service. Many of the patrons complimented the service in general and the drivers in particular. There were a number of complaints, with the most common being that the cost of the service is too high.

TABLE 15: Delta Breeze Onboard Survey Comments	
Type of Responses	# of Responses
General Compliment	5
Driver Compliment	3
Frequency of Service	
<i>Seven days per week</i>	2
<i>Five days per week</i>	2
<i>More frequency</i>	6
<i>More to Antioch</i>	3
<i>More to Fairfield</i>	1
<i>Earlier service</i>	2
<i>Later departures</i>	2
<i>Mid-day</i>	1
<i>Total Frequency Responses</i>	19
Customized service (bus to stay with patrons, drop at apartment, stores only)	3
Complaints (no show policy, on-time performance, not responsive to past surveys)	3
Fewer Stops (trip duration)	3
More Stops	1
Cost (too high)	5
Earlier phone service	1
Total Comments for Questions 26 and 27	43
<i>Source: Data collected onboard August 18 to September 15, 2011.</i>	

Solano Transportation Authority Surveys

The Solano Transportation Authority (STA) is currently conducting the *Solano Transportation Study for Seniors and People with Disabilities* which currently has produced a draft report. As part of this study, surveys were developed to identify transportation issues and preferences in transportation for seniors and people with disabilities across all modes. The survey asked 20 questions, including inquiries on how respondents got around, where they needed to go, their satisfaction with public transit, and their plans for mobility once they are unable to drive. The survey was printed and also was available on the internet for people to fill out on line.

Approximately 2,200 paper surveys were distributed at all focus group meetings, as well as through other senior facilities and residential communities, including 1,150 in Leisure Town in Vacaville. Several transit operators also distributed surveys (FAST, Rio Vista Delta Breeze, and Vacaville City Coach). A total of 993 completed surveys were collected, including 101 in Rio Vista. Rio Vista generated a particularly high response from the very active senior community at Trilogy. While this is a large number for this kind of study, it does not represent a scientific sampling of Solano County or Rio Vista residents; however, it can provide useful information in determining transportation needs and concerns.

STA Survey Summary

Two outreach meetings were held in Rio Vista, drawing 35 participants; 101 surveys were collected from Rio Vista residents. According to the US Census for 2010, Rio Vista has the unique demographic characteristic of having 54 percent of its population over the age of 50; however, this is due to the large senior housing development located in this otherwise small city.

Autos and Roads

There were a significant number of comments regarding truck traffic on Route 12, which connects I-80 in Fairfield to I-5 near Lodi via Rio Vista. The large number of trucks and high speed combined with dangerous driving behavior makes residents afraid to use this road, which is their lifeline to the two largest neighboring cities. Residents felt that the trucks damage the roads, intimidate other drivers, and do not contribute to the local economy because they do not stop. They also reported trucks and other vehicles running the light on Highway 12 at Trilogy. Residents use back roads to avoid this main artery.

Transit

Rio Vista is somewhat isolated and rural in nature, so connectivity and distance to bus stops can be an issue. Destinations mentioned by participants include Oakley, Brentwood, Antioch, medical centers in Vallejo or Vacaville, and BART. Other concerns were the on-time performance of the bus system and the cost. Residents would like later service and weekend service.

Paratransit

Comments regarding the taxi scrip program were:

- Getting the required ID is difficult, slow, and complicated
- The amount of scrip available is limited and sells out quickly
- Even with scrip, trips to common destinations like the Sacramento Airport are too expensive

Places More Transit Requested

Rio Vista residents indicated they would like to take transit to the locations listed below:

Medical

- Kaiser (Vacaville, Stockton)
- Sutter Medical Facilities (Vallejo)

Grocery

- Raley's (Suisun)
- Lira's (Rio Vista)

Other Shopping

- Costco, CVS Vacaville
- Outlets, Nut Tree Outlet stores, Green Valley shopping, Westfield-Solano Shopping Mall in Fairfield

Intercity and Transportation

- BART (Pittsburg)
- Airports
- Antioch, Fairfield, Vacaville, Lodi, Brentwood, Isleton

Locations/Uses

- Trilogy

Transit Improvements

When asked to rank transit improvements, Rio Vista residents rated more weekday service highest, followed by weekend service. Earlier morning or later evening service was also a frequent request. Few respondents selected bus stop amenities as a high priority, nor did they select more pleasant service as a high priority. In sum, more frequent service with a longer span is desired.

OTHER TRANSPORTATION PROVIDERS

Solano Express

Solano Express is a coalition of five of six transit operators in greater Solano County that coordinates intercity transit services and provides regional connections to I-80 corridor cities and transit services, such as BART and Amtrak. The STA provides significant coordination and management activities for the intercity bus system. STA hosts and staffs the Solano Express Intercity Transit Consortium, which meets on a monthly basis. The Solano Express Intercity Transit Consortium consists of representatives from each city and the county, and provides oversight for intercity transit services and marketing. STA's marketing budget for intercity transit was just over \$275,000 in FY 2007-2008 due to Regional Measure 2 (RM2) funding to market RM2 funded routes.¹

Recently, Solano County Transit consolidated transit services to simplify the system for riders, and to reduce administrative redundancies. As a result, Vallejo Transit and Benicia Breeze were consolidated under a new Joint Powers Authority. Administrative staff for the new JPA, called "SolTrans," is housed in the new Vallejo transit center.

Intercity Taxi Scrip Program

The Solano County Intercity Taxi Scrip Program is a flexible option for qualified ADA (Americans with Disabilities Act) paratransit certified riders. This service provides curb-to-curb, same day transportation between cities within Solano County. The Intercity Taxi Scrip Program began its first pilot phase in February of 2010.

To be eligible, the rider must be both an ADA paratransit certified resident of Solano County, and ambulatory or able to enter and exit a taxi without another person's help.

In addition, any mobility device must be able to be folded for transport in the trunk of the taxi. The program provides 24-hour on-call service between cities in Solano County for only 15 percent of the regular taxi fare. A scrip book containing \$100 worth of scrip may be purchased for \$15. As funding and resources become available, the pilot program is planned to also include non-ambulatory persons in Phase Two, and local service (within cities) in Phase Three.

The Intercity Taxi Scrip program is in addition to paratransit services available by public transit providers throughout Solano County. This program is not available for trips between Fairfield and Suisun City.

Emergency Ride Home Program

The Solano Transportation Authority's Solano/Napa Commuter Information (SNCI) offers an Emergency Ride Home (ERH) program, which provides an "emergency" or "back-up" ride home for an individual who has used a commute alternative like transit, carpool or vanpool, bicycle, or walked to get to work in Solano County. ERH is a free service in which the SNCI provides taxi vouchers or rental cars to ERH participants. Employers and employees must register with SNCI.

¹ Regional Measure 2 was a ballot measure passed in 2004 to increase bridge tolls to generate funds for traffic alleviation. Funds are available to seven Counties, including Solano, and to Cities within Solano but not including Rio Vista.

American Cancer Society

The American Cancer Society Road to Recovery program provides transportation to and from treatment for people who have cancer who do not have a ride or are unable to drive themselves. Transportation is provided by volunteers for ambulatory Solano County cancer patients. Reservations must be made 72 hours in advance.

Area Agency on Aging Senior Escort Program

The Area Agency on Aging offers seniors in Napa and Solano counties a senior escort program. The program provides assistance for older adults with physical or cognitive impairments which make it difficult to use public transit and paratransit. The service is available to low-income Vallejo residents aged 60 and over.

Connections for Life

Connections for Life (CFL), formerly known as Solano Supported Living Services, works with clients who are developmentally disabled clients to provide various services such as housing, training, and activities. CFL runs the “Transportation Connection” program, coordinating transportation services for the clients of the North Bay Regional Center (NBRC) who attend day programs in Solano, Napa, and Sonoma Counties. CFL works with over 15 transportation vendors to provide transportation to over 1200 NBRC consumers daily from the three client counties.

Solano Paratransit

Solano Paratransit, which had been serving the cities of Dixon, Fairfield, Suisun City, Vacaville, and unincorporated areas around these cities, was dissolved on July 1, 2009. The intercity paratransit service for ADA eligible riders is now provided by the local transit operators serving those communities.

Fairfield and Suisun City Transit (FAST)

Fixed-Route Transit

The Cities of Fairfield and Suisun City have a combined transit system that provides a total of twelve routes both within city limits as well as cities in other parts of Solano County and other counties. Eight of the Fairfield and Suisun Transit (FAST) routes serve destinations only within the two cities. Service is offered Monday through Saturday with average hours of operation from 7:00 AM to 7:00 PM.

FAST also manages four intercity routes – Routes 20, 30, 40, and 90:

- Route 20 provides service between Solano Mall in Fairfield and the Vacaville Transit Center
- Route 30 provides seven weekday round trips between Fairfield, Vacaville, Dixon, Davis and Sacramento.
- Route 40 operates between Vacaville and Pleasant Hill and Walnut Creek BART stations.
- Route 90 operates between Fairfield and the El Cerrito Del Norte BART.

The regular fare for local service is \$1.50, with a 50% discount for seniors and people with disabilities. Intercity service fares range from \$2.75 to \$6.75, while the fare to Travis Air Force Base is \$1.00. In 2009-2010, the fixed-route system had an annual ridership of approximately one million passengers. Total fixed route expenses for 2009-10 were \$7.7 million with a farebox recovery rate of 27 percent.

Paratransit and Other Transportation

In addition to the fixed-route transit system, FAST provides three transportation services geared towards the elderly and riders with disabilities – the Fairfield and Suisun Dial-A-Ride Transit (DART), subsidized taxi fare service, and a volunteer driver program:

- The DART service provides door-to-door service within the city limits of Fairfield and Suisun City for eligible people with disabilities that prevent them from utilizing fixed-route bus services. It operates Monday through Friday from 6:00 AM to 8:00 PM and on Saturday from 8:00 AM to 6:30 PM. Fares are \$3.00 per ride.
- The reduced fare taxi service is also available to Fairfield and Suisun City residents 24 hours a day at half the metered fare. To be eligible for the subsidized taxi fares, persons must qualify through an application process based on age and residence. In general, those wishing to utilize the service must be at least 60 years old and live within Fairfield, Suisun, or a nearby unincorporated area. Reservations are required for all trips.
- Fairfield also has a volunteer driver program provided through the "Friends of the Fairfield Senior Center," a private non-profit organization. The service is designed to transport persons who are 50 years or older and operates in the central City of Fairfield only. It operates from the Fairfield Senior Center Monday through Friday between 9:00 AM and 3:00 PM. Fares are \$1.25 per ride. The program uses vans that are not wheelchair accessible, so users of the service must be fairly mobile. Trips are restricted to the Fairfield Senior Center, medical/dental offices, filling prescriptions, and the passenger's home. No other trips, such as shopping or socializing, are allowed.

The combined cost of these services is \$1.6m annually, providing over 60,000 passenger trips.

Bay Area Rapid Transit

Bay Area Rapid Transit (BART) connects the San Francisco Peninsula with Oakland, Berkeley, Fremont, Walnut Creek, Dublin/Pleasanton and other cities in the East Bay, including the Pittsburg/Bay Point station. This terminal station on the yellow line serves northern and eastern Contra Costa County, and Delta Breeze provides connections here via Route 52.

Southbound trains depart every 15 minutes from 4:02 am to 11:59 pm. The Delta Breeze serves the station BART at 6:50 AM and 5:45 PM Monday through Friday. On Tuesdays one additional round trip is offered arriving at the BART station at 10:05 AM. The return trip departs the BART station at 1:25 PM, as described above.

This page left intentionally blank.

INTRODUCTION

An important element in the success of any organization is a clear and concise set of goals and objectives, and the standards needed to attain them. Rio Vista Delta Breeze (RVDB) developed goals and objectives which were outlined and reviewed in their 2007/08 *Short Range Transit Plan*. Periodic review is the key to evaluating the effectiveness of the transit service and in determining if the existing goals and objectives remain valid. Often goals, objectives, and standards need adjusting to reflect on-the-ground performance, available resources, and an understanding of what a transit agency is trying to achieve.

Transportation Development Act

The California Transportation Development Act (TDA) sets a minimum “farebox return ratio” for each public transit organization using TDA funds (under specific articles of the TDA). Put simply, the farebox return ratio is the ratio of the operating income (largely fare revenues) divided by the non-capital expenses. For Rio Vista Delta Breeze, the TDA requires a minimum farebox return ratio of 10 percent (below which a portion of TDA funds would be withheld). It should be noted that new transit services in rural areas are expressly eligible under TDA law for exemption from the minimum 10 percent farebox recovery ratio during the first two years of service. Also, the TDA only requires this ratio to be maintained for the transit system as a whole, rather than on an individual service or route basis. As TDA does not provide any requirements or guidance beyond this single systemwide ratio, establishment of specific transit services performance measures is very much a matter of local discretion.

The Transit Development Act (TDP) also requires a triennial review of five service standards:

- Operating cost per passenger
- Operating cost per vehicle service hour
- Passengers per vehicle service hour
- Passengers per vehicle service mile
- Vehicle service hours per employee

These standards are all considered in the Goals and Objectives maintained by Rio Vista Delta Breeze.

REVIEW OF EXISTING GOALS AND OBJECTIVES

Performance of the transit system is guided by the goals, objectives, measures and standards, as described below:

Goals are statements that qualify the desired results. They are the ends toward which effort is directed. They are general and timeless, but theoretically attainable.

Objectives provide quantifiable measures of the goals. They are more precise and capable of both attainment and measurement.

Measures and Standards set quantifiable targets for achieving the objectives.

RVDB has identified a total of six goals, each with different objectives and measures to meet the objectives. A current review of the goals, objectives, and standards indicates that some are being met, and some are not. Furthermore, as is to be expected as the system develops and changes, some objectives and standards are outdated or unrealistic and need to be revised. A discussion of each goal and the recommended changes is provided below. It is important to note that this discussion will be revisited once the full evaluation of service and financial alternatives better defines feasible standards for RVDB.

Goal I: Operate an efficient and effective system that maximizes service and minimizes cost impacts.

As shown in Table 16, this goal outlines three objectives to operate an efficient and effective transit system.

Objective 1 – Minimize Operating Cost: The first measure for this objective is the operating cost per vehicle hour, with a standard of \$48.70. In the last SRTP, the operating cost per hour was \$69.00, but no changes were recommended. The current cost per hour is calculated to be \$52.29 (based on monthly operating reports from July 2010 to June 2011).

The second measure is the operating cost per passenger trip, with a standard of \$25.00. Currently, the cost per passenger trip is \$22.75.

Finally, the last measure for this objective was the farebox return ratio, with a standard of 7.0 percent. The current farebox ratio is 10.4 percent.

Recommended Changes: The measures for this objective are appropriate, but the standards need to be adjusted as follows:

The operating cost per hour should be restated to adjust for inflation. A reasonable standard, based on the current cost, would be “Maintain an hourly operating cost of \$52.00 per hour, adjusted annually for inflation.” While this new cost is slightly exceeded, it is a reasonable standard for which to aim.

The operating cost per passenger trip is met, but is still high for industry standards. While dial-a-ride services typically are provided at a higher cost per passenger trip than fixed route services for most transit systems, this is not the case at RVDB, where dial-a-ride service is provided at \$9.27 per passenger trip and deviated fixed route service is provided at \$35.22 per passenger trip. The new recommended standards are “deviated fixed route operating cost per passenger trip not to exceed \$30.00 and dial-a-ride operating cost per passenger trip not to exceed \$9.00 per passenger trip. These standards should be adjusted annually for inflation.” While the new cost per passenger trip for deviated fixed route is not met, this is a standard meant to encourage improvement in this area.

The farebox return ratio needs to be adjusted to meet TDA requirements, and should be set at 10 percent minimum.

TABLE 16: GOAL I			
GOAL I: OPERATE AN EFFICIENT AND EFFECTIVE SYSTEM THAT MAXIMIZES SERVICE AND MINIMIZES COST IMPACTS			
Objectives	Measures	Current Standards	Current Status of Standards
Minimize Operating Cost	Operating Cost per Vehicle Service Hour (VSH)	\$48.70	\$54.29
	Operating Cost per Passenger Trip	\$25.00	\$22.75
	Farebox Recovery	7.0%	12.8%
Maximize use of Transit Funding	Coordinated Human Service Plan	No duplication of service	Recently eliminated duplicative service
Increase Transit Usage	Annual growth in ridership	Growth in annual ridership mirrors that of the service area's population	Transit Ridership growth = * % for the last three years
	Passengers per Vehicle Service Hour (VSH)	1.0	2.39
	Passengers per Vehicle Service Mile (VSM)	0.10	0.10
RECOMMENDED CHANGES			
Revised Objectives	Revised Measures	Revised Standards	Status of New Standards
Minimize Operating Cost	Operating Cost per Vehicle Service Hour (VSH)	Maintain at \$52.00 per VSH, adjusted annually for inflation	Nearly met
	Operating Cost per Passenger Trip	Maintain at \$30.00 per passenger trip for deviated fixed route and \$9.00 per passenger trip for dial-a-ride service, adjusted annually for inflation	Not met
	Farebox Recovery	10.0%	Met
Increase Transit Usage	Passengers per Vehicle Service Hour (VSH)	3.0	Not met
	Passengers per Vehicle Service Mile (VSM)	0.12	Not met

Source: LSC Transportation Consultants, Inc. Goals from Rio Vista Delta Breeze SRTP FY 2007/2008-FY 2017/2018; Performance data from operating reports FY 2010-2011.

Objective 2 – Maximize Use of Transit Funding: The measure is that a Coordinated Human Services Plan be in place with a standard that there is no duplication of services.

A Coordinated Human Services Plan was completed in November 2007. RVDB eliminated services to Lodi because of a duplication of services with the SCTLlink.

Recommended Change: No changes are currently recommended.

Objective 3 – Increase Transit Usage: The measure states that (a) annual growth in ridership should mirror growth in the service area's population, (b) passengers-per-vehicle-service-hour should be at least 1.0, and (c) passengers-per-vehicle-service-mile should be at least 0.8.

The population in Rio Vista grew very rapidly from 2000 to 2005 (approximately 7.8 percent annually), slowing to a growth rate of about 2.2 percent annually for the past five years. However, the RVDB grew from a small ridership of 1,154 in 2004-2005, to 14,468 in 2009-2010 (averaging 18.4 percent annually), but had an 11.8 percent decline in 2010-2011. In other words, the growth of ridership far exceeded the growth in population until last year when there was a significant decline in ridership.

The passengers-per-vehicle-mile for 2010-2011 was 2.4 systemwide (as low as 1.3 on Route 51, 5.5 on the Dial-A-Ride, and 10.4 on Special Services). The passengers-per-vehicle-mile averaged 0.10 systemwide in 2010-2011.

Recommended Changes: While the ridership trends did not mirror those of the population trends, this is still a reasonable standard to maintain.

The passengers-per-vehicle-hour standard of 1.0 is very low and was identified to reflect a growing transit system. The current standard should be 3.0 passengers-per-vehicle-hour to encourage ridership growth. The passengers-per-vehicle-mile should be increased to 0.12.

Goal II: Provide safe, reliable, and high quality transportation.

As shown in Table 17, this goal outlines two objectives to achieve this goal.

Objective 1 – Reliable Transportation (on-time performance and missed trips): The measures for this objective are a) on-time performance and b) missed trips. The measures for both deviated fixed routes and dial-a-ride are 95 percent of monthly trips should be on-time and less than 1 percent of monthly trips can be missed. However, the definitions vary by service.

On-time for deviated fixed route is defined as no earlier than one minute and no more than six minutes past the published schedule. According to surveys on the deviated-fixed routes, 5 of the 21 runs surveyed were late (24 percent). Data collected by the contractor indicated 12.1 percent of Route 52 trips were late and 20.2 percent of Route 50 trips were late, which is below the standard set. This data does not appear to track early departures.

TABLE 17: GOAL II				
GOAL II: PROVIDE SAFE, RELIABLE, AND HIGH QUALITY TRANSPORTATION.				
Objectives	Measures	Current Standards	Current Status of Standards	Recommended Changes to Standards
Reliable Transit Service	On-time performance: Routes 50 and 52	95% of all monthly trips operate on time ¹	88% Route 52; 80% Route 50	Lower to 90% on-time performance
	On-time performance: Route 51	95% of all monthly trips operate on time ²	Not tracked	Maintain standard, but track data
	Missed Trips: Routes 50 and 52	Less than 1% of total monthly trips ³	Not tracked	Maintain standard, but track data
	Missed Trips: Route 51	Less than 1% of total monthly trips ⁴	Not tracked	Maintain standard, but track data
Provide Safe Service	Spare Vehicle Ratio (systemwide)	20 percent	Met	Maintain standard
	Preventable Accidents	Minimum of 100,000 miles between preventable accidents	43,386 miles between preventable accidents	Lower to 80,000 miles between preventable accidents

Note 1: On-time for deviated routes (Routes 50 and 52) is defined as no earlier than 1 minute and no more than 6 minutes past the published schedule.
Note 2: On-time for dial-a-ride service (Route 51) is defined as within 10 minutes of scheduled pick-up.
Note 3: Missed trips for deviated routes (Routes 50 and 52) is defined as defined as no later than 15 minutes past the schedule pick-up time or missed entirely.
Note 4: Missed trips for dial-a-ride routes (Route 51) is defined as no later than 30 minutes past the scheduled pick-up time or missed entirely.

Source: LSC Transportation Consultants, Inc. Goals from Rio Vista Delta Breeze SRTP FY 200720/08-FY 2017/2018; Performance data from operating reports FY 2010-2011.

For dial-a-ride, the on-time performance standard is defined as within ten minutes of the scheduled pick up. According to on the operating records by the contractor, the deviated-fixed routes were never late for all of Fiscal Year 2011. This could not be confirmed through driver survey sheets because only the pick-up time is recorded, not the scheduled appointment time.

Missed trips are defined as no later than 15 minutes past the pick-up time or entirely missed for deviated fixed routes. This data was tracked for the dial-a-ride service, but not for the deviated fixed routes. However, during the survey effort in May, one of 21 trips was missed due to a vehicle breakdown, which is a rough indication that the standard may not be met.

Missed trips for dial-a-ride are defined as no later than 30 minutes past the scheduled pick-up time, or entirely missed. Again, this data is not properly tracked in the monthly and annual reports.

Recommended Change: Given the disparity between the on-time performance and the standard, it is appropriate to adjust the standard to a more realistic level. For deviated fixed route, the standard should be changed from 95 percent on-time to 90 percent on-time. Route 52 is close to meeting this standard, but Route 50 is below this standard.

For the dial-a-ride on-time performance, the standard should remain the same, but data should be appropriately collected to determine the status of this standard.

Missed trips were not properly tracked for deviated fixed routes or dial-a-ride. This data needs to be tracked in the monthly and annual reports. The standards should remain the same until data can support a change.

Objective 1 – Reliable Transportation (Spare vehicle ratio): The measure for this objective is to have a 20 percent spare ratio. Currently, RVDB has five revenue vehicles, which is a 40 percent spare ratio.

Recommended Change: This is a reasonable standard and is currently being met. No change is recommended.

Objective 2 – Provide Safe Service: The measure for safe service is miles between preventable accidents. The current standard is to operate 100,000 miles of service between preventable accidents. In the past year, Rio Vista Delta Breeze had three accidents and operated 130,158 miles. This equates to one accident every 43,386 miles.

Recommended Change: Despite the disparity between the standard and the number of preventable accidents, it is reasonable to maintain this standard. While it may be challenging to meet the standard, setting a high standard for safety conveys that this is an important goal for Rio Vista Delta Breeze.

Goal III: Serve the transportation needs of the Community.

As shown in Table 18, there is one objective with two measures for meeting this goal.

Objective 1 – Maximize Accessibility: There are two measures to evaluate this objective: (a) geographic coverage and b) amenities. For the first measure, the standard is to provide

TABLE 18: GOAL III				
GOAL III: SERVE THE TRANSPORTATION NEEDS OF THE COMMUNITY				
Objectives	Measures	Current Standards	Current Status of Standards	Recommended Changes to Standards
Maximize Accessibility	Geographic coverage	Equal coverage throughout the Local Tax Base	Rio Vista Delta Breeze provides service in the City Limits of Rio Vista, with coverage in Isleton, Fairfield/Suisun City and Antioch	None. Objective, measure and standards are currently being met and are appropriate.
	Amenities	100 percent of fleet is accessible to persons with disabilities All transit vehicles and stops are marked appropriately	Standards are met Standards are met	None None
Source: LSC Transportation Consultants, Inc. Goals from Rio Vista Delta Breeze SRTP FY 2007/2008-FY 2017/2018; Performance data from operating reports FY 2010-2011.				

“equal coverage throughout the Local Tax Base.” This is loosely and qualitatively measured, but basically ensures that all major corridors and populations of the community are served which appears to be the case when reviewing unmet needs findings.

The second measure for amenities includes a standard of ensuring that 100 percent of vehicles are accessible to persons with disabilities, and also that buses and stops are appropriately identified. Both of these standards are currently being met.

Recommended Changes: No changes are recommended.

Goal IV: Evaluate, monitor and improve transit services on an ongoing basis.

As shown in Table 19, only one objective is identified to meet this goal which is to provide “ongoing mandatory enhancement.” The measure identified for this objective is “regularly programmed service evaluations” with a standard for “independent evaluations at intervals no greater than 3 years.” The finding in the 2007-08 SRTP was that the standard was being met through the *Mini SRTP 2006/2007* and the *Rio Vista Transit Study 2005*.

Recommended Changes: The wording on the objective and measure is vague and should be clarified and expanded to better accomplish the goal. The following objectives, measures and standards are recommended:

Objective 1: Ongoing system planning and evaluation

- (a) Measure: Conduct Short Range Transit Plans
Standard: A minimum of every five years
- (b) Measure: Conduct Financial Plans
Standard: Annually

Objective 2: Ongoing system monitoring

- (a) Measure: Develop regular reports on operations
Standard: Monitoring reports on the effectiveness and efficiency of transit service will be collected and reviewed monthly. A summary will be provided annually. Categories to monitor include: missed/refused trips, on-time performance, and tracking of no-shows reporting. Reporting should be standardized and reported in a format (such as a spreadsheet) to allow annual summaries.

The revised objectives, measures and standards are already currently being met for RVDB.

Goal V: Undertake effective marketing, outreach, and public participation.

As shown in Table 20, this goal includes two objectives toward effective marketing and public participation.

Objective 1 – Develop Marketing Plan: The measure states simply “expenditures” with a standard of spending three percent of the annual operating budget.

In 2010-2011, RVBD has budgeted \$10,100 on marketing activities, which was 2.1 percent of the operating budget.

TABLE 19: GOAL IV				
GOAL IV: EVALUATE, MONITOR, AND IMPROVE TRANSIT SERVICES ON AN ONGOING BASIS.				
Objectives	Measures	Current Standards	Current Status of Standards	Recommended Changes to Standards
Ongoing, mandatory enhancement	Regularly programmed service evaluations	Independent evaluations at intervals of no greater than three years	Mini SRTP 2006/2007 to 2016/2017 and Rio Vista Transit Study 2005; annual Triennial Performance Audits.	It is recommended that the objective be revised and modified, as shown below.
RECOMMENDED CHANGES				
Revised Objectives	Revised Measures	Revised Standards	Status of New Standards	
Ongoing system planning and evaluation	Conduct Short Range Transit Plans	Every five years	Following the Mini SRTP conducted in 2006-2007, and full SRTP in 2007-2008, a full SRTP is being conducted in 2011, exceeding the standard.	
	Conduct Financial Plans	Annually	Financial plans are prepared annually.	
Ongoing system monitoring	Develop and provide regular reports on operations	Operations reports on the effectiveness and efficiency of transit service will be collected and reviewed monthly. A summary will be provided annually. Categories to monitor include: missed/refused trips, on-time performance, and tracking of no-shows reporting. Reporting should be standardized and reported in a format (such as a spreadsheet) to allow annual summaries.	The Operations Contract Manager provides monthly reports in a standardized format to the Transit Director.	
Source: LSC Transportation Consultants, Inc. Goals from Rio Vista Delta Breeze SRTP FY 2007/2008-FY 2017/2018; Performance data from operating reports FY 2010-2011.				

TABLE 20: GOAL V				
GOAL V: UNDERTAKE EFFECTIVE MARKETING, OUTREACH, AND PUBLIC PARTICIPATION.				
Objectives	Measures	Current Standards	Current Status of Standards	Recommended Changes to Standards
Develop Marketing Plan	Expenditures	Not less than 3 percent of annual operating budget	FY 2010-2011 budget of \$10,100 for marketing activities was 2.1% of the budget.	Revise wording, but not standard: see below.
Encourage citizen participation	Conduct annual TDA Unmet Transit Needs process Provide various opportunities for customer feedback	Conduct annual outreach prior to meetings to encourage public input on unmet transit needs Increase position visibility strategically to encourage new users	Standard met Unclear meaning – cannot determine status	No changes recommended See below
RECOMMENDED CHANGES				
Revised Objective	Revised Measures	Revised Standards	Status of New Standards	
Develop and implement Marketing Plan	Dedicate funding to marketing	Not less than 3 percent of annual operating budget	Not met	
	Engage in regular marketing activities	Maintain current schedule and riders guide; maintain informative website.	These standards are currently met. A new Riders' Guide was recently created, and the website is regularly maintained..	
Encourage citizen participation	Provide various opportunities for customer feedback	Provide comment cards on buses and comment boxes on website; conduct regular passenger surveys bi-annually	Comment cards and website input are available. Surveys are regularly conducted.	
Source: LSC Transportation Consultants, Inc. Goals from Rio Vista Delta Breeze SRTP FY 2007/2008-FY 2017/2018; Performance data from operating reports FY 2010-2011.				

Recommended Change: The objective should be expanded to say “Develop and implement marketing plan.” The measures should be a) dedicate funding to marketing and b) engage in regular marketing activities.

For the first measure, the standard should state “Three percent of the annual operating budget.” Even though there may be years when there is very little discretionary spending for the transit program, this standard is a worthy standard for which to aim.

For the second measure, the standard should be to “maintain the schedule and Riders’ Guide with current information and maintain an informative website.” RVBD is currently updating the Riders’ Guide and regularly maintains its website, meeting this standard.

Objective 2 – Encourage Citizen Participation: This objective has two measures: (a) Conduct TDA unmet transit needs process, and (b) provide various opportunities for customer feedback. The standard for the first measure is to “conduct annual outreach prior to meetings to encourage public input on unmet transit needs.” This standard has been met.

The standard for the second measure is stated as “increase position visibility strategically to encourage new users.” The previous SRTP noted this was accomplished through “Customer feedback available through comment cards, website, contact information for transit coordinator on buses, transit guide, and passenger surveys.”

Recommended Change: No changes are recommended for the first measure, but the language of the standard for the second measure is confusing and should be reworded. The following change is recommended:

Standard: Change “Increase position visibility strategically to encourage new users” to “Provide comment cards on buses and comment boxes on website; conduct regular passenger surveys bi-annually.”

Goal VI: Coordinate transit system development with community planning and development efforts and land-use policy.

As shown in Table 21, this goal includes one objective:

Objective 1 – Encourage consideration of transit needs in land-use policies within all Rio Vista Delta Breeze partner communities during the development review and approval process. This objective has one measure: (a) Practice involvement in the planning/approval process. There are two standards for this measure. The first is to specify service levels and to identify capital improvements to be included in new developments. The second is to Work with retailers and the business community to increase accessibility to the public transit network.

Presently, the RVDB Transit Coordinator currently participates in the Community Development Department activities as they relates to general plan updates and development reviews for new projects. As part of the major development review process, the Transit Coordinator identifies service improvements or needs based on an assessment. The first standard is being met through these activities.

TABLE 21: GOAL VI				
GOAL VI: COORDINATE TRANSIT SYSTEM DEVELOPMENT WITH COMMUNITY PLANNING AND DEVELOPMENT EFFORTS AND LAND-USE POLICY.				
Objectives	Measures	Current Standards	Current Status of Standards	Recommended Changes to Standards
Encourage consideration of transit needs in land-use policies within all Rio Vista Delta Breeze partner communities during the development review and approval process	Practice involvement in the planning/approval process	Specify service levels. Identify capital improvements to be included in new developments	Being met through participation in the Community Development Department activities as they relates to general plan updates and development reviews for new projects. As part of the major development review process, the Transit Coordinator identifies service improvements or needs based on an assessment.	None
		Work with retailers and business community to increase accessibility to public transit network	Not currently met	None

Source: LSC Transportation Consultants, Inc. Goals from Rio Vista Delta Breeze SRTP FY 2007/2008-FY 2017/2018; Performance data from operating reports FY 2010-2011.

The second standard of partnering with retailers is a priority for the RVBD Transit Coordinator, but is not currently being met.

Recommended Change: No changes are recommended.

This page left intentionally blank.

Chapter 5

Transit Demand Analysis

A key step in developing and evaluating transit plans is a careful analysis of the mobility needs of various segments of the population and the potential ridership of transit services. The analysis presented below segments the potential ridership for transit services into five categories:

- Employee Transit Demand
- Elderly and Disabled Transit Demand
- Mode Split Demand for General Public Transit
- Student Demand
- Intercity Trip Demand
- Peer Based Total Transit Demand

This analysis yields estimates of the demand that could be expected given a high level of transit service for each category of ridership, and for each portion of the study area. It represents an "upper bound" for an idealized transit service that could serve all of the needs of the community. In reality, no service can efficiently serve one hundred percent of this potential demand; as part of the Alternatives Analysis, additional analysis will be conducted for various service alternatives to determine the proportion of this total demand that can be realistically achieved.

As a first step, the demographic data available for the study area was reviewed. The data applicable to demand analysis is summarized in Tables 1 through 3 in Chapter 2. These data were then applied to a series of analytical techniques to provide estimates of the various types of transit demand. Finally, these estimates were considered as a whole to develop overall estimates of total transit demand.

EMPLOYEE TRANSIT DEMAND

One element of the total demand for transit services in the region is commuter services. This element has become an important "market" for many transit systems, though Rio Vista Delta Breeze is not ideally scheduled for such services currently. Nonetheless, the onboard survey responses showed 20 percent of passengers were using the service to go to work (all on Route 52 to BART).

One quantitative source on which to base an analysis of commuter demand is provided by the US CenSus "On the Map" data from 2009, which indicates the total number of employed Rio Vista residents working outside the home is an estimated 1,744. Of these employees an estimated 458 work in the City of Rio Vista, and the remaining 1,286 employees commute outside of Rio Vista.

The Transportation Research Board published an online workbook titled "Methods for Forecasting Demand and Quantifying Need for Rural Passenger Transportation" in December, 2009. This Workbook provides step-by-step instructions for developing forecasts of the need and demand for passenger transportation in rural communities. The workbook includes a

formula for estimating County-to-County commuter demand. Based on the distance from Rio Vista to employment centers, this model can be used to estimate the demand for the 1,286 workers who reside in Rio Vista but travel to other locations for work. The model estimates commuter demand to equal a factor of 0.012 times the number of person work trips per day. Applying this number to the employees outside of Rio Vista generates the following demand estimate:

$$\begin{aligned}
 1,286 \text{ workers} \times 2 \text{ trips/day} \times 250 \text{ days} &= 643,000 \text{ total annual one-way person trips} \\
 &\quad \text{(traveling outside of Rio Vista)} \\
 643,000 \times 0.012 &= 7,700 \text{ annual one-way commute transit trips}
 \end{aligned}$$

This demand represents the total commuter demand outside of Rio Vista demand given a level of service which meets the commuting needs of workers.

ELDERLY AND DISABLED TRANSIT DEMAND

The elderly population and population with disabilities represent a high transit demand segment of the populace. This demand can be estimated using a model developed by Peat, Marwick, Mitchell and Company as explained in *Description of the Transportation Handicapped Population*. The model applies specific trip rates to the elderly and to the disabled (identified by the US Census as being limited in ability to “go outside the home”). The trip rates are applied to the population of Rio Vista (2,492 elderly, and 507 mobility limited). The result is an estimated demand for annual one-way passenger trips by transit, which totals 49,700 passenger trips annually. This represents an upper-bound demand.

GENERAL PUBLIC TRANSIT DEMAND

One element of the total demand for transit services in the region is general public demand, which encompasses all passenger types. The general public demand is best estimated by evaluating the transit “mode split” (the proportion of total travel made by transit), based on national trends. In light of observed transit mode splits, a maximum feasible mode split of 0.5 percent of all local travel is appropriate. Typically, each person makes 3.5 trips approximately 255 days per year; thus, the 8,423 residents would make a total of approximately 12,946,900 one-way trips per year. Applying the 0.5 percent mode split suggests a total demand for transit trips on the order of 64,730 one-way transit passenger-trips per year:

$$\begin{aligned}
 8,423 \times 3.5 \times 255 &= 7,517,500 \text{ total annual one-way person trips} \\
 7,517,500 \times 0.5\% &= 37,600 \text{ annual one-way transit trips}
 \end{aligned}$$

Again, it should be emphasized that this represents an “upper bound” demand for transit.

DEMAND ESTIMATION FOR MIDDLE AND HIGH SCHOOL STUDENTS

Youths aged 10 to 17 typically are independent enough to take transit on their own, but are still not driving, and therefore represent a potential transit demand population. According to the 2010 census, there were 649 youths in Rio Vista. Some of these youths (30 per day on average) currently use the transit system for after-school activities with indications that more would use the service if it were available. While the youth demand is included in the overall

General Public transit demand estimates, it is important to note that this group has potential needs for transit beyond those described above.

INTERCITY TRANSIT DEMAND

In order to estimate demand for intercity bus service, a model was used from the newly released TCRP report *Toolkit for Estimating Demand for Rural Intercity Bus Services*. In general, the model considers the following input factors: the number of passengers traveling one-way on a given route is a function of the average population of the origin points of the route, the number of stops served along the route, whether or not the route provides connectivity to airport service, and whether the service provides connectivity to an intercity provider. The model that proved to be appropriate is of the following format:

$$\begin{aligned} \text{Ridership} = & -2,803.536 + 0.194 (\text{average origin population}) \\ & + 314.734 (\text{the number of stops on the route}) \\ & + 4,971.668 (\text{airport service or connection}) \\ & 5,783.653 (\text{service provided by intercity provider}) \end{aligned}$$

Where:

Ridership = annual one-way passenger boardings

Average origin population = sum of the populations of origin points (all points on the route except that with the largest population)

Number of stops = count of points listed in public timetables as stops

Airport service or connection = route serves an airport with commercial service either directly or with one transfer at a common location

Intercity provider = service operated by a carrier meeting the definition of an intercity bus carrier (see Definition of Intercity Bus Service in Chapter 6)

This equation can be applied to estimate the potential demand for services between Rio Vista and more urbanized areas such as Fairfield, Vacaville, Pittsburg or Lodi. The equation is as follows:

$$\begin{aligned} \text{Ridership} = & -2,803.536 + 0.194 \times 8,423 (\text{population of Rio Vista, city of origin}) \\ & + 314.734 \times 1 (\text{the number of stops on the route}) \\ & + 4,971.668 \times 0 (\text{no connecting airport service with only one transfer}) \\ & 5,783.653 \times 1 (\text{as service would connect to an intercity provider}) \\ = & -2,803.536 + 0.194(8,423) + 314.734 + 5,783.653 \\ = & 4,929 \\ \text{Intercity Ridership} = & 4,900 (\text{rounded}) \end{aligned}$$

This figure represents an upper bound intercity transit demand for residents in Rio Vista wishing to travel to intercity locations, and does not include regular shopping or medical trips such as those generated by demand for service to Lodi, Fairfield, and Pittsburg.

SUMMARY

A summary of the various elements of transit demand in Rio Vista is presented in Table 22. It should be emphasized that this is an upper limit of demand, and that there is overlap among the various demand estimates. This information is intended to provide an indication of the extent current demand is being met, as well as to give an indication of where increased services might be focused. Currently, Rio Vista Delta Breeze provides between 13,000 and 14,000 one-way trips annually.

TABLE 22: Rio Vista Estimated Transit Demand	
Method of Demand Estimation	Estimated Annual Transit Demand (One-way Passenger Trips)
Employee Transit Demand (From Rio Vista)	7,700
Elderly and Disabled Demand	49,700
General Public Transit Demand	37,600
Intercity Transit Demand	4,900

Source: LSC Transportation Consultants, Inc.

FUTURE TRENDS IN TRANSIT DEMAND

Future change in transit demand will be influenced by a variety of factors, including:

- Development in Rio Vista – Several planned communities are in the planning process and could influence the need for additional transit, though with the slow down in the economy, no definitive plans are presumed for the next five years.
- Plans at Trilogy – Trilogy does not currently have plans for expansion and indeed the population growth has been slowing in the past two years. The senior community at Trilogy is currently young, healthy seniors. As Trilogy ages and residents who have retired there continue to age, demand on transit is likely to increase. However, no significant changes are expected in the time frame of this Short Range Transit Plan.
- Change in Total Population – Based on prior growth from 2000 to 2010, the City population can be projected to grow at a steady pace of approximately 4 percent each year.

Given these factors, it is reasonable to assume the transit demand will increase by roughly 2.0 to 3.0 percent per year over the SRTP planning period.