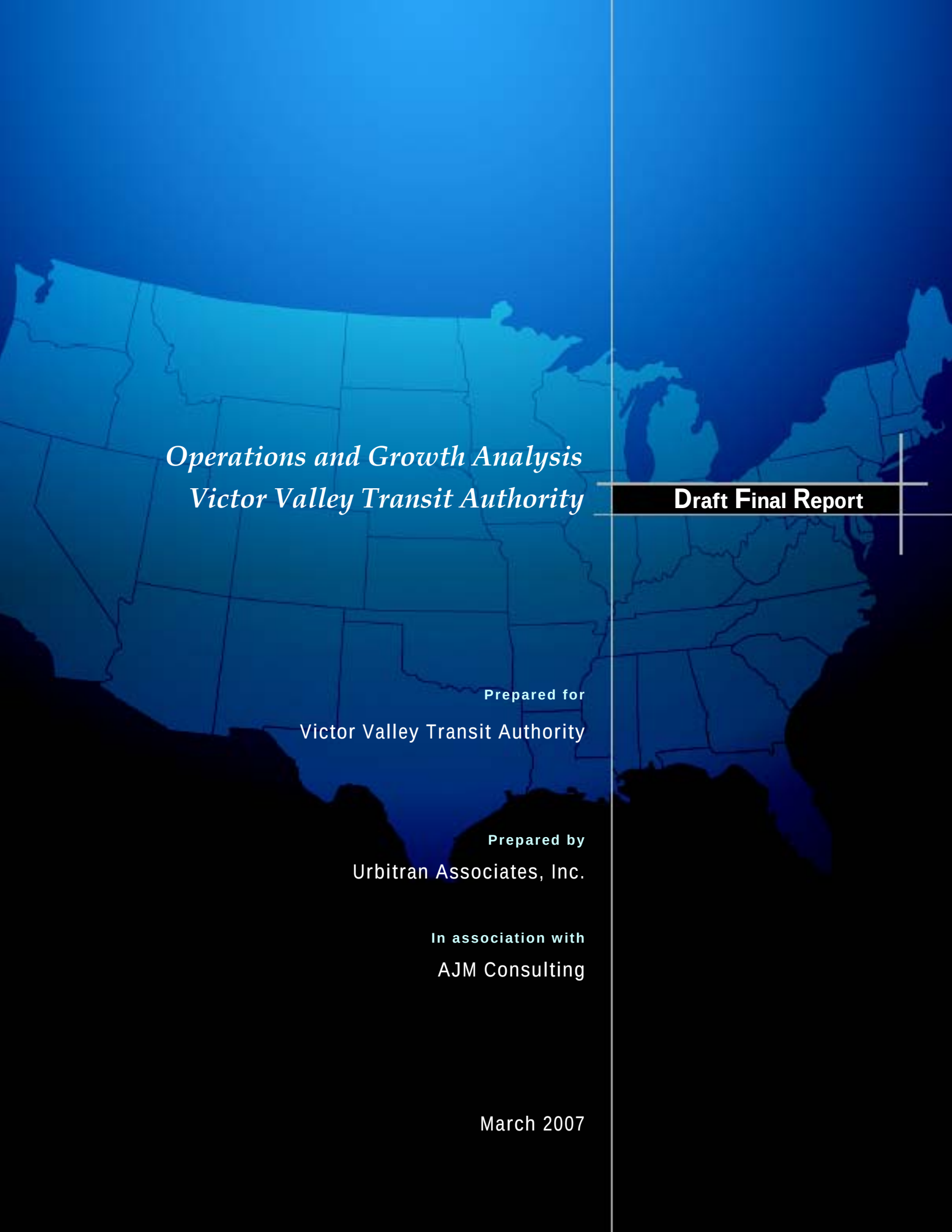


Operations and Growth Analysis
Victor Valley Transit Authority

Draft Final Report

Prepared for

Victor Valley Transit Authority

Prepared by

Urbitran Associates, Inc.

In association with

AJM Consulting

March 2007

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Executive Summary

Introduction

The *Victor Valley Operations and Growth Analysis* includes an analysis of existing service demand and an assessment of service utilization for Victor Valley Transit Authority (VVTA) services leading to recommendations for potential modifications or restructuring. VVTA has retained a team led by Urbitran Associates for this effort. The study was comprised of a review of transit service characteristics and demographic features in the Victor Valley region, a presentation and analysis of the results of passenger counts and a passenger survey conducted as part of the study. These elements, combined with observations collected through consultant fieldwork and discussions with VVTA staff and local stakeholders, allowed the consultant team to develop a preliminary list of service issues. These service issues, in turn, were explored in greater detail, leading to the development of specific service improvement alternatives.

Service Standards

In order to objectively undertake the analysis of bus service, operational standards for the program were developed and were presented along with a discussion of VVTA's adherence to these standards. Route diagnostics (service and cost effectiveness and service efficiency) were calculated and analyzed, culminating in a ranking of routes based on their effectiveness measures. Ridership by route and time of day were also discussed. Finally, routes were evaluated individually in terms of their performance statistics, ridership by time of day, and bus stop activity. The service standards with VVTA's results are presented in Table 1.

Some of the issues with the current route network are as follows:

- Out of direction travel
- Long route extensions
- One way service or loops

Table 1: Service Standards

Category	Standard	VVTA Results
Service Coverage		
Availability	• Residential areas-80% of population within ¼ mile of a bus route • Major activity centers	-Most residential areas served, review some portions of Census tracts -Route spacing standards exceeded -Most activity centers served, review some schools and other generators including SCLA
Frequency	-60-minute all day service -Clockface service	-60-minute headways during most periods -70-minute headways during afternoon peak -90-minute headways on two routes
Span	-5 AM to 10 PM on weekdays -6 AM to 7 PM on Saturdays	-6 AM to 9 PM on weekdays -7 AM to 8 PM on Saturdays
Directness	-Maximum 25% of transfer rate	-22% transfer rate
Patron Convenience		
Speed	-Regular routes maximum of 15 MPH -12-18 MPH for outlying services depending on layout	-All routes except Routes 41 and 51 operate at 15 MPH or faster
Loading	-25% standees for short periods acceptable	-Meets standard
Bus Stop Spacing	-5 to 7 blocks per mile in core (every other block) -Fringe 4 to 5 per mile, as needed based on land uses	-Victorville, Apple Valley, Hesperia meet standard, Adelanto does not
Dependability	-No missed trips -95% on-time service (0 to 5 minutes late) -No trips leaving early	-No missed trips -75% on-time service -26 trips left early
Road Call Ratio	-4,000 to 6,000 miles per road call	-5,489 miles per road call
Fiscal Condition		
Fare Structure	-Qualitative criteria	-Meets standard
Farebox Recovery	-20% measured system-wide	-Meets standard (20%)
Productivity (Pass./Mi.)	-Significantly alter routes less than 60% of average (1.07 pass/mi is average) -Review and modify routes between 60% and 80% average	Below 60% -Routes 31, 40, 44, 45F Between 60% and 80% -Routes 32 and 42
Passenger Comfort		
Waiting Shelters	-25 or more boardings	-72% of stops meet standard
Bus Stop Signs	-Denote VVTA, contact information, and route	-Do not meet standard
Revenue Equipment	-Clean and good condition	-Does not meet standard
Public Information	-Timetable, maps, advertising	-Meets standard

Action Plan

The development of a recommended action plan was based on a number of factors including data collection, the findings from data collection efforts, input from technical staff, and public involvement. The previous chapters identified issues with the current VVTA services and opportunities for improvement. These issues were sued to shape the primary service goals which are as follows:

- Provide additional service coverage.
- More efficiently match demand and supply in the areas of decreased demand, including some deviated fixed route or demand responsive alternatives.
- Seek opportunities to regain a peak system wide sixty minute cycle time that would facilitate transfer connections, especially at 7th and Lorene.

- Examine the potential for new service to areas with anticipated increased demand.
- Maximize an integrated system approach to the service plan.
- Establish core spine routes that will be supplemented with local feeder routes

Descriptions of the recommended service changes are included below.

Arterial Fixed Routes

The arterial fixed route bus network will be the backbone service for Victor Valley Transit. The routes will provides inter-community service for the most part along major roadways, with some circulation provided. These routes will serve major generators within the service area, and operate on a regular schedule.

Route Deviation/Point Deviation Circulator

Many of the areas within Victor Valley that are currently served by fixed routes are lower density and neighborhood areas that can not justify fixed route service. For some of these areas it is proposed that either a route deviation or point deviation service be provided. Route deviation services are routes that have a fixed route and setup to pick-up and drop-off passengers within ¾ mile of that route. The ¾ mile figure is a common distance used for route deviation services; however certain circumstances within the VVTA service area may result in larger or smaller deviation areas. Schedules for these routes will be set up with enough time for deviation, and a premium fare can be charged for deviations, however in the case of Adelanto a premium fare is not likely. A point deviation service is a service that has fixed timepoints but no fixed route and will pick-up passengers anywhere requested between the timepoints. Passengers using point deviation services can catch the vehicle at the timepoints for a regular fare, or request service for a premium. Route deviation routes and point deviation services are able to cover the requirements for ADA within the areas they operate, assuming the vehicle is ADA accessible. Three route deviation routes are recommended, and one point deviation service

Demand Response

Demand response services are appropriate for areas that have a large area and can not support any form of fixed route services. They are also good for new service areas, to operate as a trial area for transit services. The demand response services operate like ADA paratransit services, which are open to the general public. Passengers would use the service just like ADA passengers, calling for a ride. The service would operate within specific zones. Demand response services can take the place of ADA services. There are areas in Victor Valley that would be suitable for demand response service, such as new expansion areas. Demand response zones should be implemented based on the desire to expand service into new areas.

Year 1

- Adjust existing route network to develop a **core route network** that connects downtowns and major activity centers, and a network of **community access circulators** that both provide local trips as well as timed connections to the core routes.

- Develop a **convenient bus schedule**:
  - Create a schedule with 60 minute service on each route
  - Coordinate schedules to ensure convenient transfers at major locations, both between core routes and from community access circulators to the core routes
  - Increase reliability by adjustments to scheduled running times
  - Increase frequency on certain routes or at certain time periods

- The **Core Route Network** includes the following routes:
  - ***Victorville to Adelanto***, via Palmdale Road
  - ***Victorville to Apple Valley*** via Highway 18
  - ***Apple Valley to Victor Valley College*** via Bear Valley Road
  - ***Victor Valley College to Victor Valley Mall*** via Bear Valley Road
  - ***Hesperia to Victor Valley Mall*** via Main Street and Cottonwood
  - ***Victorville to Hesperia*** via Victor Valley College
  - ***Victorville to Victor Valley Mall*** via Civic Drive
  - ***Victorville to Adelanto North*** via SCLA
  - ***Victorville Circulator***

- The **Community Access Circulators** are timed to connect to the Core Routes. They feature a combination of fixed route and dial-a-ride services that can be individualized for the customer. The community access circulators include the following routes:
  - ***Apple Valley North Route Deviation***, a service that operates on a fixed route but upon request will serve individual destinations within ¾ of the route.
  - ***Apple Valley South Route Deviation,*** a service that operates on a fixed route but upon request will serve individual destinations within ¾ of the route.
  - ***Hesperia Route Deviation***, a route that operates on a fixed route but upon request will serve individual destinations within ¾ of the route.
  - ***Adelanto Point Deviation***, a service which has a set of scheduled stops that upon request will serve any location between those stops within the service area.

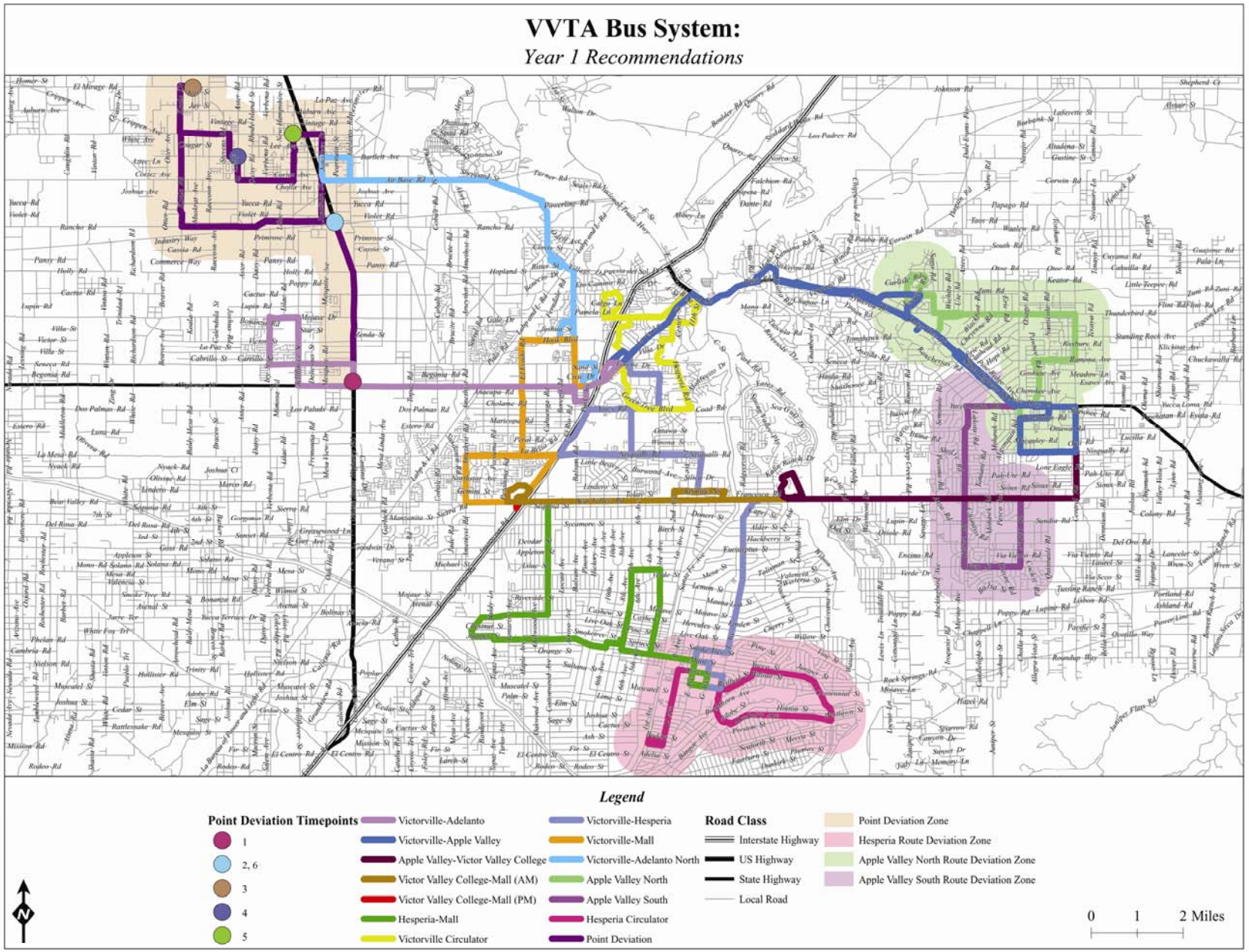
- Adjust County Route 22 Hellendale to serve Stoddard Wells area

- Fare adjustment from $1.00 to $1.25 (proposed fares shown below)

Table 2: Current and Proposed Fares

Suburban Fixed Route	Current	Proposed
Adult	$1.00	$1.25
Student	$0.75	$1.00
EDH	$0.50	$0.60
Children 5 and Under	Free	Free
County Routes 21, 22, 23	Current	Proposed
Adult	$2.00	$2.25
Student	$2.00	$2.00
EDH	$1.00	$1.00
Children 5 and Under	Free	Free
Day Pass		
Suburban Adult	$3.00	$3.50
Suburban Student	$3.00	$3.25
Suburban EHD	$1.50	$1.75
County Adult	$5.00	$6.00
County Student	$4.00	$5.00
County EHD	$3.00	$4.00
Thirty-One (31) Day Passes	Current	Proposed
Suburban Adult	$40.00	$50.00
Suburban Student	$30.00	$40.00
Suburban EHD	$20.00	$25.00
County Adult	$70.00	$75.00
County Student	$60.00	$65.00
County EHD	$30.00	$35.00
Direct Access	Current	Proposed
Zone #1	$2.00	$2.50
Zone #2	$3.50	$4.50
Zone #3	$5.00	$6.00
Subscription	Current	Proposed
Zone #1	$105.00	$130.00
Zone #2	$130.00	$160.00
Zone #3	$140.00	$180.00

Figure 1: Year 1 Proposed Route Structure



Year 2

- Create a **West Victorville Community Dial-a-Ride** to serve residential development in this area.

- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Core Routes**:
    - ***Apple Valley to Victor Valley College*** via Bear Valley Road
    - ***Victor Valley College to Victor Valley Mall*** via Bear Valley Road
    - ***Victorville to Hesperia*** via Victor Valley College

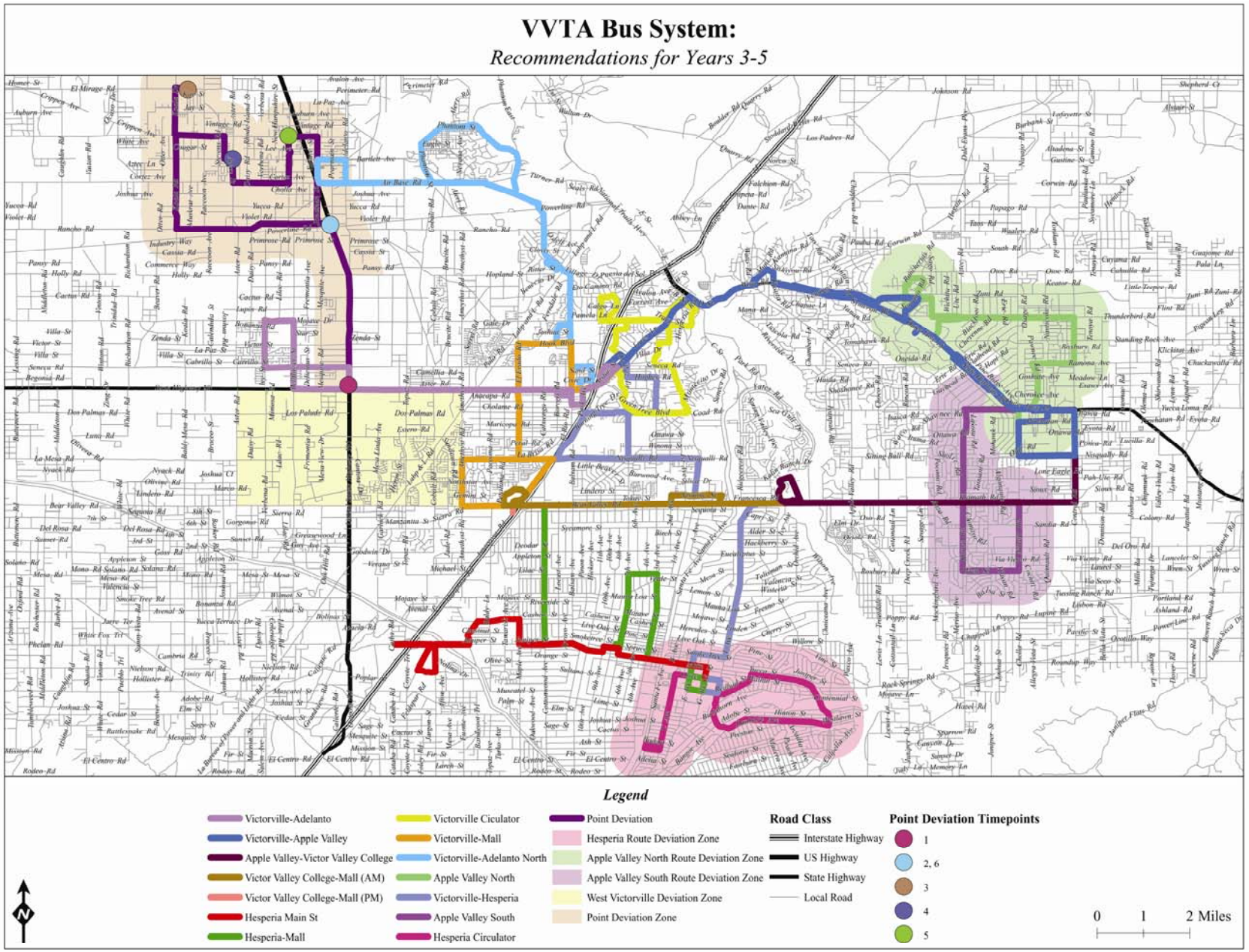
- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Community Access Circulator**:
    - Adelanto Point Deviation

Year 3

- Adjustments and additional routes to enhance the core network:
    - Add a new **Hesperia Main Street Route** to serve growing neighborhoods along Main Street. This route could be either a regular fixed route or a route deviated route similar to the community access circulators.
    - Adjust the **Hesperia to Victor Valley Mall Route** to complement the Hesperia Main Street Route.
    - Adjust the **Victorville to Adelanto North Route** to serve the expected employment growth at SCLA. As an alternative, SCLA could operate a shuttle van from SCLA employment sites to the Victorville to Adelanto North route at any time demand supports the service.
    - Adjust the **Victorville to Hesperia Route** to provide service to new VVTA Administrative facility.

- Base fare adjustment from $1.25 to $1.35

Figure 2: Year 3 Proposed Route Structure



Year 4

- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Core Routes**:
  - ***Victorville to Adelanto***, via Palmdale Road
  - ***Victorville to Apple Valley*** via Highway 18

Year 5

- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Core Routes**:
  - ***Victorville to Victor Valley Mall*** via Civic Drive
  - ***Victorville Circulator***

- Base fare adjustment from $1.35 to $1.50

This section presents the estimated annual ridership for the five years of this plan. The modified route network will affect ridership on all services that Victor Valley Transit operates including urban fixed routes, county services, and ADA Paratransit services. Also, a new type of service, community access circulators, will be implemented in Victor Valley.

Table 3: Annual Ridership Projections

Route	Year 1	Year 2	Year 3	Year 4	Year 5
Apple Valley North Deviated	35,600	36,000	35,500	35,900	35,100
Victorville/Apple Valley	150,800	152,300	150,300	162,300	158,700
Mall/College	74,300	82,000	80,900	81,700	79,900
Apple Valley/College	75,900	82,400	81,300	82,100	80,300
Mall/Hesperia	74,900	75,600	49,400	49,900	48,800
Victorville/Hesperia	133,300	146,000	144,000	145,400	142,200
Victorville Circulator	37,500	37,900	37,400	37,700	39,700
Victorville/Mall	86,600	87,500	86,300	87,100	92,700
Adelanto/Victorville	30,300	32,900	32,400	32,800	32,000
Adelanto North/Victorville	51,600	53,100	52,400	53,000	51,800
Hesperia Main Street	0	0	25,200	25,500	24,900
Apple Valley South Deviated	13,900	14,600	14,400	14,600	14,200
Hesperia Deviated	7,300	7,600	7,500	7,500	7,400
Adelanto Deviated	47,400	51,300	50,700	51,200	50,000
West Victorville Dial-a-ride	0	19,200	18,900	19,100	24,900
Total Ridership	819,400	878,400	866,600	885,800	882,600
Ridership Change	-5.00%	7.20%	-1.34%	2.22%	-0.36%

Funding Plan

The costs and funding to implement this plan are presented below.

Table 4: Regular Route Funding

	Year 1	Year 2	Year 3	Year 4	Year 5
Total Cost	$5,279,600	$6,395,800	$7,210,000	$7,710,200	$8,239,000
Fare Revenue	$756,200	$812,900	$859,200	$878,200	$972,300
5311	$204,100	$215,800	$227,400	$239,000	$250,700
5307	$583,300	$483,300	$383,300	$283,300	$183,300
Capital LTF Match	$145,800	$120,800	$95,800	$70,800	$45,800
Local Subsidy Required	$3,736,000	$4,763,000	$5,644,300	$6,238,900	$6,786,900
AB2766 Funding by Municipality					
Adelanto	$4,800	$4,800	$4,800	$4,800	$4,800
Apple Valley	$35,000	$35,000	$35,000	$35,000	$35,000
Hesperia	$35,000	$35,000	$35,000	$35,000	$35,000
Victorville	$0	$0	$0	$0	$0
County	$0	$0	$0	$0	$0
LTF Required by Municipality					
Adelanto	$384,500	$554,900	$624,000	$674,000	$716,600
Apple Valley	$722,700	$842,800	$951,600	$1,144,200	$1,217,200
Hesperia	$566,900	$700,900	$1,024,400	$1,108,600	$1,179,900
Victorville	$1,296,800	$1,627,000	$1,887,500	$2,069,400	$2,357,800
County	$690,400	$962,600	$1,081,400	$1,167,900	$1,240,645

Table 5: Paratransit Funding

	Year 1	Year 2	Year 3	Year 4	Year 5
Total Cost	$1,807,700	$1,984,400	$2,172,400	$2,372,300	$2,584,700
Fare Revenue	$183,100	$191,900	$214,900	$220,400	$257,000
5307	$64,800	$54,800	$44,800	$34,800	$24,800
Capital LTF Match	$16,200	$13,700	$11,200	$8,700	$6,200
Measure I Subarea	$0	$0	$0	$324,200	$1,041,200
Local Subsidy Required	$1,543,600	$1,724,500	$1,901,500	$1,784,200	$1,255,500
Measure I Funding by Municipality					
Adelanto	$40,000	$43,800	$46,500	$33,000	$0
Apple Valley	$180,000	$124,600	$132,000	$93,800	$0
Hesperia	$300,000	$226,300	$239,900	$170,400	$0
Victorville	$550,000	$375,700	$398,200	$282,800	$0
County	$32,570	$50,200	$55,300	$51,900	$0
LTF Required by Municipality					
Adelanto	$28,500	$11,400	$14,300	$24,100	$40,200
Apple Valley	$264,600	$391,200	$436,700	$439,900	$375,500
Hesperia	$143,900	$263,500	$300,100	$336,300	$356,600
Victorville	$4,000	$236,700	$277,000	$350,800	$445,800
County	$0	$0	$0	$0	$36,500

LTF is the important local source for funding VVTA services, and represents monies allocated to transit and other transportation needs that pass through each of the municipalities. Besides transit service, LTF funding is used for street repairs and paving, thus is an important for each

municipality. The table below presents total LTF for each municipality for both fixed route and Paratransit services.

Table 6: Total Estimated LTF Required for Fixed Route and Paratransit

Municipality	Type of Service	Current Year (FY 07)	Year 1	Year 2	Year 3	Year 4	Year 5
Adelanto	*Fixed Route*	$233,500	$384,500	$554,900	$624,000	$674,000	$716,600
	Paratransit	$45,000	$28,500	$11,400	$14,300	$24,100	$40,200
	Total	$278,500	$413,00	$566,300	$638,300	$698,100	$756,800
Apple Valley	*Fixed Route*	$394,400	$722,700	$842,800	$951,600	$1,144,200	$1,217,200
	Paratransit	$418,400	$264,600	$391,200	$436,700	$439,900	$375,500
	Total	$812,800	$987,300	$1,234,000	$1,338,300	$1,584,100	$1,592,700
Hesperia	*Fixed Route*	$387,200	$566,900	$700,900	$1,024,400	$1,108,600	$1,179,900
	Paratransit	$345,600	$143,900	$263,500	$300,100	$336,300	$356,600
	Total	$732,800	$710,800	$964,400	$1,324,500	$1,444,900	$1,536,500
Victorville	*Fixed Route*	$728,300	$1,296,800	$1,627,000	$1,887,500	$2,069,400	$2,357,800
	Paratransit	$145,900	$4,000	$236,700	$277,000	$350,800	$445,800
	Total	$874,200	$1,300,800	$1,863,700	$2,164,500	$2,420,200	$2,803,600
County	*Fixed Route*	$513,100	$690,400	$962,600	$1,081,400	$1,167,900	$1,240,600
	Paratransit	$2,500	$0	$0	$0	$0	$36,500
	Total	$515,600	$690,400	$962,600	$1,081,400	$1,167,900	$1,277,100
Total	*Fixed Route*	$2,256,500	$3,661,200	$4,688,200	$5,568,900	$6,164,100	$6,712,100
	Paratransit	$954,400	$441,000	$902,800	$1,028,100	$1,151,100	$1,254,600
	Total	$3,210,900	$4,102,200	$5,591,000	$6,597,000	$7,315,200	$7,966,700

Does not include AB2766 and Measure I Funding

Capital Plan

The current bus fleet has a total of 32 revenue ADA vehicles and 32 revenue fixed route vehicles, which includes all the vehicles that are on the property or will be delivered before the end of 2006. The current capital program ahs the following bus purchases programmed:

- 7 heavy duty transit buses for fixed route services in FY '06
- 4 cutaway vans for ADA services in FY '07
- 6 cutaway vans for ADA services in FY '09

Table 7: Total Vehicles Needed

Category of Service		Year 1	Year 2	Year 3	Year 4	Year 5
Urban Fixed Route	*Peak Require*	13	18	20	22	24
	Spares	2	3	3	3	4
	Total	15	21	23	25	28
Urban Community Access Circulator	*Peak Require*	4	6	6	6	6
	Spares	1	1	1	1	1
	Total	5	7	7	7	7
Paratransit	*Peak Require*	18	19	20	21	22
	Spares	3	3	3	4	4
	Total	21	22	23	25	26
County Routes	*Peak Require*	3	3	3	3	3
	Spares	1	1	1	1	1
	Total	4	4	4	4	4
Total	*Peak Require*	38	46	49	52	55
	Spares	7	8	8	9	10
	Total	45	54	57	61	65

Besides the vehicles programmed and already purchased, the following is a list of additional vehicle purchases that will be needed to implement the proposed plan. These vehicles include both expansion vehicles as well as replacement vehicles. The timing and number of vehicles are as follows:

- Purchase of 3 cutaway vehicles for community access circulators in FY '09
- Purchase of 3 heavy duty buses for fixed route services in FY '10
- Purchase of 2 cutaway vehicles for ADA service in FY '10
- Purchase of 2 heavy duty buses for fixed route services in FY '11
- Purchase of 1 cutaway vehicles for community access circulators in FY '11
- Purchase of 16 cutaway vehicles for ADA service in FY '11

Introduction

The *Victor Valley Operations and Growth Analysis* includes an analysis of existing service demand and an assessment of service utilization for Victor Valley Transit Authority (VVTA) services leading to recommendations for potential modifications or restructuring. VVTA has retained a team led by Urbitran Associates for this effort. The introductory chapters are comprised of a review of transit service characteristics and demographic features in the Victor Valley region. Early chapters also present and analyze the results of passenger counts and a passenger survey conducted as part of the study. These elements, combined with observations collected through consultant fieldwork and discussions with VVTA staff and local stakeholders, allow the consultant team to develop a preliminary list of service issues. These service issues are, in turn, explored in greater detail in the later chapters, leading to the development of specific service improvement alternatives.

Chapter 1: Socioeconomic and Land Use Characteristics

Study Area Description

The Victor Valley area is located on the western edge of the Mojave Desert just north of the San Bernardino Mountains., roughly 45 miles north of the City of San Bernardino and 80 miles northeast of downtown Los Angeles. Major municipalities in the Victor Valley area include Victorville, Hesperia, Adelanto and Apple Valley. Known as the "high desert", the area it has an elevation of about 3,000 feet above sea level. It is situated in San Bernardino County, which stretches from the City of San Bernardino on its western edge to the Nevada state line approximately 200 miles to the east Interstate 15 and State Highway 18 intersect near the heart of the Valley.

The Victor Valley region was historically known for its agricultural, industrial, and military land uses. During the last several decades, however, Victor Valley has become a area of increasing development in the Southern California Basin. As indicated above, the largest cities in the region are Apple Valley, Hesperia, and Victorville, each with populations exceeding 60,000, and each projected to have significant growth in the coming years. As the area's residential population continues to grow dramatically, the economy of the area is diversifying, with a growing number of large-scale commercial or industrial office developments both completed and in the planning stages in the region.

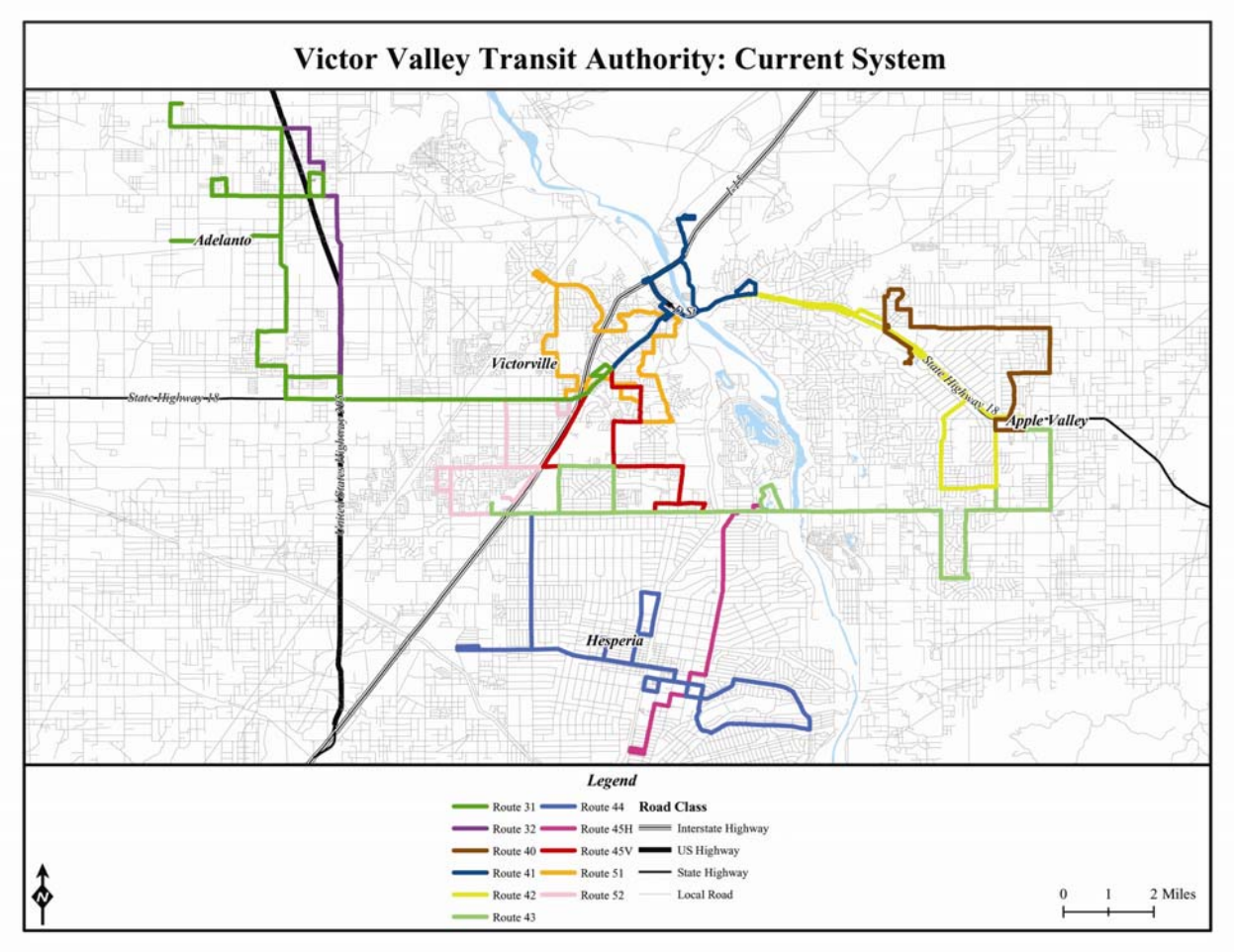
The primary highway in the Victor Valley area is Interstate 15 (I-15), which bisects the area in a north-south direction, entering the Valley between the San Gabriel and San Bernardino Mountains, which divides the Victor Valley area from the Los Angeles and Riverside metropolitan areas to the southeast, and continuing north to Barstow, roughly forty miles to the northeast, and then to Las Vegas, Nevada. State Highways 18 and 395 provide additional highway access to Victor Valley, and Historic U.S. Route 66 passes through Old Town Victorville. The Victorville Amtrak station is also located in Old Town Victorville; the "Southwest Chief" Amtrak rail line stops at the Victorville station once daily in each direction.

Victor Valley Transit Authority (VVTA) Background

VVTA operates local fixed-route, county commuter, and ADA complementary paratransit bus services in the Victor Valley area. It has a maintenance facility located in Hesperia. The service structure consists of 10 local fixed routes, 3 County routes and paratransit service. Figure 1-1 shows the system's local fixed route service area, which is the focus of this project.

VVTA was established through a Joint Powers Authority in 1991. The JPA includes the four cities of Adelanto, Apple Valley, Hesperia and Victorville and the certain unincorporated portions of the County of San Bernardino. The Board of Directors includes representatives from the above jurisdictions. Since 1998, the Board has had a management contract with McDonald Transit Associates, Inc. to manage the service. In January 2005 the operations contract for all transit service in the Victor Valley area was consolidated under a separate contract with ATC (now Veoila).

Figure 1-1: VVTA System Map



Demographic and Socioeconomic Profile

This section profiles the demographic and socio-economic characteristics of all the regions served by Victor Valley Transportation Authority (VVTA). The variables, such as population distribution, car availability and trip generators have been selected primarily because of their strong correlation to transit use.

Data used for the figures in this report are based on Census 2000 Summary files for Census tracts. *The overall population of the area by municipality is shown in* Table 1-1. Three of the four communities are generally of equivalent size – Victorville, Hesperia, and Apple Valley, and comprise 91 percent of the total population of 200,458. Adelanto, with 18,167 people, represents the remaining 9 percent of the population.

Table 1-1: Victor Valley Population by Municipality

Municipality	Census 2000 Population
Victorville	64,871
Hesperia	62,835
Apple Valley	54,585
Adelanto	18,167

Source: Census Bureau 2000 Data

Population Projections to 2025

Table 1-2 shows the 2025 population forecast in the four communities as calculated by San Bernardino County. The population forecast shows that the region will double in size, from 200,458 in 2000 to 402,996 in 2025. All four communities will grow dramatically, with Adelanto (120%) and Hesperia (154%) having the highest growth rate by the year 2025. In actual numbers the greatest growth by far will be in Hesperia, with just under 100,000 new residents projected, with Victorville second with about 50,000 new residents and Apple Valley next with about 35,000. Clearly, the area is going to continue to urbanize dramatically, and as it does the pressure will increase to accommodate the travel needs of the area, including bus transit.

Table 1-2: 2025 Population Projections by Municipality

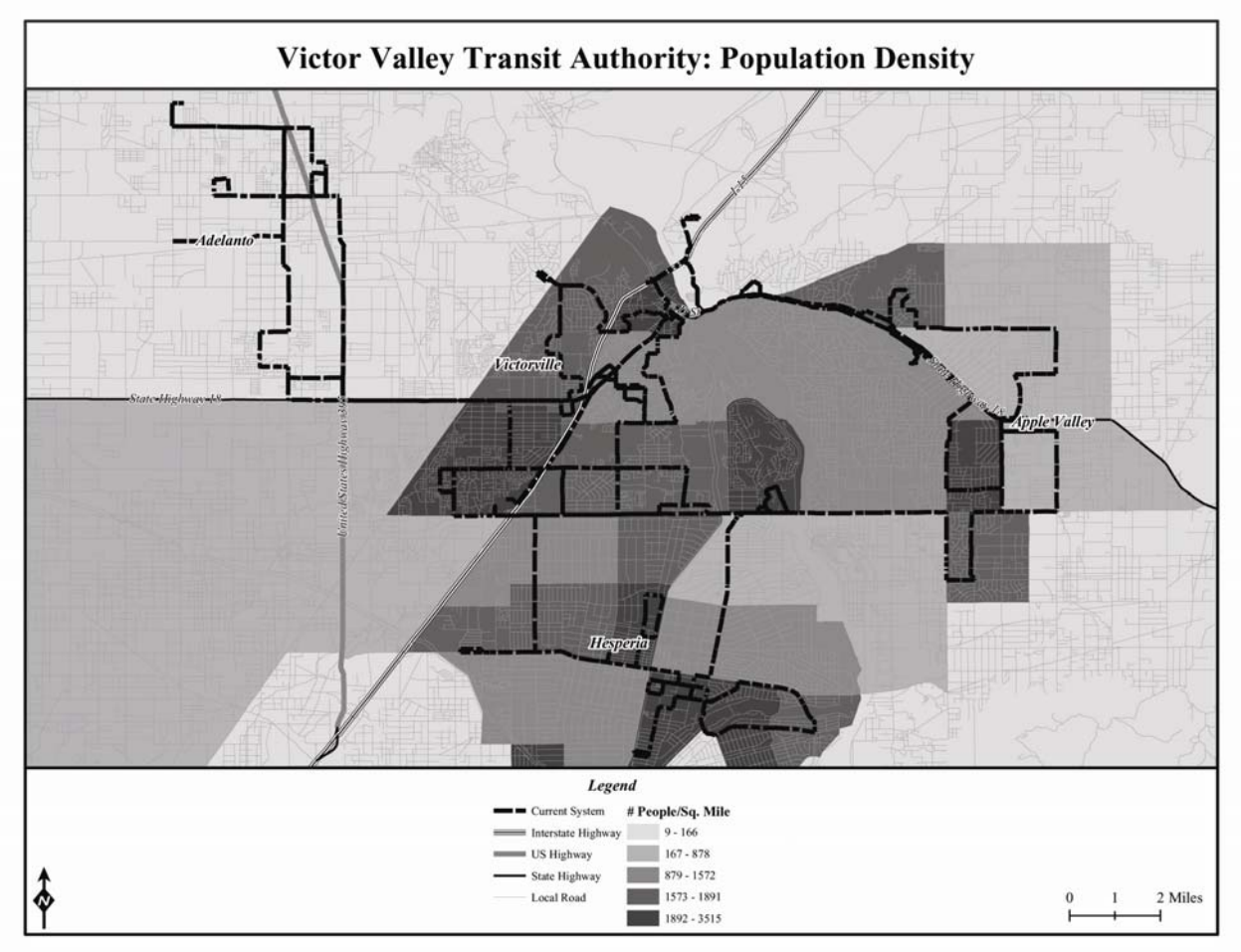
Service Region	2000 Population	2025 Projected Population	Percent Change 2000-2025
Victorville	64,871	113,711	74%
Hesperia	62,835	159,638	154%
Apple Valley	54,585	89,815	65%
Adelanto	18,167	39,832	120%

Source: San Bernardino County Population Projections

Population Density

A map of current population density is shown in Figure 1-2. Victorville is the largest city in the Victor Valley Transit Authority service area with the highest population density of 880 persons per square mile. In general, densities above 2000 persons per square mile are found within the communities of Victorville and Hesperia. The highest density areas are along the I-15 corridor. Again, as the area population grows dramatically, these densities in turn will both intensify and spread throughout more of the area.

Figure 1-2: Population Density

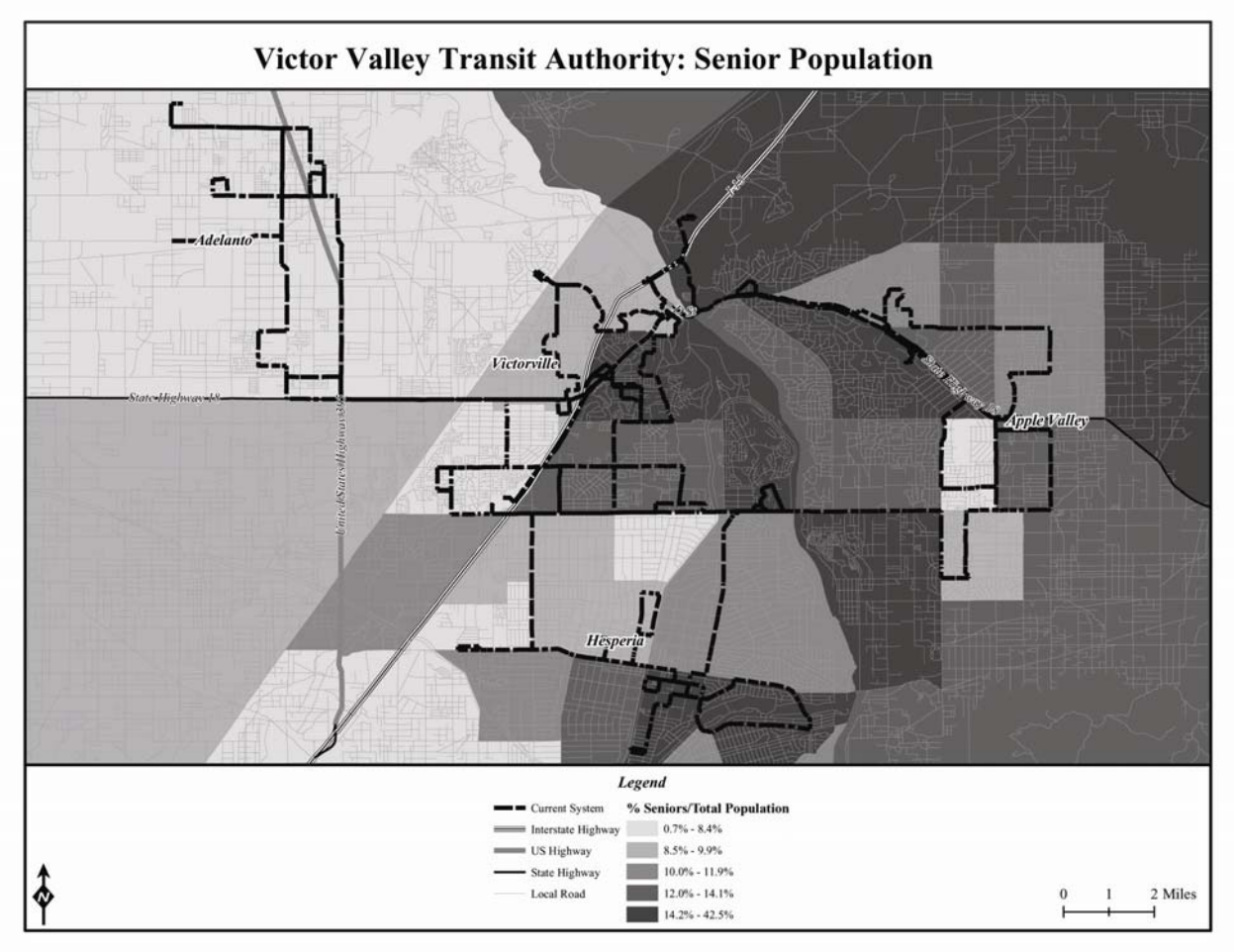


Source: Census Bureau 2000 Data

Senior Citizen Population

Figure 1-3 shows the distribution of senior citizen population, which is fairly well spread in the area and generally proportional to total population. The largest concentrations are found in the core areas of Victorville and Hesperia, with lower concentrations in Adelanto as well as significant portions of Apple Valley.

Figure 1-3: Senior Population

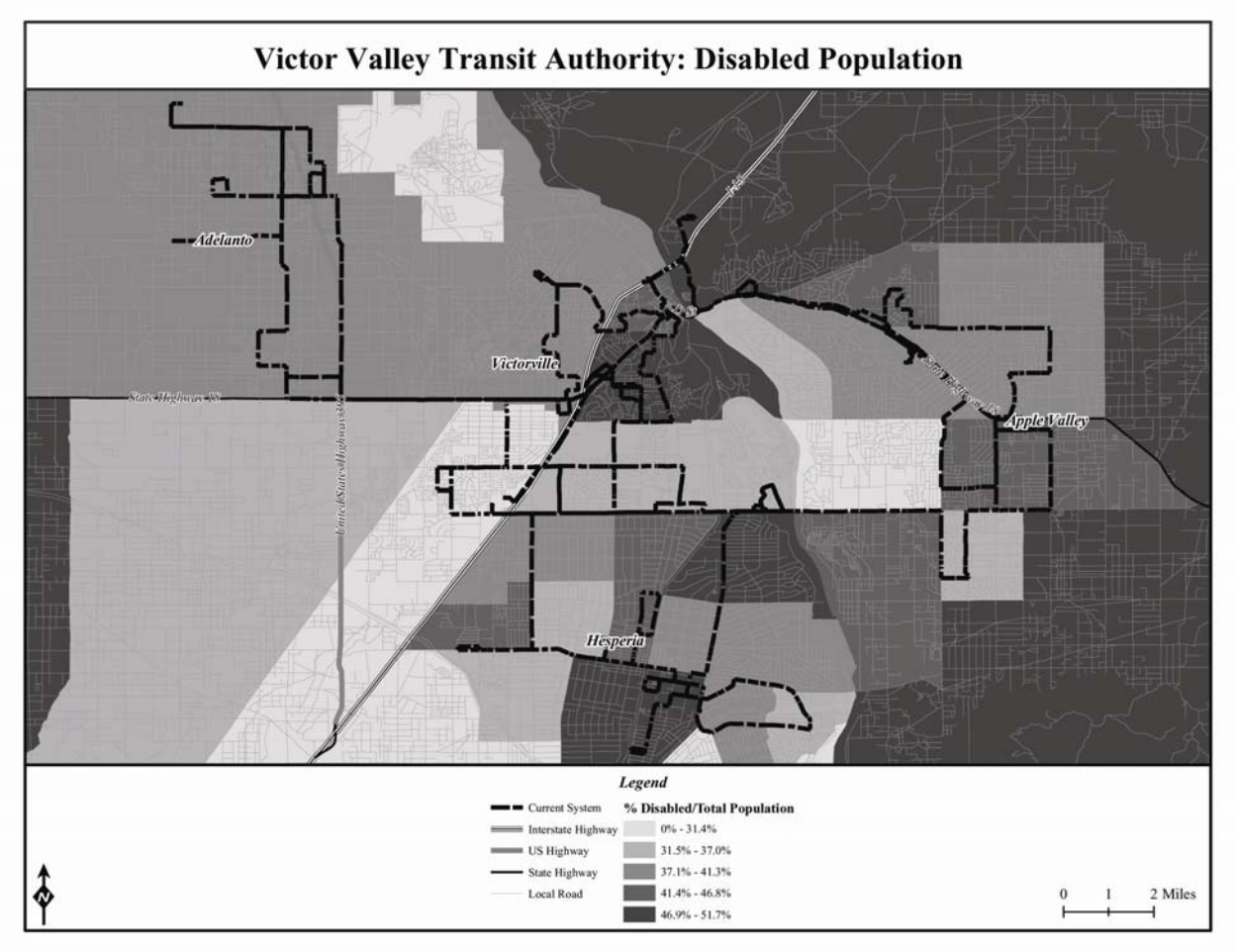


Source: Census Bureau 2000 Data

Disabled Population

In accordance with the Americans with Disabilities Act of 1990 (ADA), VVTA provides Direct Access, a fully accessible specialized paratransit service that is available on a prearranged basis (1 to 14 days in advance) for any trip purpose within the designated service area. Fares for the service are based on zones. In addition, seniors and individuals with disabilities can ride at a reduced fare on the fixed route service. Again, from a national perspective, many agencies are developing service alternatives that address the continued demand for ADA paratransit at disproportionately increased costs to the agency, yet still maintaining mobility for those persons with disabilities. Figure 1-4 displays the distribution of disabled population. The concentration is higher in Victorville and Hesperia, as shown in Figure 1-4.

Figure 1-4: Disabled Population



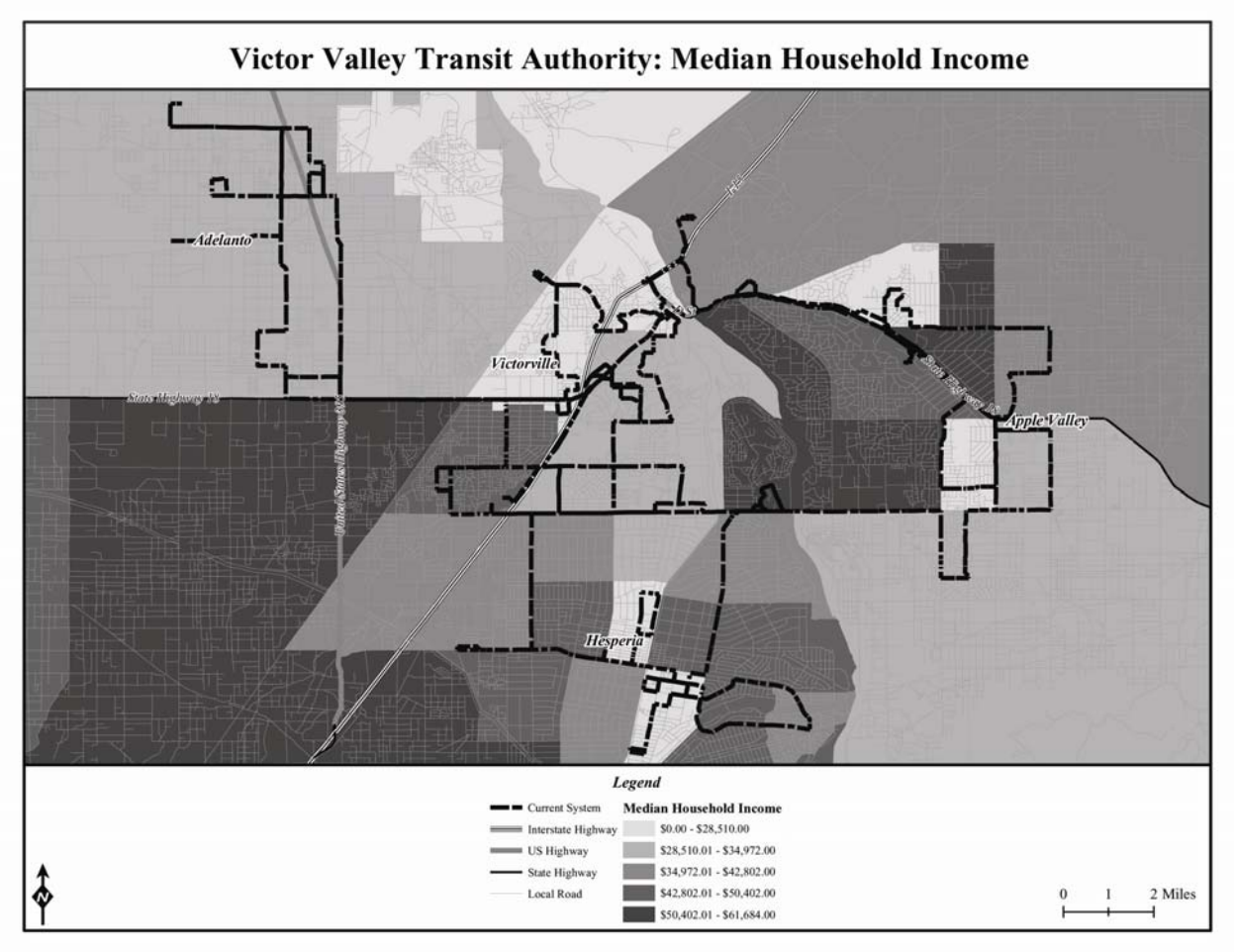
Source: Census Bureau 2000 Data

Socioeconomics

Median Household Income

Figure 1-5 shows that a majority of the households have an income range from $20,000 to $40,000. Low income clusters are found in each community, while higher income areas are for the most part found in Apple Valley and on the western side of the area where significant new residential development is taking place. .

Figure 1-5: Median Household Income

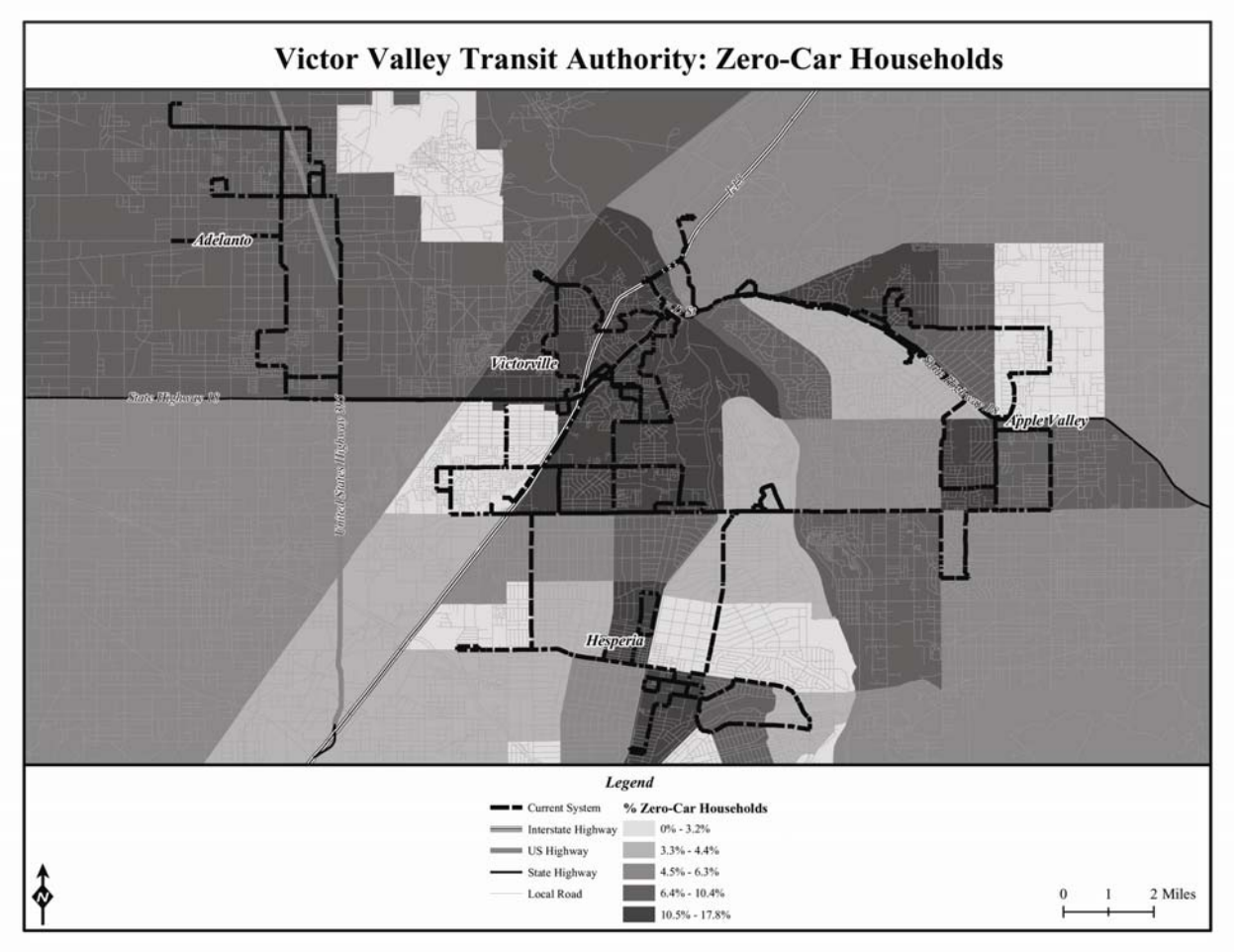


Source: Census Bureau 2000 Data

Zero Car Households

Figure 1-6 shows the distribution of households with limited transportation options. Victorville and Hesperia have a majority of households who do not have a car available. More transit service in these regions is crucial to tap this rider market.

Figure 1-6: Zero-Car Households

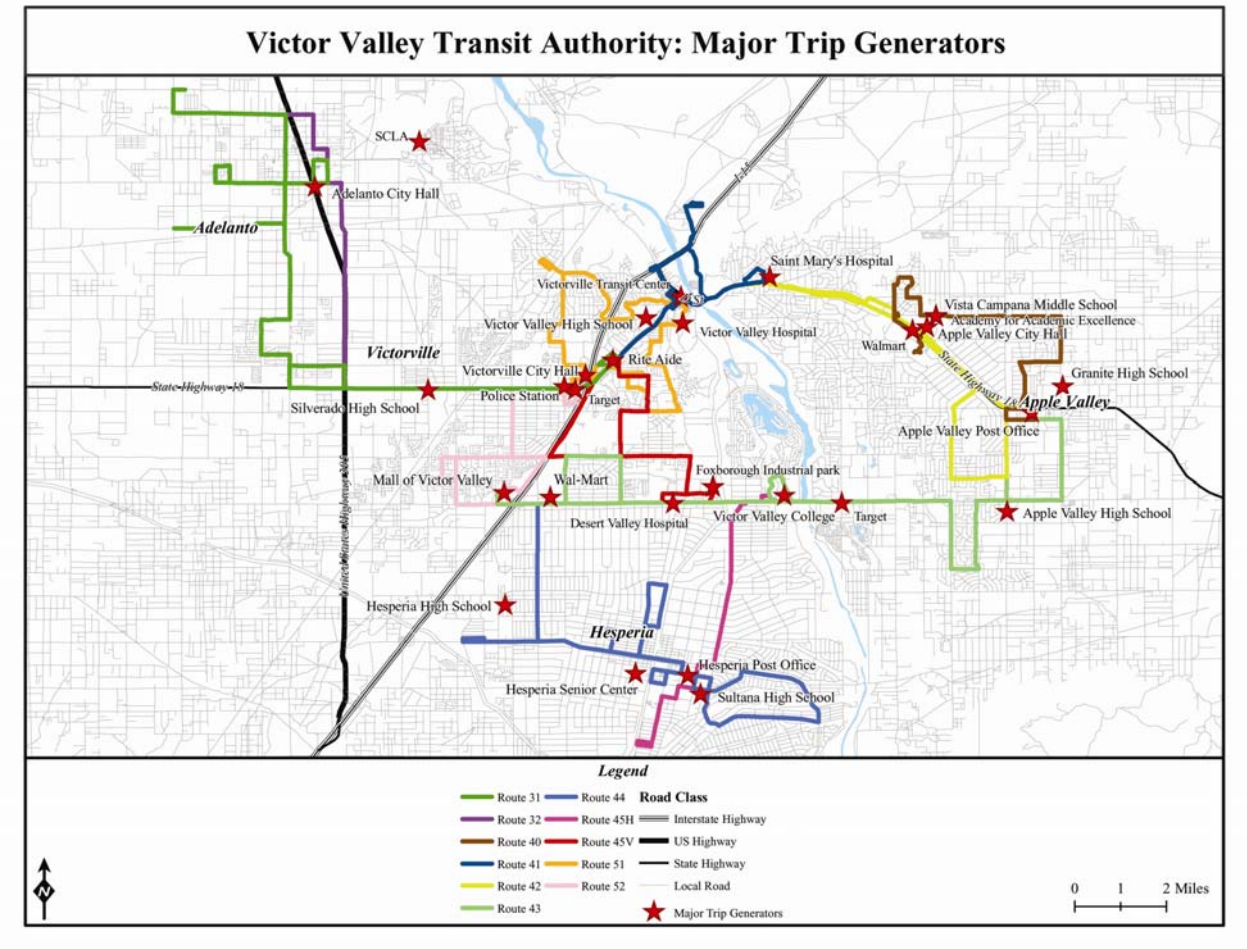


Source: Census Bureau 2000 Data

Major Trip Generators

Trip generators represent key locations that attract significant number of riders for various purposes. These locations include shopping centers, hospitals, educational institutions, government offices, etc. This section examines the trip generators in the Victor Valley area, as shown in Figure 1-7.

Figure 1-7: Major Trip Generators



Malls and Shopping Centers

The Mall of Victor Valley, located on Bear Valley Road in Victorville is one of the largest regional shopping centers between San Bernardino and Las Vegas. The mall is anchored by major department stores and offers over 100 specialty stores. The Mall includes theaters, food court and serves as a major trip generator for VVTA. Bear Valley Road east of I-15 includes the largest concentration of strip-mall and big-box retail uses in the area, and this commercial area is continuing to intensify. Highway 18 between Apple Valley and Victorville has Wal*Mart, Ralph's and a number of smaller establishments. Shopping opportunities on Main Street in Hesperia include the Albertson's Shopping Center, Von's Shopping Center, and K-Mart. Downtown Victorville has numerous commercial enterprises, including the Rite-Aid shopping center location at the bus transfer point at Lorene and 7th, but also Costco and other store in the CBD. Various strip malls in the area offer additional shopping and dining options along Palmdale Road between Victorville and Adelanto, including the Stater Brothers market/shopping Center.

Schools and Colleges

School districts in the study area include the Apple Valley Unified School District, Hesperia Unified School District, Victor Elementary School District, Adelanto School District, and the Victor Valley Union High School District.

The Victor Valley Community College, located off Bear Valley Road, generates many trips within the study area and is a key destination for this project.. Sultana High School, Hesperia High School, Apple Valley High School, Apple Valley Junior High School, Granite Hills High School, Silverado High School, Cobalt Middle School, and Vista Campana Middle School are all locations for consideration in this plan.

Hospitals

With more than 200 physicians and surgeons, the Victor Valley area provides many medical facilities, clinics, and hospitals. The largest of these are Desert Valley Medical Center, St. Mary Regional Medical Center in Apple Valley and Victor Valley Community Hospital. All hospitals provide a wide range of medical services, including 24-hour emergency care.

Desert Valley Hospital is located on the campus of Prime Care Desert Valley Medical Center. The hospital is a state-of-the art facility that features a 24-hour emergency room and care beds.

St. Mary's Hospital in Apple Valley is located on Kasota Road, just off Highway 18.

Victor Valley Community Hospital is located on Eleventh Street in Victorville and provides comprehensive medical care.

Future Growth and Development

Growth Projections

Earlier in this chapter, population projections for 2025 done by San Berardino County ere presented. The following table (Table 1-3) shows the growth projections that were developed as part of the Southern California Association of Governments (SCAG) 2030 Regional Transportation Plan update, showing growth data to 2015, in particular for this discussion the growth rate of employment While Victorville will continue to provide the main source of employment, Hesperia will experience significant growth during the period, mirroring its dramatic population growth and indicative of the urbanization of the community.

Table 1-3: Growth Forecasts 2000-2015

City	2000 Population	2005 Population	2010 Population	2015 Population
Adelanto city	18,167	21,888	25,939	30,675
Apple Valley town	54,585	63,453	70,873	77,333
Hesperia city	62,835	78,494	95,800	117,568
Victorville city	64,871	75,952	81,592	92,548
City	**2000 Households**	**2005 Households**	**2010 Households**	**2015 Households**
Adelanto city	4,713	5,383	6,545	8,109
Apple Valley town	18,636	20,726	24,022	27,199
Hesperia city	20,014	23,033	28,575	35,239
Victorville city	20,978	22,986	24,762	28,621
City	**2000 Employment**	**2005 Employment**	**2010 Employment**	**2015 Employment**
Adelanto city	2,500	3,136	4,010	5,321
Apple Valley town	13,795	16,130	19,338	21,867
Hesperia city	14,998	17,150	20,109	31,957
Victorville city	31,377	38,108	47,362	57,873
Source: Southern California Association of Governments, 2004 Regional Transportation Plan				
Disclaimer: The 2004 RTP forecast at the region, county and subregional level are adopted by the Regional Council in April, 2004. City totals are sum of small area data.				

Development Projects

Analysis of future development projects is an important part of the study, because it gives an idea about probable future activity centers that need to be provided with transportation service. Each of the four jurisdictions have issued construction permits for various projects ranging from single-family residential, multi-unit apartment complexes, retail and commercial buildings to self-storage and industrial facilities. The planning departments of all these four jurisdictions were contacted to obtain activity lists. The activity list includes pending and approved projects, with details on location, land area and name of the owners. The Cities of Victorville and Hesperia had activity list information and the City of Adelanto sent tract map details which did not include information regarding land area. The Town of Apple Valley provided information on there development projects. Other sources of information included Internet research, interviews with city officials and review of local newspapers. From the comprehensive activity list, significant projects that were approved and that have a minimum area of 7,000 square feet were selected.

City of Victorville

The construction timeline for these approved projects is over the next five to ten years. Some of the projects have already started construction. The City of Victorville had 15 site plans approved. Of these fifteen, six were for retail centers with the largest being a 203,000 square foot development on Bear Valley Road. There are also three multi-family developments that include over 1,100 units. Other development proposals include two hotels with 205 rooms, two office

complexes of nearly 68,000 square feet, one corporate headquarters that includes 126,000 square feet of manufacturing and office space and one self-storage facility.

The city of Victorville is a "pro growth" community. The city promotes business retention and encourages expansion though tax incentives and low interest loans. Victorville is expanding City Hall from 41,000 to 107,000 square feet which will be completed in 2007.

More than $30 million is expected to be spent in Victorville for street improvements, including $6 million to widen Nisqually Road from Balsam to Hesperia Roads.

A new $80 million retail center with 40 shops creating approximately 800 retail jobs opened in late 2005. The Victorville Pavilion is home to such chains as Old Navy, Marshall's, Linens 'n Things, Pat and Oscar's, Men's Warehouse, Michael's and the Shoe Pavilion. The first phase of a 240,000-square-foot site west of Mall Boulevard along Bear Valley Road started in June 2005. According to building officials, when the project is completed, it will generate annual sales taxes of about $1.5 million for the city.

Southern California Logistics Airport (SCLA)

By far, the largest generator of economic activity in the Victor Valley region is anticipated to be the Southern California Logistics Airport (SCLA). SCLA encompasses some 5,000 acres and, according to plans, when it is built out it will accommodate up to 6,000 employees. Currently, there are 60 tenants on the airport site. Some of the uses that either now or will occur on this site are expected to include:

- Air cargo services
- Aviation maintenance
- Military Defense Programs
- Flight Testing
- Advanced Flight Training
- Charter Passenger Service
- Business & Executive Jet Travel Center
- Warehousing and logistics
- Automotive and manufacturing support
- Rail distribution
- Office and other commercial development
- Foreign trade zone
- Real Estate Development

According to the SCAG 2030 Regional Transportation Plan, air cargo activity at the airport will rise to 81,000 tons by 2010. There are currently over 100 businesses housed at SCLA. The majority of these activities are in the warehousing, logistics activities and aviation related activities. Current employment is estimated at around 2,500. Construction on the rail spur will connect the main line of the Burlington Northern and Santa Fe Railway Co. to SCLA. Upon completion of the rail spur, SCLA will have a warehousing and distribution complex containing 64 million square feet of space.

At present, there is no commercial passenger service originating from SCLA. While the primary function of this airport will continue to be air cargo and other aviation related activity, there will also be some modest demand for passenger service. According to the *SCAG 2030 Regional Transportation Plan*, the SCLA is expected to serve short haul demand that primarily serves the communities of Victorville, Apple Valley and Barstow. Ontario International Airport will still primarily serve travel needs from these communities that will require medium or long haul service. Almost none of the demand for this airport will originate from outside the Mojave Valley. In order to accommodate this service, this airport will need a new passenger terminal facility, passenger parking, ground access improvements and ramp improvements. The $450 million in improvements estimated for the airport would fund a terminal with 14-18 gates. With a 2030 forecast of 4 million annual passengers, the airport would be similar to current passenger activity at Reno/Tahoe International. There is adequate space at Southern California Logistics for a new terminal structure. The cost estimates for this airport were derived mostly from case studies of Boise International and Palm Springs International. As the airport continues to grow, there will be more interest in expanding transit service to the airport.

City of Hesperia

Based on the data collected, the City of Hesperia has nine major site plans approved. Of those projects approved, four were retail centers with the largest being nearly 23,000 square feet. Other projects include two multi-family developments that include 173 units, and an 80,000 square foot industrial park. The remaining projects include a 7,248 square foot museum located at Hesperia Lakes, a 40,000 square foot library and a 45,000 square foot city hall that will include space for the fire, police, and public works departments. The site for both the library and city hall are at 7th Avenue and Juniper Street.

Hesperia currently has many large-scale residential developments approved for construction, with scores of others pending approval, most of which will be developed on the west end of the community near I-15. Hesperia is taking the steps with developers to transform itself into a retail destination for its burgeoning population. In connection with an anticipated influx of new residents, the city has identified land for commercial development, including many projects involving big-box retailers, and several are in negotiation.

City of Adelanto

According to the Victorville Daily Press, July 9, 2005, the assessed value of property in San Bernardino County for the fiscal year 2005-2006 rose by an all time record high of 14.5 percent to $126.5 billion, based on figures released July 8, 2005 by the San Bernardino County Assessor's Office. Adelanto was the leader for the entire County with the largest percentage increase, rising by 31.2 percent, which makes it San Bernardino County’s fastest developing city. The City of Adelanto provided information related to tracts that are subdivided primarily for residential development. Between 2004 and this invenstory in 2005, there were 91 applications submitted which would result in the construction of 7,721 single family units. The size for each development ranges from as few as eight units to as many as 311 units. The City offers ready made parcels for industrial and manufacturing companies who locate there. Additionally, the

Redevelopment Agency grants the prospective company deferred payment and no-interest loans. Once companies have completed their environmental impact reports, they can almost immediately begin development in a fraction of the time that would be required in Los Angeles or Orange County. Thus Adelanto offers a pro-growth posture to business with fast track processing for new construction and tax incentives for industry.

Town of Apple Valley

Apple Valley occupies a land area of 78 square miles. Seventy percent of the City's homes are owner occupied. The City has a five-year plan to construct a Civic Center area with a 19,500 square foot library, a 13,000 square foot police station and a 22-acre park and recreation area. The town has also approved construction of a Super Target and Super Wal-Mart.

According to the Victorville Daily Press, February 17 2005, the Cove, a proposed 14-building condominium community opposite the Apple Valley Country Club, received unanimous approval from the town's planning commissioners. The project is expected to break ground in April and have the first tenants moving in by the fall of 2006. The gated community on 17.87 acres will have 56 separate units averaging 3,000 square feet each.

Conclusions

Nearly 90% percent of the projects discussed above are within 1.5 miles of an existing bus route, with the major exceptions being the large scale residential developments in West Victorville and Hesperia, which in some cases are outside the current bus service area. Development is taking place throughout the region, and while the residential development is the largest element, commercial and industrial uses are growing significantly as the areas diversifies and matures into a self-supporting region. Most of today’s housing is, and will continue to be, single family residential units, although the new developments will offer a mix that includes some apartment complexes. The Victor Valley region is growing at a fast pace as a combination of increasing infrastructure, regulations and rising land costs elsewhere are attracting companies and new residents to this region. Keeping in view that this growth is expected to come in a five to ten year period, the VVTA plan will look to keep pace with this five-year plan.

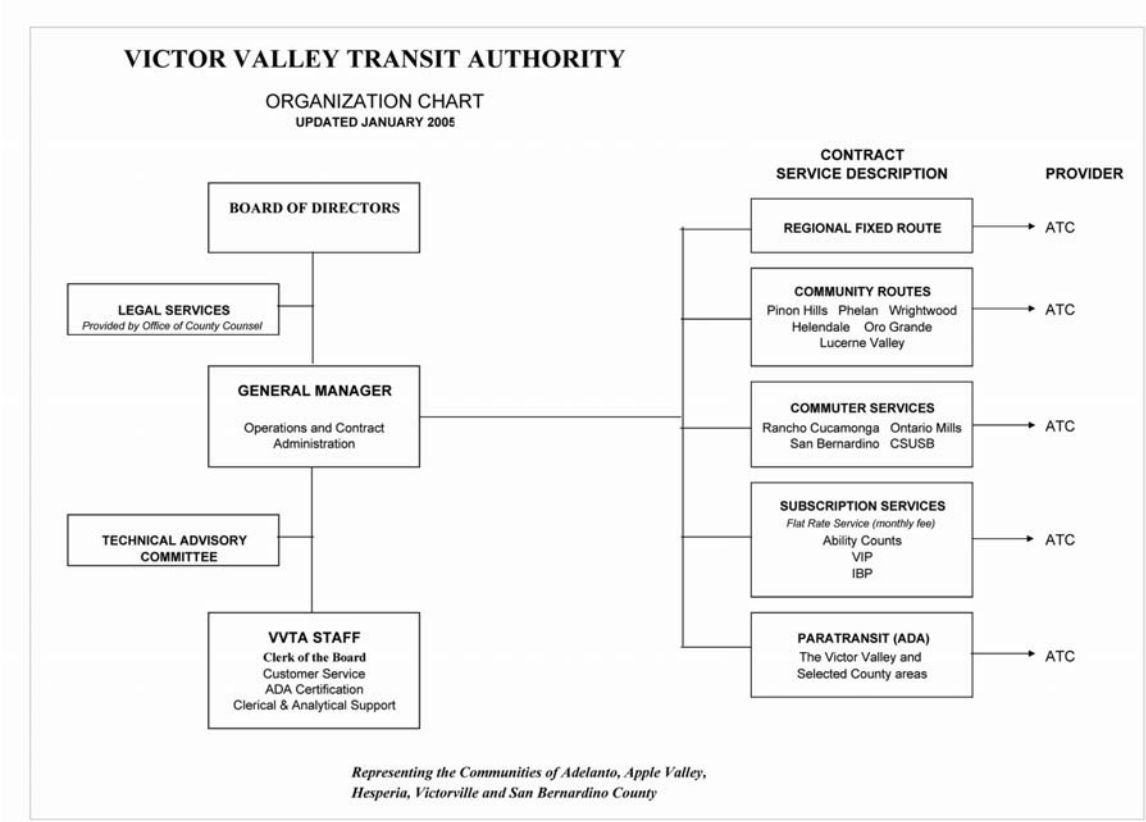
Chapter 2: Transit Service Overview

The operational characteristics of the VVTA system are discussed in this section, covering days and hours of operation, route descriptions, headways, route miles, layover time, transfer coordination, major stop descriptions and fare structure.

Organizational Structure

VVTA is overseen by a board of Directors with representatives from each constituent community. The system is directed by a General Manager who is in turn supported by a small administrative staff. Management and operations are contracted to two management companies. The management contract for VVTA is held by McDonald Transit, while the operations contract is held by ATC (now Veoila). Operations are also overseen by a technical advisory committee. Figure 2-1 is the organization chart for VVTA as of January 2005 (Note: ATC is now Veoila).

Figure 2-1: VVTA Organization Chart



Service Span

The local service operates Monday through Saturday and there is no Sunday service. Table 2-1 shows the span of service with the start and end time matching with the origin and destination of the related bus route. Buses operate from 6:00 a.m. to 9:00 p.m. Monday through Friday, and

7:00 a.m. to 8:00 p.m. on Saturdays. Service is not provided on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Table 2-1: VVTA Service Span by Route

Fixed Route Service	Origin - Destination	Weekday		Saturday	
		Start (AM)	End (PM)	Start (AM)	End (PM)
Route 31 Adelanto	El Mirage/Muskrat - Adelanto Hub Bartlett	5:57	9:08	7:27	7:38
Route 32 Adelanto	Adelanto Hub - Lorene Transit Center (Rite Aid)	6:15	8:57	7:45	7:27
Route 31 and 32	Adelanto Hub to Rite Aid	9:00	10:05	8:00	9:05
Route 40 Apple Valley North	Apple Valley Quinnault	6:05	8:57	7:05	7:57
Route 41 Victorville/St. Mary's	Lorene Transit Center (Rite Aid)	6:00	8:55	7:00	7:55
Route 42 Apple Valley/St. Mary's	Apple Valley Quinnault	6:00	8:52	7:00	7:52
Route 43 Mall to VV College	VV Mall Transit Point	6:00	8:53	7:00	7:53
Route 43 Apple Valley to VV College	Apple Valley Quinnault	6:00	8:55	7:00	7:55
Route 44 Mall/Hesperia	Danbury Arrowhead - Danbury Arrow Ave/Mall Transit Point (Saturday)	6:17	9:22	7:17	8:25
Route 45 Rite Aid-VV College	Lorene Transit Center (Rite Aid)	6:00	8:52	7:00	7:52
Route 45 Mission/C-VV College	Mission C Ave	5:55	8:55	6:55	7:55
Route 51 Victorville Circulator	Lorene Transit Center (Rite Aid)	6:00	8:58	7:00	7:58
Route 52 Victorville/Mall	Lorene Transit Center (Rite Aid)	6:00	8:57	7:00	7:57

Route Descriptions

Route 31 begins at El Mirage and Muskrat in Adelanto and connects the section of Adelanto located west of Highway 395 and north of Palmdale Road with Victorville, ending at the Lorene Transit Center. The route provides 33 miles of service, makes 10 round trips on Weekday and 8 round trips on Saturday.

Route 32 connects the core of Victorville with the north-west region of Adelanto. The service area overlaps with Route 31 areas in the north-west region primarily near Palmdale road and 7th street. This route also spans 31.6 miles from end to end and makes 10 round trips on Weekday and 8 round trips on Saturday.

Route 40 is a route that provides service entirely within Apple Valley connecting Wal-Mart at the west end of the route with the Apple Valley Post Office at the eastern end. The service spans a total of 14.5 miles in Apple Valley and makes 14 round trips on Weekday and 12 trips on Saturday.

Route 41 traverses the Victorville downtown area connecting the transit center at Lorene and 7th Street with St. Mary's Regional Hospital in Apple Valley. The service area is a mix of residential and retail development with few medical services at the eastern end of the route. The service

route spans 13 miles in Victorville and total of 15.3 miles including Apple Valley. Route 41 makes 14 trips on Weekday and 12 trips on Saturday.

Route 42 operates 18.9 miles of service entirely within Apple Valley connecting to major activity centers like the post office, Wal-Mart and St. Mary's Regional Hospital. The route makes 14 trips on Weekday and 12 trips on Saturday with a significant route length on Highway 18.

Route 43 serves Victorville, Apple Valley and Hesperia. The route branches out from Victor Valley College to the Mall of Victor Valley at the western end and Apple Valley post office at the eastern end, respectively. The major activity centers like the Mall of Victor Valley, Victor Valley College, Desert Valley Hospital, Apple Valley High School and Post office.

Route 45H is the north-south transit link for the City of Hesperia. The route is anchored on the north by Victor Valley College, and on the south by a residential area on C Street at Mission Street. The route operates via the community core of Hesperia, where transfers can be made with the other Hesperia service, Route 44. At the College, transfers can be made with Route 43, and with Route 45V for continuation of trips into Victorville. Between Victor Valley College and downtown Hesperia, the route operates through a rural and low-density residential area. There is some light industrial development along I Avenue. Retail, commercial, government and social service agencies are served in the community core. The route makes 13 round trips on Weekday and 11 trips on Saturday. Major trip generators are Victor Valley College and the downtown Hesperia core and vicinity.

Route 45V operates within the City of Victorville, connecting the Lorene at 7th Street transfer center with Victor Valley College. It has a good mix of origins and destinations, as well as strong anchor terminals at each end of the route. Transfer opportunities at the north end are with Routes 22, 31, 32, 41, 51 and 52.. On the south, Routes 43, and Route 45H connect with this route. The primary sources of boarding activity on Route 45V are the Lorene transfer center, the businesses in the vicinity of Hesperia Road at Bear Valley Road, and Victor Valley College. The route makes13 round trips on weekdays and 11 round trips on Saturdays.

Route 51 is the local circulator service for the City of Victorville's central geographic area. The route is a dizzying mix of commercial, retail, government, urban and suburban residential and medical facilities. All of these are linked to the transfer center at Lorene at 7th Street for connections with Routes 22, 31, 32, 41, 45V and 52. Weekday round trips are 13 and Saturday round trips are 11 in total.

Route 52 provides transit service to the south and west portions of the city. It connects the transfer center at Lorene at 7th Street with Victor Valley Mall. It also operates beyond the Mall, providing a link with the south central part of Victorville. At the north terminal, transfers with Routes 22, 31, 32, 41, 45V and 51. The south terminal point is in the residential neighborhood at Nisqualli Road at 7th Avenue. However, the strong anchor point on that end of the route is Victor Valley Mall, where there are connections with Routes 21, 43V and 44.

Table 2-2 shows the headways by time of day for all the routes. Table 2-3 shows the accumulated layover time for all the routes. The longest layover time in the system is 18 minutes

for Route 45 during the midday peak hours. The average total hours of operation per route are 16.4 hours on Weekdays and 14.04 hours on Saturdays.

Table 2-2: Headways by Route

Fixed Route Service	Weekday				Saturday			
	AM Peak	Mid-day	PM Peak	Evening	AM Peak	Mid-day	PM Peak	Evening
Route 31 Adelanto	90	90	90	90	90	90	90	90
Route 32 Adelanto	90	90	90	90	90	90	90	90
Route 40 Apple Valley North	60	70	70	60	60	60	70	60
Route 41 Victorville/St. Mary's	60	70	70	60	60	60	70	60
Route 42 Apple Valley/St. Mary's	60	70	70	60	60	60	70	60
Route 43 Mall to VV College	60	70	70	60	60	60	70	60
Route 43 Apple Valley to VV College	60	70	70	60	60	60	70	60
Route 44 Mall/Hesperia	60	70	70	60	60	60	70	60
Route 45 Rite Aid-VV College	60	70	70	60	60	60	70	60
Route 45 Mission /C-VV College	60	70	70	60	60	60	70	60
Route 51 Victorville Circulator	60	70	70	60	60	60	70	60
Route 52 Victorville/Mall	60	70	70	60	60	60	70	60

Table 2-3: Miles and Layover Time

Fixed Route Service	Total Route miles	Daily Revenue miles		Total Layover Time (minutes)	
		Weekday	Saturday	Weekday	Saturday
Route 31 Adelanto	23.6	252.8	189.6	88	73
Route 32 Adelanto	32.2	265.6	199.2	29	28
Route 40 Apple Valley North	19.4	188.5	189.5	117	93
Route 41 Victorville/St. Mary's	16.2	198.9	168.3	125	115
Route 42 Apple Valley/St. Mary's	18.6	277.2	237.6	134	118
Route 43 Bear Valley Rd Mall-Apple Valley	20.2	516.1	476.4	241	217
Route 44 Mall/Hesperia	38.5	462	423.5	125	115
Route 45 Victorville/Hesperia	21.4	425.1	368.7	249	227
Route 51 Victorville Circulator	15.2	222.3	188.1	59	55
Route 52 Victorville/Mall	17.5	222.3	188.1	74	68

Descriptions of Major Stops and Transfer Locations

The busiest transfer point in the VVTA route network is the Lorene Transit Center (Rite Aid) where Routes 22, 31, 32, 41, 45 (Rite Aid to VV College), 51, and 52 provide service. Major transfer opportunities in addition to Rite Aid along Route 31 are Palmdale at El Evado, El Mirage at Muskrat and Adelanto Bartlett Hub.

Route 32 serves low-density residential and commercial areas mostly near Adelanto. Transfer activity is moderate and the primary passenger generators are retail centers along Palmdale Road.

Route 40 has two major transfer points at Wal-Mart and Apple Valley Quinnault. Community recreation centers, post office, police station and retail centers are some of the places that the route serves in a one-way loop pattern.

Route 41 generates high transfer activity at St. Mary's Hospital and Lorene Transit Center at Victorville. Actual transfer point is South Outer Highway and Apple Valley Road.

Route 42 connects the low density residential areas to the Apple Valley Town Hall, Post Office, Police station, St. Mary's Hospital and library.

Victor Valley Community College serves as a major transfer location for Routes 43 and 45. Route 43 primarily runs along Bear Valley Road with a transfer to Routes 40 and 42 at Apple Valley Quinnault.

The primary passenger generator for Route 44 is The Mall of Victor Valley Transit Center where the transfer can be made to Routes 43 or 52. Hesperia City Hall, Mojave High School, Hesperia Post Office, Sultana High school are key locations along this route.

Route 45 underwent a change in its routing structure beginning in April 2005 due to continued heavy traffic and congestion on Bear Valley Road. Instead of traveling all the way to Cottonwood on Bear Valley Road, the route turns right on Balsam (WalMart), left on Nisqualli, right on Mariposa and then returns to its original routing. A total of two Bear Valley stops, two Cottonwood stops, one Monarch stop and four Mariposa stops are either eliminated or relocated. Two additional stops at Nisqualli and Church have been introduced to serve the people in the high density housing in Victorville. Route 45 connects with Route 43 at Victor Valley College, which is a major source of ridership.

Route 51 traverses a mix of residential, retail and medical facilities in Victorville, connecting to other routes at Rite Aid. The transfer rate is higher at this location because of the connections to Routes 22, 31, 32, 41, 45V, 51 and 52. Significant ridership activity is generated by Rite Aid, the government center on Civic Drive, commercial development in the vicinity of Village Drive at Mojave Drive, and downtown Victorville.

Transfer connections from Route 52 can be made at the Mall of Victor Valley transit center, Palmdale/El Evado and Rite Aid. At Rite Aid, transfers to 22, 31, 32, 41, 45V and 51 can be made.

Table 2-4 shows the transfer locations for all the routes operated by Victor Valley Transit Authority.

Table 2-4: Transfer Locations

Transfer locations	Connecting Routes
Lorene Transit Center	22, 31, 32, 41, 45V (Rite Aid to VV College), 51, 52
Victor Valley College Transit Center	43, 45V, 45F
El Mirage and Muskrat	31, 32
Adelanto Bartlett Hub	31,32
Palmdale/El Evado	31,32,52
Apple Valley Quinnault	23, 40,42,43
WalMart	40,42
St. Mary's Hospital	41,42
Mall of Victor Valley Transit Center	21, 43,44,52
Hesperia TP/Olive	44, 45F

Fare Structure

The Victor Valley Transit Authority utilizes different types of fare payment on the fixed routes, County routes and Deviated routes. Table 2-5 shows the cash fares for various categories of transit riders.

Table 2-5: Fares by Service Type

Service Type	Regular	Student	Senior and Disabled	Children 5 and under (3 children per adult fare)
Fixed Routes	$1.00	$0.75	$0.50	Free
County Routes	$2.00	$1.50	$1.00	Free
Deviated Routes	$2.00	$2.00	$1.00	N/A

VVTA also offers a day pass and a 31-day pass that are available for fixed and county routes, but not for the deviated routes. The 31-day passes are available at Apple Valley Town Hall, Hesperia City Hall, Victorville City Hall, Adelanto City Hall, Victor Valley College, and the VVTA Administration Office. Day passes can be purchased while boarding or alighting the bus from the driver. Table 2-6 shows the fare amount for the two types of passes by category.

Table 2-6: Pass Fares by Type of Rider

Type of Rider	Day Pass		31-Day Pass	
	Fixed Route	County Route	Fixed Route	County Route
Regular	$3.00	$5.00	$40.00	$70.00
Student	N/A	$4.00	$30.00	$60.00
Senior and Disabled	$1.50	$3.00	$20.00	$30.00

Direct Access paratransit service is available to Direct Access Certified riders and the fare is based on the distance traveled. The service area is divided into three zones and the fare is more for riders of more than one zone. The minimum fare is $2.00 and which increases to $3.50 for trips to zone 2 and to $5.00 for zone 3.

Table 2-7 shows the number of riders in FY 2003-2004 who utilized the various available fare types. The data in this table is separated by fixed routes, county routes (Routes 21, 22 and 23)

and Direct Access paratransit service. Systemwide, student and senior fares combine for a total ridership greater than that of the regular adult fare.

Table 2-7: Ridership by Fare Type

Fare Type	Fixed Route	County Routes	Direct Access	Total
Adult	482,697	15,310	N/A	498,007
Senior	249,458	13,744	42,641	305,843
Student	207,723	10,776	972	219,471
Transfer	18,255	4	N/A	18,259
Deviation	N/A	587	N/A	587
Disabled	1,371	N/A	14,866	16,237
Companion	N/A	N/A	2,068	2,068
Subscription	N/A	N/A	45,492	45,492
Other	N/A	44	N/A	44

Fleet Overview

The VVTA vehicle fleet is comprised of 64 vehicles in active use for fixed-route or ADA paratransit service. The fleet inventory is shown in Table 2-8 as it was comprised in 2005; in preparing the capital plan associated with the recommendations of the study, a revised 2006 fleet inventory was used to reflect Fall 2006 conditions when the plan was completed. The El Dorado and Bluebird buses are mostly dedicated to fixed-route operations. For ADA paratransit service, VVTA operates the smaller El Dorado National cutaway vans. These cutaways are also occasionally substituted into fixed-route service when larger buses are unavailable, but only on fixed routes with low ridership.

The oldest vehicles in the VVTA fleet, which are Bluebirds, date back to 1999. As such, the fleet is relatively young overall. The fixed route vehicles which have accumulated the most miles, typically over 300,000, are slated for replacement in 2006. The newest fixed-route buses in the fleet are 33-seat NABI buses from 2004.

The newest buses operating ADA service are the El Dorado – Aerotech vans from 2005. All vehicles are wheelchair-accessible, and the majority of the fleet operates using compressed natural gas (CNG). The condition of VVTA vehicles have been characterized from poor to excellent. The observations of the consultant team confirmed that the buses were in serviceable running condition. However, drivers and ATC staff noted occasional problems with malfunctioning wheelchair lifts which require vehicles to be taken out of service. Staff also mentioned the difficulty of fueling CNG vehicles as a result of fueling station issues. These fueling problems in turn lead to instances in which buses ran out of fuel in the middle of revenue service.

The VVTA fleet is housed in the complex off I Avenue south of Bear Valley Road in Hesperia. The vehicles are stored outdoors at this site.

Table 2-8: Revenue Fleet Inventory

ADA Service				
Model Year	Type of Vehicle	Quantity	Seats	WC Spaces
2001	ELDORADO/Aerotech 220	6	12	2
2002	ELDORADO/Aerotech	6	12	2
2002	ELDORADO/Aerotech III	1	7	3
2003	ELDORADO/CalTrans TypeVI	8	11	2
2005	ELDORADO/Aerotech	16	12	2
Fixed Route Service				
Model Year	Type of Vehicle	Quantity	Seats	WC Spaces
1999	BLUEBIRD/Transhuttle	2	23	3
2000	ELDORADO/NATIONALS	7	26	2
2000	ELDORADO/NATIONALS	1	25	1
2001	BLUEBIRD/Transhuttle	2	21	2
2001	BLUEBIRD	7	37	2
2002	NABI	4	33	2
2003	BLUEBIRD/xcl 102	1	23	2
2003	BLUEBIRD/xcl 102	1	27	0
2004	NABI/40 LFW-29.02	2	33	2
2007	BLUEBIRD XLF 35	5	30	2

Facility

The VVTA management and operations base is currently housed in a temporary location until a new facility is ready. The temporary facility is located in Hesperia on Santa Fe Road. The new facility will be located in Hesperia near the intersection of E Avenue and Smoke Tree Street. The new facility is slated to be completed in 2008.

Ridership

Annual ridership for all VVTA services is presented in Table 2-9 for FY03-04, FY04-05, and FY05-06. Taken together, the two segments of Route 43 have the highest ridership in the system, totaling 158,690 annual passengers in FY05-06. As a single segment, Route 41 has the highest ridership with 109,429 passengers. The lowest ridership for a full local route is found on Route 40, which tallied only 37,153 riders in the 2005-2006 fiscal year. Systemwide annual ridership amounted to 1,020,119 in FY 2005-2006.

Recent trends in system ridership are also tracked in Table 2-9. This table shows the ridership on all VVTA services between July 2003 and June 2006. Over the period, the system as a whole saw ridership decreases of 11.4%. The county routes experienced the highest percentage growth from 2003-2006 with a 23.5% increase in ridership entirely due to the increases on Route 21. The local fixed routes together saw a ridership decrease of 13.8% over the period. Paratransit and subscription services experienced a 2.7% decrease in ridership from 2003-2006.

Table 2-9: Ridership Trends

Routes	FY 03/04	FY 04/05	% Change 03-05	FY 05/06	% Change 04-06	% Change 03-06
Local Routes						
Route 31	68,034	67,247	-1.2%	60,074	-10.7%	-11.7%
Route 32	66,896	64,165	-4.1%	47,072	-26.6%	-29.6%
Route 40	39,982	33,955	-15.1%	37,153	9.4%	-7.1%
Route 41	123,073	96,355	-21.7%	109,429	13.6%	-11.1%
Route 42	53,593	55,067	2.8%	60,337	9.6%	12.6%
Route 43F	91,937	78,427	-14.7%	86,124	9.8%	-6.3%
Route 43V	94,367	88,035	-6.7%	72,567	-17.6%	-23.1%
Route 44	77,481	69,563	-10.2%	82,753	19.0%	6.8%
Route 45F	36,440	36,688	0.7%	38,131	3.9%	4.6%
Route 45V	141,665	102,260	-27.8%	102,095	-0.2%	-27.9%
Route 51	91,371	80,567	-11.8%	76,756	-4.7%	-16.0%
Route 52	116,029	92,747	-20.1%	90,008	-3.0%	-22.4%
Sub Total	*1,000,868*	*865,076*	*-13.6%*	*862,497*	*-0.3%*	*-13.8%*
County Routes						
Route 21	17,774	16,516	-7.1%	30,396	84.0%	71.0%
Route 22	12,961	10,772	-16.9%	10,513	-2.4%	-18.9%
Route 23	12,000	8,396	-30.0%	8,822	5.1%	-26.5%
Sub Total	*40,280*	*35,285*	*-12.4%*	*49,731*	*40.9%*	*23.5%*
Other Services						
Paratransit	65,453	57,575	-12.0%	64,265	11.6%	-1.8%
Subscription	45,416	42,609	-6.2%	43,627	2.4%	-3.9%
Sub Total	*110,869*	*100,184*	*-9.6%*	*107,892*	*7.7%*	*-2.7%*
TOTAL	***1,152,017***	***1,000,545***	***-13.1%***	***1,020,119***	***2.0%***	***-11.4%***

Later chapters in this report will address the ridership issues, and the plan itself will be largely guided by efforts to address the drop in ridership by making service adjustments and by tailoring services to better fit changing markets and operational realities.

Note that both commuter routes were discontinued on Friday, July 1, 2005. The three-year demonstration project was funded with a Congestion Mitigation Air Quality (CMAQ) grant from the federal government. Under this program the federal government funded the service for a maximum of three years, after which VVTA needed to find another funding source for the routes. The VVTA Board of Directors took into account public comments but voted to discontinue the service and dedicate transit funds to the operations of local routes.

Operating Expenses and Revenues

Expenses and in-house revenues for VVTA operations during FY 2003-2004 are shown in Table 2-14. As seen in this table, systemwide operations expenses totaled $7,223,496, 48% of which is dedicated to the operation and administration of the local fixed routes (not including Routes 31 and 32 to Adelanto). Farebox revenues yield a farebox recovery ratio of 15.5% for the whole

system, and 15.8% for the local routes alone. Thus, the farebox revenues for the fixed routes do not meet the 20% threshold stipulated by the California Transportation Development Act (TDA).

The subsidy of just over $6,000,000, covering the differential between in-house revenues and expenses, is derived from a mixture of federal sources such as Section 5311 funding, TDA funds, and the Measure I transportation sales tax disbursed by the San Bernardino Associated Governments (SANBAG). TDA funding comes from both the Local Transportation Fund, a ¼ general sales tax dedicated to transportation and the gasoline-tax generated State Transit Assistance Fund. Monies from the Local Transportation Fund are subject to a formal unmet needs process, in which public commentary is solicited to identify unmet transit needs, and any unused funding can be directed to road and highway improvements.

Table 2-10: Operating Expenses & Revenues FY2003-2004

Operating Expenses	**Adelanto Routes (31 and 32)**	**Commuter Routes**	**County Routes (21, 22, and 23)**	**Paratransit**	**Subscription**	**Other Local Fixed Routes**	**Total**
Administrative Costs	$383	$0	$175,143	$0	$0	$596,692	$772,218
Purchased Transportation	$417,252	$591,812	$598,940	$1,535,825	$418,547	$2,888,902	$6,451,278
Total Expenses	$417,635	$591,812	$774,083	$1,535,825	$418,547	$3,485,594	$7,223,496
In-house Revenues	**Adelanto Routes (31 and 32)**	**Commuter Routes**	**County Routes (21, 22, and 23)**	**Paratransit**	**Subscription**	**Other Local Fixed Routes**	**Total**
Farebox Revenue	$90,954	$64,036	$45,345	$81,336	$92,610	$417,830	$792,111
Pre-Paid Sales	$1,480	$11,002	$5,372	$80,584	$0	$133,574	$232,012
Local Fare Assistance	$0	$70,702	$25,154	$0	$0	$0	$95,856
Farebox Subtotal	$92,434	$145,740	$75,870	$161,920	$92,610	$552,404	$1,120,978
Non-Transportation Revenue	$2,648	$683	$841	$1,288	$894	$17,014	$23,368
Other Local Support	$542	$140	$172	$264	$183	$3,484	$4,785
Other Revenues Subtotal	$3,190	$823	$1,013	$1,552	$1,077	$20,498	$28,153
Total Revenues	$95,624	$146,563	$76,884	$163,472	$93,687	$572,902	$1,149,132

Chapter 3: Public Outreach

Stakeholder Interviews

As part of this study, key stakeholders were identified who would be able to assist with providing input both on current service and any future expansion of service. The range of stakeholders identified to interview included Victor Valley Mall, Victor Valley College, Southern California Logistics Airport, various chambers of commerce, the four school districts, four social service agencies, one medical center and seven senior citizen centers. Questions asked of stakeholders are listed in Appendix A.

Social and community service agencies included:

- Rolling Start
- Jobs and Employment Services Dept. (San Bernardino County)
- Department of Aging and Adult Services (San Bernardino County)
- Good Shepherd
- Victor Valley Community Services Council
- D.C.S
- San Bernardino County Behavioral Health Center

The senior centers included:

- Apple Valley Senior Center
- Hesperia Leisure League
- Hesperia Senior Center
- Senior Citizens of Phelan
- Victorville Senior Citizen Club
- Adelanto Senior Citizen Club
- Lucerne Valley Senior Citizen Center

The overriding sentiment from the stakeholders interviewed as a part of the study is that public transit has recently improved and would meet the future demands, but at present commuting by car is more convenient. All were open to the idea of increased service, but had no specific requests or suggestions. They expressed general interest in possible collaboration among the cities, but indicated that their perception was that funding for service expansion would be difficult to obtain. The following is a summary of some of the interviews that were conducted. In some instances we have noted recommendations that relate to specific questions or concerns.

These general issues were brought up by stakeholders:

- Buses have a negative image which is not necessarily due to anything that VVTA is doing, but rather a general perception. However, a few stakeholders noted that the bus is safe and complimented VVTA on safety.

- There is a lack of awareness of the bus system and the serves it provides.
- Some stakeholders were concerned with the lack of frequent enough bus service, particularly the fact that some routes run on headways that exceed one hour. Frequency is clearly tied to convenience and the ability to use the system regularly for work trips.
- Some suggest that there be better coordination with school hours so the buses could better serve the large youth population
- Service to SCLA (1,900 employees) was mentioned as a possible market by some.
- Several stakeholders felt that the employment and population growth expected in near future will increase the need for transit as an option over the car, and particularly are concerned with traffic growth and congestion.
- Several mentioned the need to have good on-time performance; some felt that VVTA is good in this area, others felt otherwise.
- Direct Access paratransit was considered by all to be a good service.

Public Hearings

As part of the process of receiving State Transportation Development Act (TDA) funding, each transportation planning agency holds at least one public hearing pursuant to Section 99238.5 for the purpose of soliciting comments on the unmet transit needs that may exist within the jurisdiction and that might be reasonable to meet by establishing or contracting for new public transportation or specialized transportation services or by expanding existing services. The fact that an identified transit need cannot be fully met based on available resources shall not be the sole reason for finding that a transit need is not reasonable to meet. An agency's determination of needs that are reasonable to meet shall not be made by comparing unmet transit needs with the need for streets and roads. Once the public input is received, the transportation planning agency will adopt by resolution a finding for the jurisdiction, after consideration of all available information.

In general, one of the main objectives of this study has been to restore a system-wide 60 minute headway, especially during the key early afternoon peak demand times, while still maintaining a good on-time performance record. Other comments at the hearing regarding requests for new services, either for specific types of service or for additional hours of service, were offered, and will be considered as well in shaping the plan. In all cases, the final plan will be shaped not only by these comments and other analyses, but also by the availability of funding and by the determination of the VVTA Board of Directors acting upon the plan.

As indicated by the data regarding future demographics and development, there will be significant growth in the service area which will result in the demand for additional services. One of the concepts of the service plan is to build on core connections between the communities while still providing the local circulation needed within each.

Included below are summaries of the comments received from the two public hearings.

September 2003

At the unmet transit needs hearing in September of 2003, the following requests were made:

- More frequent service
- Bi-directional service on Route 51
- Later evening service to the college
- Early AM service from downtown Victorville for employment
- Service to new affordable housing complex at Civic Drive and Midtown in Victorville
- Sunday service

September 2004

At the unmet transit needs hearing in September of 2004, the following requests were made:

- More frequent service
- More reliable service, particularly in the afternoons
- More routes, more buses, more stops
- Later evening service to the mall and the college
- Service expansion/modification requests
    - Jurassic/Village Drive in Victorville
    - West Coast College
    - Adelanto Medical Clinic 11678 Rancho Road Adelanto
    - El Mirage Market, west of current last stop at El Mirage and Muskrat
    - I-15 and Main Street (mobile home park)
    - County fair
    - Lucerne Valley
    - Medical trips Down-the-Hill (paratransit)
- Sunday Service

All of these comments will be addressed in the plan, although, as noted, not all necessarily will be included in the final recommendations.

Rider Opinion Survey

A survey of riders was taken on local routes and county routes that are operated by Victor Valley Transit Authority (VVTA). The surveys were distributed from Tuesday, April 26, 2005 through Thursday, April 28, 2005. The purpose of the study was to learn about the trip and rider characteristics for giving input on service operations. A questionnaire was distributed by surveyors as people boarded the bus and a total of 772 surveys were collected from the local fixed routes.

Questions were based on trip characteristics such as access to and from the bus, length of bus ride, trip purpose and automobile availability. To get a snapshot of who is riding the system, the surveys also included questions on age, ethnicity, income and employment status. For several questions, the riders were asked to rate the services on a scale of 1 (worst) to 7 (best). The rating

procedure applied to two characteristics namely, Average Importance Rating and Average Satisfaction Rating. The first addressed the rider's opinion on the service that was considered to be the most important and the latter quantified the satisfaction of the riders with a particular service.

Local routes include 31, 32, 40, 41, 42, 43, 44, 45, 51 and 52. County routes include 21 and 22. The following analysis is based on the surveys that were distributed on the local routes in Apple Valley, Victorville, Adelanto and Hesperia.

Trip Characteristics

Access to the bus

Table 3-1 summarizes the mode that passengers use to access the Victor Valley Transit Authority (VVTA) bus. More than three quarters (78.6%) of the local route respondents walked to the bus on which they were surveyed. The next preferred mode to access the bus is by transferring (15.3%) from other routes. The percent of respondents who got a ride and who bicycled is the same (2.5%). The least preferred mode to get to the bus is driving to the parking lot (0.9%). Almost half of the respondents walk a single block to access the bus.

Table 3-1: Access to Bus

How did you get this bus?	**Local Routes**	
Answer	Number of responses	Percentage of responses
Walked	431	78.6%
Got a ride	14	2.6%
Drove to Parking Lot	5	0.9%
Bicycle	14	2.6%
Transferred from another bus	84	15.3%
No response	26	0.0%
Total	574	100.0%

Access to final destination

Table 3-2 shows how passengers reach their destination after alighting the bus. Approximately 69% of the riders said that they walk to the destination while 24% said they transferred after alighting the bus. Getting a ride and bicycling to work constitute an equal share of respondents (3.36%). A majority of the riders (45%) walk a single block to get to the end of the trip.

Table 3-2: Completion of Trip

After leaving this bus, how will you get to the end of this trip?	**Local Routes**	
Answer	Number of responses	Percentage of responses
Walk	370	69.2%
Get a ride	18	3.4%
Drive	1	0.2%
Bicycle	18	3.4%
Transfer	128	23.9%
No response	39	0.0%
Total	574	100.0%

Length of Bus Riding

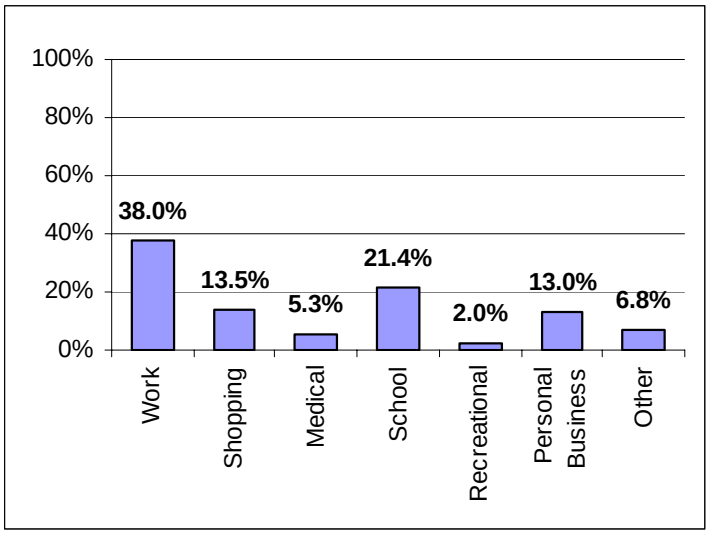
The single largest segments of the 574 riders that responded to this question are either new to the system (20.3%) or have been riding for at least 5 years (22.46%). At the same time, about half (49%) have used the system continuously for between 1 an 4 years. These statistics indicate a fairly significant turnover in riders and an opportunity to increase the VVTA ridership base by retaining existing riders an continuing to attract as many as 20 percent new riders each year but also retaining them

Trip Purpose

A majority of trips are to work (38%) and to school (21.4%), as shown in Figure 3-1. In addition, VVTA has a large percentage of riders using the service for shopping (13.5%) and personal trips (13%). Medical trips make about 5.3% of all the trips. Recreational trips (2%) constitute the remainder of trips among the 574 surveys received on the system.

A majority of the riders (78.4%) said they use VVTA for other purposes besides their main trip purpose. In this group, a quarter of the respondents go for shopping and a fifth of them travel for personal business.

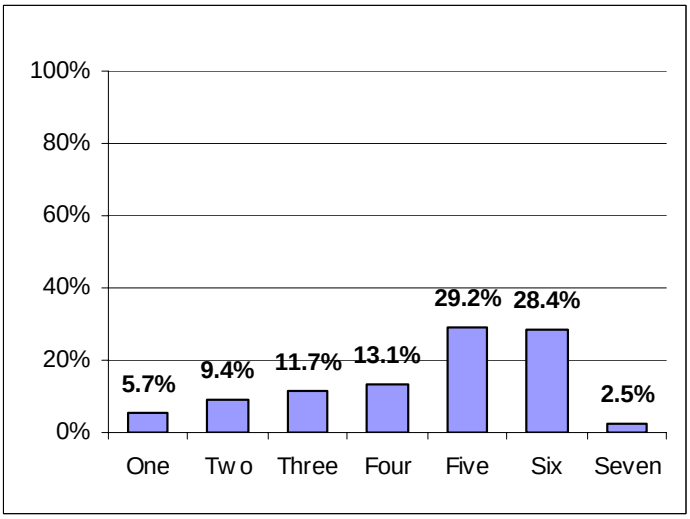
Figure 3-1: Primary Trip Purpose



Frequency of usage

At least half of the respondents (57.6%) ride the bus five or six times a week, while 26.8% are occasional riders who take the bus three times or less in a week. VVTA has a large number of frequent riders who take the bus at least five times a week (60.1%). As illustrated in Figure 3-2, these data show that there are regular riders on the system who go to work and school five days a week. There are many schools in Apple Valley, Victorville, Hesperia and Adelanto and they provide a great deal of VVTA's ridership.

Figure 3-2: Frequency of Use (Trips per Week)



Trip Time

As shown in Table 3-3, thirty percent of the respondents ride for 16 to 30 minutes on an average and a quarter of the respondents ride for 31 to 45 minutes on a one-way trip. From Figure 3-9, we can also observe that there is a significant difference in the ratings for important service and satisfaction with the service with respect to the amount of time it takes for a one-way trip. Therefore, the trip time is an important factor to consider for further recommendations, with an emphasis on shortening trip lengths and improving directness as possible.

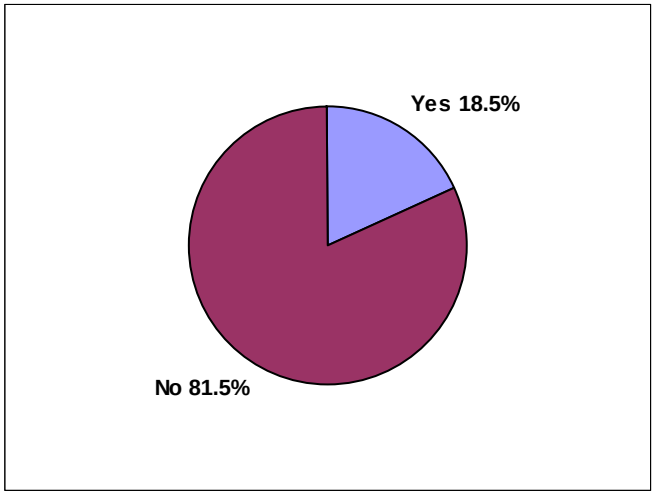
Table 3-3: Length of Bus Ride

How long was your bus ride?	**Local Routes**	
Answer	Number of responses	Percentage of responses
1 to 15 minutes	97	22.6%
16 to 30 minutes	131	30.5%
31 to 45 minutes	111	25.9%
46 to 60 minutes	40	9.3%
More than 60 minutes	50	15.5%
No response	145	0.0%
Total	574	100.0%

Automobile Availability

More than half (55%) of the respondents have an automobile in their household. However, 81% of them did not have an automobile available to make the one-way trip, as seen in Figure 3-3. The survey also shows that 63% of the respondents are not licensed drivers.

Figure 3-3: Automobile Availability



Rider Characteristics

Age and Gender

A large number of riders (24.6%) on the VVTA system are in the age group of 23 to 35 years. They are followed in rank by the riders whose age group is from 18 to 22 years (21.7%). Thirty six percent of the riders are in the age groups from 36 to 65 years old and senior citizens constitute the smallest percentage (2.9%) of all the riders. Judging by the fare classification data presented in Table 2-9, it can be inferred that senior citizen passengers filled out the survey form in far fewer numbers than other age groups, as seniors comprise approximately one-third of the systemwide ridership as seen in that table. Interestingly, half of the riders surveyed were students. So from the previous tables, we can infer that a majority of the riders on the system who are in the age group of 23 to 35 years go to work for their primary trip and followed by students in the age group of 18 to 22 years. VVTA services have a higher female ridership (56.2%) than male ridership (43.8%). These results are summarized in Figures 3-4 and 3-5.

Figure 3-4: Age Distribution

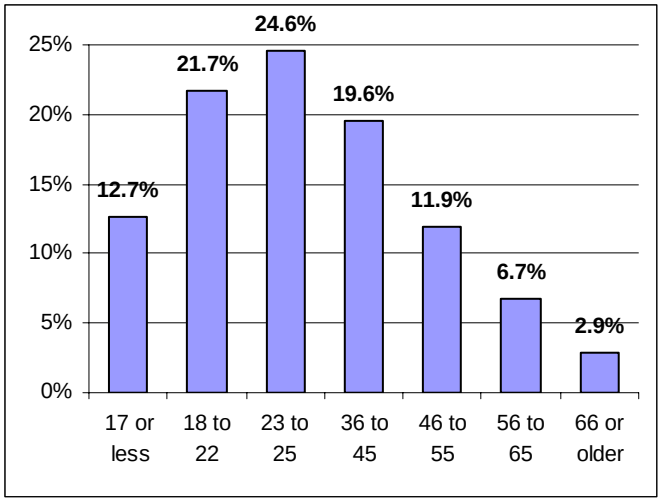
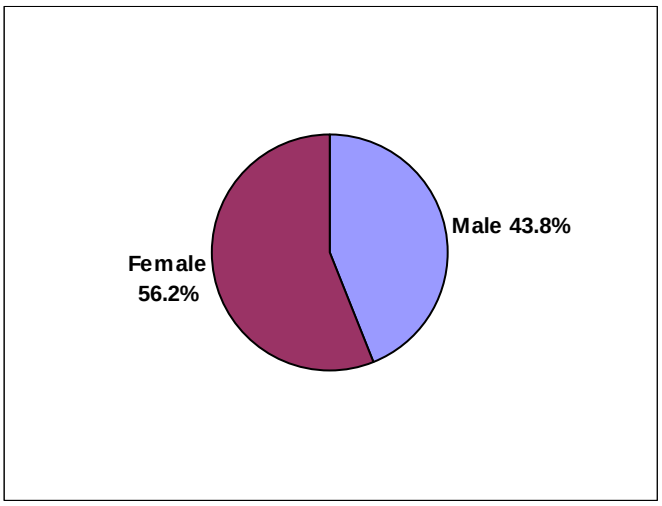


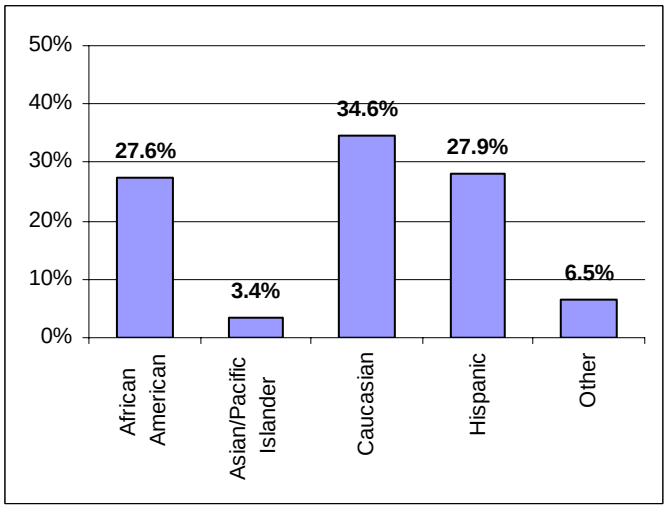
Figure 3-5: Gender



Ethnicity

As seen in Figure 3-6, ridership was divided fairly evenly among three groups -- Caucasians (34.6%), African Americans (27%) and Hispanics (28%). Very few of the riders (3.4%) were Asians.

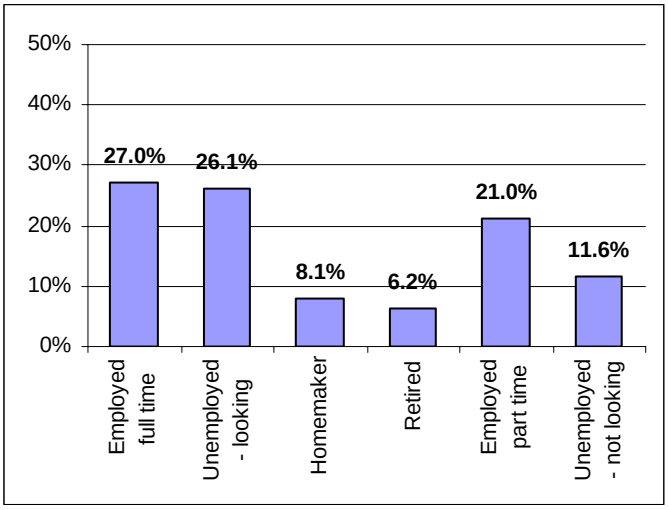
Figure 3-6: Ethnicity



Employment Status

Full-time employees (27%) of the riders on the VVTA system were followed by an almost equal percentage (26.1%) of unemployed people looking for jobs. In addition, there were a high percentage of part-time employees (21.0%). Very few retired people (6.2%) were surveyed. These data are summarized in Figure 3-7.

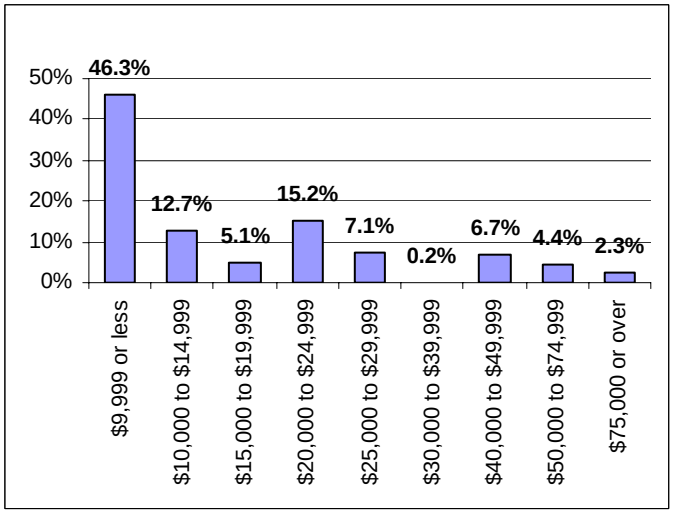
Figure 3-7: Employment Status



Income

Forty four percent of the respondents make a total annual household income of $9,999 or less (see Figure 3-8). Only 6% of the total has an income that is $50,000 or more. This shows that a substantial portion of VVTA ridership is comprised of low-income individuals.

Figure 3-8: Annual Household Income

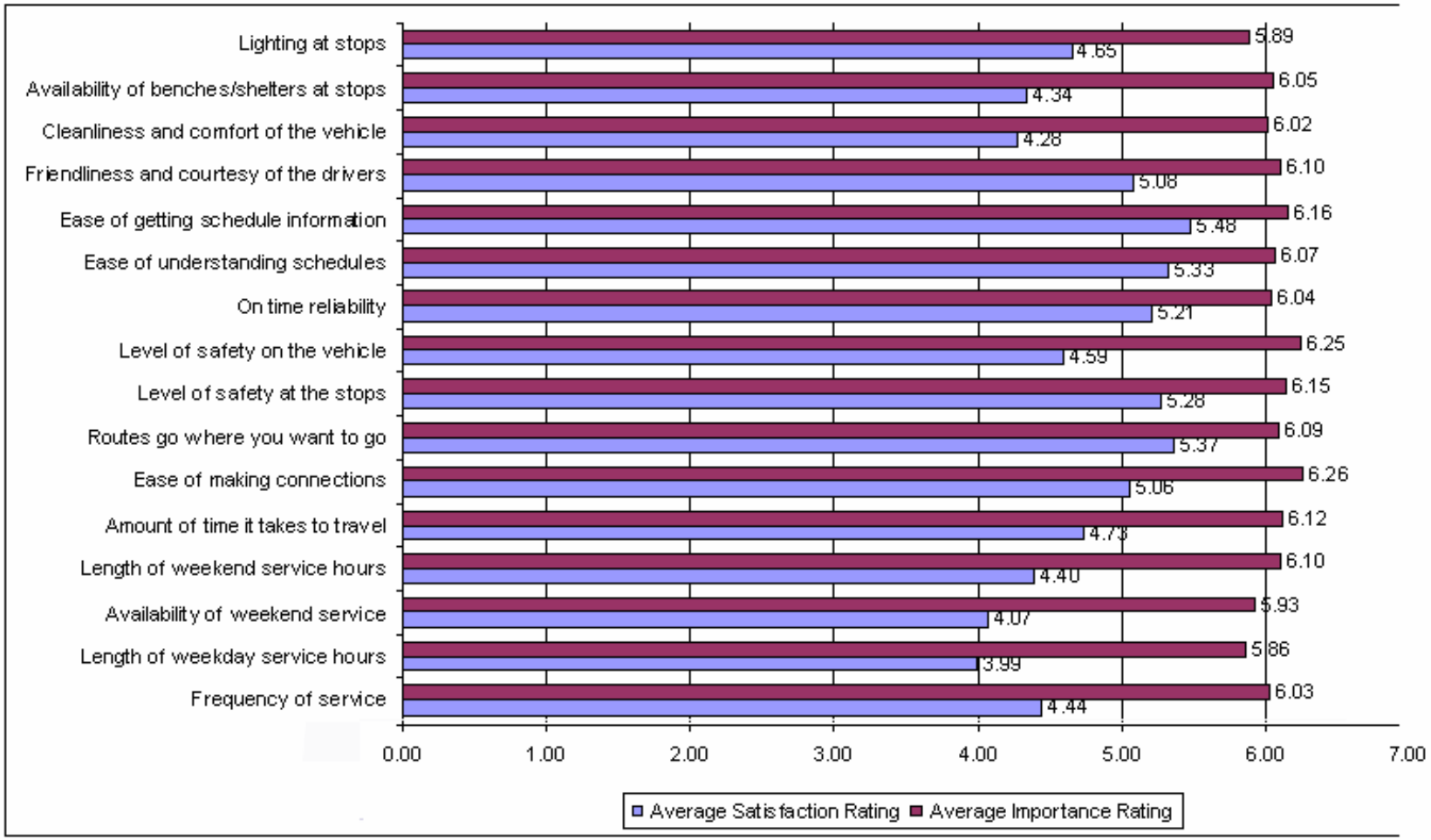


Customer Satisfaction

Figure 3-9 presents the customer satisfaction and importance ratings for a wide array of service elements. More people (28.4%) have registered a rating of 5 which is closer to the best opinion with respect to satisfaction rating for the VVTA system. There has been a significant increase in the satisfaction rating from the previous year as half of the respondents have rated the service on a scale above 5. Overall, friendliness and courtesy of the drivers are rated the best followed in

rank by the satisfaction with the safety level. There is a significant difference between the ratings for important service and satisfaction of the service with respect to the routes that go to where the riders want to go.

Figure 3-9: Average Importance and Satisfaction Rating



Paratransit Survey Results

Concurrent with the administration of the onboard passenger survey, the consultant conducted a similar survey on VVTA Direct Access Paratransit vehicles. Packets of surveys and writing utensils were distributed to drivers of Direct Access vehicles to hand out to riders, who would then return the surveys to the drivers upon completion. Surveys were also mailed to local sheltered workshops and other facilities for developmentally disabled individuals who have historically patronized Direct Access vehicles. Completed surveys totaled 30, which was lower than anticipated, largely due to a low response rate on Direct Access vehicles.

Major observations derived from the survey results include:

- *Dedicated ridership base*: 41% of the survey respondents estimated that they had been using Direct Access paratransit for four or more years.
- *Large disabled ridership*: 86% of those surveyed had a permanent disability, most often related to impairment of mobility.
- *Large elderly ridership*: Riders of Direct Access are notably older than those riding fixed-route buses. 41% of those surveyed were 66 years of age or older. By contrast, only 2.9% of the riders of VVTA local fixed routes were senior citizens.
- *Satisfaction with riding experience*: Survey respondents rated driver courtesy, vehicle comfort and cleanliness most favorably among the service characteristics reviewed, with a score of 6.09 out of 7 on average for these characteristics. By contrast, Direct Access scored less favorably with regard to on-time pickup from the passenger's home.

SCLA Employer Survey

The Southern California Logistics Airport (SCLA) has been identified as an area of development and a potential major employment destination in Victor Valley. This area currently has no transit service; therefore, a survey was developed and distributed to SCLA employers to gauge their perceptions of the current and projected need for bus service. A total of 16 businesses and/or employees returned completed surveys. Many were individuals who are participating in the Work Release Program at Glen Helen Rehabilitation Center, and it is largely this group who responded that having transit service would be very important. This section provides a summary of the survey results and an assessment of the need for transit service to SCLA.

Survey Questions and Results

The first set of questions was developed to profile the businesses at the site. All participants responded to these questions, and the businesses have mostly full time workers, a wide range of working hours, and between 7 and 65 total employees. Most of the start times were between 6:00 and 8:00 AM, with end times ranging significantly, including overnight hours, depending on the length of shifts and start times. Many of the employers have both Saturday and Sunday hours, operating roughly the same hours as they do during weekdays.

A set of questions was asked to determine parking availability. All survey respondents said that they provide free parking for employees. None of the employers mentioned parking as an issue.

The survey asked respondents whether lack of transit service impacts the ability to attract employees or retain them. Five of the eight people/businesses who responded to these questions mentioned that lack of transit service does not affect their ability to attract or retain employees. The three who did respond that lack of transit service is an issue mentioned that some of their employees do lack transportation, that some employees would prefer transit service, or that they are having trouble retaining employees due to lack of service. All three people who mentioned that lack of transit service is an issue are affiliated with one company, Million Air.

Seven surveys responded to the question of what level of transit service would be preferred. Of those who responded, three mentioned hourly services, two mentioned peak and some midday service, and two mentioned peak period only service. One respondent mentioned that they would definitely need night service; while four respondents mentioned that maybe they would need night service. When asked about sharing costs one respondent showed a willingness to share cost, while two respondents indicated they might be willing to share costs. The respondents from Million Air, the company mentioned which indicated a lack of transit service as an issue in attracting and retaining employees, mentioned that hourly service would be needed, as well as nighttime service, and that they too might be willing to share the costs. The other respondents mentioned that they were less likely to share costs, need night service, or need service outside of peak periods.

A series of questions was asked regarding the importance of transit service, with a rating of 5 being very important and a rating of 1 being not important. There were seven responses to each of the questions. Again the respondents at Million Air were the ones who rated the importance and need for bus service as high in each of the categories, while other respondents rated bus service importance lower. The table below summarizes the responses.

Table 3-4: SCLA Employer Survey Results

Question	Highest Importance	Very Important	Somewhat Important	Somewhat not Important	Not at all Important
Importance of transit service at your location?	2	1	0	1	3
Importance of transit to current employees?	2	1	0	1	3
Will current workers use?	2	0	1	1	3
Will transit enable you to hire and retain workers?	2	1	0	0	4

Conclusion

This survey shows that, at this time, service to SCLA is likely to generate little ridership. Very few employers showed a need or interest in bus service, and parking at SCLA is available and free for users. VVTA may want to consider working with individual SCLA employers that showed an interest in bus service, tailoring it to individual employer needs, and exploring

funding options, such as using Job Access and Reverse Commute (JARC)[1] monies, along with participation by the employers, to help fund such a service. The companies that are likely to have a stronger interest in bus service include:

- Million Air
- People associated with the Glen Helen Work Release Program

As SCLA grows, regular general public transit service may be a viable transportation mode to SCLA. A future factor that may support transit is traffic in the area, an increase in the number of employers and jobs at SCLA, and development in adjacent areas that could help support a bus route. This survey should be repeated in the future to see if transit service receives more support as SCLA grows.

[1] The Federal reauthorization bill has shifted funding for the Job Access and Reverse Commute (JARC) program from a competitive discretionary funding to a formula funding assuring each urbanized area a certain amount of money. The Victor Valley area has about $132,000 available for FY 06 and about $572,000 over the course of the reauthorization period. The funds could be used to develop some pilot projects to promote public transportation for the airport that could include, in addition to fixed route service, ridershare options like vanpool options or subscription bus service. These types of services could be tailored to each individual employer or group of employers.

Chapter 4: Service Evaluation, Issues and Opportunities

Using the data from the previous chapters coupled with on/off data and other operating and financial statistics, this chapter provides the detailed system and route analyses required to identify issues and opportunities which will feed into the development of the five year service plan. In order to objectively undertake the analysis, operational standards for the program were developed and are presented along with a discussion of VVTA's adherence to these standards. Next, route diagnostics (service and cost effectiveness and service efficiency) are calculated and analyzed, culminating in a ranking of routes based on their effectiveness measures. Ridership by route and time of day are also discussed. Finally, routes are evaluated individually in terms of their performance statistics, ridership by time of day, and bus stop activity.

The discussion of service standards looks at VVTA's practices and performance in the context of local policies, industry standards, and the consulting team's experience developed over time through studies from around the country.

Operational data used in the evaluation is from VVTA annual figures for fiscal year 2003-2004. The ridership portion of the analysis is based on data collected during on and off counts for all routes which took place Tuesday through Thursday, April 24-28, 2005. Ridership totaled 3,344 from all the routes surveyed on these three weekdays. For the ridership counts, temporary workers were hired to count all passengers boarding and alighting the bus, as well as the times at which the bus arrived at several timepoints. A standard ridecheck count form was used by these workers to record passenger activity.

Performance Evaluation

Background

VVTA currently has a limited range of performance and design guidelines for the fixed route service. These include:

- Schedule Adherence: Not early, and up to 5 minute late.
- Farebox Recovery: 20% for urban fixed route.
- Productivity: 12.68 revenue passengers per hour for urban fixed route.

These performance design guidelines are very limited in scope and provide modest assistance in developing new or revised services.

Service design guidelines provide an objective rationale for the allocation of scarce transit resources. Service design guidelines are a tool that can be used to implement broader policy objectives as well as providing the framework for decisions to be made on the provision of transit services, the design of routes and schedules, and the evaluation of services.

The service standards proposed in this report can be used for evaluating the existing services, and in developing proposed service changes as part of the Comprehensive Operations Analysis

(COA). It may be necessary to phase in the some of the guidelines over the next several years as more supporting data becomes available. Implementation of the service design guidelines is not dependent on advanced technology such as Automatic Passenger Counters or Automatic Vehicle Location systems but would be enhanced when these technologies are introduced.

The proposed service design guidelines developed here will fulfill several important functions:

- Service Development
  - The guidelines should form a consistent basis for service planning, and particularly establishing minimum levels of service. Judgment and flexibility remain, but the guidelines assist in the development of new services and the refinement of existing services.

- Evaluation
  - The service design guidelines will provide indicators and targets that enable the performance of the individual routes and brands to be evaluated and monitored by management decision-makers. Targets can be adjusted if necessary to reflect fiscal realities or service issues without changing the overriding service objectives or indicators.

- Budgeting
  - The preparation of annual program plans, Short Range Transit Plans, and budgets should reflect the goal of providing service to the policy levels established in the service design guidelines. This will enable the Board of Directors to focus on the policy and service impacts of budget adjustments, rather than operational details that should be the focus of staff.

- Public Accountability
  - Political decision-makers, transit customers, voters and taxpayers should be able to readily identify the minimum levels of service and performance that are to be provided. The allocation of the resources of the transit system must be seen to be based on equitable and rational criteria that are explicit and available for public scrutiny.

This report provides a set of proposed service design guidelines and new service warrants for implementation starting in 2007. The service design guidelines are intended to be flexible in interpretation and application, and to be continuously refined over time. As new types of services and data sources are introduced, revisions to the guidelines may become appropriate. Flexibility in application and interpretation must be maintained, as the environment in which these standards will be applied is not static and will continue to change as the region grows and transportation demand increases.

The guidelines have been designed as targets that Victor Valley Transit should strive to achieve. They are not intended to be rigid requirements that must be met by all transit services in the short term. The guidelines will be applied to identify transit services that may be falling below acceptable performance levels. For any such service, further investigations and analysis will be

undertaken to confirm whether the guidelines are being achieved, and a broad range of potential corrective actions will be considered. The action taken, if any, will need to be appropriate given the specific circumstances of the service in question.

The proposed principles for the service design guidelines are stated below.

1. Support County & Municipal Transportation and Land Use Goals. The service design guidelines should be supportive of strategic transportation and land use goals of the cities of the Victor Valley and the Long Range Transportation Plan of the San Bernardino Association of Governments (SANBAG).

2. Customer Focus. The service design guidelines should address aspects of transit service that are of the highest importance to current and potential customers.

3. Equal Application in all Municipalities. Guidelines should be defined and measured in a way that does not unfairly bias the allocation of service in favor of particular municipalities. The same guidelines should be applied equally across the Valley.

4. Equity for all Residents. The guidelines should promote the availability of a basic level of transit mobility to all residents and in particular those without access to other modes of transportation. This principle also includes the provision of appropriate municipal infrastructure to support this basic level of service in all communities (e.g. streets designated for use by transit vehicles, accessible bus stops and bus shelters).

5. Clarity. The service design guidelines should be clear and easy to understand by customers and other stakeholders.

6. Measurability. Each service design guideline should be measurable using reliable data that is currently available or planned to be collected in the future.

7. Ease of Implementation and Monitoring. The service design guidelines should be straightforward to implement and monitor on a continuous basis. The guidelines should lend themselves to consistent and continuous application by VVTA staff to identify transit services needing further investigation for possible adjustments.

8. Cost-Effectiveness: The service design guidelines should ensure that all transit services in the Valley are as cost-effective as possible.

9. Responsiveness to Changes in Urban Form: The service design guidelines should reflect the changing needs of communities for transit services as they reach various levels of urban development.

Evaluation Standards

Evaluating the VVTA system against a set of service standards or goals is the first step in the evaluation process. The process allows one to deal with a variety of issues related to the quality and quantity of bus service. This section presents proposed service standards and lists VVTA's performance for each standard. This provides initial guidance for the development of service strategies. It should be noted that viewing any system with regard to a set of standards or goals requires an understanding of local conditions as well as the trade-offs associated with providing service. As an example, in some cases, it will be acceptable to be below the target; e.g., while it is desirable to provide 30-minute peak service on all routes, doing so on routes in less productive areas might mean not meeting the standards for fiscal condition. The analysis discusses these issues and the competing requirements of providing extensive coverage and frequent service while meeting the need to maintain cost effectiveness. It will identify where standards should be met and where standards should be used as goals for VVTA to use in planning future service changes.

Table 4-1 provides a summary of proposed standards/goals. The performance evaluation is based on weekday and annual total operations.

Table 4-1: Proposed Service Standards

Category	Standard
Service Coverage	
Availability	• Residential areas -80% of population within ¼ mile of a bus route -Route spacing guide presented in Table 4-2 • Major activity centers -employers or employment concentrations of 200 or more employees -health centers -middle and high schools -colleges/universities -shopping centers of over 25 stores or 100,000 square feet of leased retail space -social service/government centers
Frequency	-60-minute all day service -Clockface operation
Span	-5 AM to 10 PM on weekdays -6 AM to 7 PM on Saturdays
Directness	-Maximum 25% transfer rate
Patron Convenience	
Speed	-Regular routes maximum of 15 MPH -12-18 MPH for outlying services depending on layout
Loading	-25% standees for short periods acceptable
Bus Stop Spacing	-5 to 7 blocks per mile in core (every other block) -Fringe 4 to 5 per mile, as needed based on land uses
Dependability	-No missed trips -95% on-time service (0 to 5 minutes late) -No trips leaving early
Road Call Ratio	-4,000 to 6,000 miles per road call
Fiscal Condition	
Fare Structure	-Qualitative criteria
Farebox Recovery	-20% measured system-wide
Productivity (Pass./Mi.)	-Significantly alter routes less than 60% of average (1.07 pass/mi is average) -Review and modify routes between 60% and 80% average
Passenger Comfort	
Waiting Shelters	-25 or more boardings
Bus Stop Signs	-Denote VVTA, contact information, and route
Revenue Equipment	-Clean and good condition
Public Information	-Timetable, maps, advertising

Service Coverage

The service coverage and minimum service quality objective establishes the transit service areas within the municipalities of the Victor Valley in which transit service will be provided within a reasonable walking distance for customers. The purpose of the objective is to clearly indicate that at least a basic minimum level of transit service will be provided within urban areas with significant residential or employment land uses. This is an important distinction for VVTA due to the large portions of the region that are rural or undeveloped. The objective should not preclude service in the rural areas; however it should indicate that those areas might not receive the basic minimum service. The service coverage objective should indicate there is only a commitment to provide a basic level of service, and all areas should not expect the same level of service beyond the minimum.

Several indicators are required to fully assess whether the objective of providing a minimum level of service and access is being met. The required indicators include:

- Walking distance to transit service, route spacing and stop spacing;
- Hours of service; and
- Minimum service frequencies.

Availability

Service coverage indicators and standards are in use by most transit systems. The Transportation Research Board (TRB) survey found that walking distance, route spacing and stop spacing are all in use. Perhaps surprisingly, 66% of the systems responding to the TRB survey indicated that they included bus route spacing as a service design criterion, usually in conjunction with bus stop spacing. Fewer systems use actual walking distance and some systems explicitly defines walking distance for residential or non-residential generators.

The problem with bus route and bus stop spacing criteria is that they are not responsive to actual development patterns, and are best suited for a grid route pattern, a grid street pattern and few geographic barriers. Curvilinear street patterns, non-contiguous development and geographic obstacles would make it impossible to consistently apply bus route and bus stop spacing standards in the Victor Valley. Bus stop spacing is discussed further under the purview of patron convenience later in this chapter.

The use of “walking distance” to a bus stop as an indicator for service coverage appears to have been adopted less frequently. The advantage of this indicator is that it responds directly to one of customers’ main concerns – the distance to the nearest bus stop. Ongoing surveys by transit systems in the U.S. confirm that more than half of all transit customers come from residences that are less than 750 feet from a bus stop. It therefore makes sense to establish walking distance as an indicator. The indicator must take into account that there will likely always be exceptions due to road and pedestrian network patterns or development patterns, and special local conditions such as steep grades or unsafe pedestrian environments may also require special treatment.

Many transit systems with walking distance standards limit their applicability to residential developments. It is equally important to establish and maintain guidelines for non-residential locations. Service coverage and congruency analyses provide a baseline evaluation of VVTA service availability. Service coverage analysis looks at VVTA routes and their relationship to areas of high population density, low income, and low mobility and service congruency analysis looks at VVTA routes and their relationship to the locations of major trip generators.

This standard is divided into two separate components that reflect travel concentrations, trip purpose, and the need for bus service. Availability standards are developed for the residential trip end that produces travel and the non-home end that attracts travel. A description of each of these two is provided below:

- *Production End (Coverage)* – Determination of which residential neighborhoods should be candidates for service is a function of reasonable walking distance. Numerous studies have indicated that the maximum distance an average person can reside from a bus route and still be considered to 'have service' is one-quarter mile, which is approximately equivalent to a five-minute walk. However, this rule of thumb must be applied coupled with a surrogate for income and mobility, as well as population density. Route spacing and existing service coverage are discussed in the following sections.
- *Attraction End (Congruency)* – Activity centers deserve transit service if they are large enough to attract and adequate number of transit trips. To assist in this determination, 'threshold levels' have been established for different categories of activity centers. These threshold levels, which are based on past experience and judgment, should serve as guidelines in determining which activity centers in each category should be given consideration for service. It should be noted that other factors, such as proximity of the center to existing bus routes, should be considered before providing new service to a major activity center.
    - *Employers* – Employers or concentration of employers, such as in business or industrial parks, with 200 or more employees are large enough to generate transit ridership.
    - *Health Centers* – Institutions consisting of hospitals, clinics, rehabilitations, and mental health centers, and nursing homes are significant destinations that should have access to transit services.
    - *Educational Facilities* – Colleges, universities, vocational schools, and secondary schools have been included in the availability standard. Those institutions with enrollment of at least 1,000 full-time students warrant major consideration for service. All middle and high schools also warrant consideration.
    - *Shopping Centers* – Shopping trips constitute a key reason for transit travel. Shopping centers (including malls and major plazas) with at least 25 stores or more than 100,000 square feet of leased retail space are large enough to warrant consideration for service, as well as the CBD and neighborhood business districts or any other significant commercial attractions.

- *Social Service/Government Centers* – Public agencies, government centers, community facilities, and recreational complexes attract some volume of traffic. Since the nature and size of these facilities varies greatly, no numerical threshold will be set. Judgment, as well as trip purposes and characteristics of the users (e.g. elderly and low income citizens) should be considering whether to serve a facility.

Route Spacing

Table 4-2 lists the recommended route spacing guide given an area's population density and percentage of households without automobiles, which are the surrogates for income and transit dependency. Areas with low population density and low transit dependence given the number of cars available have lower requirements for transit service than to areas with high population density and greater transit dependence.

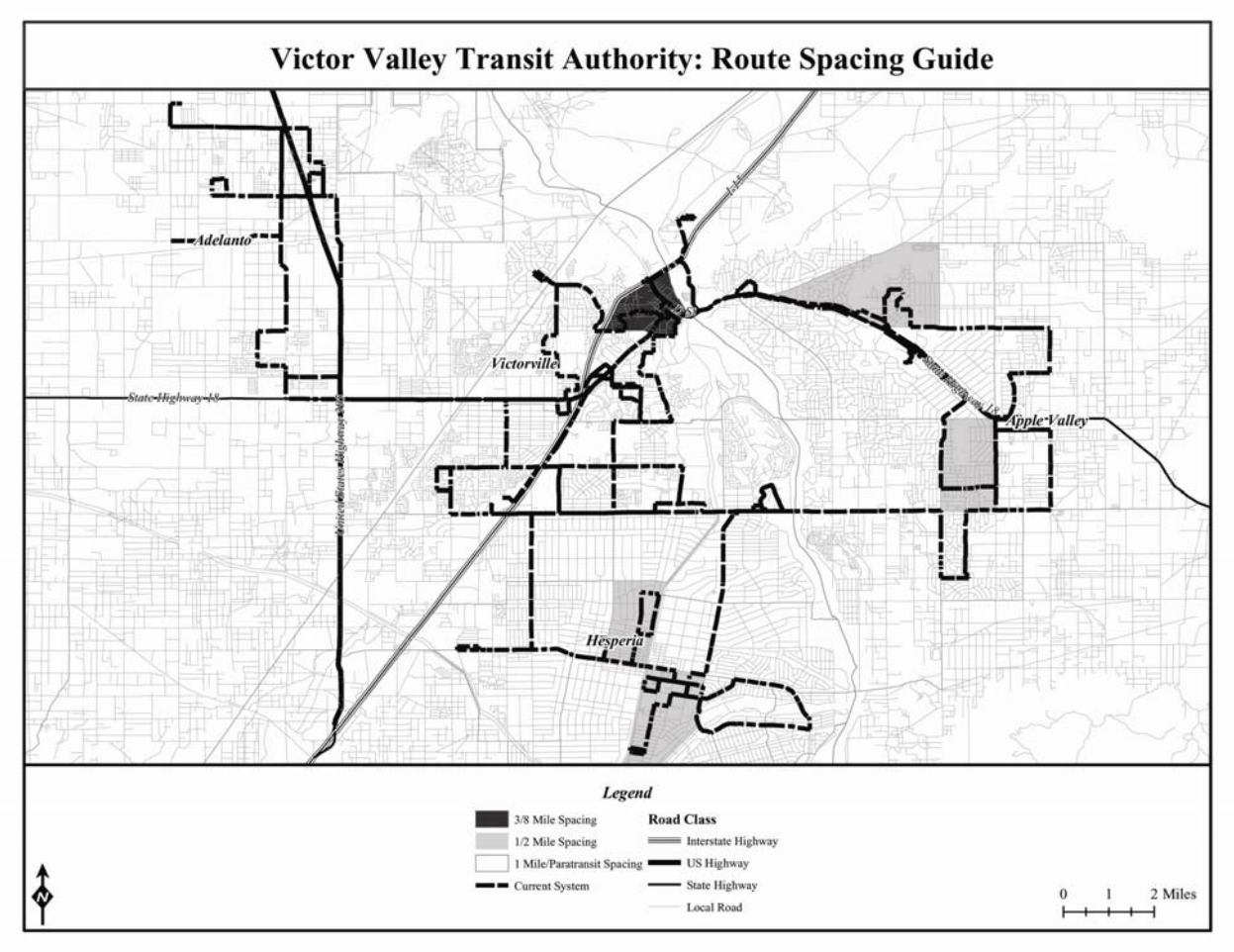
Table 4-2: Route Spacing Guide

% of Households without Automobiles	Population Density (Persons Per Square Mile)			
	Over 6,400	**4,500 to 6,400**	**2,500 to 4,449**	**Under 2,500**
Over 15.0	¼ mile	¼ mile	3/8 mile	½ mile
10.0-15.0	¼ mile	3/8 mile	½ mile	1 mile or Paratransit
5.0-9.9	3/8 mile	½ mile	1 mile or paratransit	*
Below 5.0	½ mile	1 mile or paratransit	*	*

Source: St Cloud, MN Transit Study 2002

Figure 4-1 applies these route spacing standards to Victor Valley's population and VVTA's route structure. Victor Valley is a region of dispersed population. Based on the population distribution and income structure (shown here by Census tract), the vast majority of the VVTA service area requires one mile spacing between routes or paratransit services instead of fixed route services. Only downtown Victorville lends itself to 3/8 mile spacing between routes and parts of Hesperia and Apple Valley are recommended for ½ mile spacing. Thus, given the current route structure and population, VVTA routes do meet the spacing standards.

Figure 4-1: VVTA Route Spacing Guide



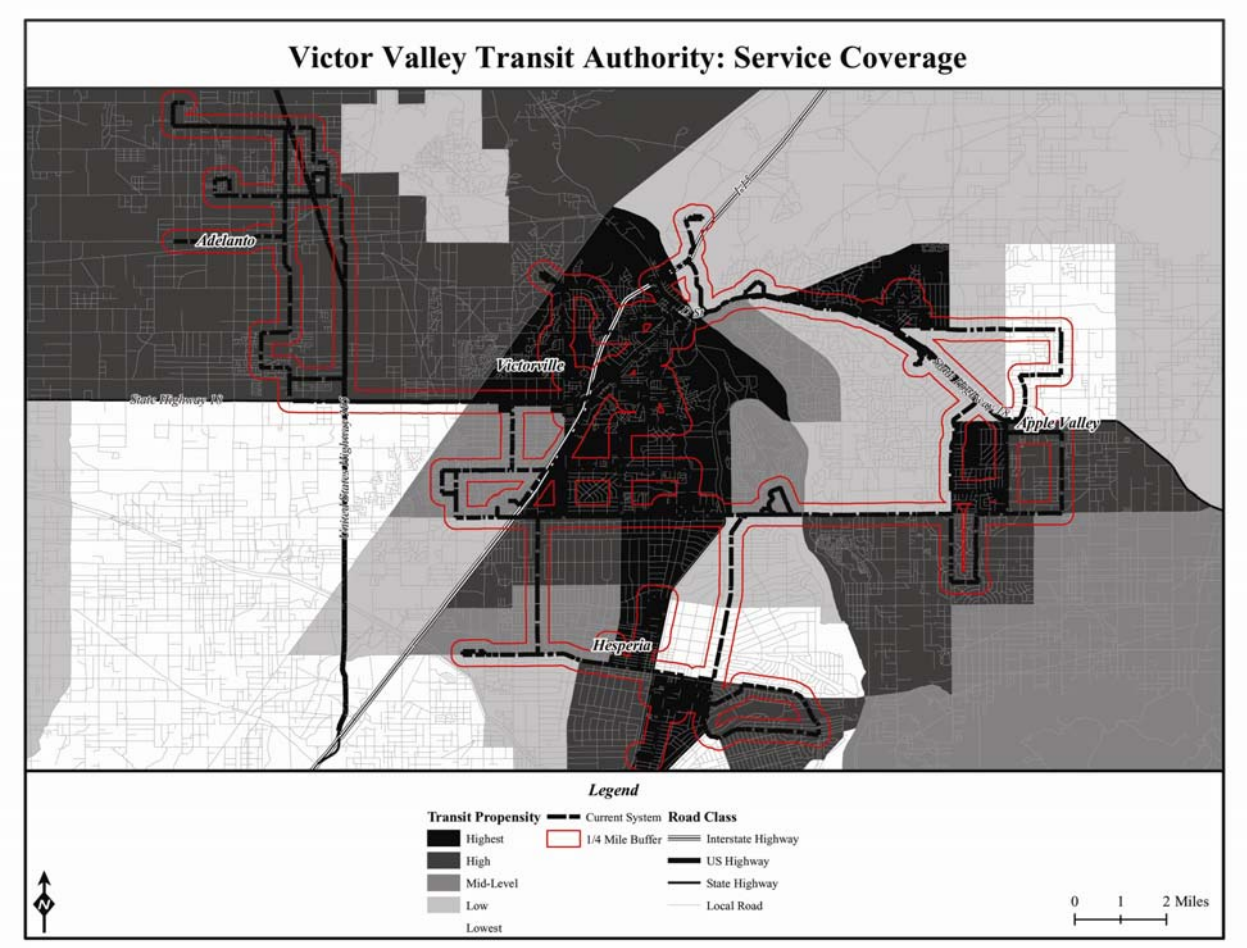
The route coverage guide is just that – a guide. It is not an exact measurement. In some areas, the street pattern is not uniform or the trip generators are further apart than the guide indicates. VVTA bus service should not conform to the guide in all areas. Service should, however, meet the intent of the guide – areas with more people and/or fewer cars need more transit service than sparsely populated or relatively affluent areas. Another consideration for warranting service is concentrations of elderly and disabled populations as well as multifamily housing developments. These socioeconomic characteristics are included in the transit score analysis, which is also the base map for the coverage analysis.

Coverage

Service coverage analysis looks at the VVTA system in comparison to the distribution of the population and their socioeconomic and mobility characteristics (in this case, income level and zero-car households) in the region to see if any needy areas are currently unserved. Figure 4-2 is a map of the combination of population density, median household income, and percentage of zero-car households (statistics used to calculate a transit propensity score) by Census tract along with VVTA routes and their coverage region (1/4 mile buffer).

Transit propensity looks at certain characteristics of a population that have been shown to lend themselves to higher transit ridership. In general, where there are higher concentrations of people (population density), transit ridership tends to be greater than in areas with great population dispersion. Also, people with lower incomes and who have limited mobility (no vehicle available, for example), tend to be more likely to use public transportation. VVTA currently serves the majority of the population who live in densely populated areas, have lower incomes, and limited mobility. There are, however, some pockets of the highest transit propensity in Victorville, Hesperia and Apple Valley that are not currently served by VVTA local routes. Also, there are some areas of high transit propensity in Adelanto, Victorville, Hesperia and Apple Valley that are presently underserved.

Figure 4-2: VVTA Service Coverage

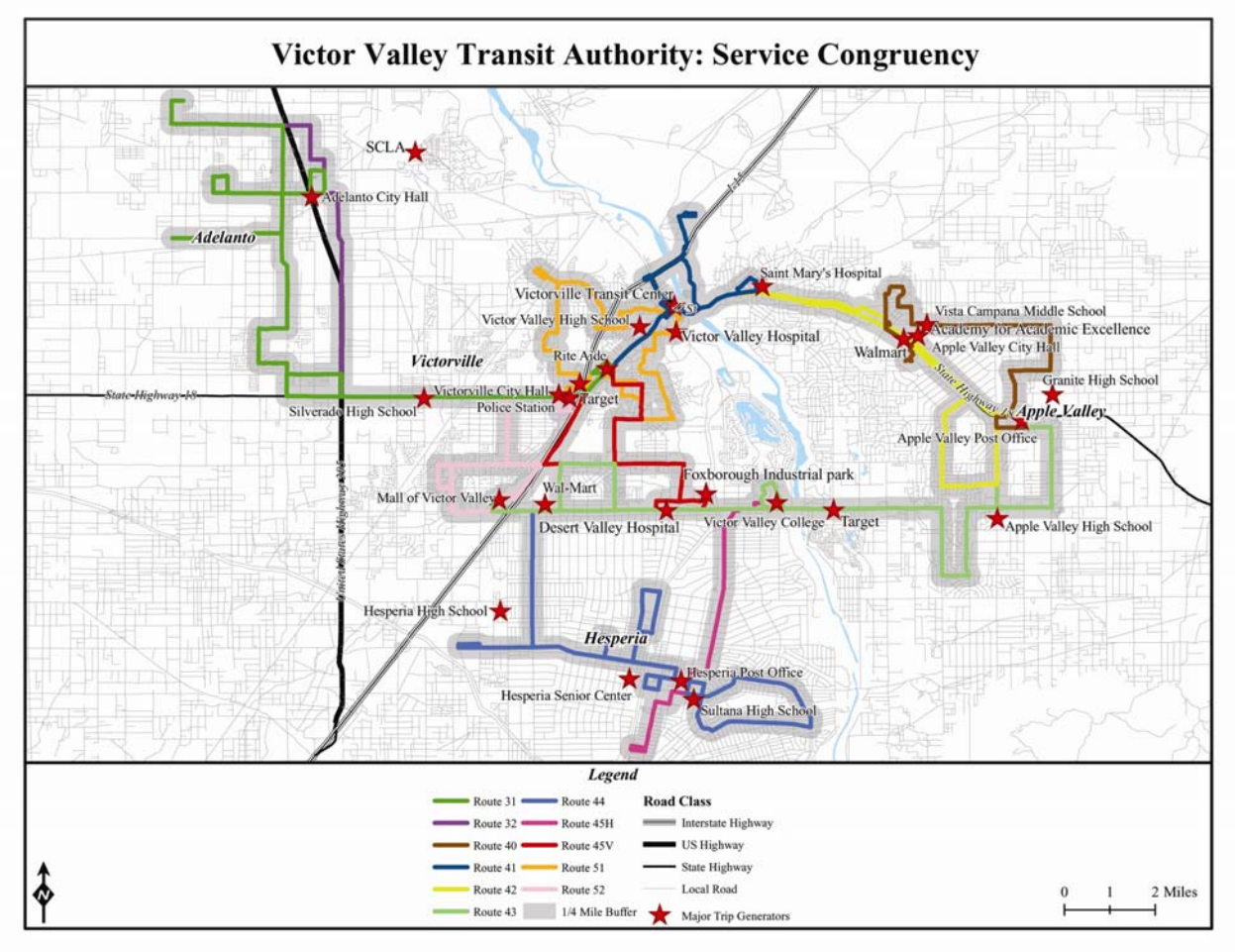


Service coverage and congruency analyses are used to evaluate the existing VVTA fixed route system. These analyses provide the opportunity to identify underserved populations and unserved destinations in the VVTA service area that have potential for transit success. Service coverage compares the VVTA fixed route system to the underlying demographic and socioeconomic characteristics of the region's population and service congruency compares the VVTA fixed route system to major transit generators in the region.

Congruency

The congruency analysis looks at the VVTA fixed route service area (the area within a quarter mile of fixed routes) in comparison to the location of major trip generators in Victor Valley. Major trip generators include: hospitals, shopping centers, government offices, schools, colleges and universities. Figure 4-3 provides a map of VVTA's service congruency.

Figure 4-3: VVTA Service Congruency



VVTA local fixed routes currently serve the most of the major trip generators in the overall service area. Major trip generators currently not served by VVTA include:

- SCLA
- Hesperia High School
- Granite High School

Frequency

Another major indicator for the service convenience objective is the minimum service frequency guidelines. Most U.S. small and mid-sized urban transit systems have minimum peak frequency guidelines of either every 30 minutes or 60 minutes. Many systems provide additional detail in the guidelines that differentiate minimum frequencies by route classification and time of day. In some major systems frequencies of 15 minutes or better are guaranteed on major trunk lines or in grid pattern service areas. However, it is difficult to categorize transit routes in a consistent way. There are many different criteria on which a route can be categorized such as ridership level, length, origin-destination, express operation, function, or network. Some routes change in ridership or function from one section to another. No single factor or combination of factors can adequately describe the characteristics of any set of routes sufficiently to allow the creation of distinct route categories.

For VVTA, all transit services should be scheduled using clockface headways and the timed transfer concept to maximize regional accessibility. All bus services shall provide a service with a minimum frequency of every 60 minutes during peak and midday periods on all days. Headways of 30 minutes should be considered during peak periods on popular routes.

Presently VVTA operates all its local routes on 60-minute headways during the morning, mid-day and evening periods, but shifts to 70- minute headways during the afternoon peak period. Routes 31 and 32 operate on 90-minute headways during all time periods.

Span

The TCRP survey found that 80% of transit systems have hours or span of service design guidelines. A review of a sample of U.S. systems found that most systems have fixed spans of service that do not directly relate to customer's decision making. For example most guidelines include statements such as "service to be provided from 7:00 am to 1:00 am". However if a customer has to leave downtown at midnight in order to get home by 1:00 am, the customer will probably perceive the service as running only until midnight. The guidelines should therefore be designed to reflect as much as possible real uses of the transit network. This type of indicator would set the span of service based on arrival and departure times at a range of major destinations such as for trips between residences and major activity centers, or between any two points in the service area.

The span of service targets reflect the current practice of VVTA. Longer hours of operation would be desirable; however, at the present time there are not sufficient financial resources to cover the additional cost. The current span of service permits commute trips from most part of the urban service area to reach a point with transit service in time for a work start of 8:00 a.m. on weekdays. Similarly the end of service provides enough time for anyone ending work at 6:00 pm to arrive home before service stops.

The growth of service jobs, particularly in the retail industry means that it would be highly desirable to extend the service hours to 11:00 pm on week nights. This would permit mall workers and others that finish at 9:00 or 9:30 to utilize transit for their journey home.

Presently VVTA operates between the hours of 6 AM to 9 PM on weekdays and 7 AM until 8 PM on Saturdays

Directness

The identified standard for directness for this project is the percentage of transfers being made by bus riders. A standard of 25 percent (transfer trips/revenue trips) is the maximum rate for transferring. A transfer analysis was completed as part of this study and the results are summarized below.

Drivers were asked to collect all transfers they received and to put them into specially labeled envelopes for one whole weekday. The collected transfers were then sorted and tabulated.

Victor Valley Transit does not use fare boxes that record information from passes so the transfer information is only a sample of cash fare paying passengers. It was extrapolated to include pass holders to provide an indication of overall transfer levels. No survey was done to verify that transfer rates are the same between passholders and cash paying customers. However, cash and pass using customers are not expected to have significantly different ridership patterns and as a result, the extrapolated results are expected to be representative of all riders.

Table 4-3 shows the monthly ridership by route and fare type.

Table 4-3: April 2005 Fare Distribution by Route

April 2005 Fare Data					
Route	Cash Fare	% Cash	Pass Fare	% Pass	Total Fare
31	1,363	41%	1,963	59%	3,326
32	1,371	41%	1,978	59%	3,349
40	370	27%	1,008	73%	1,378
41	2,834	40%	4,325	60%	7,159
42	442	30%	1,041	70%	1,483
43V	1,628	35%	3,052	65%	4,680
43AV	2,118	49%	2,192	51%	4,310
44	782	39%	1,205	61%	1,987
45H	1,103	42%	1,540	58%	2,643
45V	1,699	33%	3,491	67%	5,190
51	2,317	47%	2,593	53%	4,910
52	2,231	37%	3,797	63%	6,028

Daily ridership is estimated to be about 1,790 passenger trips for all routes. The transfer analysis found 157 transfers in one day. Since cash fares represent about 39% percent of all fares collected by Victor Valley Transit the overall transfer rate is about 22%., which meets the directness standard.

The transfer movements are shown in Table 4-4. The table shows the summary of transfers for actual cash transfers and estimated pass transfers. The most popular transfer was between route

45V and 31. Overall, the routes that issued the most transfers were 45V, 43AV, and 41, each of which issued 60 or more. Several transfer pairs were to and from the same route, which indicates that people are using the transfer as a stopover or a return trip.

Table 4-4: Transfer Matrix

Estimated Total Transfers													
	Route From												
Route To	**31**	**32**	**40**	**41**	**42**	**43V**	**43AV**	**44**	**45V**	**45H**	**51**	**52**	**Total**
31	3			3					23			10	39
32		3		3					13		8	5	32
40	5					5	3						13
41	3			3	18				8		15	15	62
42			2	13			3						18
43AV			8		10	18		3	15	12			66
43V							18		3	8			29
44								3		5		10	18
45V	8	8		5		15		8		10	10	3	67
45H						7	5	2	9				23
51		5		8		3		3	15				34
52		8		10		8		5	5		8	3	47
Total	19	24	10	45	28	56	29	24	91	35	41	46	448

Looking at the transfer analysis, the routes with the highest number of riders transferring are from route 43V to 43AV, 43AV to 43V, 42 to 41, and 45V to 43AV, and 45V to 31. With the exception of the transfers from Route 41 to 42 at the transfer point across from St. Mary's Hospital and from the 43 and 45 routes at Victor Valley Community College, the majority of the remaining transfers occur at 7th and Lorene, reinforcing both the importance of this location in the system and the necessity to modify each of those routes if the 60 minute system cycle goal is to be achieved.

Patron Convenience

This section includes a review of speed, loadings, bus stops, and service dependability including road call/breakdown frequency.

Speed

There are a set of standards associated with the operating speed of the routes. These standards allow for the identification of routes that may be too long for the running time allotted, or may be running slowly and unreliably due to congestion. As such they are also indicators of safety, as routes that are too long require drivers to speed to keep on schedule; and reliability, since very slow routes may create problems with on-time performance and transfers.

The standards shown on Table 4-1 were as follows:

- Regular routes should not exceed 15 MPH

- Outlying service should range between 12 and 18 MPH depending on route layout

VVTA local routes average 17 miles per hour, based on annual miles and hours data from FY 2003-2004. Table 4-5 lists average speed by route. All routes except Routes 41 and 51 operate at 15 MPH or faster. Routes 43V and 45V operate at exactly 15 MPH. The numbers indicate a potential problem with on-time performance; coupled with known issues regarding traffic congestion in the afternoons, it is clear why VVTA extended headways to 70 minutes to adjust service to improve its reliability. A goal of the project is to accomplish this with 60 minute headways by adjusting the route structure or, if necessary, the running times and allocation of buses.

Table 4-5: Operating Speed by Route

Local Route	**MPH**
Route 31	23
Route 32	22
Route 40	18
Route 41	13
Route 42	18
Route 43F	20
Route 43V	15
Route 44	18
Route 45F	16
Route 45V	15
Route 51	14
Route 52	16
Average	*17*

Loading

The maximum occupancy objective balances the fiscal need of VVTA to generate fare revenue with the need to provide a safe, comfortable and attractive customer environment onboard transit vehicles. The purpose of the objective is to provide a means of ensuring that an appropriate level of service is provided for the level of ridership on each individual route. The objective should also ensure that overcrowding is not permitted to occur on a sustained or regular basis. Crowded conditions can quickly turn existing and potential customers away from public transportation. The guidelines for this indicator must be set at levels that provide comfortable traveling conditions appropriate for the b the market being served.

The survey by the TCRP found that most transit systems have service design guidelines relating to crowding or the number of standees. Many also have standards relating to the duration of a customer's standing time. Some transit systems in the U.S. also have established policies of no standees, particularly on express routes. Many of the systems with no standee policies also have peak hour fare surcharges for express routes.

Information on maximum occupancy can be obtained from onboard ride checks, APCs or point checks conducted by stationary personnel.

Passengers should be seated except for short periods of time associated with peak load periods, during which time there should be no more than 25 percent standees for only a limited duration. At the same time, there is no minimum load factor in the standards, i.e. loads should not fall below a given number of riders, which would be an indicator of an over-supply of service to these routes for selected time periods. The route by route studies later in this memorandum discuss these conditions in detail to determine which routes, if any, may require less service than is presently being provided.

VVTA buses have an average seating capacity of 30 passengers. Thus, loads of 40 or more riders would result in having 25% or more standees. Based on the 2005 on/off counts, none of VVTA's runs have loads of 40 or more riders during any period of the day. In fact, the only route that exceeded 30 passengers at any time of day is Route 45 (Rite Aid to Victor Valley College). Route 45 exceeds 30 passengers onboard during the 9:00 AM southbound run, the 11:00 AM southbound run, and the 4:10 PM northbound route.

Bus Stop Spacing

In addition to service coverage evaluation, bus stop spacing guidelines can also serve another purpose. A minimum bus stop spacing standard assists in maintaining reasonable bus service speeds to improve the competitiveness of transit. Frequent stops along a route can create a significant travel time penalty. Of course, some judgment must be exercised to ensure that minimum stop spacing guidelines do not interfere with the ability of the system to meet the walking distance standard, or to serve major transit generators.

The spacing of stops should balance patron convenience and speed of operation. The core standard calls for a stop every other block, while in fringe areas stops can be as far apart as .2 to .25 miles (4 to 5 per mile), based on need. While providing an attractive benefit, flag stops can slow operations, is a safety hazard for other vehicles, and should generally be avoided on heavily traveled streets. In outlying areas, where traffic is lighter, flag stops may be preferable to signed stops for passenger convenience.

Figures 4-4 and 4-5 map VVTA bus stops by every other block spacing and quarter mile spacing. In the core areas of Victorville, Apple Valley and Hesperia, bus stops are generally spaced at least every other block. In Adelanto, however, the spacing is sparser. When looking at quarter mile spacing in the fringe areas, the coverage is excellent except in Adelanto.

Figure 4-4: Every Other Block Bus Stop Spacing

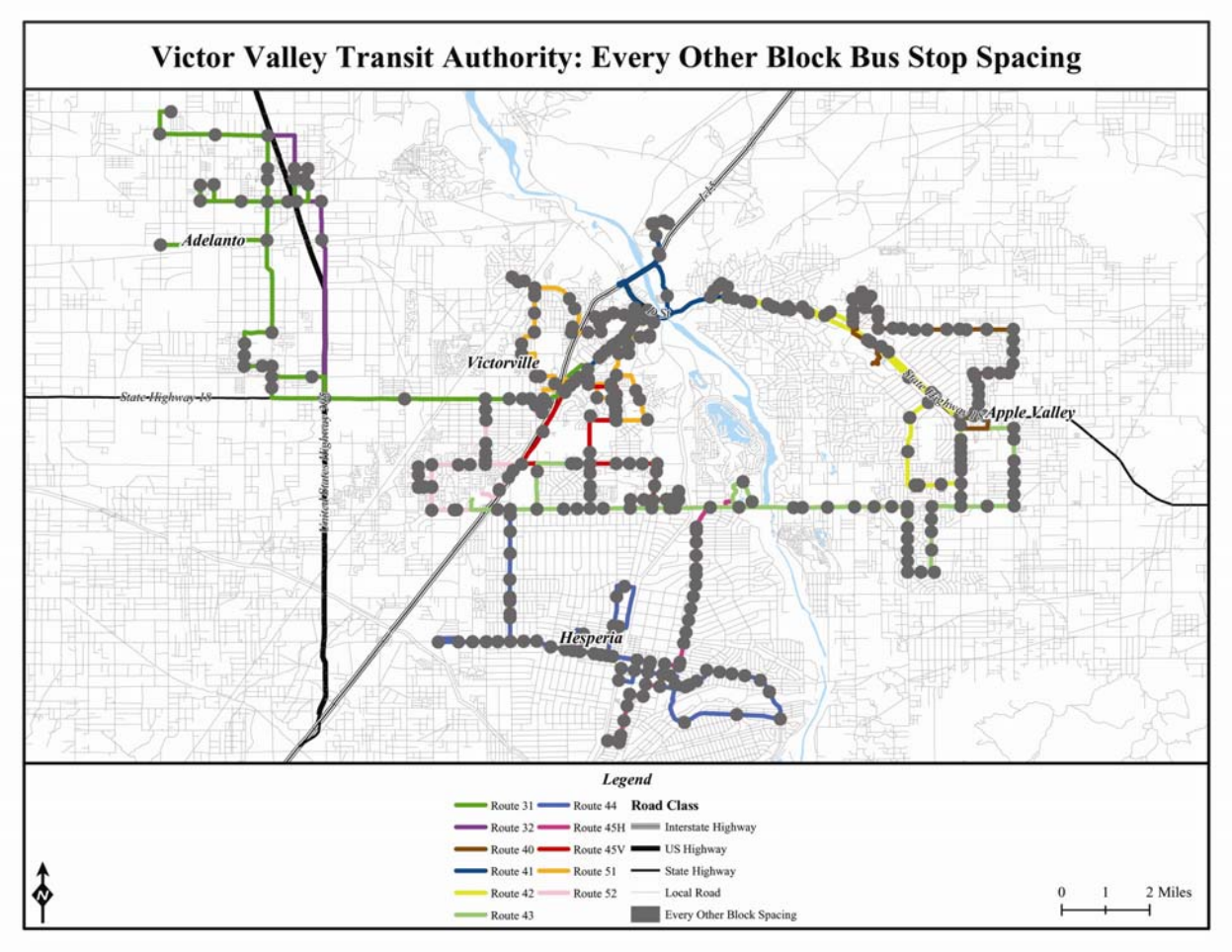
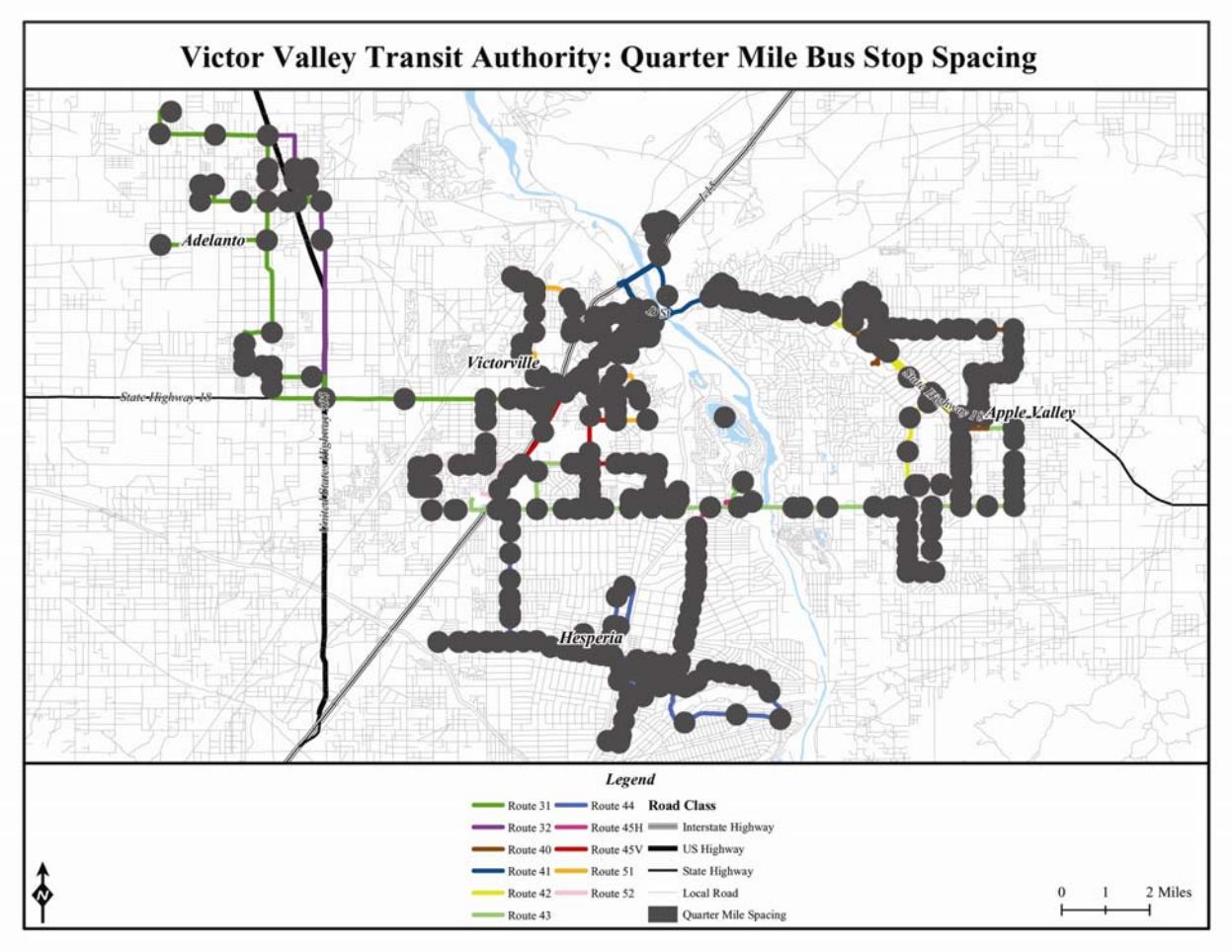


Figure 4-5: Quarter Mile Bus Stop Spacing



On-Time Performance

During the 2005 on/off counts, on-time performance was evaluated using checkers situated on the buses. The following section summarizes the results of the ridecheck. The frequency of vehicle breakdowns is also an issue of dependability and is evaluated following the on-time performance discussion.

Riders require dependable service, defined as service that arrives on time and gets them to their destination on time, particularly if they are going to work, to school, or to an appointment. The standard should be two-fold: 100.0 percent of all trips should be operated (i.e., no missed trips), and 95.0 percent of the trips should run on-time (i.e., not more than 5 minutes late). Finally, no trip should run ahead of schedule at any point along a route.

Surveyors recorded the arrival time at several major timepoints for each VVTA route while conducting onboard ridership counts. These observations are aggregated in Table 4-6 and compared against scheduled arrival times to estimate on-time performance. As seen in this table, the western portion of Route 43 (in both directions) and the southbound runs of Route 45 were observed to run on time the substantial majority of the time. The eastbound Route 43 run

between the Mall of Victor Valley and Victor Valley College ranked highest in terms of on-time performance with a 92.9% on-time percentage. The southbound Route 45 section between Victor Valley College and Mission and C Avenue tallied strong on-time performance results, but this section in the northbound direction scored noticeably lower. Routes 32 and 52 also performed well in this measure.

The southbound and northbound directions of Route 44 failed to operate on time quite frequently, with on-time percentages of 78.1% and 65.7%, respectively. These data correspond with observations by the drivers and staff that Route 44 experiences difficulty running on time due to the length of the route.

Taken together, VVTA local routes operate on-time 75% of the time, which does not meet the standard for on-time performance. None of the routes meet the 95% on-time standard. Additionally, although there were no missed trips observed, all routes except Route 43F (eastbound direction only) operate ahead of schedule at multiple points along the route. On the day of the onboard ridership count, 26 trips left early, one as much as 7 minutes early and many 5 minutes early.

Table 4-6: On-Time Performance by Route

Route #	Route Name	# of Observations	# On Time	On Time Percentage
31	Adelanto EB	71	60	84.50%
31	Adelanto WB	55	44	80.00%
32	Adelanto EB	30	27	90.00%
32	Adelanto WB	101	90	89.10%
40	Apple Valley WB	42	32	76.20%
40	Apple Valley EB	28	14	50.00%
41	Victorville/St Mary's OB	28	22	78.60%
41	Victorville/ St Mary's IB	56	41	73.20%
42	Apple Valley/St M EB	70	44	62.90%
42	Apple Valley/St M WB	42	23	54.80%
43	Mall to VV College EB	42	39	92.90%
43	Mall to VV College WB	42	36	85.70%
43	Apple Valley to VV College WB	42	25	59.50%
43	Apple Valley to VV College EB	42	22	52.40%
44	Mall/Hesperia SB	114	89	78.10%
44	Mall/Hesperia NB	70	46	65.70%
45	Mission/VV College SB	27	25	92.60%
45	Rite Aid/VV College SB	42	38	90.50%
45	Mission/VV College NB	42	34	81.00%
45	Rite Aid/VV College NB	28	15	53.60%
51	Victorville Circulator	112	70	62.50%
52	Victorville Mall SB	42	38	90.50%
52	Victorville Mall NB	42	36	85.70%
Total		1210	910	75.20%

Road Call Ratio

This is a measure of dependability and quality for the customer, as the fewer the road calls, the fewer times customers are inconvenienced. The standard for road calls is between 4,000 and 6,000 miles per road call. For fiscal year 2005, VVTA operated 1,053,843 miles in their fixed route service and had a total of 192 road calls. Thus, the road call ratio for VVTA is 5,489 miles per road call, which meets the standard.

Fiscal Condition

These standards assess financial situation, the use of the VVTA system, and the relationship of service used to the amount of service provided. While there are any number of possible criteria that can be used to define fiscal condition, many of which will be studied in detail in the route diagnostics, for the purpose of defining general standards and overall condition, three were selected: fare structure, farebox recovery, and productivity.

Fare Structure

The fare structure should meet qualitative considerations set by VVTA policy. It should be simple to understand, offer convenience to the user, and generate reasonable revenues for the system. With regard to equity issues, the fare policy offers a number of discounts based either upon age, income, or disability, or upon the use of a variety of media. Free transfers should be provided so that those needing to use two buses for a trip are not penalized.

VVTA has a simple fare structure – regular fixed route service costs $1.00 per one-way trip. There is no fee for transfers. Students pay $0.75 per one-way trip and seniors and disabled persons pay $0.50. Children 5 and under ride for free. Day passes cost $3.00 ($1.50 for seniors and disabled persons) and 31-day passes cost $40 for regular riders, $30 for students and $20 for seniors and disabled persons.

Farebox Recovery

Farebox recovery measures the percent of operating cost covered by fares and is an outcome heavily influenced by the ridership productivity of a route against its total operating cost, as well as the fare policy of the system. It is calculated by dividing fare revenue by operating cost. It is also discussed in the route diagnostic section.

In order to qualify for state Transportation Development Act funding VVTA must meet the minimum cost recovery targets set by the Act. These targets are measured on a system wide basis, and therefore are not influenced by the difficulties that occur when financial analysis is extended to individual routes. Ultimately failure to meet these targets would put the transit authority at risk as other sources of funding would be required to replace the State grants.

It is virtually impossible to develop accurate route by route measurements of financial performance due to the complexity of transfers, distance traveled, passes, and discount fares,

although reasonable and necessary estimates can be made using the on/off count data and average fare calculations for the purpose of the route by route evaluations.

However, the goal for farebox recovery is applied globally as 20% measured system-wide. For its local routes, VVTA's farebox recovery is exactly 20%, which meets the standard.

Productivity

The productivity standard for individual routes relates to the system average as well as the average for each category of service. Deviations from the standard identify routes that require different levels of analysis and change. Routes achieving less than 60 percent of the category average should be studied and significantly altered. Routes falling between 60 and 80 percent of the category average need to be carefully reviewed and possibly modified. And routes that exceed 80 percent, particularly those which might exceed the average, may need adjustments as well to increase service. Productivity is measured in passengers per mile for this report.

VVTA averages 1.07 passengers per mile for its local routes. Four routes fall below 60% of the system average: 44, 40, 45F, and 31. Two routes are between 60% and 80% of the system average: 42 and 32.

Passenger Comfort

Passenger comfort standards pertain to the passenger environment that VVTA provides. These standards examine the placement and condition of shelters and bus stop signs, the comfort and condition of the revenue equipment, and the quality of public information.

Waiting Shelters

The recommended standard for waiting shelters for a system of this size is to place one at any location having 25 or more daily boardings, generally spread throughout the day (e.g., not 25 boardings for a single load and no boardings for the remaining part of the day).

Table 4-8 shows the stops in the VVTA system with the highest level of activity in terms boardings, as observed in the 2005 ridership counts. The largest transfer point, Lorene Transit Center (Rite Aid), garnered the most passenger activity with 648 total boardings. Stops at Victor Valley College, the Mall of Victor Valley, and Apple Valley Post Office also generated significant passenger activity, respective to their status as major system transfer locations. Other high-activity destinations included Victor Valley High School, St Mary's Hospital and the Apple Valley Wal-Mart.

Stop locations highlighted in Table 4-7 are high activity bus stops that do not have shelters. A complete list of shelters is provided in Table 4-8. In terms of meeting the shelter standard, 72% of stops with 25 or more daily boardings have shelters.

Table 4-7: High Activity Bus Stops

Street Intersection	Activity Center	# Boardings
7th St. & Lorene	Rite Aide	648
Jacaranda & VV College	Victor Valley College	380
VV Mall & Back of Mall	Mall of Victor Valley	229
Quinnault & S. Outer Highway 18	Apple Valley Post Office	98
Fish Hatchery & Gym	Victor Valley College	85
Seven Eleven	Seven Eleven	66
Kasota & N. Outer Highway 18	St. Mary's Hospital	58
S. Outer Highway 18 & Wal-Mart	Wal-Mart	43
Navajo Rd. & Powhattan	Downtown Apple Valley	42
Palmdale & Cobalt	Target	41
B St. & 7th St.	Victorville Transit Center	39
Jasmine & Hesperia	Desert Valley Hospital	36
Palmdale & Amargosa	Target	32
G Ave. & Olive	Hesperia Post Office	31
Bartlett & Greening	Adelanto Post Office	27
Navajo Rd. & Bear Valley	Apple Valley High School	26
Thunderbird & Ralphs	Vista Campana Middle School	26
La Paz & 7th St	Downtown Victorville	25

Table 4-8 lists the shelter locations based on information from VVTA from 2005.

Table 4-8: Shelter Locations

Shelter Locations
7th St. & La Paz
7th St. & Lorene
7th St. & Tatum
7th St. & Victor
7th St. & Westside
Amargosa & Palmdale
Apple Valley Rd. & Wika/Hwy 18
B St. & 7th St.
Bartlett & Greening
Bear Valley & 11th
Bear Valley & 2nd Ave.
Bear Valley & Cottonwood
Bear Valley & Hesperia Rd.
Bear Valley & Industrial
Bear Valley & Mariposa
Bear Valley & Kiowa
Bellflower & Bartlett
Bellflower & Rancho
Bellflower & Seneca
Central Rd. & Little Beaver Rd.
Chamberlaine & Bellflower
Cottonwood & Pendleton
El Mirage & Muskrat
Jacaranda & VVC
Jasmine & Hesperia Rd.
Jonathan & Chamberlaine
Kasota & N. Outer Hwy 18/St. Marys
Kentwood & Palmdale
Lorene & 7th St./RITE-AID
Main & 7th Ave.
Main & E Ave.
Navajo Rd & Powhattan
Navajo Rd. & Bear Valley Rd.
Palmdale & Amargosa
Quinnault & S. Outer Hwy 18
S. Outer Hwy 18 & Wal-Mart
Seneca & Jonathan
Seneca & Pearmain
Sultana & Foremost Care
Thunderbird Rd & Ralphs (West end)

Source: VVTA Bus Stop List updated 3/18/2005 or 11/23/2005, depending on route

Bus Stop Signs

The standard for bus stop signs is to denote the name of the system and the route/routes served, as well as to provide a telephone number for schedule information. VVTA bus stop signs are very simple. They do not contain any contact or routes served information. Many signs in Victorville are out-of-date and read 'Victorville Transit.' The signs, however, are in good condition.

Revenue Equipment

The revenue equipment ranges in condition from excellent to poor based on age. The newer model vehicles are in excellent condition where the older models are in varying levels of disrepair. Overall, the fleet is in fair condition. At the time of this study, a separate maintenance review was being completed. Buses and vans are from model years 1999 through 2005.

Public Information

Public information including timetables, maps and advertising should be widely available and be easy to read and understand. VVTA offers public timetables and route maps, which are easy to read and widely available. They do not distribute system maps, however. All maps and timetables are also available on VVTA's website.

Paratransit Service

VVTA currently offers both subscription and Direct Access paratransit services. Paratransit service standards with regard to productivity, farebox recovery, and convenience are discussed below. Guidelines and standards are presented but VVTA paratransit services are not evaluated.

Productivity

The current standards include a 10% cost recovery target and hourly passenger targets of 1.69 for Direct Access and 5.38 for subscription trips.

The number of passengers that can be carried on a door to door service is typically in the range of 3 to 10 passengers per hour. The low population densities and vast distances of the VVTA service area means that a lower target must be used in the Victor Valley, The current target of 1.69 has accepted for the direct access service and 5.38 has been adopted as the target for subscription services.

Farebox Recovery

In order to qualify for state Transportation Development Act funding VVTA must meet the minimum cost recovery targets set by the Act for fixed route or paratransit services. Ultimately failure to meet these targets would put the transit authority at risk as other sources of funding would be required to replace the State grants. The current target is 10% cost recovery.

Convenience

The Victor Valley transit service area is a sprawling area with potentially long travel distances and a low density of development. At the present time paratransit ridership is relatively low which means that trips can be completed relatively quickly. However as ridership grows and the number of passengers per hour increases it is likely that travel times will escalate. This policy will ensure that paratransit service provides continues to provide parallel service for ADA certified users. The target for schedule adherence for the pick-up window is: 95% of trips shall be started within 20 minutes of scheduled departure time.

Route Diagnostics

Five important data sets were collected or calculated from VVTA 2003-2004 records to create the database and calculations for the route diagnostics: ridership statistics, revenue hours, revenue miles, operating cost, and farebox revenue. These statistical data are shown in Table 4-9. Only local routes are discussed in the diagnostics section. Local routes are operated weekdays and Saturdays and the route-level data are annual numbers.

For fiscal year 2003-2004, VVTA's local routes carried 1,000,868 passengers on 60,112 hours and 1,045,035 miles of service. Operation of the service cost $3,306,160, of which $640,556 was recouped in farebox revenue.

Table 4-9: 2003-2004 Route Level Ridership, Operating Data, Cost and Revenue Estimates

Local Route	Ridership	Revenue Hours	Revenue Miles	Operating Cost	Farebox Revenue
Route 31	68,034	4,744	108,324	$260,920	$43,542
Route 32	66,896	4,566	99,886	$251,130	$42,813
Route 40	39,982	4,593	83,564	$252,615	$25,588
Route 41	123,073	4,628	59,969	$254,540	$78,767
Route 42	53,593	4,591	80,937	$252,505	$34,300
Route 43F	91,937	4,605	93,246	$253,275	$58,840
Route 43V	94,367	4,628	67,183	$254,540	$60,395
Route 44	77,481	9,245	169,581	$508,475	$49,588
Route 45F	36,440	4,628	72,023	$254,540	$23,322
Route 45V	141,665	4,628	70,554	$254,540	$90,666
Route 51	91,371	4,628	65,932	$254,540	$58,477
Route 52	116,029	4,628	73,836	$254,540	$74,259
Total	*1,000,868*	*60,112*	*1,045,035*	*$3,306,160*	*$640,556*

For each of the diagnostic indicators, each route is ranked compared to the other routes in the system and also compared to the system average. Performance by route is shown in both table and chart format for each indicator. Routes that are less than 60% of the system average may require substantial modification or possibly elimination. Routes that are between 60% and 80% of the system average need to be looked at in further detail to determine if small modifications are necessary.

Service Effectiveness

Service effectiveness describes the amount of service utilized per unit of transit service provided. Service effectiveness is measured based on two indicators, passengers per mile and passengers per hour. While both passengers per mile and passengers per hour are presented, only passengers per mile is included in the route scoring and ranking presented at the end of the route diagnostics section to avoid duplication.

Passengers per Mile

The passenger per mile figures and rankings are presented in Table 4-10 and Figure 4-6. This indicator measures the number of passengers carried annually by each route versus the number of miles per year the route operates.

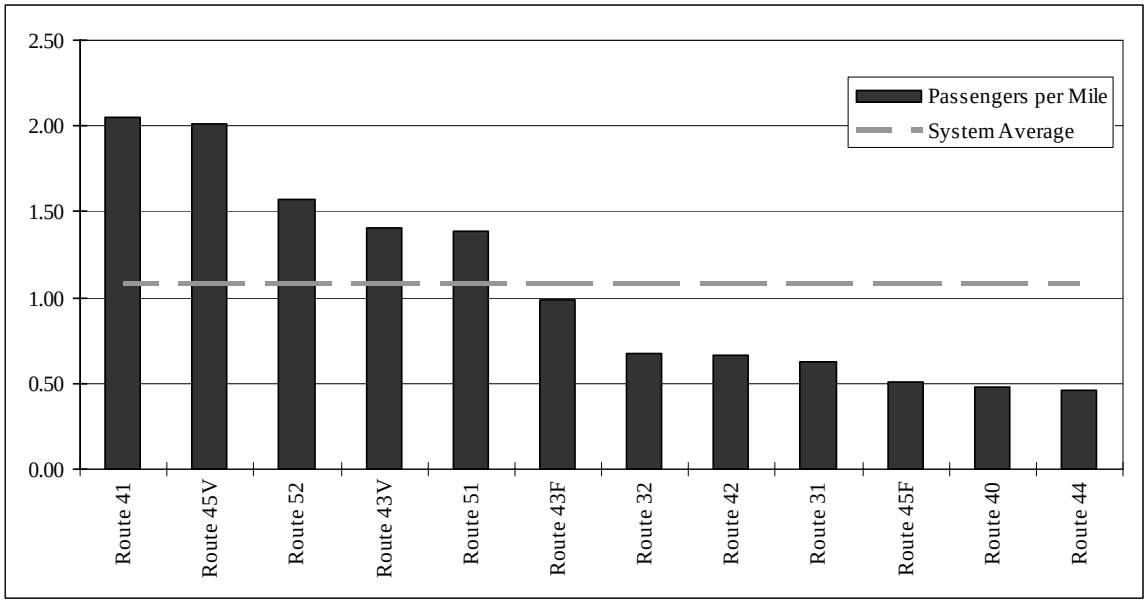
VVTA averages 1.07 passengers per mile for their local routes. Routes 41 and 45V carry the most passengers per mile while Routes 40 and 44 carry the least. Five routes operate above the system average while the other 7 routes operate below the system average.

Table 4-10: VVTA Passengers per Mile by Route

Local Route	Passengers per Mile	Rank	% of System Average
Route 41	2.05	1	191.8%
Route 45V	2.01	2	187.7%
Route 52	1.57	3	146.9%
Route 43V	1.40	4	131.3%
Route 51	1.39	5	129.5%
Route 43F	0.99	6	92.1%
Route 32	0.67	7	62.6%
Route 42	0.66	8	61.9%
Route 31	0.63	9	58.7%
Route 45F	0.51	10	47.3%
Route 40	0.48	11	44.7%
Route 44	0.46	12	42.7%
System Average	*1.07*		

(Higher is better.)

Figure 4-6: Passengers per Mile by Route with System Average



Passengers per Hour

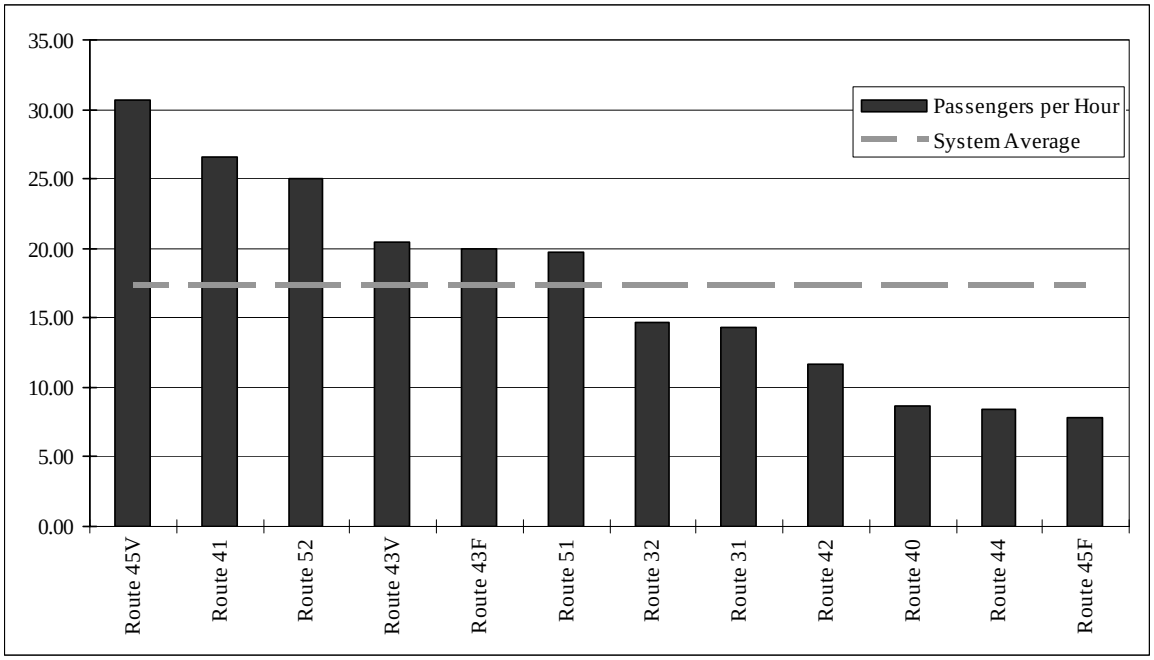
The passengers per hour figures, which include rankings, are presented for VVTA in Table 4-11 and Figure 4-7. This indicator measures the number of passengers carried annually by each route versus the number of hours per year the route operates.

In fiscal year 2003-2004, VVTA carried 17.33 passengers per hour on their local routes. Half of the routes operated above the system average and half below. Route 45V served the most passengers per hour and Route 45F served the least.

Table 4-11: VVTA Passengers per Hour by Route

Local Route	Passengers per Hour	Rank	% of System Average
Route 45V	30.61	1	176.6%
Route 41	26.59	2	153.5%
Route 52	25.07	3	144.7%
Route 43V	20.39	4	117.7%
Route 43F	19.96	5	115.2%
Route 51	19.74	6	113.9%
Route 32	14.65	7	84.5%
Route 31	14.34	8	82.8%
Route 42	11.67	9	67.4%
Route 40	8.70	10	50.2%
Route 44	8.38	11	48.4%
Route 45F	7.87	12	45.4%
System Average	*17.33*		

Figure 4-7: Passengers per Hour by Route with System Average



Financial Efficiency

Financial efficiency measures the cost of providing transit service per unit of service provided. Two indicators, cost per mile and cost per hour, can be used to determine financial efficiency. Since the annual operating cost was determined using an average cost per hour figure for the system as a whole and not for each individual route, only the cost per mile indicator varies from route to route in this analysis and therefore is presented for the review of financial efficiency.

Cost per Mile

Table 4-12 and Figure 4-8 present the cost per mile for each route and the route rankings. This indicator presents the total annual route cost per revenue mile operated, and is an indicator of how well resources are being used to produce a unit of service.

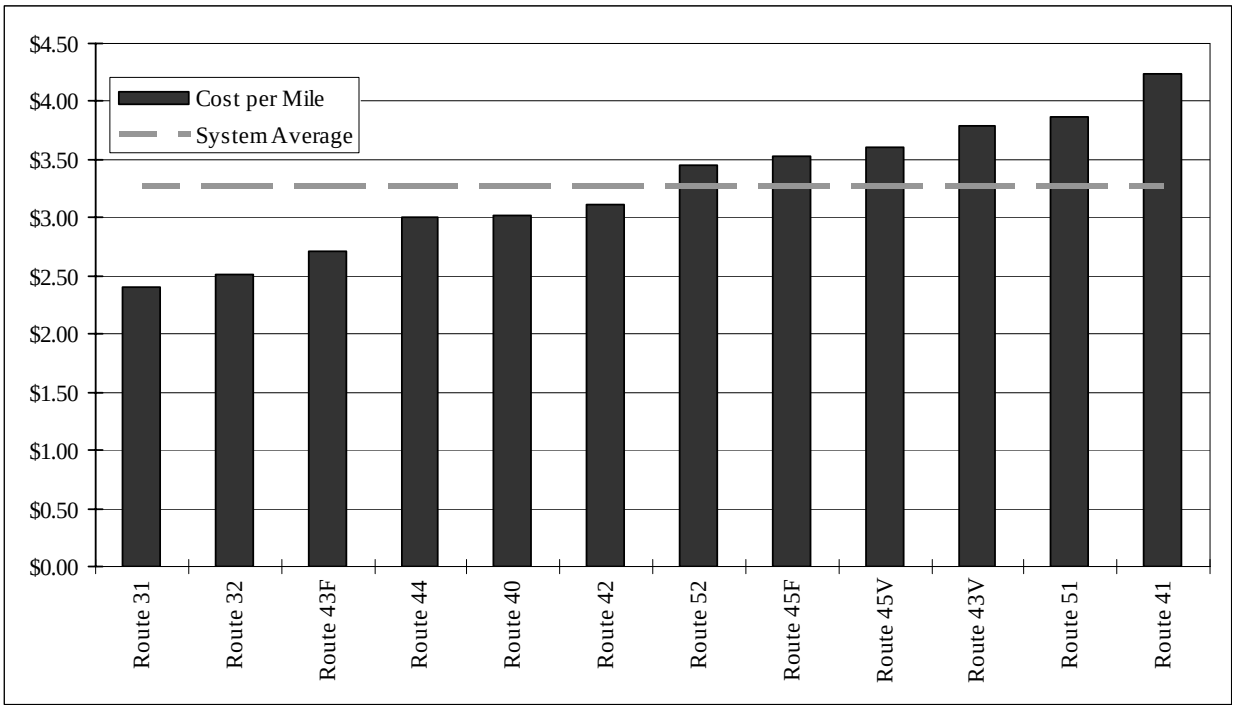
VVTA local routes cost $3.27 per mile to operate. Half of the routes operate better the system average and half worse. Route 31 is the most efficient route at $2.41 per mile. Route 41 is the least efficient route at $4.24 per mile.

Table 4-12: VVTA Cost per Mile by Route

Local Route	Cost per Mile	Rank	% of System Average
Route 31	$2.41	1	73.7%
Route 32	$2.51	2	76.9%
Route 43F	$2.72	3	83.1%
Route 44	$3.00	4	91.7%
Route 40	$3.02	5	92.4%
Route 42	$3.12	6	95.4%
Route 52	$3.45	7	105.4%
Route 45F	$3.53	8	108.1%
Route 45V	$3.61	9	110.3%
Route 43V	$3.79	10	115.9%
Route 51	$3.86	11	118.1%
Route 41	$4.24	12	129.8%
System Average	*$3.27*		

(Lower costs are better.)

Figure 4-8: Cost per Mile by Route with System Average



Cost Effectiveness

Cost effectiveness measures the effectiveness of the system from a financial standpoint – how well the dollars put into the system are being used to produce trips. The cost effectiveness indicators are cost per passenger, subsidy per passenger, and farebox recovery.

Cost per Passenger

Table 4-13 and Figure 4-9 present the cost per passenger and ranking for each route. This indicator divides the route operating cost among all passengers that use the route.

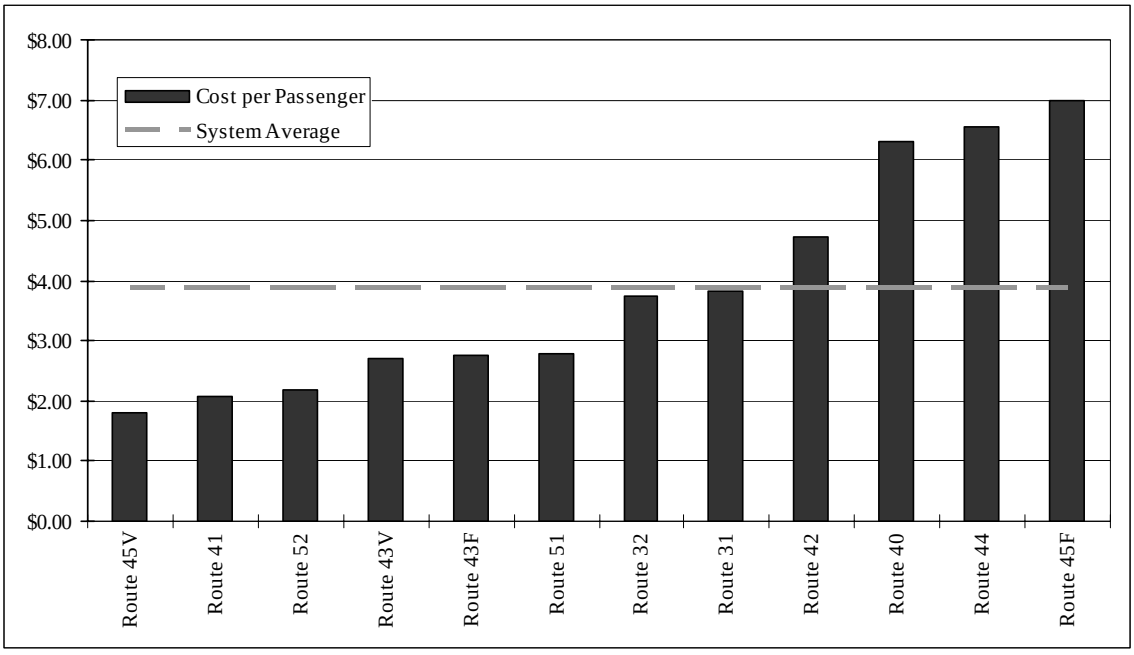
VVTA local routes cost $3.87 per passenger to operate. Route 45V is the most cost effective route and Route 45F is the least cost effective. Eight routes are most cost effective than the system average and only four routes are less so.

Table 4-13: VVTA Cost per Passenger by Route

Route	Cost per Passenger	Rank	% of System Average
Route 45V	$1.80	1	46.4%
Route 41	$2.07	2	53.4%
Route 52	$2.19	3	56.7%
Route 43V	$2.70	4	69.7%
Route 43F	$2.75	5	71.2%
Route 51	$2.79	6	72.0%
Route 32	$3.75	7	97.0%
Route 31	$3.84	8	99.1%
Route 42	$4.71	9	121.7%
Route 40	$6.32	10	163.3%
Route 44	$6.56	11	169.6%
Route 45F	$6.99	12	180.5%
System Average	*$3.87*		

(Lower costs are better.)

Figure 4-9: Cost per Passenger by Route with System Average



Farebox Recovery

Farebox recovery measures the percent of operating cost covered by fares and is an outcome heavily influenced by the ridership productivity of a route against its total operating cost, as well as the fare policy of the system. It is calculated by dividing fare revenue by operating cost. Table 4-14 and Figure 4-10 list the farebox recovery ratio for each route as well as how each route ranked compared to the other routes in the system.

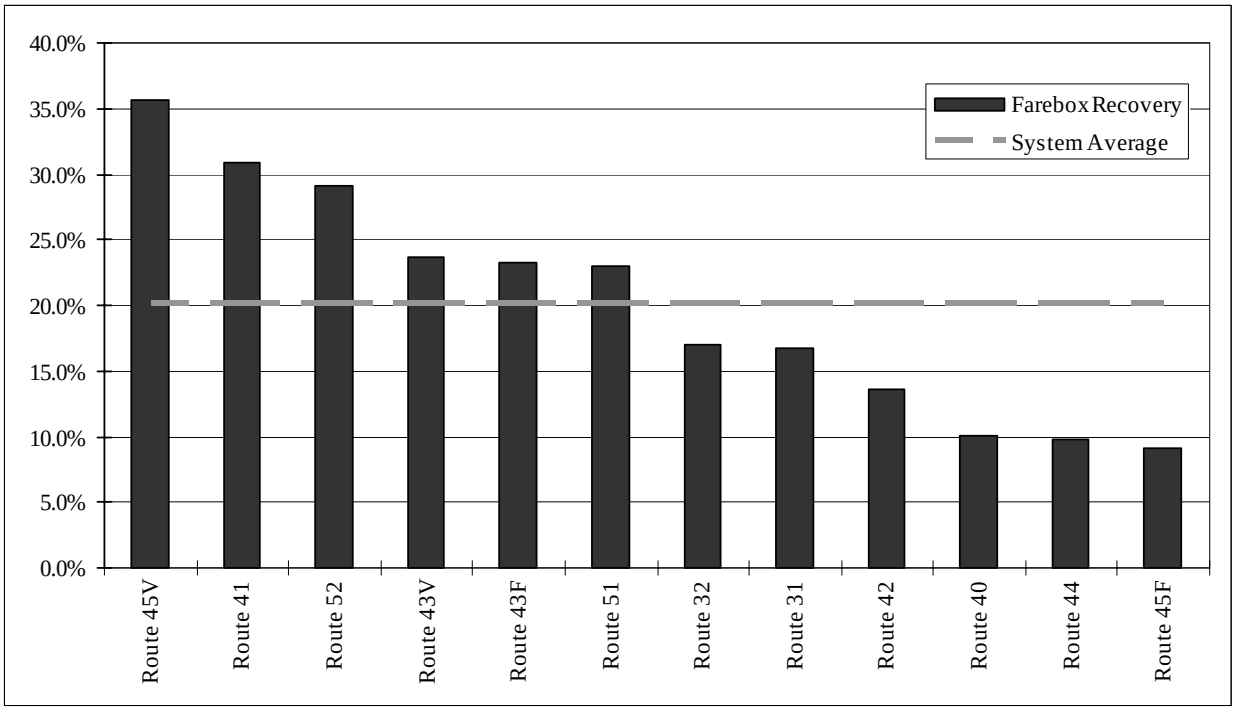
VVTA local routes recover 20% of their costs through farebox revenue. As with the other cost effectiveness measure, Route 45V is the most cost effective and Route 45H is the least so. However, half of the routes recover more than the system average of their costs through farebox revenue and half recover less.

Table 4-14: VVTA Fare box Recovery by Route

Route	Farebox Recovery	Rank	% of System Average
Route 45V	35.6%	1	176.6%
Route 41	30.9%	2	153.4%
Route 52	29.2%	3	144.6%
Route 43V	23.7%	4	117.6%
Route 43F	23.2%	5	115.2%
Route 51	23.0%	6	113.9%
Route 32	17.0%	7	84.5%
Route 31	16.7%	8	82.7%
Route 42	13.6%	9	67.3%
Route 40	10.1%	10	50.2%
Route 44	9.8%	11	48.4%
Route 45F	9.2%	12	45.4%
System Average	*20.17%*		

(Higher is better).

Figure 4-10: Farebox Recovery by Route with System Average



Route Ranking

The rankings of each of the routes for two indicators can be used to calculate a cumulative rank score for each route on The two indicators include passengers per mile to rate service effectiveness and farebox recovery to rate cost effectiveness. Financial efficiency was not rated because the ratings of the routes in this category correlated directly to route length, which does not measure performance. Routes with a higher score are indicative of poorer performing routes which need to be addressed. Routes with a lower score are generally better performing routes that may only require monitoring or minor adjustment in order to integrate better into the VVTA network or to serve new generators.

Table 4-15 presents the route rankings. There are several ties, so those routes with the same cumulative rank scores are given the same overall rank. Routes 41 and 45V are tied as being the highest ranked routes. Route 52 is also highly ranked. Route 44 is the lowest ranked route while Routes 40 and 45F are also ranked low compared to the other local routes in the VVTA system.

Table 4-15: VVTA Route Ranking

Route	Passengers per Mile Rank	Farebox Recovery Rank	Cumulative Rank Score	Overall Rank
Route 41	1	2	3	1
Route 45V	2	1	3	1
Route 52	3	3	6	3
Route 43V	4	4	8	4
Route 43F	6	5	11	5
Route 51	5	6	11	5
Route 32	7	7	14	7
Route 31	9	8	17	8
Route 42	8	9	17	8
Route 40	11	10	21	10
Route 45F	10	12	22	11
Route 44	12	11	23	12

Individual routes and their positive and negative performance attributes are discussed following the ridership by route and time of day analysis.

Ridership Counts and Time of Day Analysis

Ridership by Route

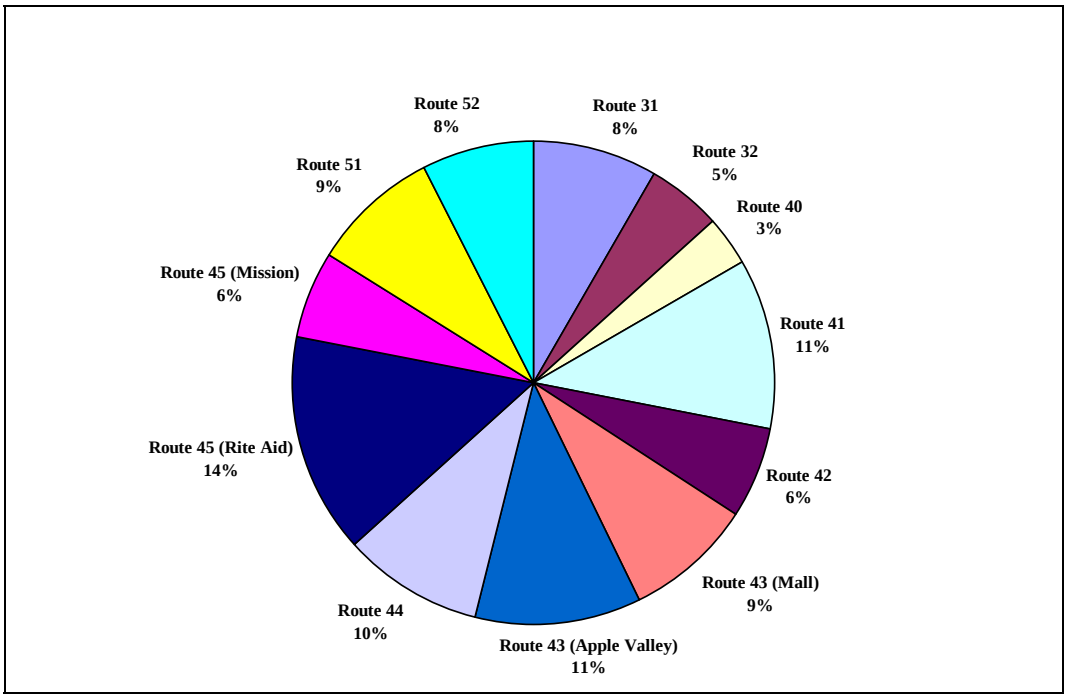
Taken together, forty percent of the total ridership for the system is carried on Route 43 (20%) and Route 45 (20%). These routes are essentially the backbone of the system and link to all other fixed route networks. Route 45 has more than twice the percent of riders on one segment from Victor Valley College to the Lorene Transit Center (Rite Aid) compared to the other segment from Mission and C Avenue. By contrast, there is only a 2% difference in the ridership between the two segments of Route 43. This shows that transfer activity on Route 43 between the two loops is higher than Route 45. As shown in Figure 4-6, a significant percentage of riders also travel on Route 41 (11%) and Route 44 (10%). In Apple Valley, Routes 40 (3%) and 42 (6%) have few riders on a system-wide basis. Route 40 has less ridership in both directions at the stops in between the Apple Valley WalMart and Apple Valley Post Office. Route 32 and Route 51 traverse through Victorville, with each accounting for 8% of the total ridership of 3,344 on all routes.

In general, higher ridership activity can be observed on routes that provide service to Victorville and Hesperia. Table 4-16 and Figure 4-11 illustrate the breakdown of systemwide ridership by route.

Table 4-16: Ridership by Route

Route	Total Ridership
Route 31	276
Route 32	174
Route 40	110
Route 41	376
Route 42	210
Route 43 (Mall)	287
Route 43 (Apple Valley)	368
Route 44	320
Route 45 (Rite Aid)	489
Route 45 (Mission)	196
Route 51	285
Route 52	253
Total	3,344

Figure 4-11: Ridership by Route



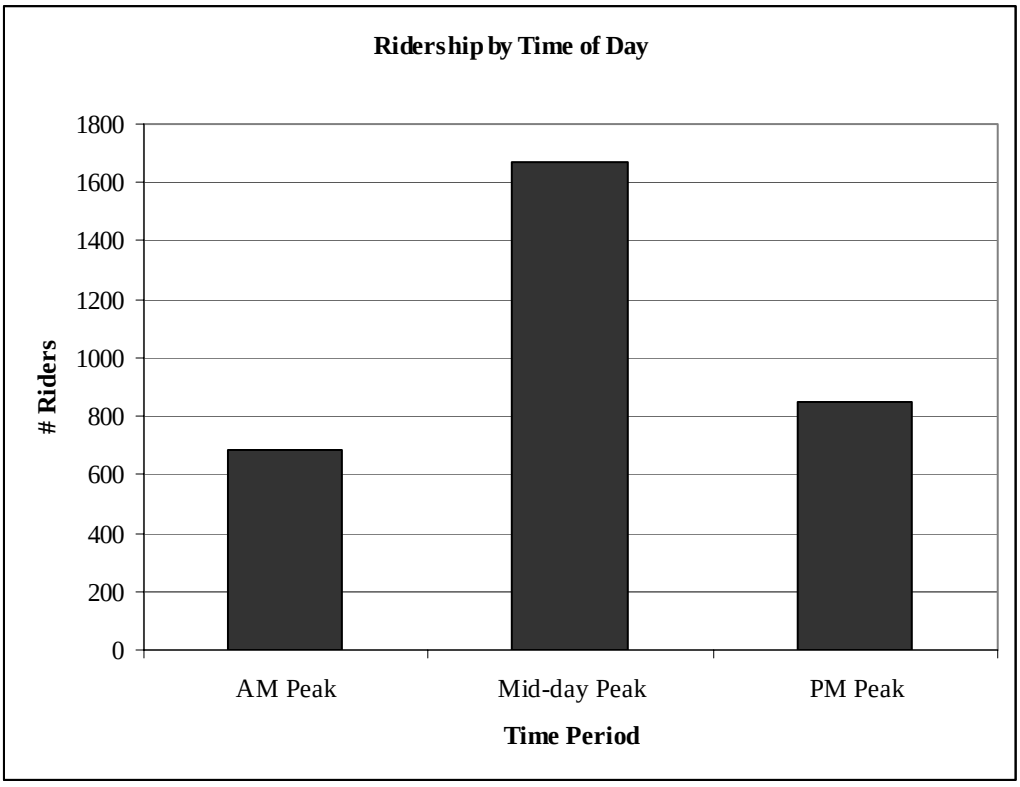
Ridership by Time of Day

The distribution of VVTA ridership by time of day, based on the on/off counts show modest morning and afternoon peaks and relatively strong midday ridership, with the peak ridership occurring between 9:00 A.M and 3:00 P.M. This is shown graphically in Figure 4-12. Morning passenger totals 227 per hour from 6:00 A.M to 9:00 A.M. After a slight drop in ridership during the late morning period, passenger total increases to 1,673 riders at Mid-day peak between 9:00 A.M and 3:00 P.M. Ridership declines by 50% during the PM peak period from 3:00 P.M and 7:00 P.M as shown in Table 4-17.

Table 4-17: Ridership by Time of Day

Route	AM Peak	Mid-day Peak	PM Peak
Route 31	79	115	50
Route 32	33	76	57
Route 40	19	125	56
Route 41	54	176	62
Route 42	51	99	55
Route 43 (Mall)	47	138	85
Route 43 (Apple Valley)	75	208	66
Route 44	86	118	96
Route 45 (Rite Aid)	85	262	115
Route 45 (Mission)	50	91	80
Route 51	58	145	54
Route 52	44	120	76
Total	681	1,673	852

Figure 4-12: Ridership by Time of Day



Route Issues and Opportunities

The following section provides an overview of the individual local fixed routes that run all or most of the service day. This section includes data collected for each route from the route diagnostics section and the ridership counts taken for this project. This section compares the performance of each route to the standards identified in this chapter.

Route 31

Route 31 is a poor performing route, ranking 8th out of 12 local routes in terms of cost and service effectiveness. In fiscal year 2003-2004, Route 31 served 68,034 passengers on 4,744 hours and 108,324 miles of service. In order to operate the route, the cost totaled $260,920, of which $43,542 was recovered from farebox revenues. Table 4-18 lists performance indicators for Route 31.

Table 4-18: Route 31 Indicators

Factor/Indicator	Route 31
Ridership	68,034
Revenue Hours	4,744
Revenue Miles	108,324
Operating Speed (MPH)	22.8
Operating Cost	$260,920.00
Farebox Revenue	$43,541.76
Passengers per Mile	0.63
Passenger per Hour	14.34
Cost per Mile	$2.41
Cost per Passenger	$3.84
Farebox Recovery	17%
Cumulative Rank Score	17
Rank	8

Figures 4-13 and 4-14 chart boardings on Route 31 by time of day. In the eastbound direction, boardings are highest in the morning peak period and drop off almost to nothing in the evening. In the westbound direction, ridership peaks during the mid-day period and is consistent throughout the day.

Figure 4-13: Route 31 EB Boardings by Time of Day

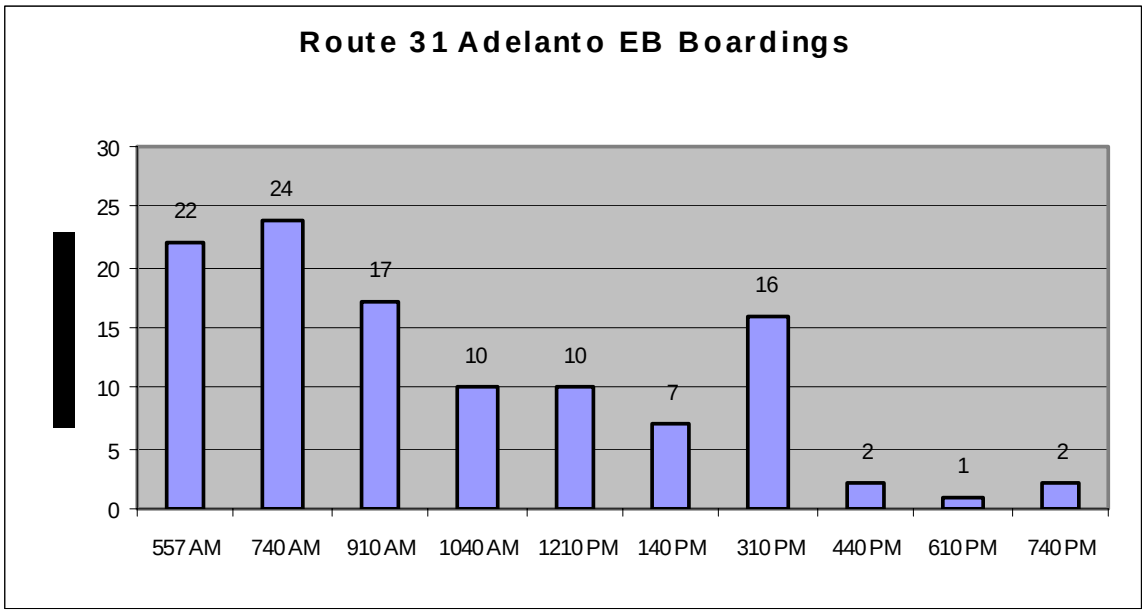
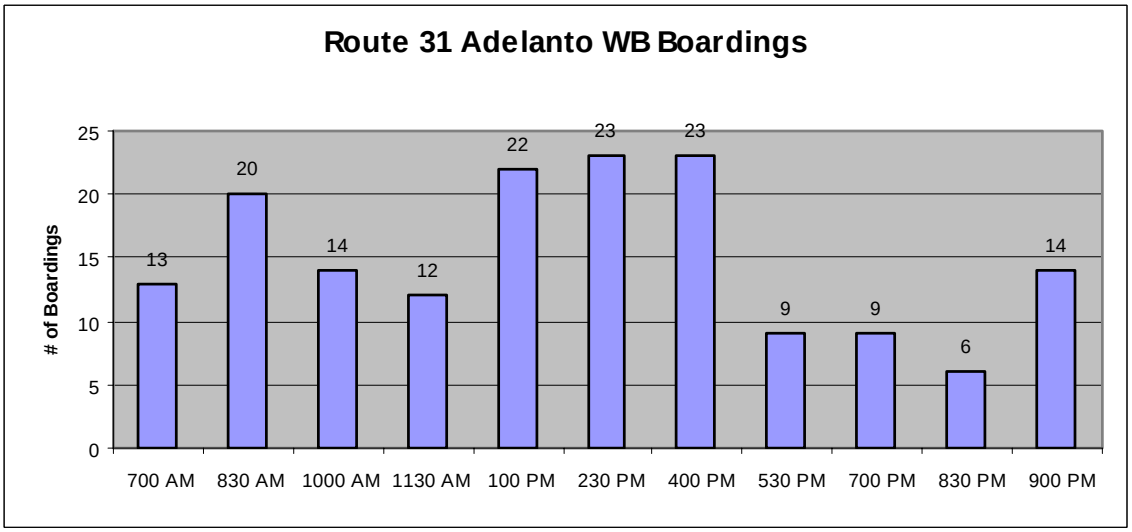


Figure 4-14: Route 31 WB Boardings by Time of Day



Boardings and alightings along the route during weekday service are heaviest at the terminals and a few stops such as those located at Verbena/Victor and Palmdale/Cobalt. The stops along Palmdale, Cobalt, and Amargosa provide the largest share of route's ridership. Compared to Route 32, the ridership counts are more than twice on this route on a weekday. Figures 4-15 and 4-16 show boardings and alightings by bus stop for Route 31.

Figure 4-15: Route 31 EB Bus Stop Activity

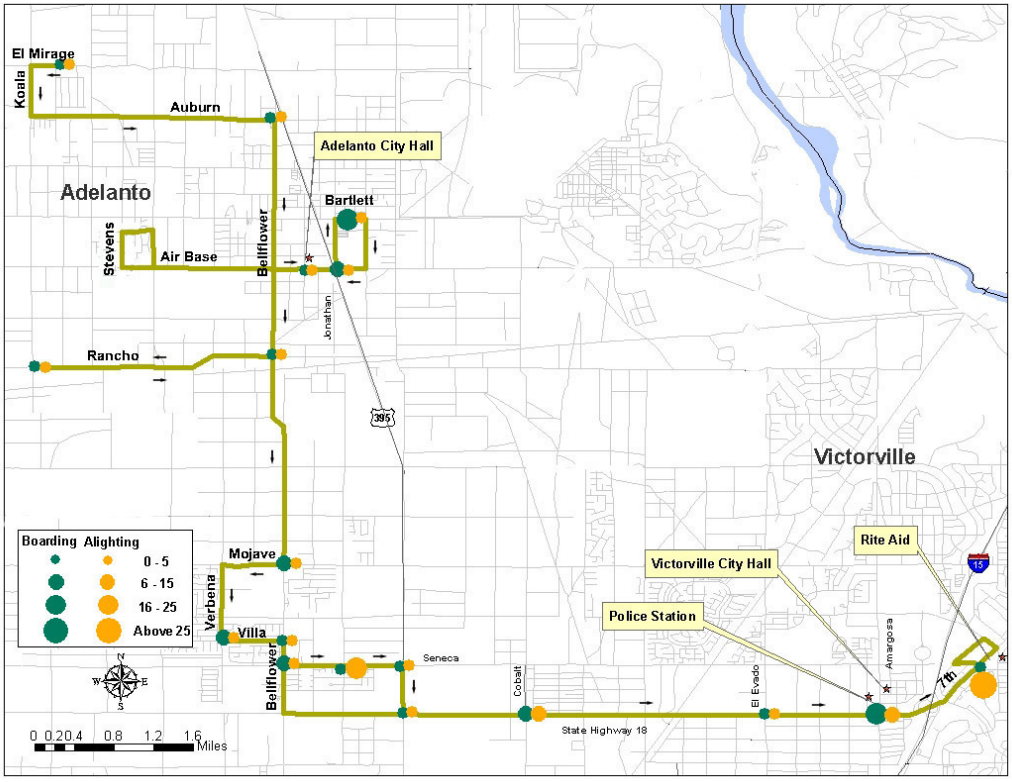
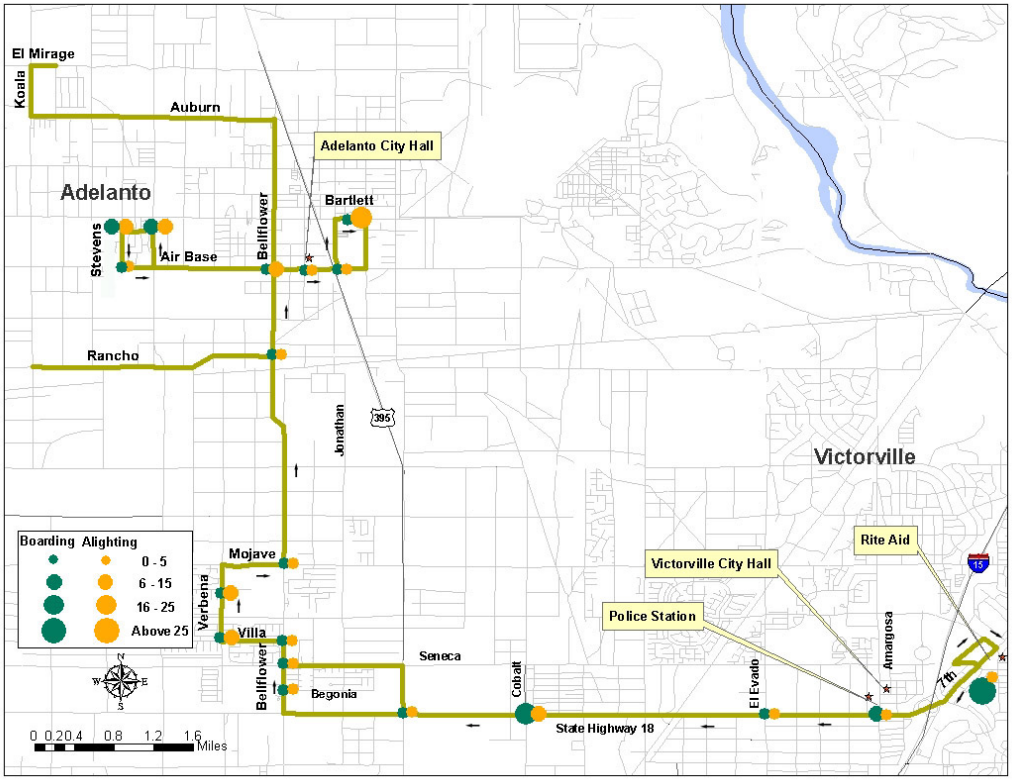


Figure 4-16: Route 31 WB Bus Stop Activity



Route 32

Route 32 is a mid-level to poor performer in the VVTA system, ranked 7th out of 12 local routes. In 2003-2004, Route 32 served 66,896 passengers on 4,566 hours and 99,886 miles of service. Table 4-19 includes performance statistics for Route 32. Route 32 cost $251,130 to operate during fiscal year 2003-2004, of which $42,813 was recouped in farebox revenue.

Table 4-19: Route 32 Indicators

Factor/Indicator	Route 32
Ridership	66,896
Revenue Hours	4,566
Revenue Miles	99,886
Operating Speed (MPH)	21.9
Operating Cost	$251,130.00
Farebox Revenue	$42,813.44
Passengers per Mile	0.67
Passenger per Hour	14.65
Cost per Mile	$2.51
Cost per Passenger	$3.75
Farebox Recovery	17%
Cumulative Rank Score	14
Rank	7

Figures 4-17 and 4-18 are ridership by time of day charts. In the eastbound direction, ridership is highest during the morning and evening peak periods and drops off to nearly nothing in the evening. In the westbound direction, ridership is also greatest during the morning and afternoon peak periods, but is higher and more consistent throughout the day than in the eastbound direction.

Figure 4-17: Route 32 EB Boardings by Time of Day

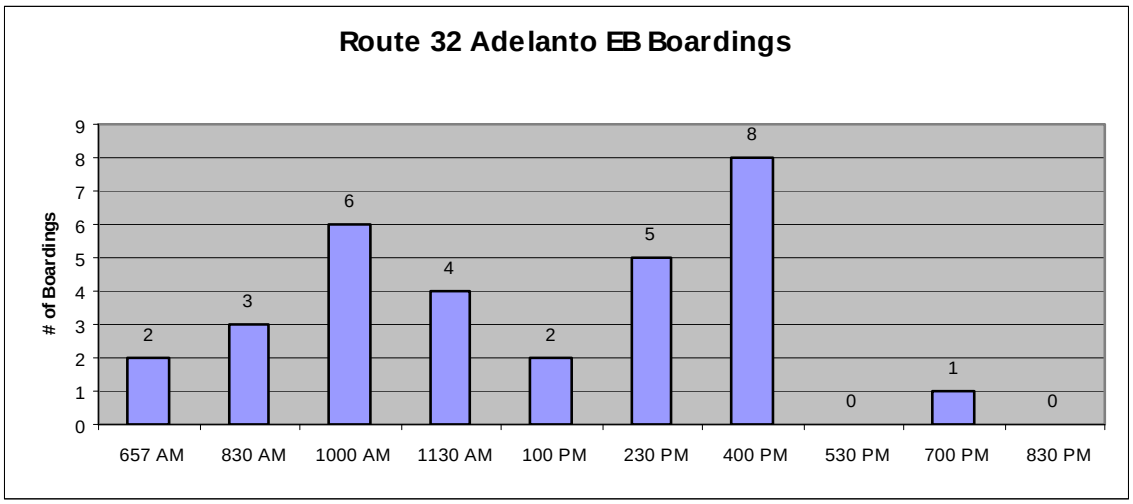
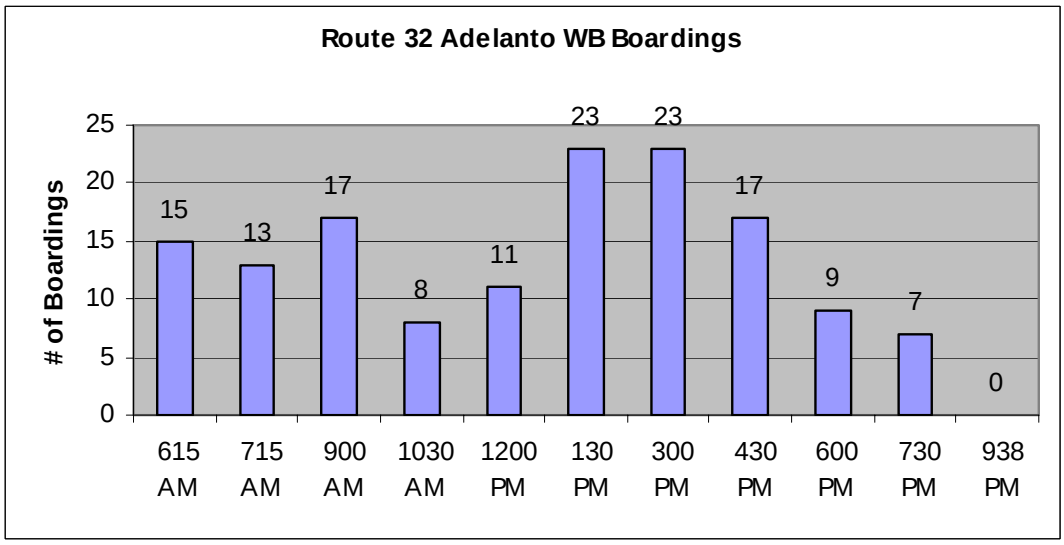


Figure 4-18: Route 32 WB Boardings by Time of Day



Route 32 overlaps with Route 31 for a major portion and diverts at Palmdale Road and Cobalt. Passenger counts are not very high in the eastbound direction, with highest activity taking place at 7th Street and Lorene. Passenger volume increases from Palmdale and Cobalt, but the northern section has stops with little or no activity until the terminus. Figures 4-19 and 4-20 map ridership by bus stop for Route 32.

Figure 4-19: Route 32 EB Bus Stop Activity

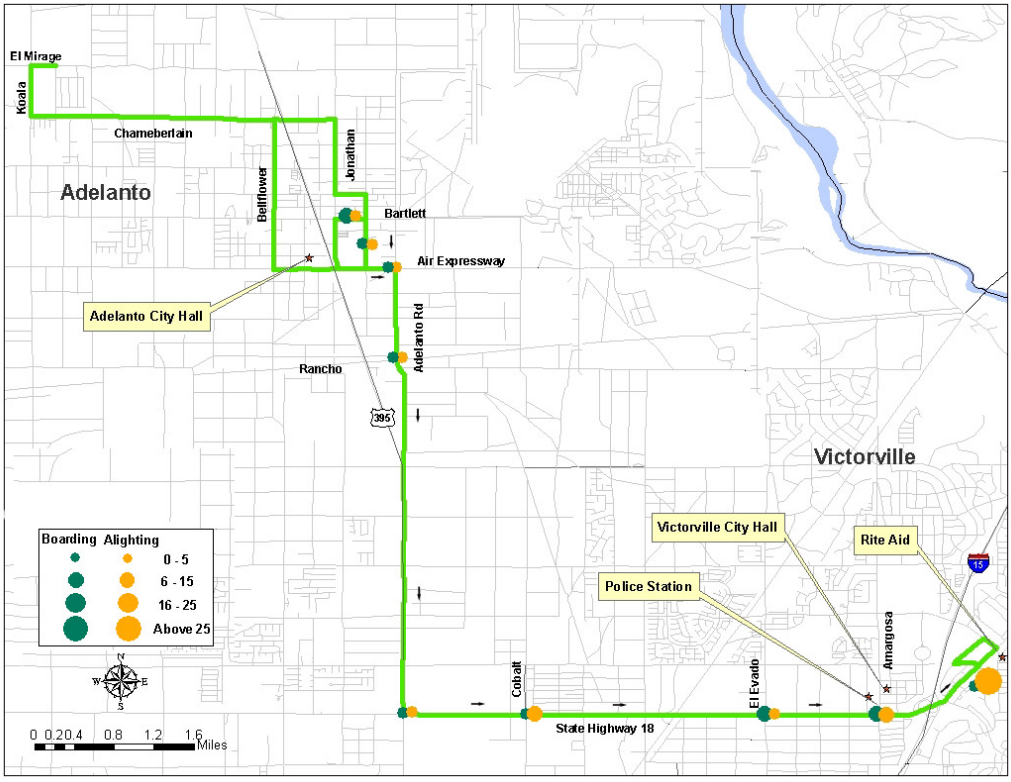
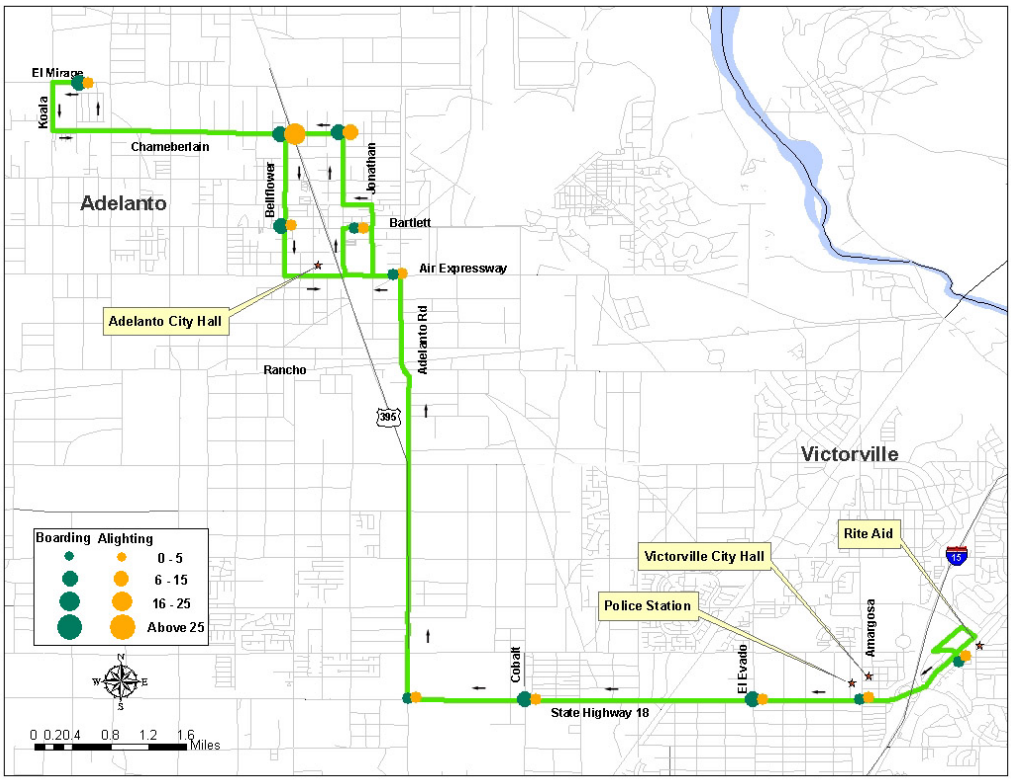


Figure 4-20: Route 32 WB Bus Stop Activity



Route 40

Route 40 is a poor performing route in the VVTA system of local routes, ranked 10th out of 12 routes. Route 40 cost $525,615 to operate during fiscal year 2003-2004. Of the costs incurred by the route, 10% of them were recovered through farebox revenues. During the same period, Route 40 served 39,982 passengers on 4,593 hours and 83,564 miles of service. Table 4-20 lists performance indicators for Route 40.

Table 4-20: Route 40 Indicators

Factor/Indicator	Route 40
Ridership	39,982
Revenue Hours	4,593
Revenue Miles	83,564
Operating Speed (MPH)	18.2
Operating Cost	$252,615.00
Farebox Revenue	$25,588.48
Passengers per Mile	0.48
Passenger per Hour	8.70
Cost per Mile	$3.02
Cost per Passenger	$6.32
Farebox Recovery	10%
Cumulative Rank Score	21
Rank	10

Figures 4-21 and 4-22 chart ridership by time of day for Route 40. In the eastbound direction, ridership is strongest in the mid-day period but is also high in the morning and afternoon peak periods. It is very low in the evenings. In the westbound direction, ridership is greatest during the mid-day and afternoon peak periods and is very poor in the morning and evening periods.

Figure 4-21: Route 40 EB Boardings by Time of Day

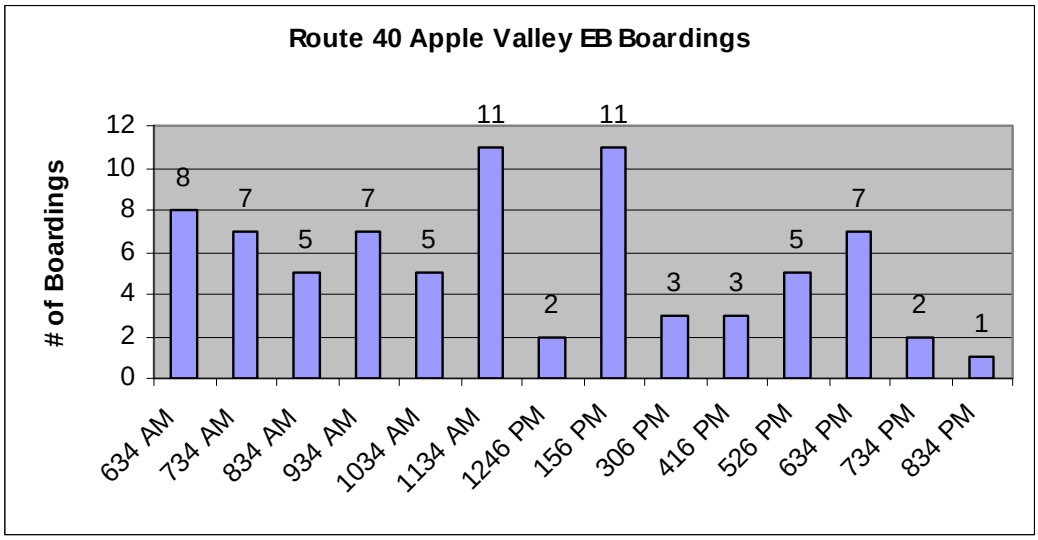
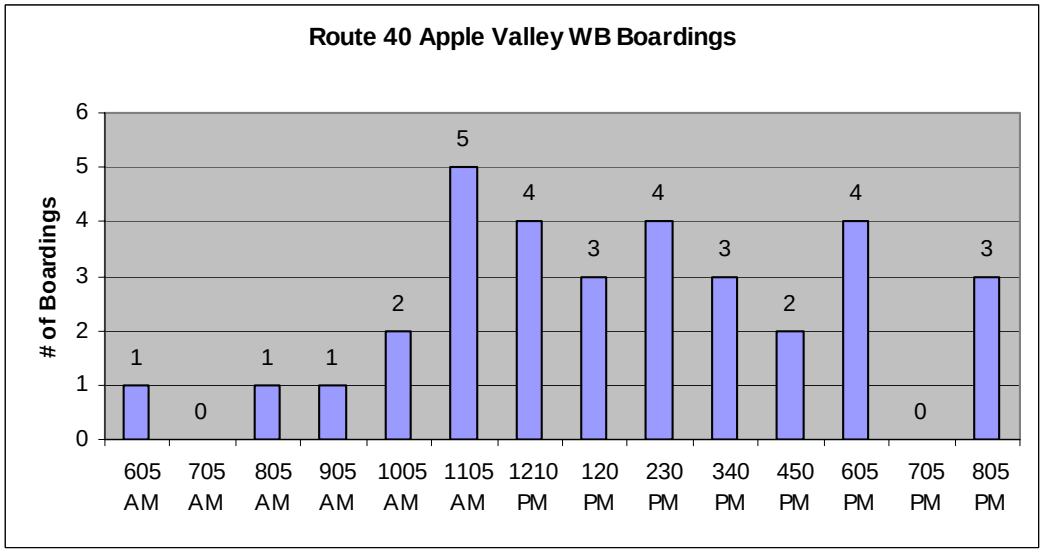


Figure 4-22: Route 40 WB Boardings by Time of Day



Route 40 comprises the smallest percentage of total ridership of all the routes, with almost no activity on Thunderbird. The section from Apple Valley WalMart to Thunderbird and Wannaque has the majority of riders on the eastbound run. In the westbound direction, there is high boarding at Quinnault, but demand remains low for the rest of the route segment. Figures 4-23 and 4-24 map activity by bus stop for Route 40.

Figure 4-23: Route 40 EB Bus Stop Activity

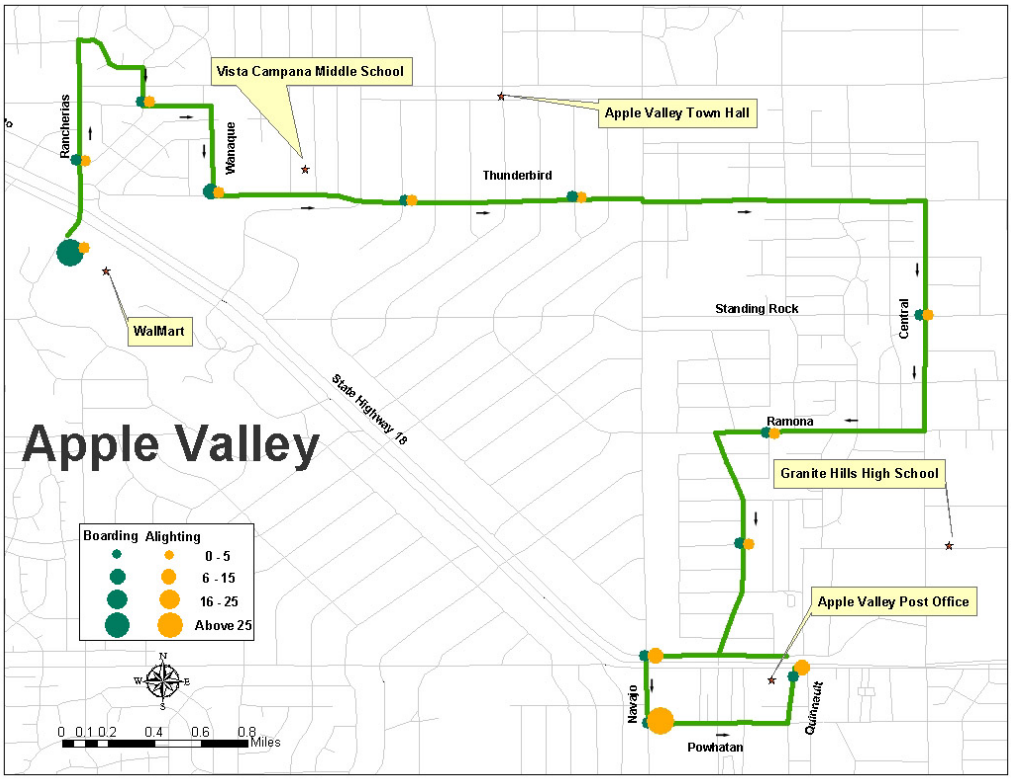
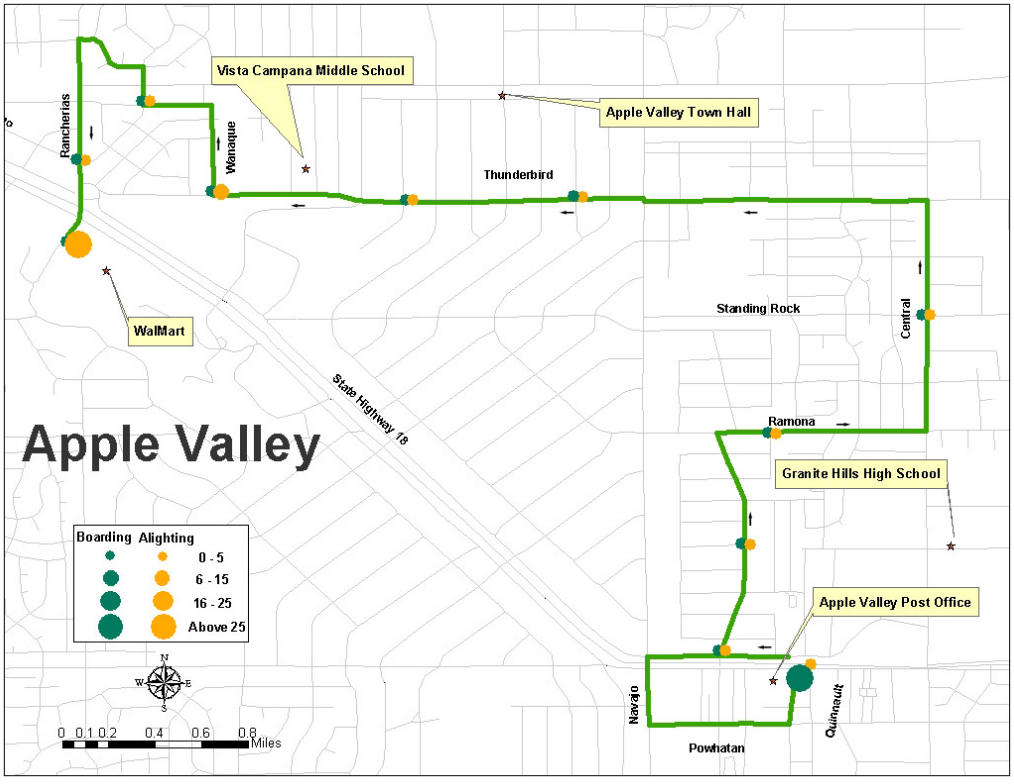


Figure 4-24: Route 40 WB Bus Stop Activity



Route 41

Route 41 is the top performer in the VVTA system of local routes (tied with Route 45V). Table 4-21 describes the performance statistics for the route. In 2003-2004, Route 41 served 123,073 passengers on 4,628 hours and 59,969 miles of service. The operation of the route cost $254,540, of which $78,767 was recouped from farebox revenue.

Table 4-21: Route 41 Indicators

Factor/Indicator	Route 41
Ridership	123,073
Revenue Hours	4,628
Revenue Miles	59,969
Operating Speed (MPH)	13.0
Operating Cost	$254,540.00
Farebox Revenue	$78,766.72
Passengers per Mile	2.05
Passenger per Hour	26.59
Cost per Mile	$4.24
Cost per Passenger	$2.07
Farebox Recovery	31%
Cumulative Rank Score	3
Rank	1

Figures 4-25 and 4-26 chart ridership by time of day for Route 41. In the outbound direction, ridership is highest during the mid-day and afternoon peak time periods and is drops off throughout the morning and evening periods. In the inbound direction, ridership is greatest throughout the mid-day period and is lower during the morning and afternoon peak periods and lower still in the evening.

Figure 4-25: Route 41 OB Boardings by Time of Day

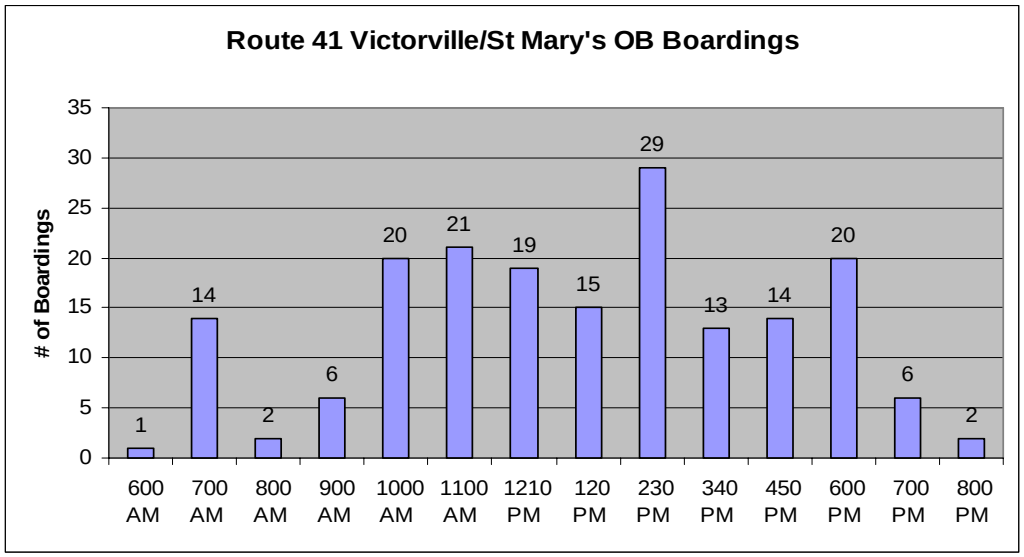
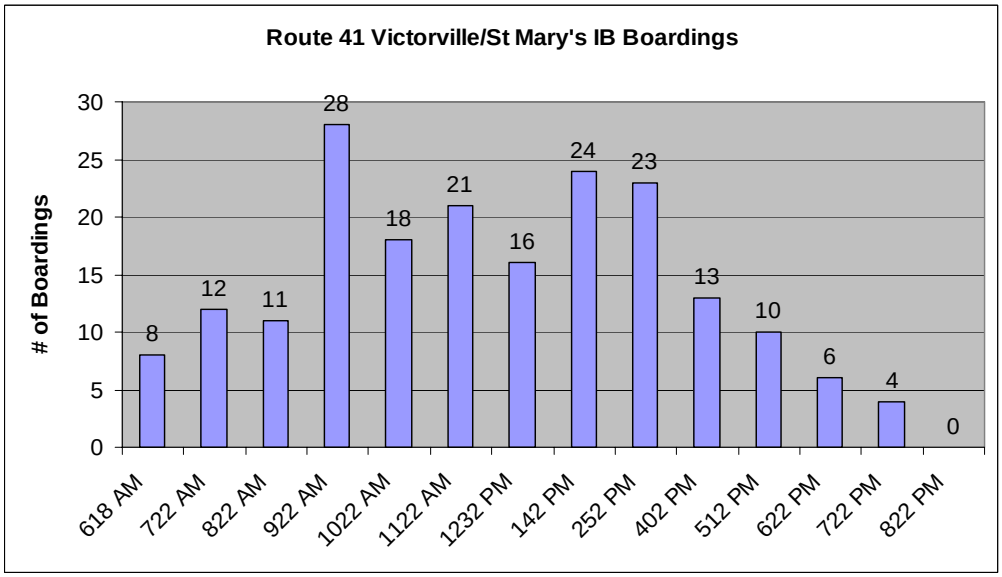


Figure 4-26: Route 41 IB Boardings by Time of Day



In the eastbound direction, the major boarding point is at Lorene Transit Center (Rite Aid). The major alightings are at 8th Street and C Street and at 7th St and Forrest. Significant boarding and alighting occur in the southbound direction beginning primarily from Stoddard Wells and continuing for the remainder of the route. Figures 4-27 and 4-28 map boardings and alightings by bus stop for Route 41.

Figure 4-27: Route 41 IB Bus Stop Activity

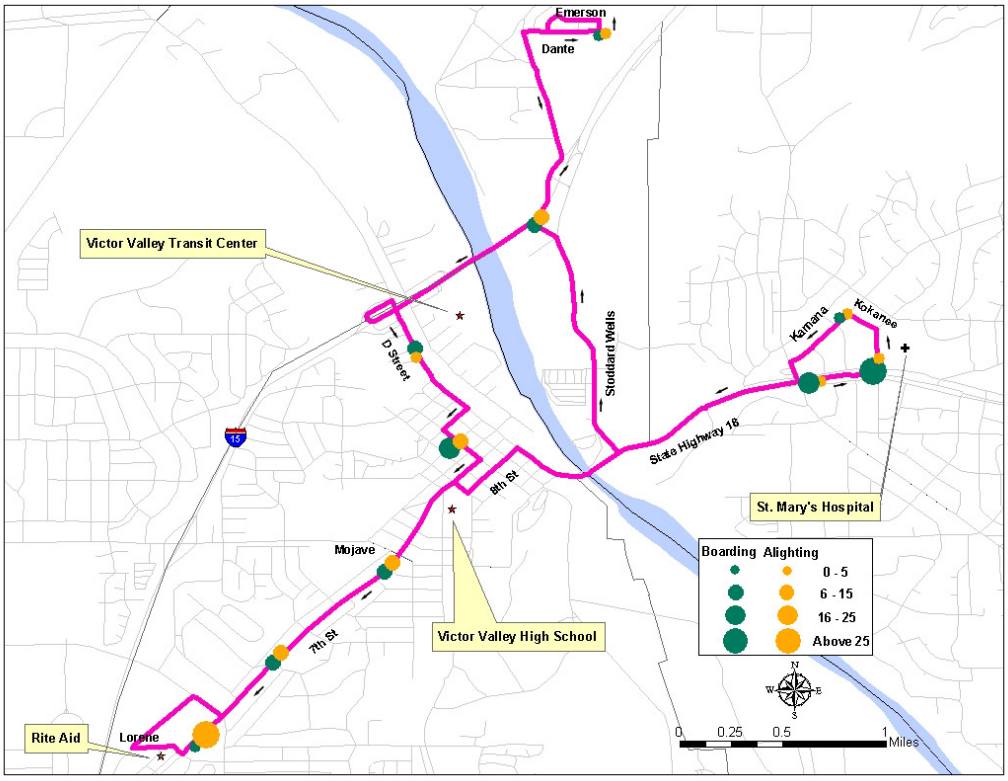
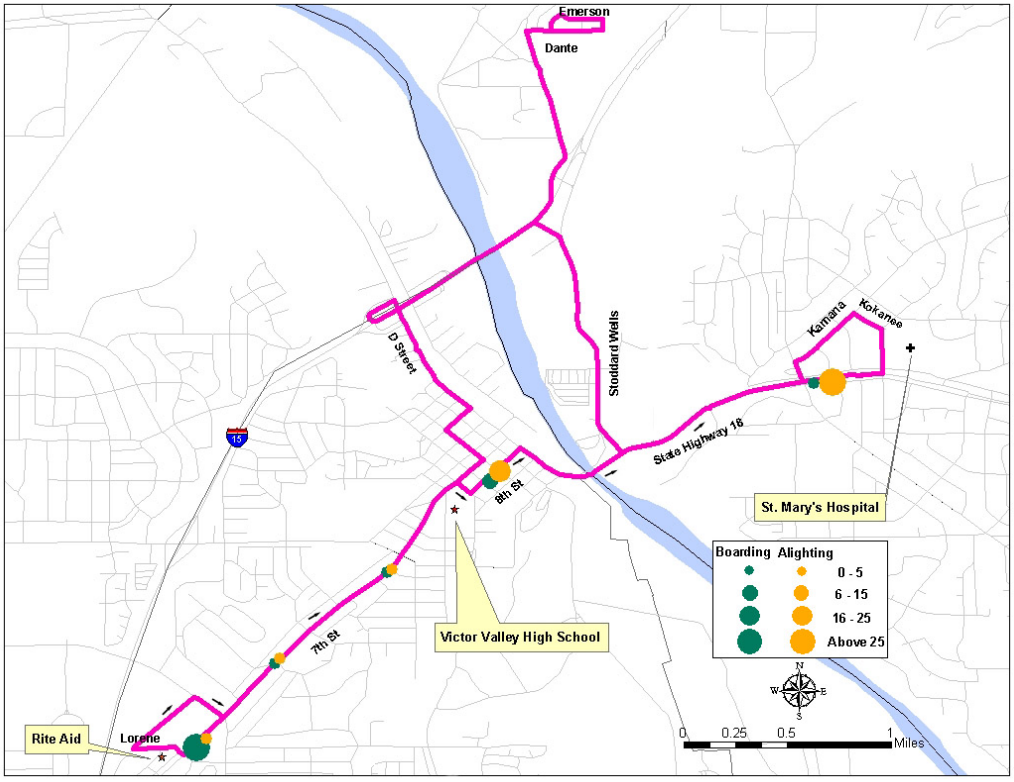


Figure 4-28: Route 41 OB Bus Stop Activity



Route 42

Route 42 is ranked 8th out of 12 local routes in the VVTA system (tied with Route 31). For fiscal year 2003-2004, Route 42 served 53,593 passengers on 4,591 hours and 80,937 miles of service. The operation of the route cost $252,505, of which $34,300 was recovered in farebox revenues. Table 4-22 lists performance indicators for Route 42.

Table 4-22: Route 42 Indicators

Factor/Indicator	Route 42
Ridership	53,593
Revenue Hours	4,591
Revenue Miles	80,937
Operating Speed (MPH)	17.6
Operating Cost	$252,505.00
Farebox Revenue	$34,299.52
Passengers per Mile	0.66
Passenger per Hour	11.67
Cost per Mile	$3.12
Cost per Passenger	$4.71
Farebox Recovery	14%
Cumulative Rank Score	17
Rank	8

Figures 4-29 and 4-30 describe ridership on Route 42 by time of day. In the eastbound direction, ridership is generally consistent throughout the day with peaks in the morning and afternoon and a major drop in the evening. In the westbound direction, ridership is also consistent throughout the day with peaks in the morning and mid-day periods.

Figure 4-29: Route 42 EB Boardings by Time of Day

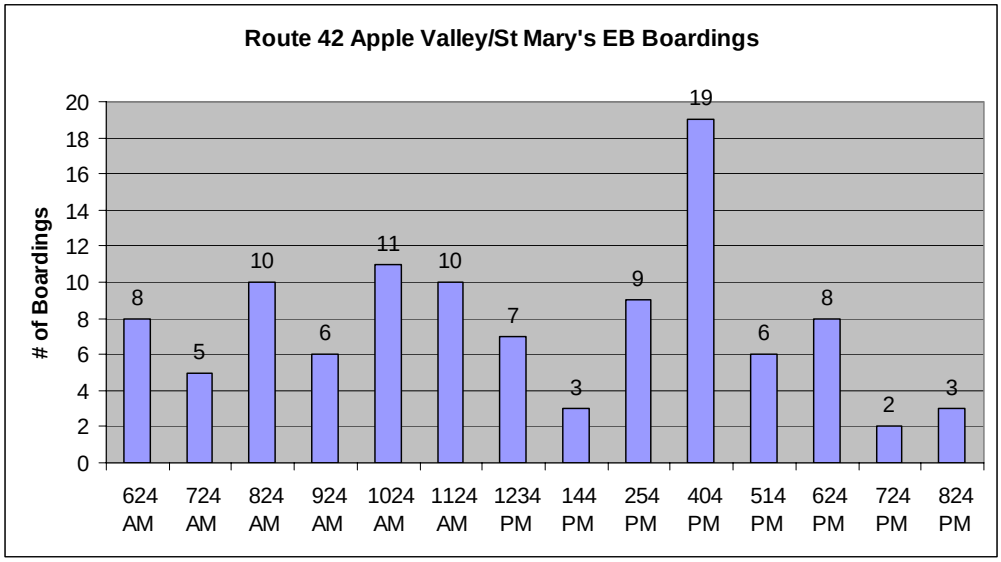
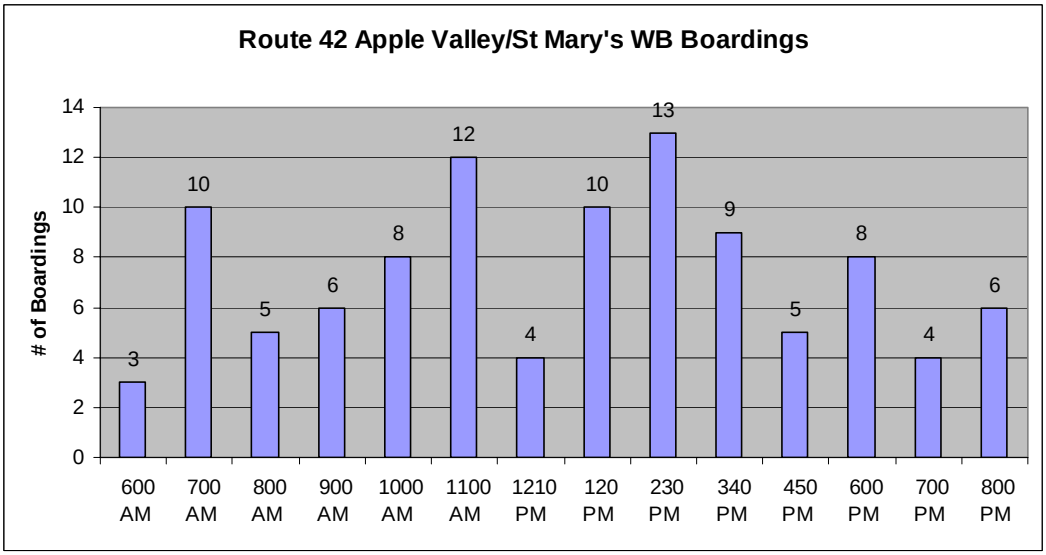


Figure 4-30: Route 42 WB Boardings by Time of Day



With six percent share of the total system ridership, Route 42 draws riders mostly at its terminal points, the Apple Valley WalMart and the Apple Valley Post Office. There is little activity on the Highway 18 section of the route. Figures 4-31 and 4-32 map bus stop activity for Route 42.

Figure 4-31: Route 42 EB Bus Stop Activity

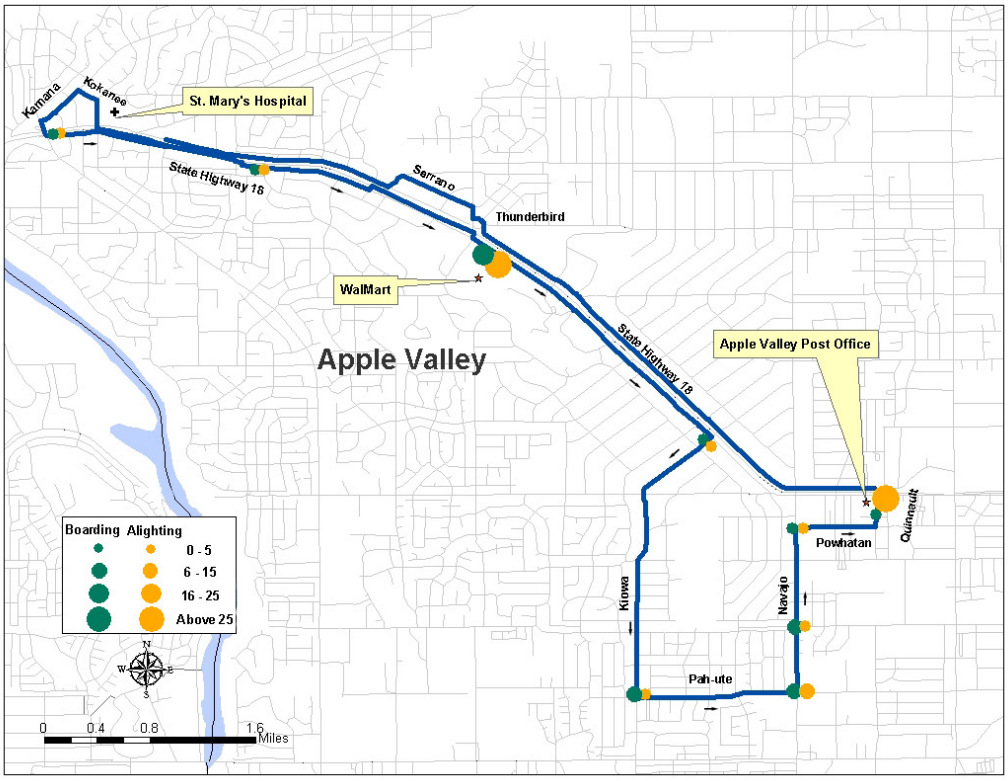
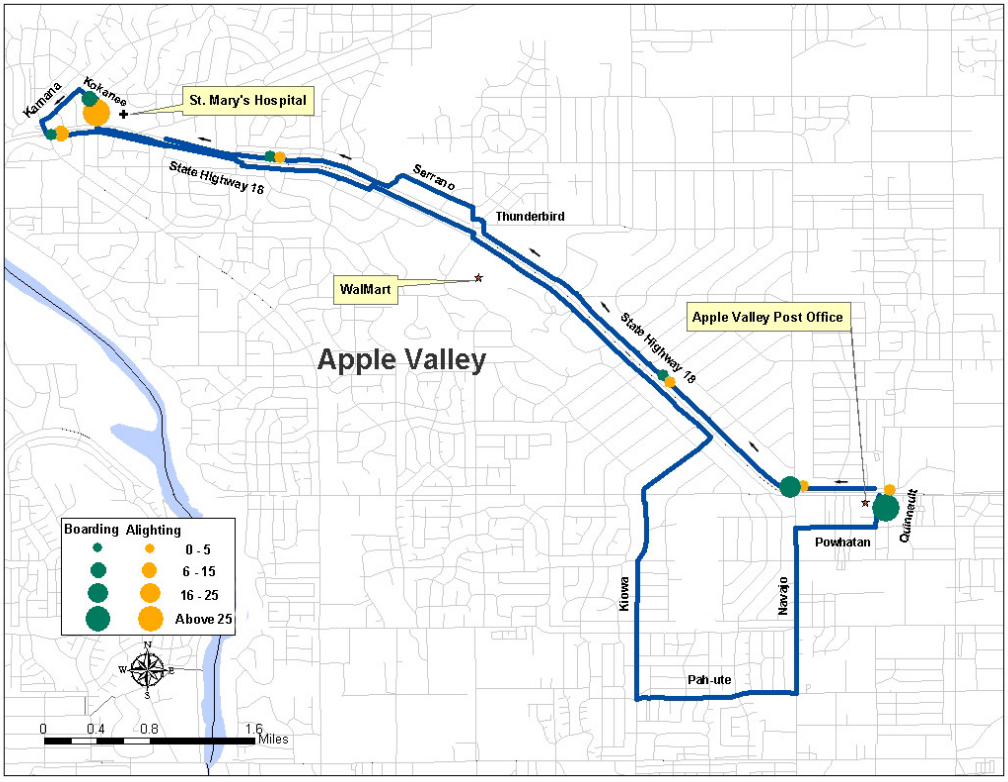


Figure 4-32: Route 42 WB Bus Stop Activity



Route 43

Route 43 has two segments: V (Victor Valley Mall/Victor Valley College) and F (Apple Valley/Victor Valley College). The two segments are discussed separately in terms of performance. Route 43 is one of the highest ridership routes in the VVTA system comprising twenty percent of total ridership. The transfer activity is high and there is significant boarding and alighting at most of the stops on the two segments that connect Victor Valley Mall on western side to Apple Valley on the east.

Route 43V

Route 43V is a solid route, rated 4th out of 12 local routes. Table 4-23 lists the performance indicators for Route 43V. For fiscal year 2003-2004, Route 43V served 94,367 passengers on 4,628 hours and 67,183 miles of service. Operation of the route cost $254,540, of which $60,395 was offset by farebox revenue.

Table 4-23: Route 43V Indicators

Factor/Indicator	Route 43V
Ridership	94,367
Revenue Hours	4,628
Revenue Miles	67,183
Operating Speed (MPH)	14.5
Operating Cost	$254,540.00
Farebox Revenue	$60,394.88
Passengers per Mile	1.40
Passenger per Hour	20.39
Cost per Mile	$3.79
Cost per Passenger	$2.70
Farebox Recovery	24%
Cumulative Rank Score	8
Rank	4

Figures 4-33 and 4-34 chart ridership by time of day for Route 43V. In the eastbound direction, ridership is consistent throughout the day with peaks in the morning, mid-day and afternoon periods. Ridership is much lower in the early mornings and in the evenings. In the westbound direction, ridership is also strong throughout the day, except in early morning and evening periods.

Figure 4-33: Route 43V (Mall to VV College) EB Boardings by Time of Day

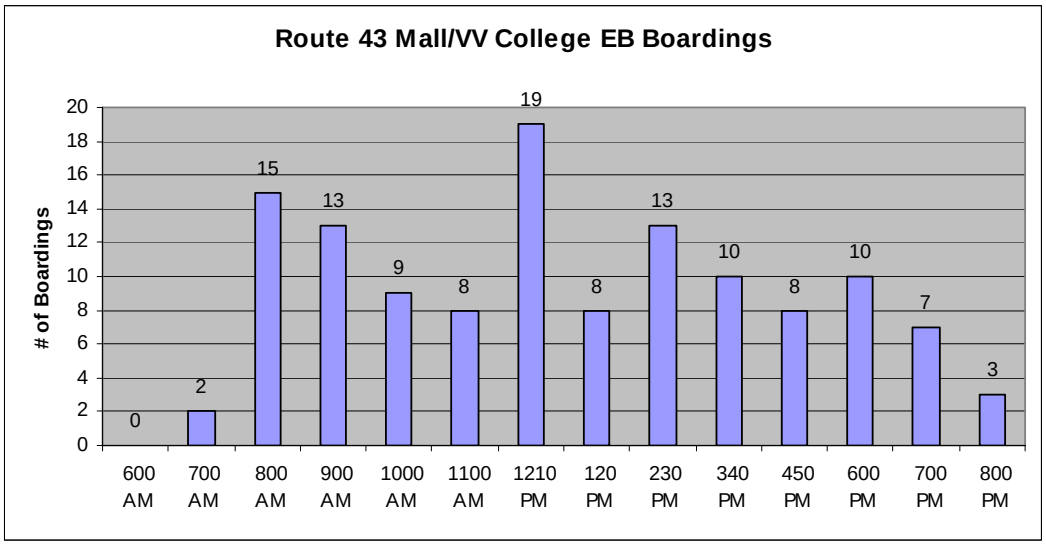
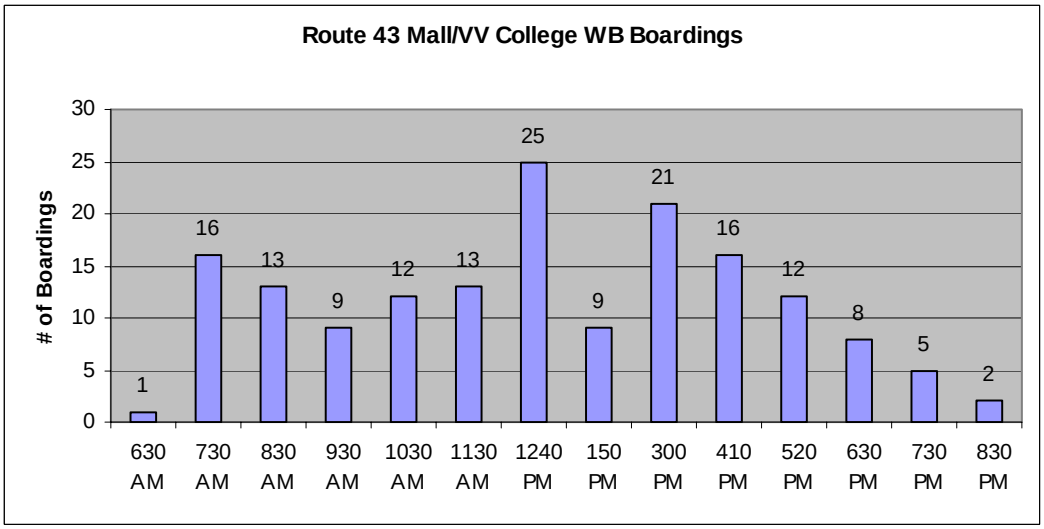


Figure 4-34: Route 43V (Mall to VV College) WB Boardings by Time of Day



Figures 4-35 and 4-36 depict bus stop activity for Route 43V. Boardings are greatest at the Victor Valley Mall and alightings are greatest at Victor Valley College in the eastbound direction and the opposite is true in the westbound direction. Another popular stop is located at State Highway 18 and Navajo.

Figure 4-35: Route 43V (Mall to VV College) EB Bus Stop Activity

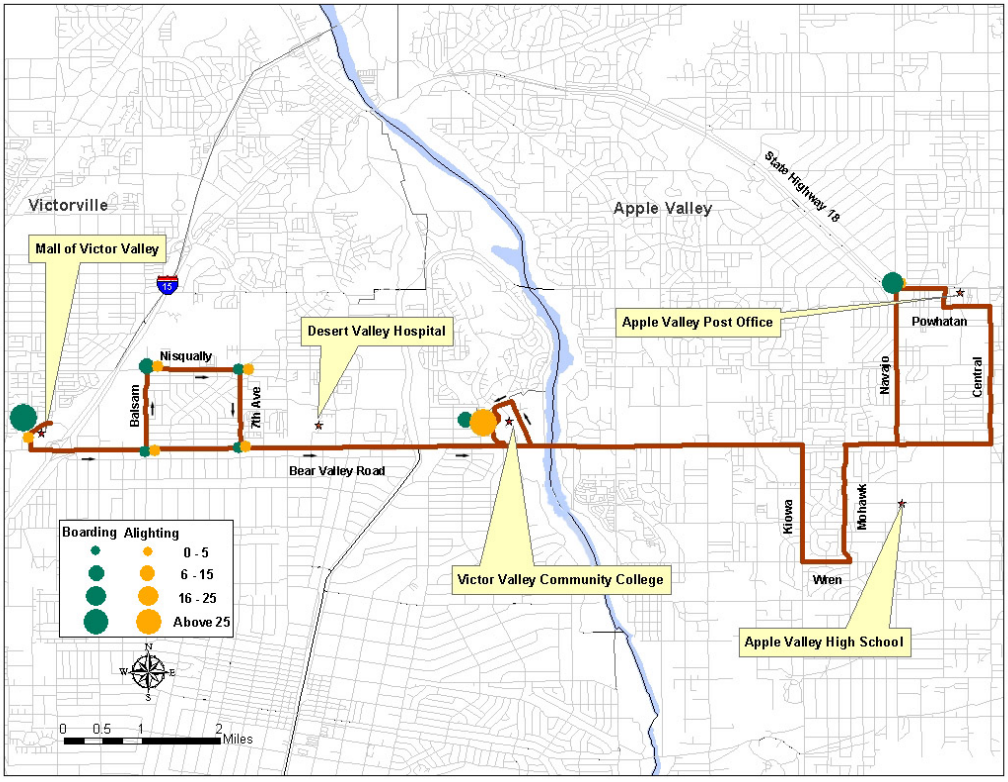
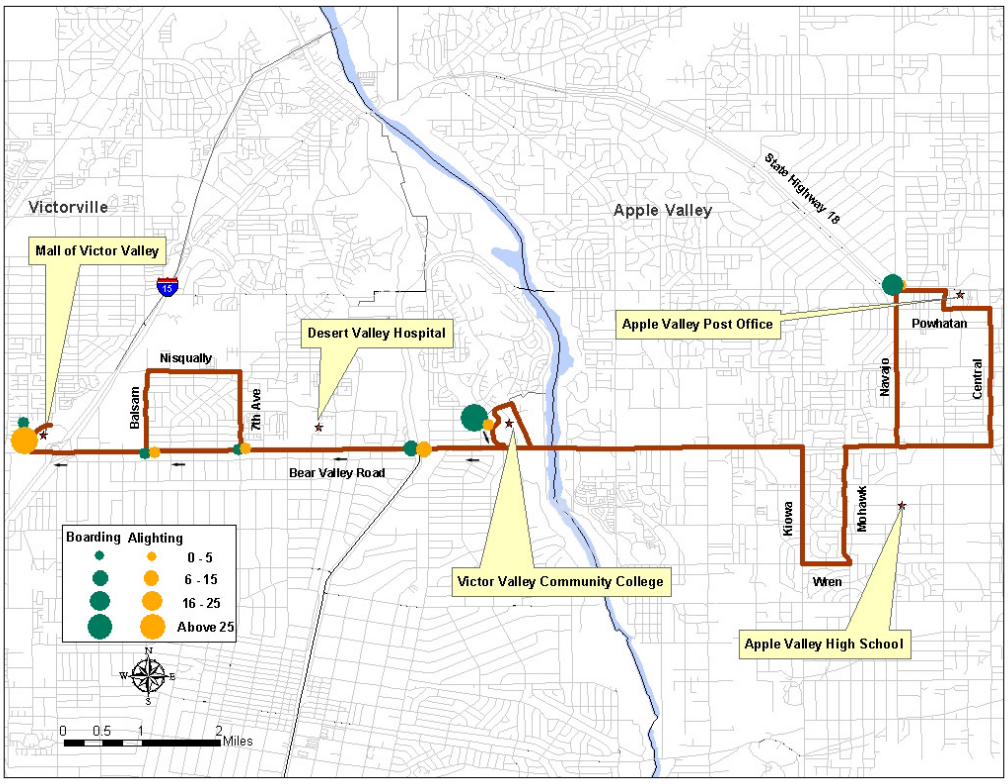


Figure 4-36: Route 43V (Mall to VV College) WB Bus Stop Activity



Route 43F

Route 43F is a mid-level performer, ranked 5th out of 12 local routes in the VVTA system. Table 4-24 provides performance statistics for Route 43F. During fiscal year 2003-2004, Route 43F cost $253,275 to operate. Approximately a quarter of these costs were recouped through farebox revenue. During this time period, Route 43F served 91,937 passengers on 4,605 hours and 93,246 miles of service.

Table 4-24: Route 43F Indicators

Factor/Indicator	Route 43F
Ridership	91,937
Revenue Hours	4,605
Revenue Miles	93,246
Operating Speed (MPH)	20.2
Operating Cost	$253,275.00
Farebox Revenue	$58,839.68
Passengers per Mile	0.99
Passenger per Hour	19.96
Cost per Mile	$2.72
Cost per Passenger	$2.75
Farebox Recovery	23%
Cumulative Rank Score	11
Rank	5

Figures 4-37 and 4-38 show ridership by time of day for Route 43F. In the eastbound direction, ridership steadily increases during the morning to a peak at mid-day, then falls again throughout the afternoon into lower evening numbers. In the westbound direction, ridership is strong all day, then drops off drastically after 2:30 PM.

Figure 4-37: Route 43F (Apple Valley to VV College) EB Boardings by Time of Day

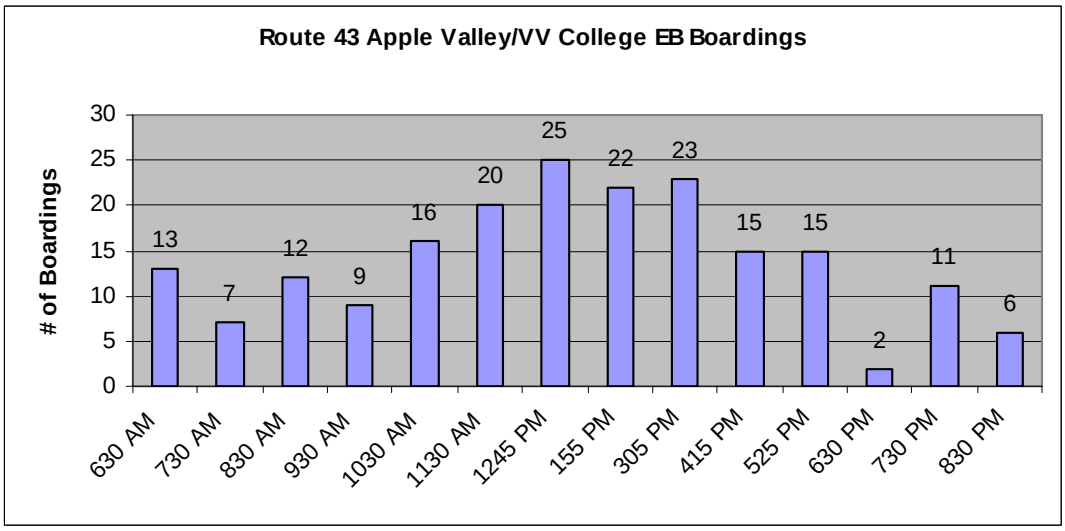
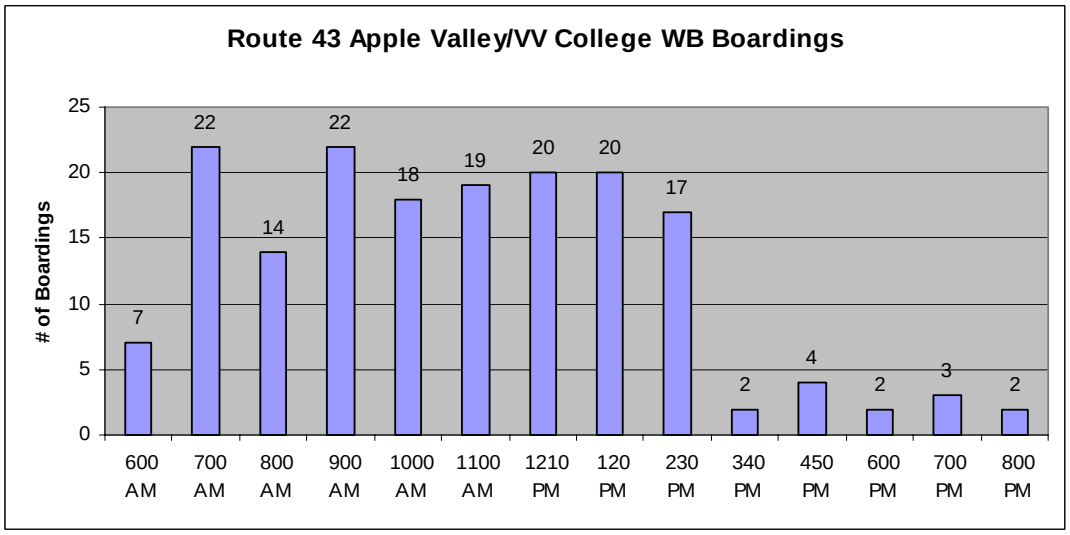


Figure 4-38: Route 43F (Apple Valley to VV College) WB Boardings by Time of Day



Figures 4-39 and 4-40 map bus stop activity for Route 43F in the eastbound and westbound directions. Ridership is highest at the stops around the loop in Apple Valley and at Victor Valley College.

Figure 4-39: Route 43F (Apple Valley to VV College) EB Bus Stop Activity

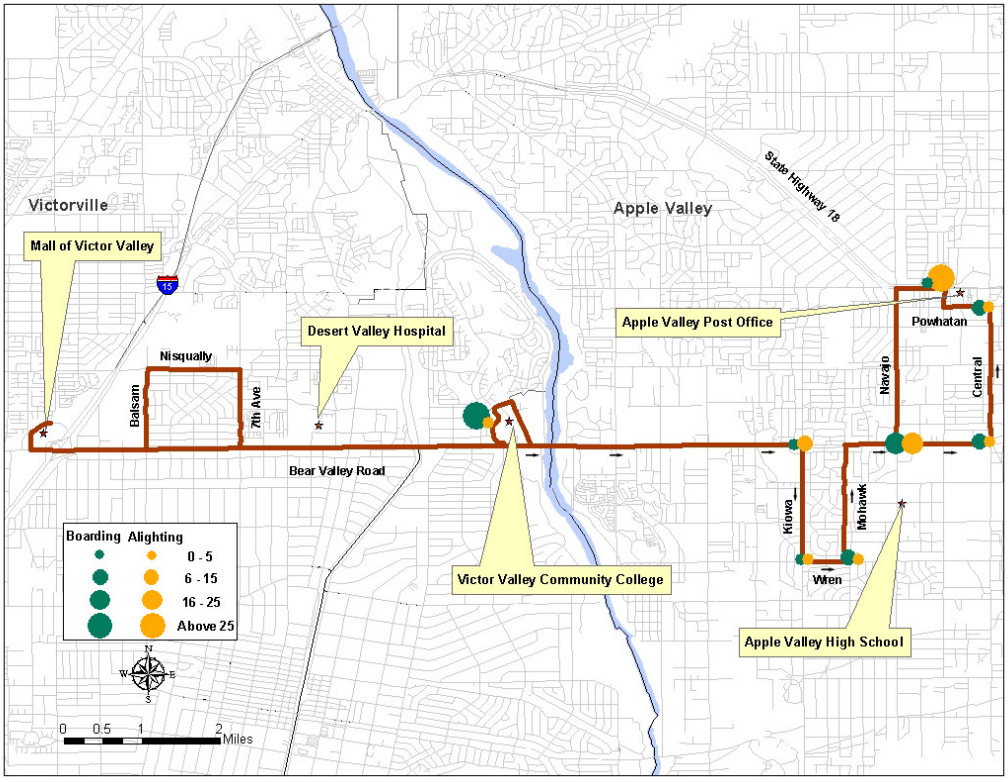
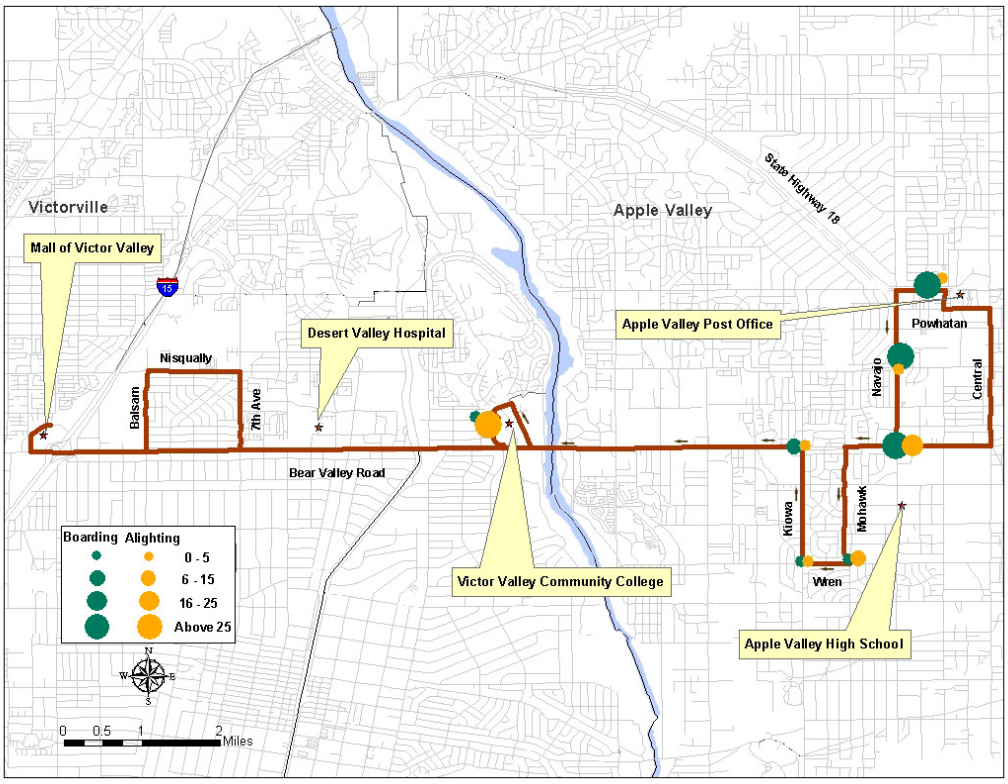


Figure 4-40: Route 43F (Apple Valley to VV College) WB Bus Stop Activity



Route 44

Route 44 is the poorest performing route of VVTA's local routes. Table 4-25 lists the performance statistics for Route 44 for fiscal year 2003-2004. During that year, Route 44 served 77,481 passengers on 9,245 hours and 169,581 hours of service. Operation of the route cost $508,475, of which $49,587.84 was recovered through farebox revenue.

Table 4-25: Route 44 Indicators

Factor/Indicator	Route 44
Ridership	77,481
Revenue Hours	9,245
Revenue Miles	169,581
Operating Speed (MPH)	18.3
Operating Cost	$508,475.00
Farebox Revenue	$49,587.84
Passengers per Mile	0.46
Passenger per Hour	8.38
Cost per Mile	$3.00
Cost per Passenger	$6.56
Farebox Recovery	10%
Cumulative Rank Score	23
Rank	12

Figures 4-41 and 4-42 chart ridership by time of day for Route 44. In the northbound direction, ridership is greatest during the morning and afternoon peak periods and is consistent throughout the rest of the day except during the evening when it drops off. In the southbound direction, ridership is consistent throughout the day except in the early morning and is greatest during the morning and afternoon peak periods.

Figure 4-41: Route 44 NB Boardings by Time of Day

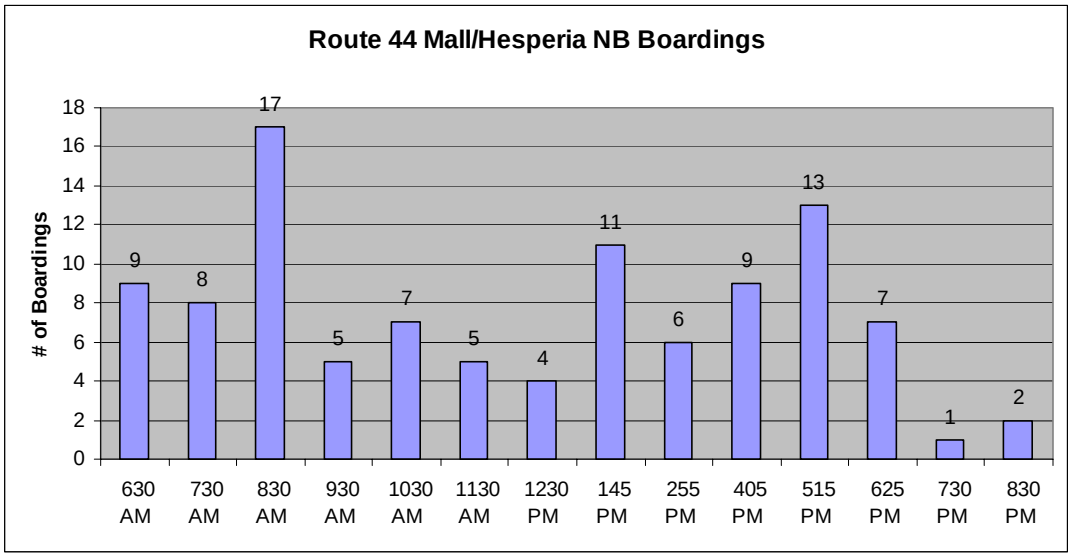
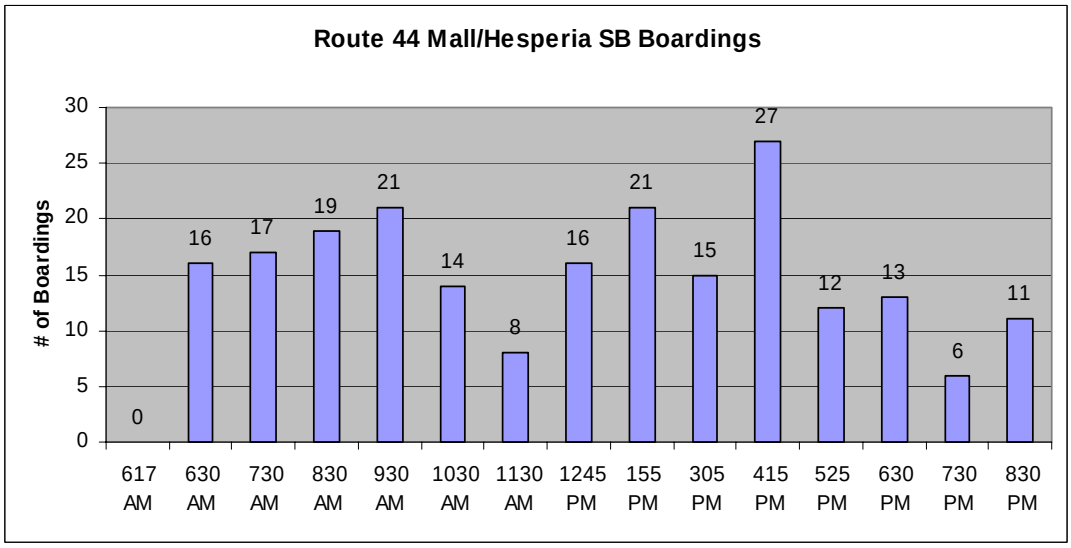


Figure 4-42: Route 44 SB Boardings by Time of Day



The highest activity stop is at Victor Valley Mall, with decreasing boarding and alighting activity at the subsequent stops. At the eastern end, there is significant boarding and alighting at the intersection of Danbury and Main Street. The loop on the eastern end of the route is quite lengthy with no pick ups or drop offs recorded during the ridership counts. Similarly, Juniper Street at the western end collects riders then makes a large loop back (with little ridership) back to Cottonwood. Figures 4-43 and 4-44 map boarding and alighting activity by bus stop for Route 44.

Figure 4-43: Route 44 NB Bus Stop Activity

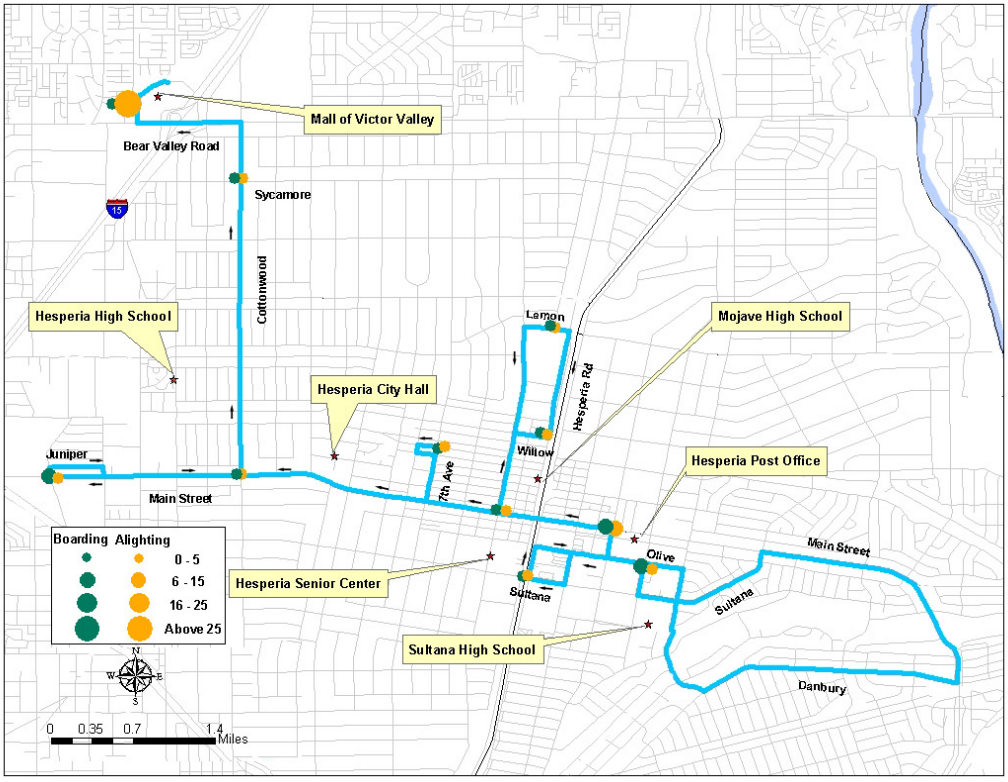
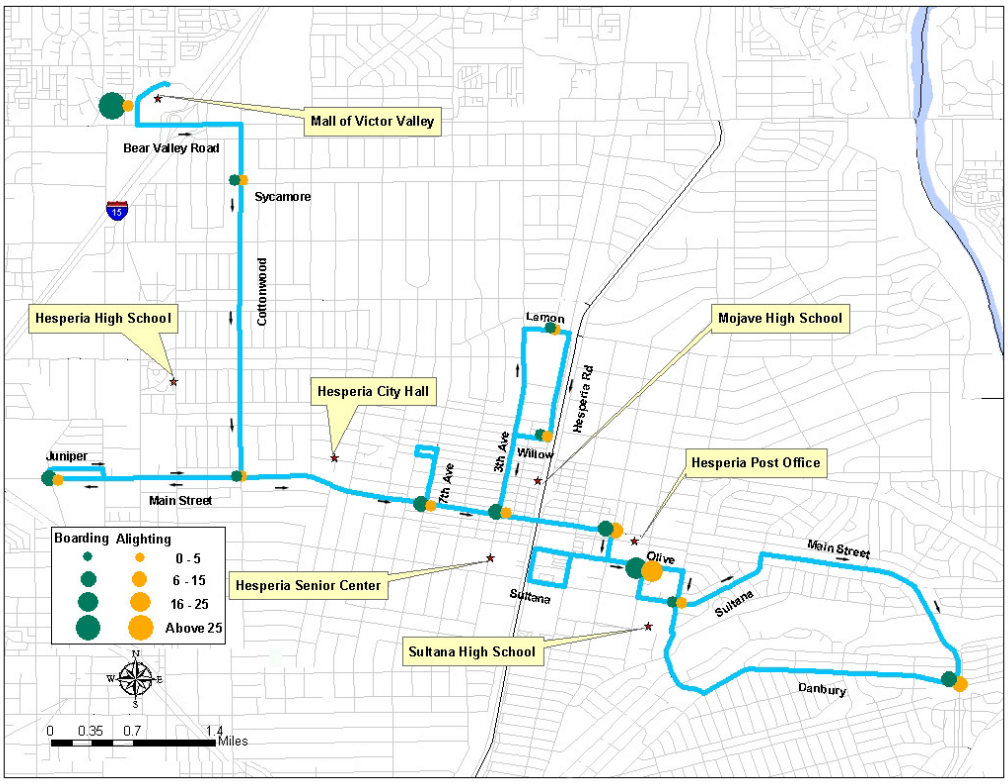


Figure 4-44: Route 44 SB Bus Stop Activity



Route 45

Route 45 is split into two segments: V (Victorville/Victor Valley College) and H (Hesperia/Victor Valley College). The segments are discussed separately in terms of performance in the following sections. Route 45 draws a large percentage of riders (20%) from the two segments that service major stops at Victor Valley Community College, the Hesperia Post Office and the Lorene Transit Center.

Route 45V

Route 45V is ranked number 1 in the system in terms of service and cost effectiveness (tied with Route 41). During fiscal year 2003-2004, Route 45V served 141,665 passengers on 4,628 hours and 70,554 miles of service. It cost $254,540 to operate the route, of which $90,666 was recouped through farebox revenue. Table 4-26 provides performance indicators for Route 45V.

Table 4-26: Route 45V Indicators

Factor/Indicator	Route 45V
Ridership	141,665
Revenue Hours	4,628
Revenue Miles	70,554
Operating Speed (MPH)	15.2
Operating Cost	$254,540.00
Farebox Revenue	$90,665.60
Passengers per Mile	2.01
Passenger per Hour	30.61
Cost per Mile	$3.61
Cost per Passenger	$1.80
Farebox Recovery	36%
Cumulative Rank Score	3
Rank	1

Figures 4-45 and 4-46 show ridership trends by time of day for Route 45V. In the northbound direction, ridership is strong throughout the mid-day and afternoon peak periods, but is lower during the morning peak period and in the evening. In the southbound direction, ridership rises during the early morning period to peak during the morning rush period, then tapers off throughout the rest of the day.

Figure 4-45: Route 45V NB Boardings by Time of Day

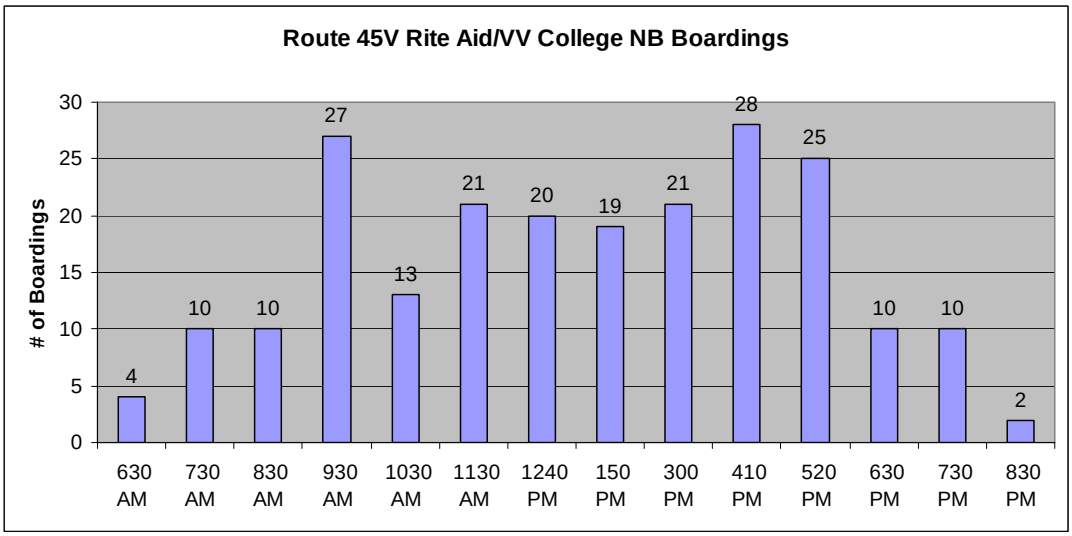
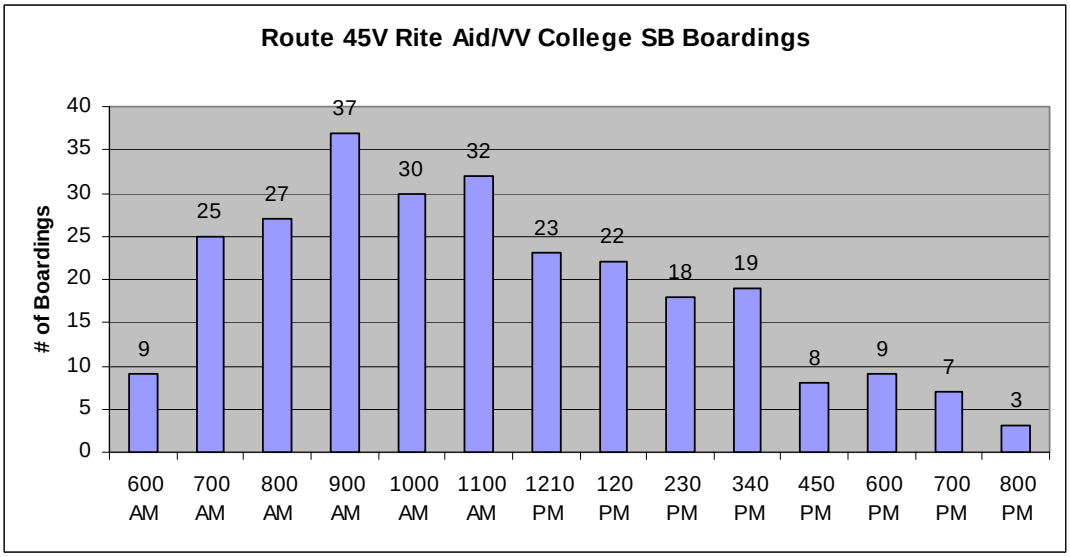


Figure 4-46: Route 45V SB Boardings by Time of Day



Figures 4-47 and 4-48 map boarding and alighting activity by bus stop for Route 45V. In the northbound direction, activity is greatest in downtown Victorville and at Victor Valley College. The stop located at Hesperia and Jasmine also has high activity. The same is true in the southbound direction.

Figure 4-47: Route 45V NB Bus Stop Activity

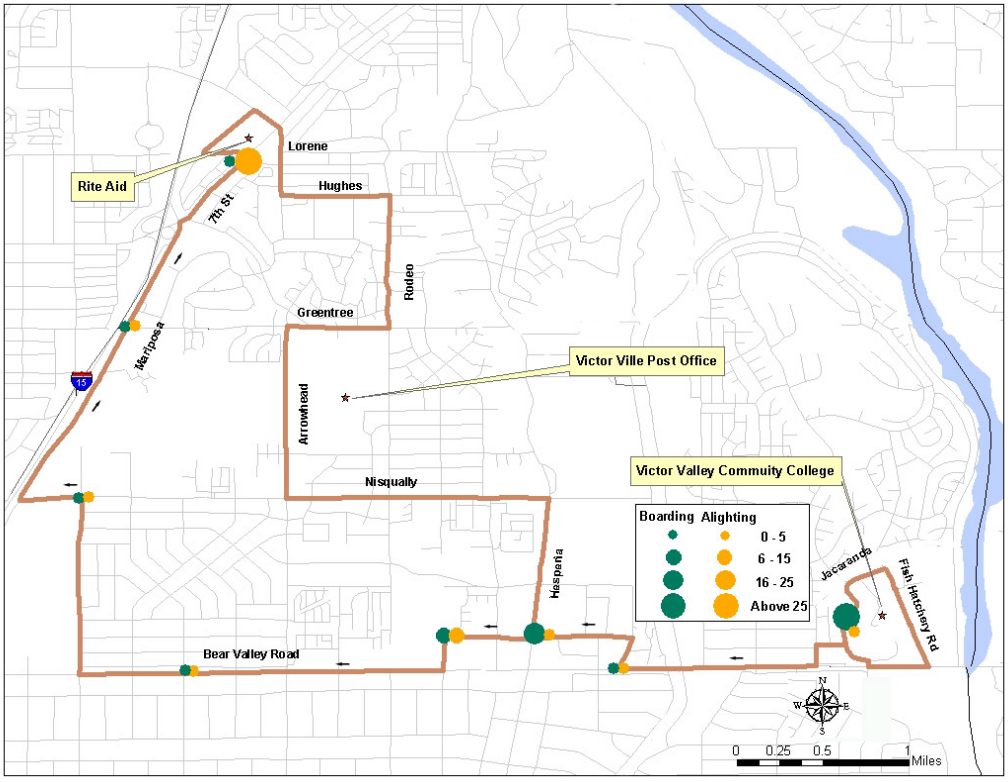
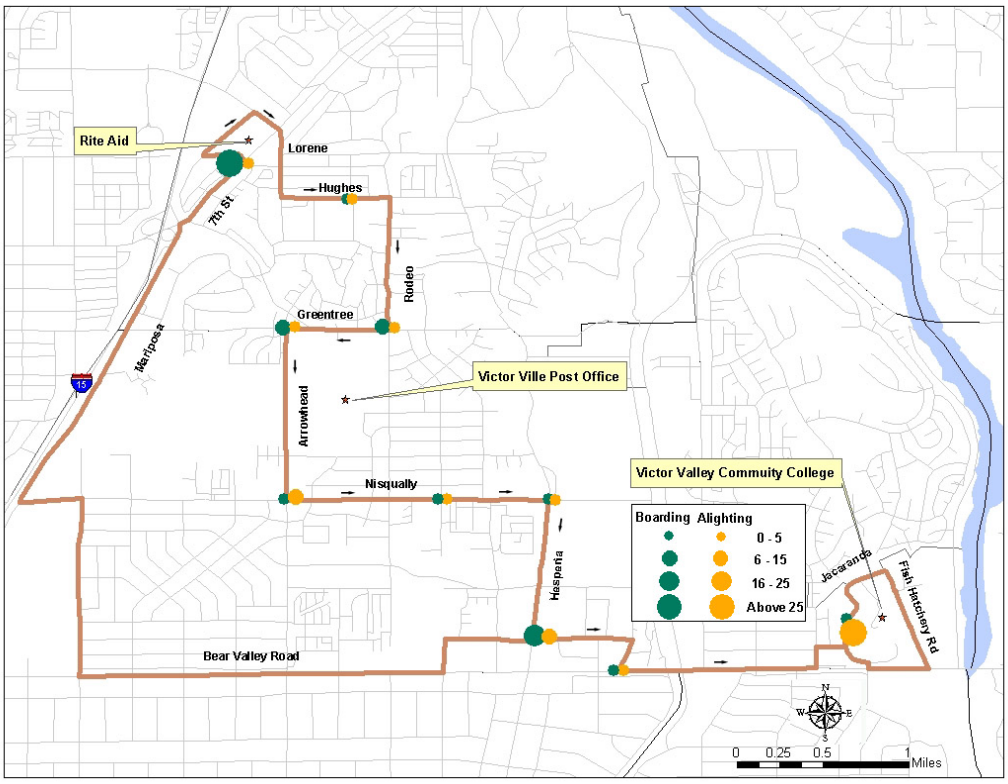


Figure 4-48: Route 45V SB Bus Stop Activity



Route 45H

Despite Route 45V being a top performer in the VVTA system, Route 45H is a poor performer, ranked 11th out of 12 local routes. Table 4-27 includes performance indicators for Route 45H. In 2003-2004, the route served 36,440 passengers on 4,628 hours and 72,023 miles of service. Operation of the route cost $254,540, of which $23,322 was recouped in farebox revenues.

Table 4-27: Route 45H Indicators

Route 45H	
Factor/Indicator	Route 45H
Ridership	36,440
Revenue Hours	4,628
Revenue Miles	72,023
Operating Speed (MPH)	15.6
Operating Cost	$254,540.00
Farebox Revenue	$23,321.60
Passengers per Mile	0.51
Passenger per Hour	7.87
Cost per Mile	$3.53
Cost per Passenger	$6.99
Farebox Recovery	9%
Cumulative Rank Score	22
Rank	11

Figures 4-49 and 4-50 chart ridership by time of day for Route 45H. In the northbound direction, ridership is greatest during the morning and afternoon peak periods. Mid-day, early morning, and evening ridership is much lower. In the southbound direction, ridership is consistent throughout the day, reaching its peak during the mid-day period.

Figure 4-49: Route 45H NB Boardings by Time of Day

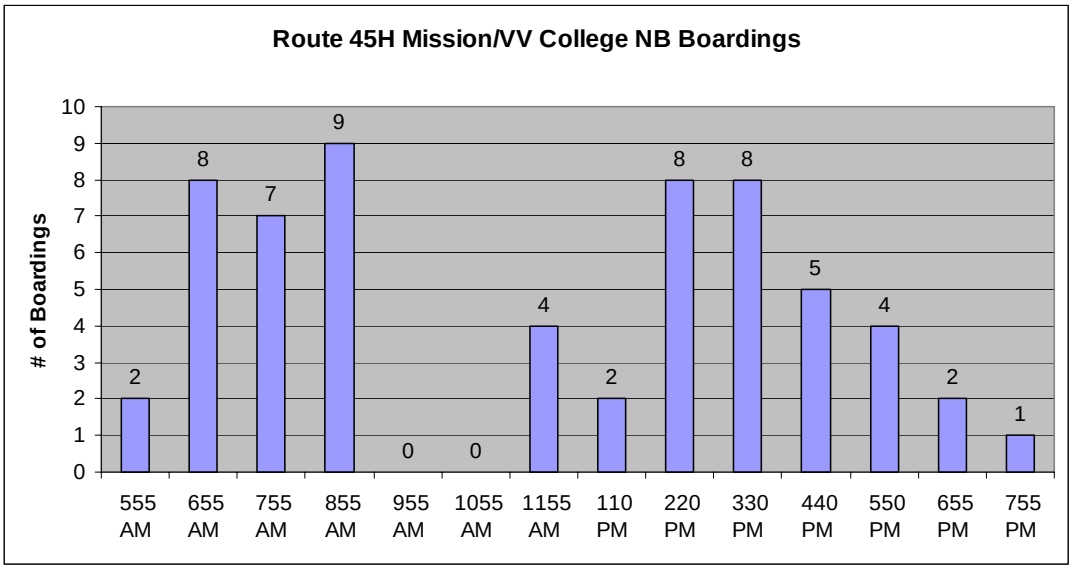
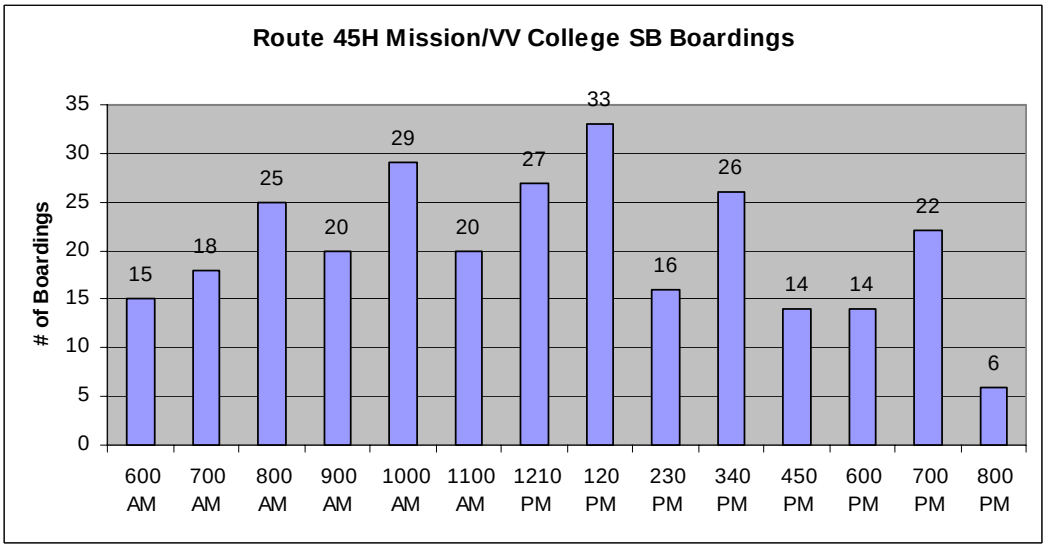


Figure 4-50: Route 45H SB Boardings by Time of Day



Figures 4-51 and 4-52 map bus stop activity for Route 45H. Activity is greatest in both the northbound and southbound directions at Victor Valley Community College. Ridership is sparse throughout most of the route, but especially along I Ave. and C Ave.

Figure 4-51: Route 45H NB Bus Stop Activity

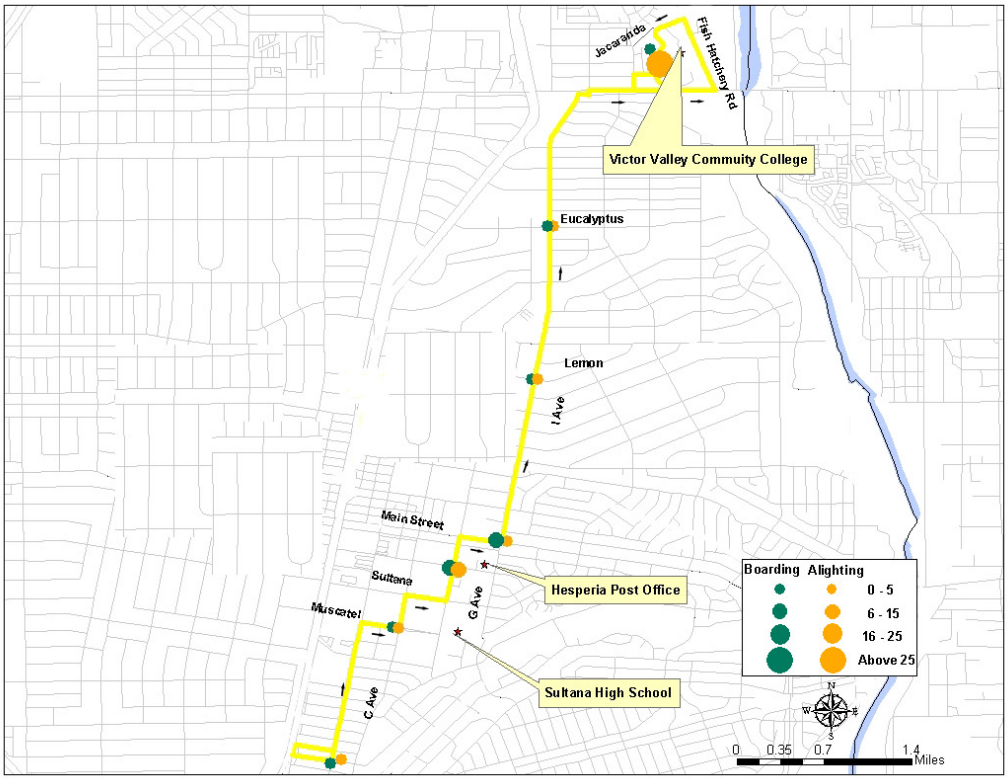
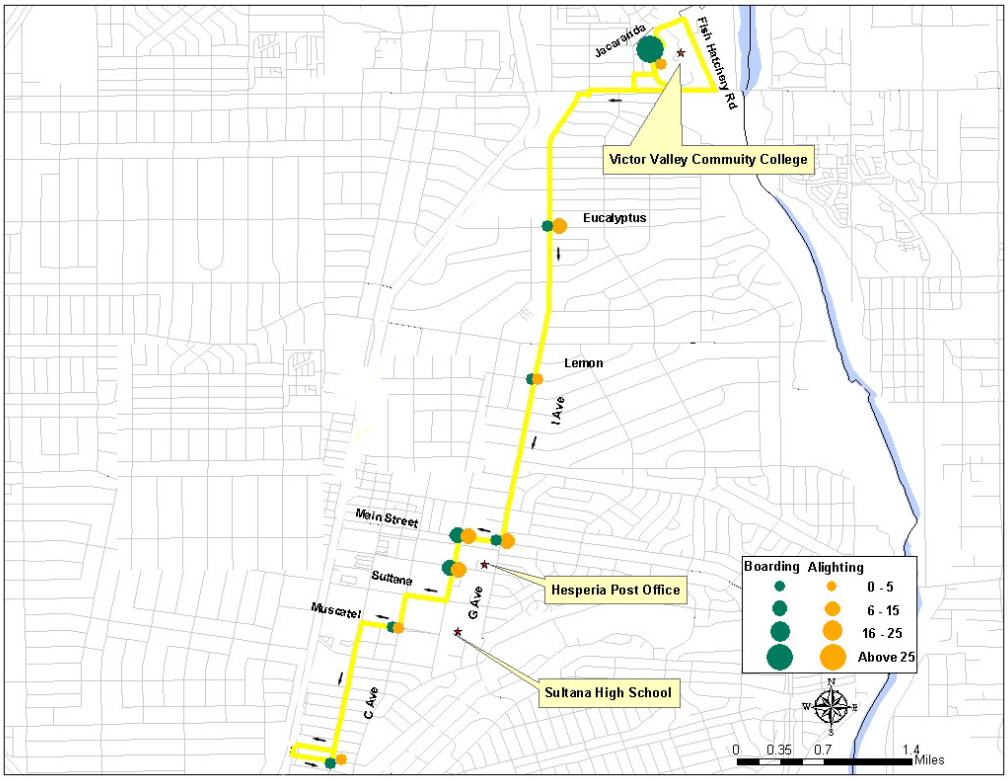


Figure 4-52: Route 45H SB Bus Stop Activity



Route 51

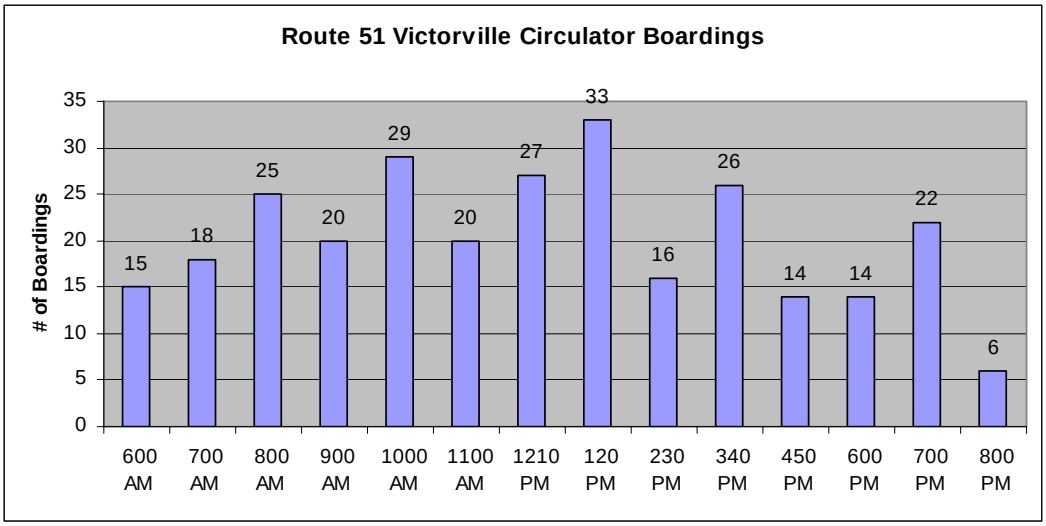
Route 51 is a mid-level performer in the VVTA system, ranked 5th out of 12 local routes. Table 4-28 lists performance statistics for Route 51. During fiscal year 2003-2004, Route 51 operated 4,628 hours and 65,932 miles of service. The route served 91,371 passengers. Operation of the route cost $254,540, of which $58,477 was recovered through farebox revenue.

Table 4-28: Route 51 Indicators

Factor/Indicator	Route 51
Ridership	91,371
Revenue Hours	4,628
Revenue Miles	65,932
Operating Speed (MPH)	14.2
Operating Cost	$254,540.00
Farebox Revenue	$58,477.44
Passengers per Mile	1.39
Passenger per Hour	19.74
Cost per Mile	$3.86
Cost per Passenger	$2.79
Farebox Recovery	23%
Cumulative Rank Score	11
Rank	5

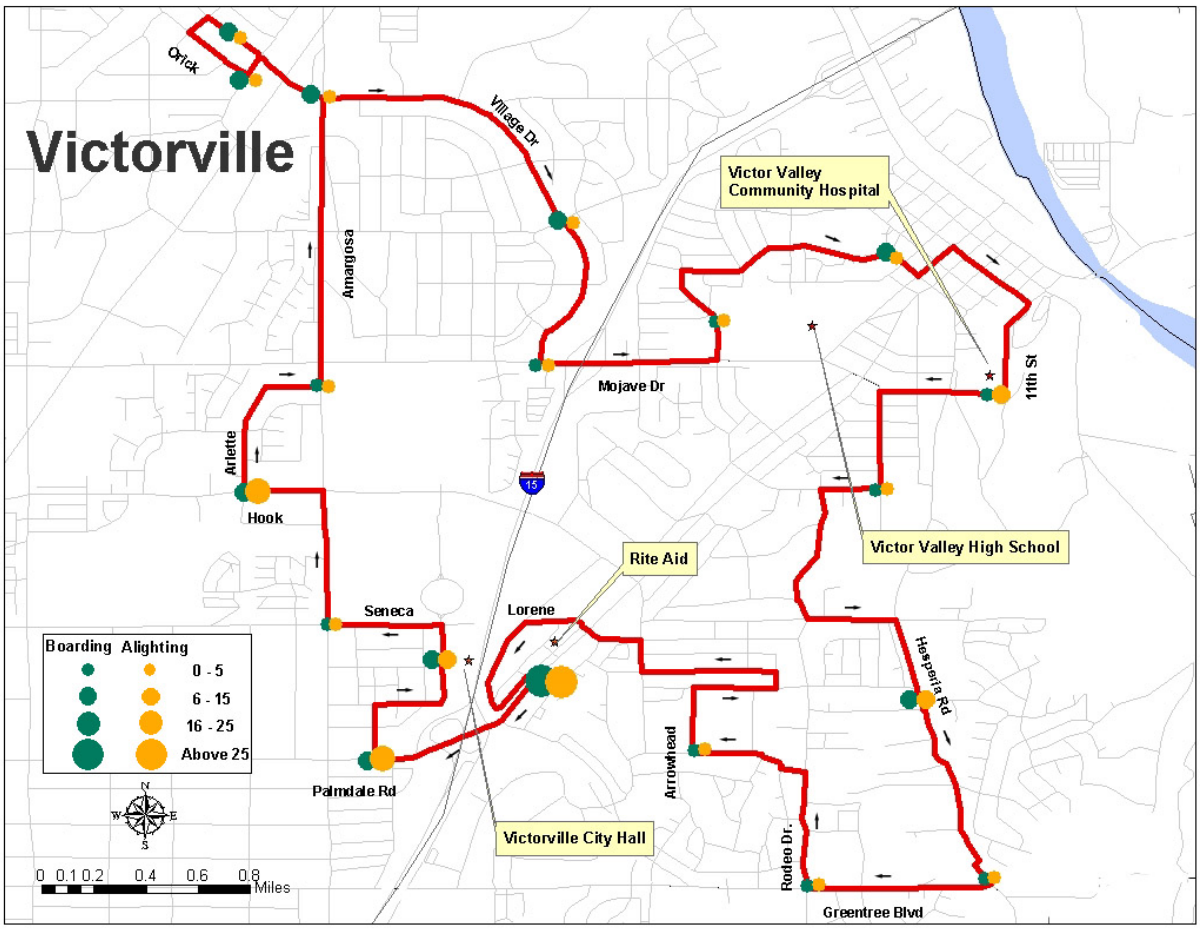
Figure 4-53 charts ridership by time of day for Route 51. Ridership is consistent throughout the day and peaks throughout the mid-day period. Ridership drops off slightly in the later evening hours.

Figure 4-53: Route 51 Boardings by Time of Day



Route 51 covers 9% of the total ridership and travels along circuitous roads and stops at the largest number of stops in a single loop to pick up riders. From Orick and Ritter to Forrest and 6th street, activity declines. The most extensive boarding and alighting takes place along the stretch from 7th Street and Palmdale through Arlette and Hook. Figure 4-54 maps bus stop activity for Route 51.

Figure 4-54: Route 51 Bus Stop Activity



Route 52

Route 52 is a solid route in the VVTA system, ranked 3rd out of 12 local routes. Table 4-29 describes Route 52's performance during fiscal year 2003-2004. Route 52 carried 116,029 passengers on 4,628 hours and 73,836 miles of service. Operation of the route cost $254,540, of which $74,259 was recovered through farebox revenues.

Table 4-29: Route 52 Indicators

Factor/Indicator	Route 52
Ridership	116,029
Revenue Hours	4,628
Revenue Miles	73,836
Operating Speed (MPH)	16.0
Operating Cost	$254,540.00
Farebox Revenue	$74,258.56
Passengers per Mile	1.57
Passenger per Hour	25.07
Cost per Mile	$3.45
Cost per Passenger	$2.19
Farebox Recovery	29%
Cumulative Rank Score	6
Rank	3

Figures 4-55 and 4-56 chart ridership by time of day for Route 52. In the northbound direction, is consistent throughout the day but peaks in the mid-day and afternoon periods. In the southbound direction, ridership is less consistent throughout the day and is greatest during the afternoon peak period. There are lulls in the early morning, mid-day and evening periods.

Figure 4-55: Route 52 NB Boardings by Time of Day

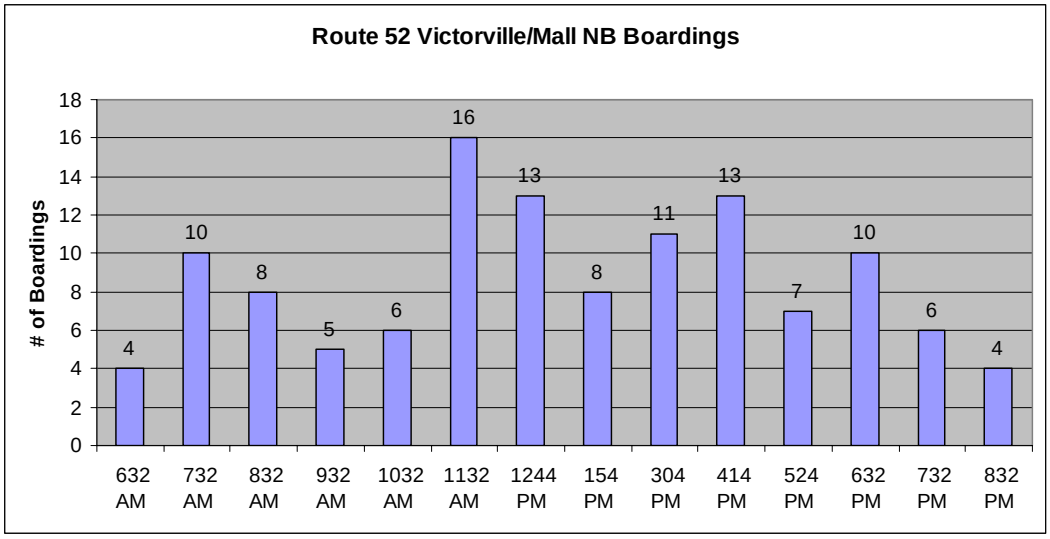
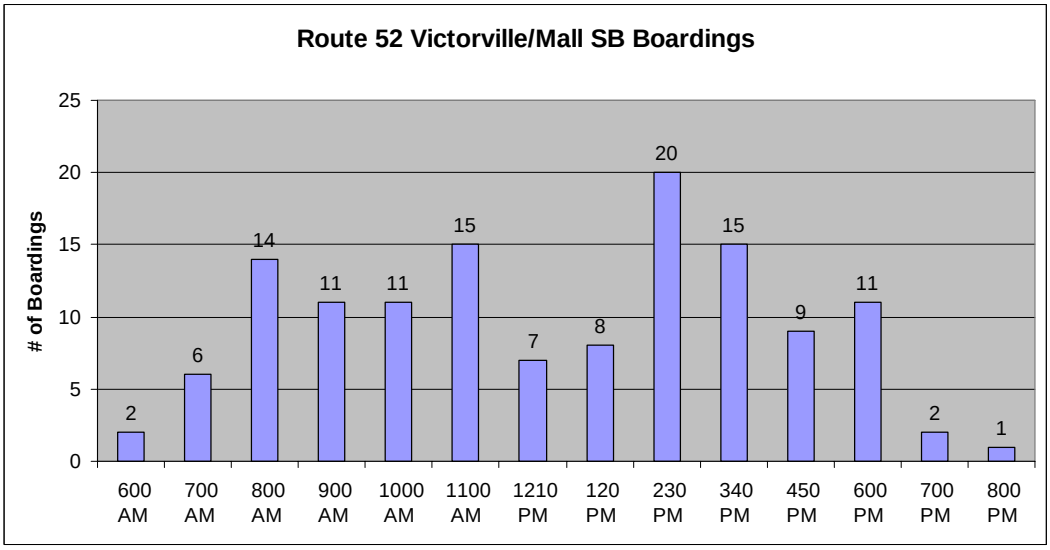


Figure 4-56: Route 52 SB Boardings by Time of Day



For the southbound Route 52, there is no boarding or alighting activity from Cholame to Amargosa. There are 93 boardings at Rite Aid and 78 alightings at Victor Valley Mall. Similarly, the pattern remains the same in the northbound direction, where the activity is primarily concentrated at the terminals. Figures 4-57 and 4-58 map bus stop activity in the northbound and southbound directions for Route 52.

Figure 4-57: Route 52 NB Stop Activity

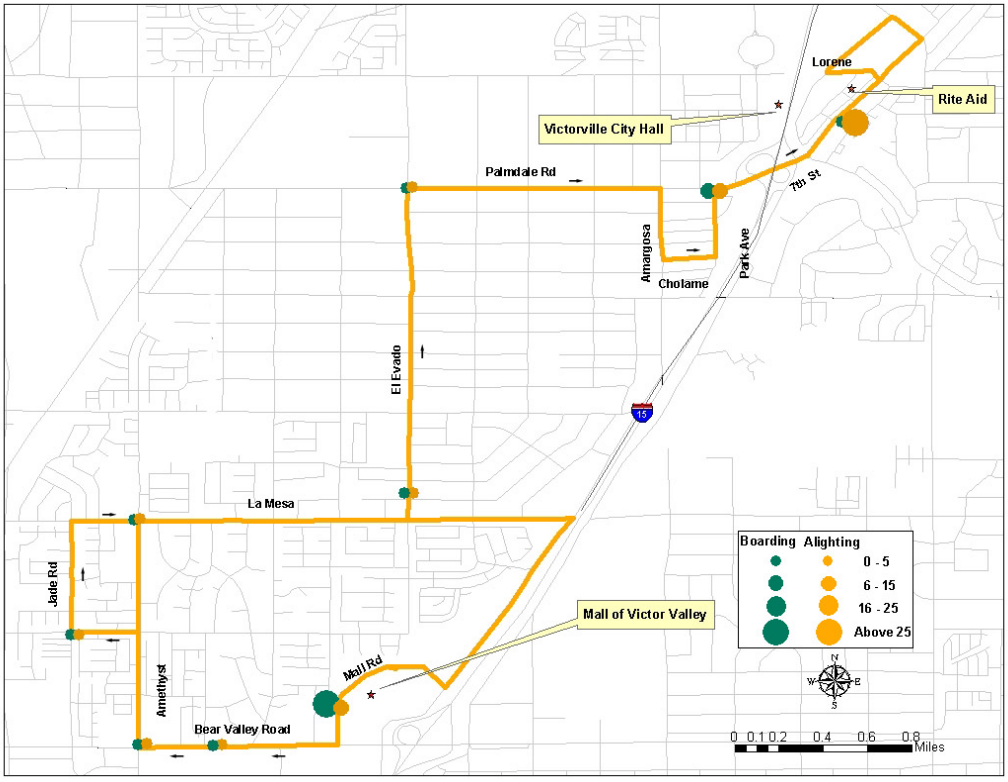
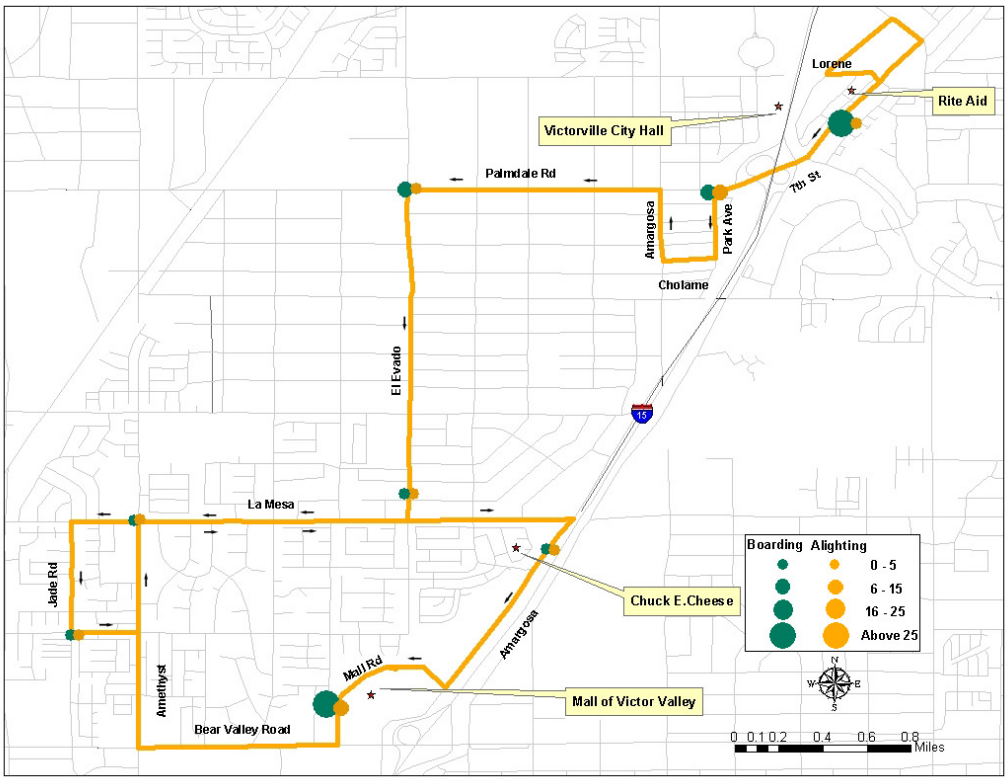


Figure 4-58: Route 52 SB Stop Activity



Overall Issues and Opportunities

Existing Services

During the first phase of the investigation and analysis there have been opportunities to discuss existing service issues with VVTA and ATC staff, various stakeholders within the community and riders of the service.

In general, the system has a number of both strong and weak points that currently result in a conflict with some of the goals that could make the services more attractive for the users. From the positive view, the services provide significant coverage throughout a majority of the service area and are viewed favorably by the majority of riders. Many of these riders are from lower-income households and rely on public transportation for trips to employment and school.

Issues identified during the evaluation that need addressing include:

- Reliability (on-time performance)
- 70-minute headways
- Inter-community and intra-community transportation
    - Arterial functions should be separated from feeder/collector functions
- New software available – allows for more tailored demand response services
- Headways need adjusting to match loadings
    - Improve headways where maximum loads exceed standards during peak periods
- Gradually expand services to meet emerging development
    - West Victorville and West Hesperia (residential and commercial development)

In addition, the transfer activities at the Lorene Transit Center and at other major activity points across the system indicate that the services are indeed working as a system, with many riders using more than one route and making frequent trips during the day. A rather unique attribute of the system, compared with other public transportation systems, is that the peak period occurs more in the middle of the day, rather than late in the afternoon. This fact reinforces the importance of school connections and the demand for mid-day shopping connections.

Although, as indicated above, coverage is thorough, many of the routes include long out-of-direction loops and extend long distances to reach termini that have some, but not significant ridership. As a result, due to increasing congestion near the core of the system, the running times have been extended. It also appears on some days, transfer connections at 7th and Lorene are inconsistent, thus impacting transferring riders. Given the anticipated increases in population, as reinforced by the existing and proposed construction activities in many parts of the service area, it can be anticipated that vehicle speeds will continue to decrease. Thus, many of the system elements will continue to be stressed, in essence, attempting to serve the most area and the highest demand.

This service dichotomy is also reinforced through many of the unmet need requests that have been generated over the past two years. Some of these speak to system wide issues such as instituting Sunday service, extending service hours and increasing service frequencies to 30

minutes, especially those routes with the highest demand. Others, however, ask for specific route extensions or modifications to serve individual or group needs. Some of these requests would further extend, or add additional deviations to the existing routes. We will continue to review these unmet needs requests as plans for service modifications are developed and discussed.

In addition to alterations to existing services, there would also appear to be future opportunities for new services. For example, from a current construction perspective, there is a significant amount of activity west of I-15 from north of Palmdale Road to south of Main Street. Although single family housing, even if constructed on smaller lots, does not necessarily indicate the need for public transit, housing construction is often followed by retail activity to serve the general area. The combination of the two often does increase the potential demand for transit.

Table 4-30 summaries the service standards presented in this chapter and compares those standards to VVTA's actual performance.

Table 4-30: VVTA Performance versus Service Standards

Category	Standard	VVTA Results
	Service Coverage	
Availability	• Residential areas -80% of population within ¼ mile of a bus route -Route spacing guide presented in Table 4-2 • Major activity centers -employers or employment concentrations of 200 or more employees -health centers -middle and high schools -colleges/universities -shopping centers of over 25 stores or 100,000 square feet of leased retail space -social service/government centers	-Most residential areas served, review some portions of Census tracts -Route spacing standards exceeded -Most activity centers served, review some schools and other generators including SCLA
Frequency	-60-minute all day service -Clockface service	-60-minute headways during most periods -70-minute headways during afternoon peak -90-minute headways on two routes
Span	-5 AM to 10 PM on weekdays (evening service based on demand) -6 AM to 7 PM on Saturdays	-6 AM to 9 PM on weekdays -7 AM to 8 PM on Saturdays
Directness	-Maximum 25% of transfer rate	-22% transfer rate
	Patron Convenience	
Speed	-Regular routes maximum of 15 MPH --12-18 MPH for outlying services depending on layout	-All routes except Routes 41 and 51 operate at 15 MPH or faster
Loading	-25% standees for short periods acceptable	-Meets standard
Bus Stop Spacing	-5 to 7 blocks per mile in core (every other block) -Fringe 4 to 5 per mile, as needed based on land uses	-Victorville, Apple Valley, Hesperia meet standard, Adelanto does not
Dependability	-No missed trips -95% on-time service (0 to 5 minutes late) -No trips leaving early	-No missed trips -75% on-time service -26 trips left early
Road Call Ratio	-4,000 to 6,000 miles per road call	-5,489 miles per road call
	Fiscal Condition	
Fare Structure	-Qualitative criteria	-Meets standard
Farebox Recovery	-20% measured system-wide	-Meets standard (20%)
Productivity (Pass./Mi.)	-Significantly alter routes less than 60% of average (1.07 pass/mi is average) -Review and modify routes between 60% and 80% average	<u>Below 60%</u> -Routes 31, 40, 44, 45F <u>Between 60% and 80%</u> -Routes 32 and 42
	Passenger Comfort	
Waiting Shelters	-25 or more boardings	-72% of stops meet standard
Bus Stop Signs	-Denote VVTA, contact information, and route	-Do not meet standard
Revenue Equipment	-Clean and good condition	-Does not meet standard
Public Information	-Timetable, maps, advertising	-Meets standard

Potential Modifications

As previously discussed there are a number of attributes of the current route structure that are typically viewed as less than ideal. Recognizing that the current services have been developed over time, thus have more history than creating new service to new areas; nonetheless it appears worthwhile to discuss these attributes.

Out of direction travel – This situation occurs whenever a majority of riders are transported away from the most direct route to their destinations in order to serve a few additional boardings. For most existing and potential users of transit service, issues relating to time and the perception of time, especially time wasted are the biggest deterrents to riding. An example of this occurs on Route 44 when the bus detours from Main at 3rd and then travels to Lemon and returns to Main.

Long route extensions – Although this attribute does not affect the large percentage of riders as the one above, it can significantly affect the running time for the route, and the ability for the route to meet timed transfer points at the other terminus. Examples here include serving El Mirage on Route 31 and 32, Stoddard Wells on Route 41, Danbury on Route 44, and Mission/C on Route 45.

One way service or loops – This service either requires the rider that boards within the one way portion of the route to either traverse the remainder of the route on the return trip or find some alternative means of making the trip. The best example of this is Route 51, which only travels in one direction. Thus, if you board at Orick/Vasquez and go to Victor Valley Hospital it takes 13 minutes to get there, but 45 minutes to return.

We would note that every existing route contains one or more of the above attributes, which results in certain inefficiencies of operation when trying to meet schedules that include transferring between routes. We would also note that VVTA is not dissimilar to other systems that are attempting to balance the often competing needs to be effective for the various populations within the community, while also striving to be efficient with regard to expenditure of funds, meeting farebox recovery goals, etc.

Potential modifications could include a variety of alternatives and combinations of alternatives as discussed below.

Route deviations – Service would only deviate from a route on request from a rider and the length of deviation would be limited to a fixed distance or time. These deviations would typically occur along certain portions of the line and would be constructed to maintain connections at key time points. This type of routing requires good communication with the riders, good coordination with the operator and an ongoing refinement process based on shifts in demand.

Paratransit substitution – This alternative replaces fixed route operation with demand responsive service that connects with the fixed route system typically at designated bus stops. Various systems either request advance reservations, similar to other paratransit services, or equip operators with cell phones and residents call the operators directly. The new Trapeze Flex dispatch system will allow some efficiencies in the Paratransit service and allow for better

utilization of the fixed route services by ADA passengers. Again, good communication, coordination and flexibility are required, but there have been excellent results achieved in other areas.

Another ancillary impact of creating route deviation or paratransit substitution services is that because they provide for flexible connection to all residents, they eliminate the requirement for complementary ADA paratransit. Analysis of these alternatives will also include existing ADA demand in the affected areas and potential impact on the mobility of people with disabilities.

Streamlining – This concept would examine each of the out of direction, route extensions and one way segments of the existing routes and based on ridership, time expended or perhaps a combination of those or other factors, recommend establishing a threshold that could result in more direct operation.

Consolidation – Typically this type of review looks at the entire system for areas of duplication or proximity to see if resources can be shared or other actions taken to improve service delivery.

There may also be opportunities to combine one or more of the above ideas in re-evaluating alternatives. For example, new routes could include some consolidation and some route deviation and/or paratransit substitution. The next phase of the study will further examine those alternatives that appear most viable.

Service Warrants

Service warrants are required to provide direction on when new services should be initiated. Victor Valley is a diverse region and some flexibility may be required in adapting the proposed warrants to every possible situation. The warrants should be viewed as guidelines, rather than strict rules. Service warrants respond to the objective of providing a transit service responsive to the needs of the residents of Victor Valley.

Warrants are required to determine when bus service should be introduced in new residential, industrial, commercial and recreational developments. Changes to existing bus routes would be based on an evaluation of existing services using the service design guidelines.

There are two main approaches to new service warrants commonly in use in the U.S. The first requires a projection or forecast of ridership. The forecast is either used directly to determine the timing of a new service or through surrogates such as riders per hour or cost recovery that are derived from the ridership forecast. Ridership forecasting on a micro-level can be extremely difficult and unreliable. The existing SANBAG model is not well suited to estimating ridership on short local routes, however the new versions of Trans Track being used by SANBAG are making significant strides to correct this issue.

Other transit agencies have favored a second approach. In this approach, the determination of the start up of a new service is dependent on actual population of residents or employees in the development. One of the weaknesses of this approach is that it does not count visitors for commercial establishments. Shoppers at a mall, for example, would easily out-number

employees. Also, this approach does not have any mechanism to prioritize opportunities based on the cost of providing the new service.

An alternative approach would be to use trip generation as an evaluation factor. Trip generations are projected using generally accepted standards and are available for all types of land use including residential, commercial, recreational and industrial. There are trip generation tables that have been produced by both national and provincial authorities. The tables have generally been developed as a result of many years of data collection and verification. Trip generation data is usually expressed in car trips; however total person trips can be developed by making some occupancy assumptions. Trip generations are a form of forecast based on a broad knowledge base derived from observed behavior.

As an example, a new development is projected to generate 750 auto trips in a peak one hour period. It can be assumed that during peak periods the average auto occupancy is 1.1 or 1.2, persons per car. If recent surveys are available this assumption can be modified. The modal share for transit in the Victor Valley is about 1.5%. This means a transit route in this area would be expected to generate about 12.4 trips per hour. This is very close to the existing target of 12.6 for existing routes. New routes should be allowed some time to build ridership up to the minimum levels required. At this rate it could be reasonably expected that ridership would build to a level that is sustainable.

The recommended warrant for new local bus services is based, in part, on the trip generation methodology. This methodology has the advantage of using data that has already been prepared for and accepted by the municipal authorities, is available for all land uses, and incorporates elements of both population and forecasting approaches.

In addition to the forecast trip generation volume for the development, it is recommended that several other factors related to the physical design of the development be considered as part of the service warrants. For bus services to operate efficiently and safely in a neighborhood, the road system must meet minimum geometric design requirements for bus operations and provide a relatively direct routing for the service. Where the bus route is to terminate within the development, adequate bus terminus facilities (e.g. street space or a bus loop for vehicle layovers) must be available. Finally, adequate pedestrian facilities (e.g. sidewalks and direct pedestrian routes to bus stops) and amenities at bus stops (e.g. shelters and lighting) are required to ensure fast and safe access by customers to the bus service.

Recommended Warrant

New services to be provided to areas beyond ½ mile of an existing bus stop when all of the following conditions are met:

- Minimum density of 10 residents per acre or 5 jobs per acre as measured over a minimum area of 25 acres.
- Road and pedestrian access system that provides for safe access and efficient operation of transit service;

- Minimum of 750 total person trips generated for all vehicle modes during a peak one hour of service as measured from end to end of proposed bus route.
- Trip generation to be based on standard trip generation methodology and procedures in common use in San Bernardino County.
- Service will be extended to additional time periods if the route is able to sustain ridership that is 75% of the minimum productivity standard during the first year of service.
- The service must meet the full productivity guideline within 1 year of the start of service. If after one year, the service is unable to meet the productivity standard alternative approaches will be considered. If the service being provided is changed significantly the probationary period may be extended.

Chapter 5: Recommended Action Plan

The development of a recommended action plan was based on a number of factors including data collection, the findings from the previous chapters, input from technical staff, and public involvement. The previous chapters identified issues with the current VVTA services and opportunities for improvement. These issues were sued to shape the primary service goals which are as follows:

- Provide additional service coverage.
- More efficiently match demand and supply in the areas of decreased demand, including some deviated fixed route or demand responsive alternatives.
- Seek opportunities to regain a peak system wide sixty minute cycle time that would facilitate transfer connections, especially at 7th and Lorene.
- Examine the potential for new service to areas with anticipated increased demand.
- Maximize an integrated system approach to the service plan.
- Establish core spine routes that will be supplemented with local feeder routes

These goals were used to develop a new route network. A full day transit planning charrete attended VVTA technical staff, as well as representatives from the towns and cities within Victor Valley, and representatives from SANBAG resulted in a modified route network. This modified route network was presented to the general public at major transfer locations on Tuesday September 12th through Thursday September 14th, 2006. Comments from the public were used to modify the proposed route network to create a final plan network presented in this chapter.

Overview

As indicated previously system coverage is substantial. However, as a result of increased traffic congestion, especially for the portions of the routes crossing Interstate 15 and traversing the area proximate to 7th and Lorene, it has been increasingly difficult to maintain the pulsed system connections even with the current 70 minute peak cycle. Thus, transitioning back to the 60 minute cycle will either require route streamlining or the addition of service.

In addition, many of the routes have over 60% of the boardings and alightings recorded at the major connection points, such as 7th and Lorene, Victor Valley Community College, the Mall of Victor Valley and the Apple Valley Post Office. In fact, almost 40% of all system boardings and alightings occur at these four route termini. Another influencing factor is that approximately 12% of all riders transfer from one route to another.

Looking at the transfer analysis, the routes with the highest number of riders transferring are from route 43AV to 43V, 43V to 43AV, 42 to 41, and 45V to 31.

With the exception of the transfers from Route 41 to 42 at the transfer point across from St. Mary's Hospital and from the 43 and 45 routes at Victor Valley Community College, the majority of the remaining transfers occur at 7th and Lorene, reinforcing the importance of this location in the system.

From a system standpoint, a number of routes have out of direction travel that increases running time or have long extensions at the end of the route, which serve less people than the remainder of the route. In addition, one-way loops, in general, make it more difficult for riders in the one-way portion of the route to complete a round trip. On the other hand, each of the current routes is providing service to riders that, based on the demographic analysis and system survey, typically have no other form of transportation and need the services of VVTA to access jobs, education, shopping, medical services, etc.

Table 5-1: Transfer Matrix

Estimated Total Transfers													
	Route From												
Route To	**31**	**32**	**40**	**41**	**42**	**43V**	**43AV**	**44**	**45V**	**45H**	**51**	**52**	**Total**
31	3			3					23			10	39
32		3		3					13		8	5	32
40	5					5	3						13
41	3			3	18				8		15	15	62
42			2	13			3						18
43AV			8		10	18		3	15	12			66
43V							18		3	8			29
44								3		5		10	18
45V	8	8		5		15		8		10	10	3	67
45H						7	5	2	9				23
51		5		8		3		3	15				34
52		8		10		8		5	5		8	3	47
Total	19	24	10	45	28	56	29	24	91	35	41	46	448

Potential Service Alternatives

The critical issue for existing service alternatives then becomes the potential opportunities to maintain and expand service coverage, decrease running times to regain the 60 minute system cycle and to the extent possible accomplish this within existing funding.

In order to achieve these goals, we looked at a number of service alternatives. Urbitran is currently completing a research project for the Transportation Cooperative Research Program entitled “Guidelines for Evaluating, Selecting and Implementing Suburban Transit Services”, which included preliminary input from over 30 transit systems around the country and focused on eight specific case studies. This research showed that the primary problem facing transit operators in outlying suburban areas is how to effectively and efficiently provide service in areas with changing density, especially those areas with lower density. This is also the situation to some degree for VVTA.

In order to address this problem operators have taken different paths. Some such as the Capital Transit District in Albany New York have had success with route deviation services, maintaining a maximum deviation time to ensure that transfers to other portions of the fixed route system can

be maintained. Others, such as SMART in suburban Detroit have worked with individual communities to provide vehicles, which the community operates based on its priorities.

In Denver, the RTD initiated a call-n-Ride program where vehicles in certain geographic areas are operated in demand response mode using a combination of subscription and same day trips to connect with local destinations or other routes within the geographic area. In this case, the operators receive the same day calls on cell phones and are responsible for developing the daily schedule.

Each of the operators has taken differing stances regarding performance measurement and funding. Some view the continued availability of local funding, through sales tax or other financing mechanisms as being the most important element and thus do not focus on productivity. Others have developed specific performance thresholds that must be maintained in order to retain the service, similar to the 20% farebox requirement in TDA.

Although, in general, demand responsive operation is more costly to provide than fixed route operation, due to lower ridership productivity and increased mileage per passenger trip, some systems, such as Denver RTD have improved ridership and decreased subsidy per passenger by switching from fixed route to call-n-Ride services (which attract over 5 riders per hour at a subsidy of $12 per trip). Some of the systems also have implemented either route deviation or demand responsive services with a secondary goal of eliminating the requirement for a separate complementary ADA paratransit service in those areas.

Finally, many of these suburban systems have ultimately developed a service philosophy that reinforces the longer distance or higher demand “spines” or “trunks” of the system and considers more locality based alternatives in order to address local trip needs or feed the spine services. Feeder services clearly require increased transfers in those localities and thus are only effective and sustainable if the transferring can be effectively accomplished.

The Service Plan attempts to incorporate the results of this research in a manner that is both effective and efficient for Victor Valley.

Recommended Service Changes

Route and service alternatives were examined to determine which of these would best meet the primary objectives of achieving a 60 minute frequency for all routes, providing more direct service to major trip generators, improving route connections, and offering additional service coverage. Based on this analysis, we determined that the best approach would be to establish a series of high demand trunk routes and supplement them with local feeder routes. The following describes these service recommendations.

Overview of System-wide Changes by Year

Year 1

- Adjust existing route network to develop a **core route network** that connects downtowns and major activity centers, and a network of **community access circulators** that both provide local trips as well as timed connections to the core routes.

- Develop a **convenient bus schedule**:
  - Create a schedule with 60 minute service on each route
  - Coordinate schedules to ensure convenient transfers at major locations, both between core routes and from community access circulators to the core routes
  - Increase reliability by adjustments to scheduled running times
  - Increase frequency on certain routes or at certain time periods

- The **Core Route Network** includes the following routes:
  - ***Victorville to Adelanto***, via Palmdale Road
  - ***Victorville to Apple Valley*** via Highway 18
  - ***Apple Valley to Victor Valley College*** via Bear Valley Road
  - ***Victor Valley College to Victor Valley Mall*** via Bear Valley Road
  - ***Hesperia to Victor Valley Mall*** via Main Street and Cottonwood
  - ***Victorville to Hesperia*** via Victor Valley College
  - ***Victorville to Victor Valley Mall*** via Civic Drive
  - ***Victorville to Adelanto North*** via SCLA
  - ***Victorville Circulator***

- The **Community Access Circulators** are timed to connect to the Core Routes. They feature a combination of fixed route and dial-a-ride services that can be individualized for the customer. The community access circulators include the following routes:
  - ***Apple Valley North Route Deviation***, a service that operates on a fixed route but upon request will serve individual destinations within ¾ of the route.
  - ***Apple Valley South Route Deviation,*** a service that operates on a fixed route but upon request will serve individual destinations within ¾ of the route.
  - ***Hesperia Route Deviation***, a route that operates on a fixed route but upon request will serve individual destinations within ¾ of the route.
  - ***Adelanto Point Deviation***, a service which has a set of scheduled stops that upon request will serve any location between those stops within the service area.

- Adjust County Route 22 Hellendale to serve Stoddard Wells area

- Fare adjustment from $1.00 to $1.25 (proposed fares shown on Table 5-2)

Table 5-2: Proposed Fares for Year 1

Suburban Fixed Route	Current	Proposed
Adult	$1.00	$1.25
Student	$0.75	$1.00
EDH	$0.50	$0.60
Children 5 and Under	Free	Free
County Routes 21, 22, 23	Current	Proposed
Adult	$2.00	$2.25
Student	$2.00	$2.00
EDH	$1.00	$1.00
Children 5 and Under	Free	Free
Day Pass		
Suburban Adult	$3.00	$3.50
Suburban Student	$3.00	$3.25
Suburban EHD	$1.50	$1.75
County Adult	$5.00	$6.00
County Student	$4.00	$5.00
County EHD	$3.00	$4.00
Thirty-One (31) Day Passes	Current	Proposed
Suburban Adult	$40.00	$50.00
Suburban Student	$30.00	$40.00
Suburban EHD	$20.00	$25.00
County Adult	$70.00	$75.00
County Student	$60.00	$65.00
County EHD	$30.00	$35.00
Direct Access	Current	Proposed
Zone #1	$2.00	$2.50
Zone #2	$3.50	$4.50
Zone #3	$5.00	$6.00
Subscription	Current	Proposed
Zone #1	$105.00	$130.00
Zone #2	$130.00	$160.00
Zone #3	$140.00	$180.00

Year 2

- Create a **West Victorville Community Dial-a-Ride** to serve residential development in this area.

- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Core Routes**:
    - ***Apple Valley to Victor Valley College*** via Bear Valley Road
    - ***Victor Valley College to Victor Valley Mall*** via Bear Valley Road

  - ***Victorville to Hesperia*** via Victor Valley College

- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Community Access Circulator**:
  - Adelanto Point Deviation

Year 3

- Adjustments and additional routes to enhance the core network:
  - Add a new **Hesperia Main Street Route** to serve growing neighborhoods along Main Street. This route could be either a regular fixed route or a route deviated route similar to the community access circulators.
  - Adjust the **Hesperia to Victor Valley Mall Route** to complement the Hesperia Main Street Route.
  - Adjust the **Victorville to Adelanto North Route** to serve the expected employment growth at SCLA. As an alternative, SCLA could operate a shuttle van from SCLA employment sites to the Victorville to Adelanto North route at any time demand supports the service.
  - Adjust the **Victorville to Hesperia Route** to provide service to new VVTA Administrative facility.

- Base fare adjustment from $1.25 to $1.35

Year 4

- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Core Routes**:
  - ***Victorville to Adelanto***, via Palmdale Road
  - ***Victorville to Apple Valley*** via Highway 18

Year 5

- Improve peak period frequency from 60 to 30 minutes by adding 3 additional AM roundtrips and 3 additional PM roundtrips to the following **Core Routes**:
  - ***Victorville to Victor Valley Mall*** via Civic Drive
  - ***Victorville Circulator***

- Base fare adjustment from $1.35 to $1.50

The following sections provide an overview of the route proposals for the local services within Victorville, Hesperia, Adelanto, and Apple Valley. The route proposals are designed to meet the goals of having 60 minute roundtrip cycle times or 120 minutes for longer routes to allow for 60 minute headways, maintain a functional network that ensures that riders are effectively served, and establish innovative services to replace traditional fixed route services in areas that are inappropriate for those services at this time.

Another consideration in route recommendations are for services that will reduce the ADA costs within the Victor Valley area. The recommendations are grouped into three types of services; fixed route arterial services, route deviation circulator services, and demand response services, all of which build off and modify the current route network. Every effort was made to maintain service to all areas; however certain areas that generate no ridership, or very little ridership may have been cut with no replacement services provided. In many instances the cut areas are within a deviation zone or are within walking distance to another route.

Arterial Fixed Routes

The arterial fixed route bus network will be the backbone service for Victor Valley Transit. The routes will provides inter-community service for the most part along major roadways, with some circulation provided. These routes will serve major generators within the service area, and operate on a regular schedule. The estimated vehicle need for the arterial fixed route network will be 12 vehicles in year 1, with an additional four vehicles needed for community access circulators. Descriptions of each of the routes are presented below with maps provided that show the proposed routings, areas of the replaced route that will be replaced by modifications to other routes, and areas that will lose transit service.

Victorville – Adelanto (existing Routes 31 and 32)

This route provides a replacement to routes 31 and 32, and will operate every 60 minutes utilizing one vehicle. This route will begin at the Victorville transfer point and provide corridors service along Palmdale Road (Highway 18) to a turnaround in Adelanto at Highway 395. The terminal loop will utilize Bellflower Street, Seneca Street, and Highway 395. This route will connect with a point deviation at the Adelanto transfer. Adelanto is mostly rural with numerous small developed "villages." Due to the low density and spread out nature of this area, fixed route service has a difficult time providing adequate service to the town. For this reason a new point deviation service, which is described below, will be implemented to provide service to most locations within Adelanto. In year 4, this route will provide service every 30 minutes during the peak periods. Figure 5-1 provides a map of the proposed route.

Victorville – Apple Valley (existing Routes 41 and 42)

This route will replace current routes 41 and 42, utilizing 2 buses each running on a 2 hour cycle. Service will operate primarily along Highway 18 (Happy Trails Highway) and 7th Street, with some off corridor running to serve major generators such as the Apple Valley Library and Civic Center, as well as Wal Mart and Target. This route will serve both the Victorville and Apple Valley transfer centers, and will eliminate the need to transfer at St. Mary's when traveling between the two downtowns This arterial route will provide a connection between two major downtown areas on an identifiable corridor that serves the major generators along the corridor. It removes the weakest segments from both the 41 and 42 to provide a strong route. In year 4, this route will provide service every 30 minutes during the peak periods. Figure 5-1 provides a map of the proposed route.

Figure 5-1: Proposed Victorville-Adelanto Route

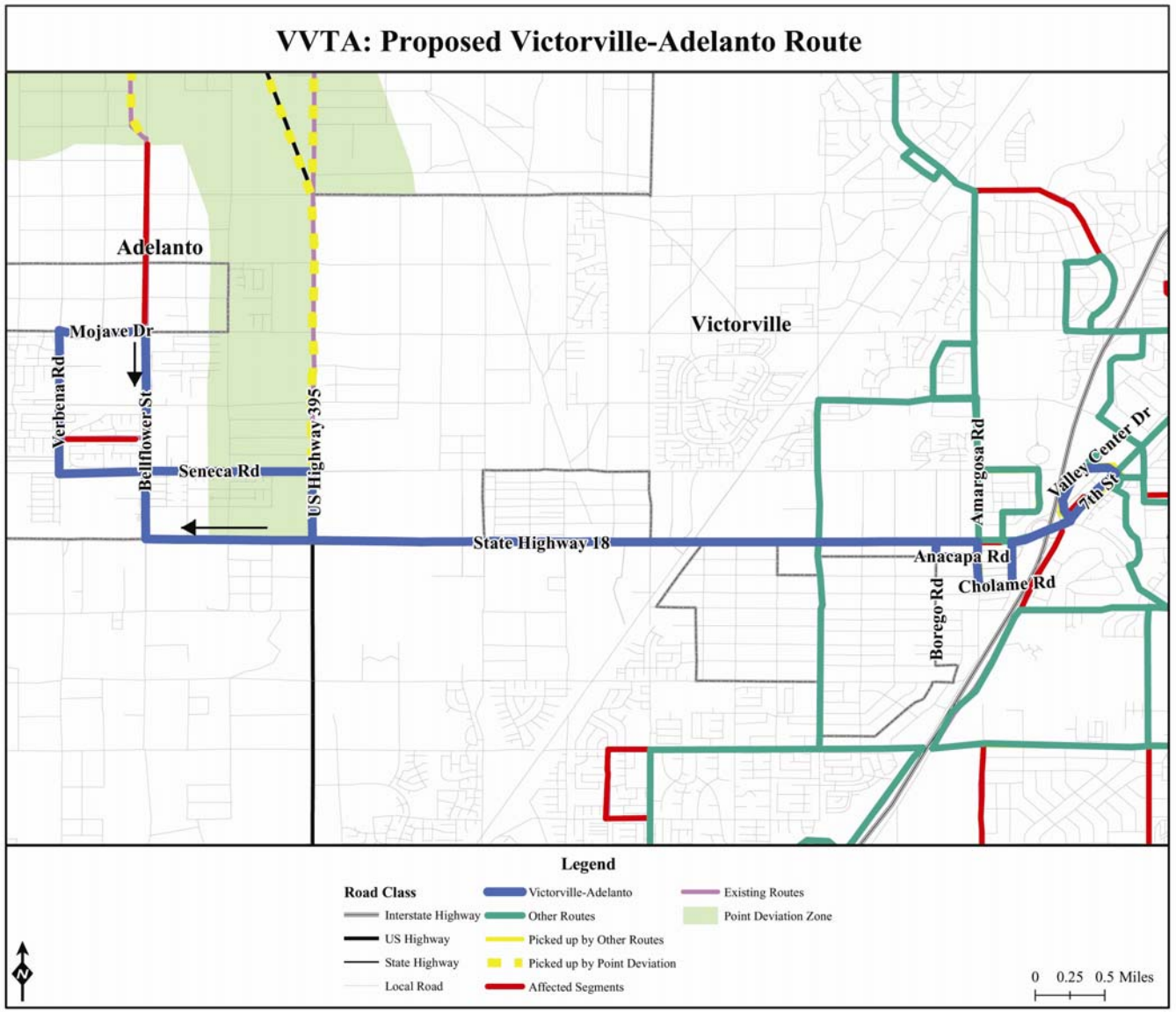
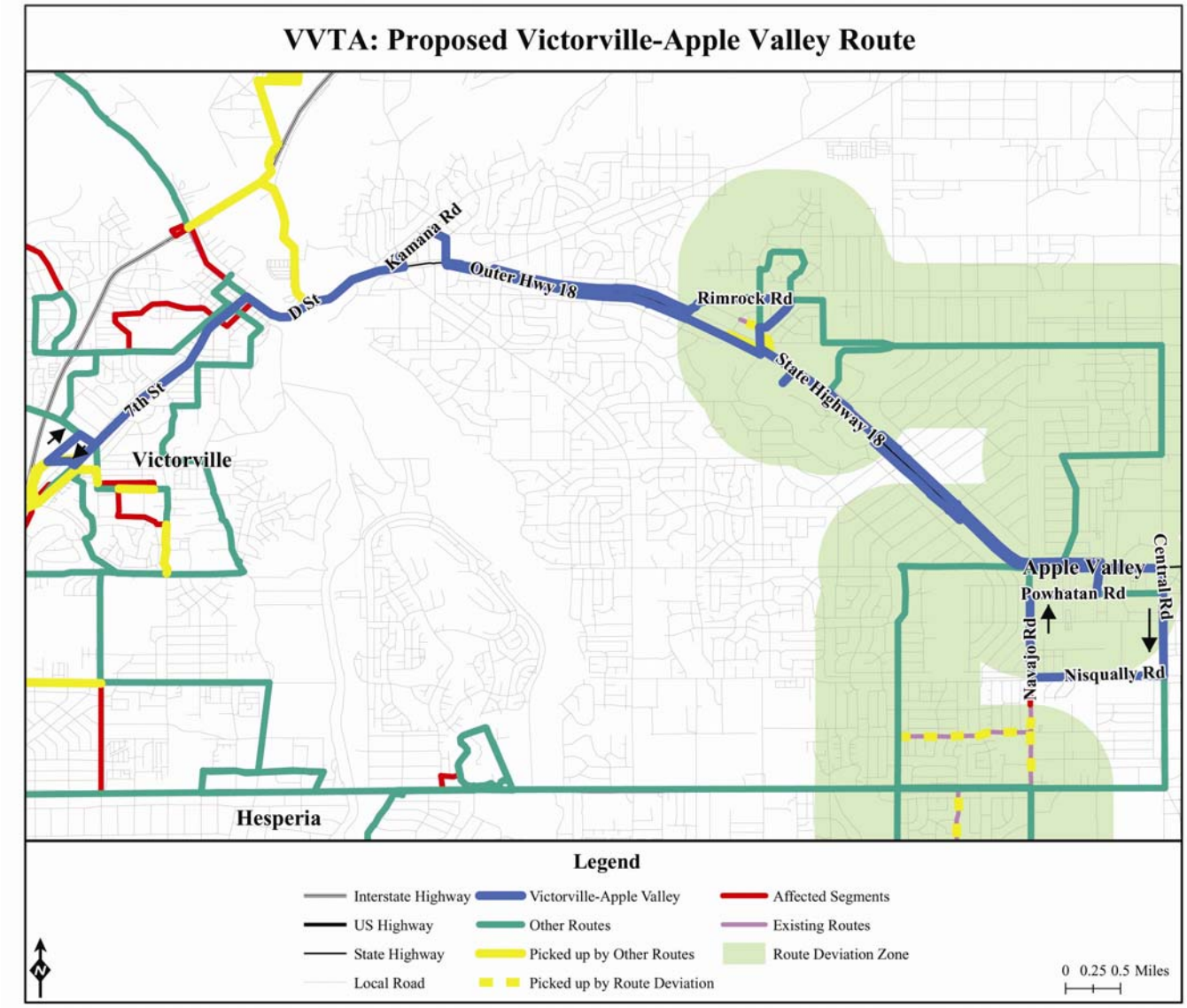


Figure 5-2: Proposed Victorville-Apple Valley Route



Apple Valley – Victor Valley College (existing Route 43)

This route replaces the current route 43, and will have one vehicle operating on a 60 minute cycle for 60 minute service. This route will provide service primarily along Bear Valley Road and Central Road, with service along portions of Navajo Road. Service will branch off provide service to major generators including the Victor Valley College, the Apple Valley Senior Citizens Center, and the Apple Valley Community Center. This route serves transfer locations at Victor Valley College and Apple Valley. This route does cut out certain segments in order to provide service in both directions to areas of stronger ridership an to allow it to maintain a 60 minute headway, as well as to have a more direct trip for a majority of passengers. Most areas that are proposed to lose access to this route will be served by other routes. In year 2, this route will provide service every 30 minutes during the peak periods. Figure 5-3 provides a map of the proposed route.

Note that Route 43, the Bear Valley corridor from Apple Valley to the Mall, was split into two pieces and will require a transfer at the college for trips traversing that location from one side to the other. This was done to free the two segments from one another with respect to running time issues, thus allowing VVTA to use an extra bus on the western segment (College to the Mall) in the afternoon when congestion is heaviest, while still using a single bus on the other segment.

Victor Valley College – Mall (existing Route 43)

This route replaces the current route 43, and will have 2 vehicles operating for 60 minute service from 10:00 AM to 5:00 PM, with one vehicle providing 60 minute service during the remainder of the service day. This route will provide service primarily along Bear Valley Road. Service will branch off provide service to major generators including the Mall of Victor Valley, Desert Valley Hospital, and Victor Valley College. This route serves transfer locations at Victor Valley College. This route does cut out certain segments in order to provide service in both directions to areas of stronger ridership, to maintain reliable on-time performance, as well as to have a more direct trip for a majority of passengers. Most areas that are proposed to lose access to this route will be served by other routes. In year 2, this route will provide service every 30 minutes during the peak periods. Figure 5-4 provides a map of the proposed route.

Figure 5-3: Proposed Apple Valley-Victor Valley College Route

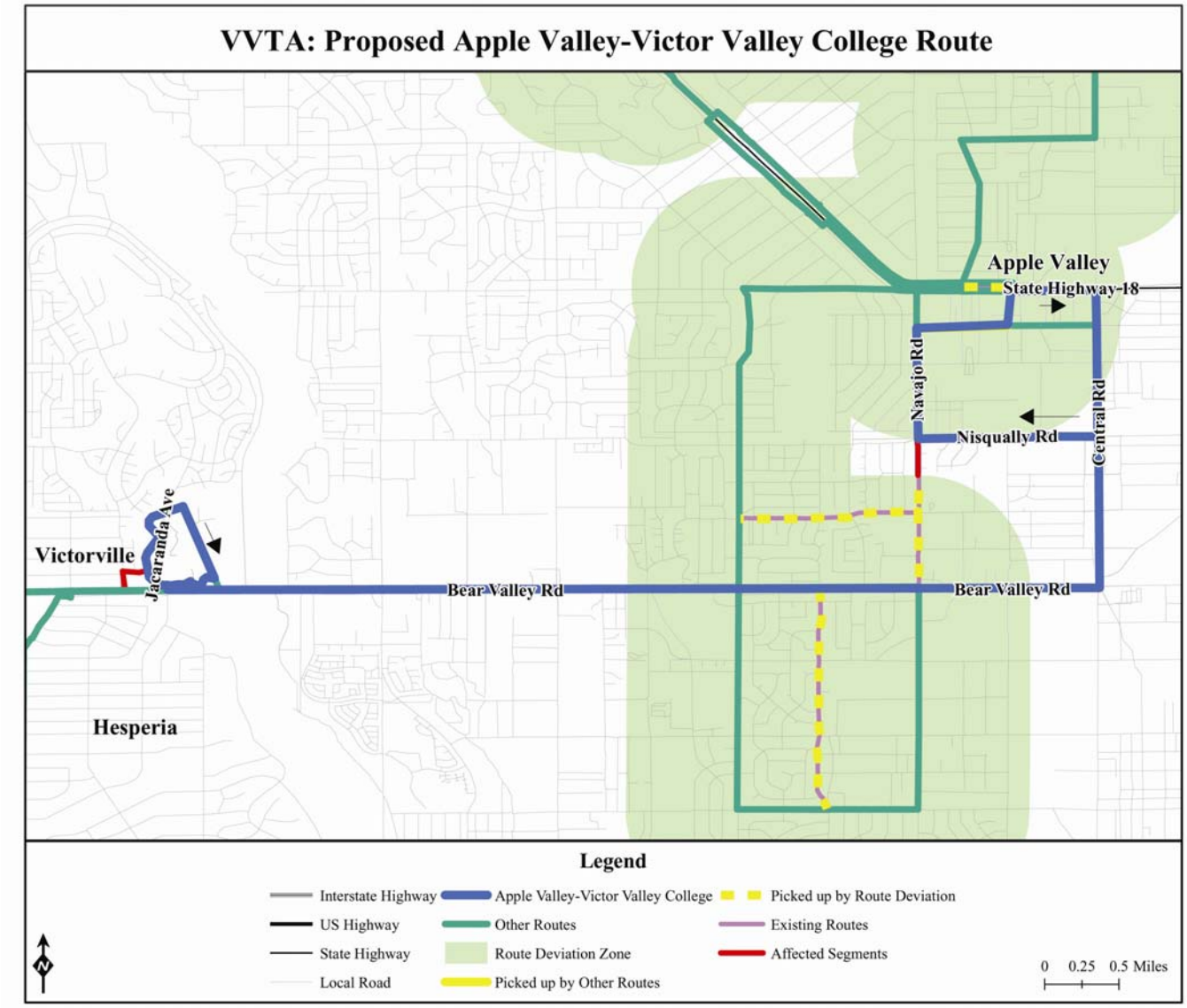
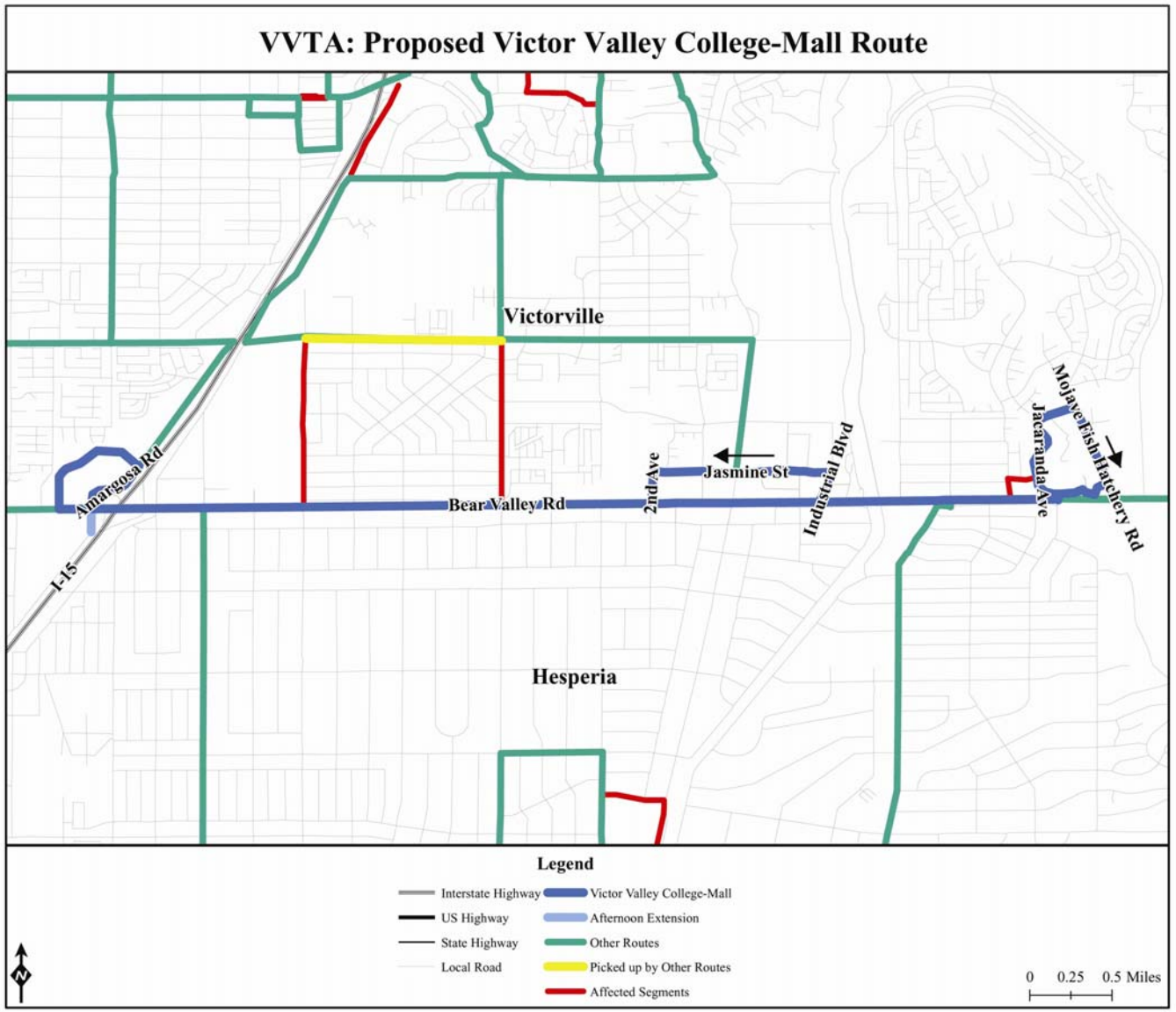


Figure 5-4: Proposed Victor Valley College-Mall Route



Hesperia – Mall (existing Route 44)

This route replaces current route 44 with some minor edits. This route will run every 60 minutes utilizing 2 buses. This route provides service along Main Street and Cottonwood Avenue, with some sections running off the major corridors to serve important generators such as the Hesperia Library, as well as residential areas. This route serves the transfer location in Hesperia. The modified version of this route combines the two areas where service deviates off of Main Street into one route deviation. Service to the Hesperia City Hall is provided in both directions, however buses in the Hesperia bound direction also provide service further north on 7th Avenue and along 3rd Avenue. This is done since having two deviations inconveniences most riders going to the Hesperia transfer point, while the stops along Main Street that will lose eastbound service do not have very high ridership. For passengers who are on the deviation and are bound for the Victor Valley Mall the travel time is not excessive by traveling through the Hesperia Post Office. If service along the deviation was provided in the direction of the mall, travel time would be excessive for those passengers bound for the Hesperia transfer point. Most of the areas of this route that are being cut will be replaced with other routes, including a route deviation service in Hesperia.

This route will be further modified in year 3 with the introduction of the Hesperia Main Street route. The Hesperia Main Street route, discussed later in this chapter, will serve areas in the western part of Hesperia along Main Street, and Pyrite Avenue. As a result, the Hesperia-Mall route will be streamlined and modified. Additionally, service in both directions will be provided on the deviation along 3rd and 7th Avenues.

Figure 5-5 provides a map of the proposed route for year 1, and Figure 5-6 presents the year 3 modifications.

Figure 5-5: Proposed Hesperia-Mall Route (Year 1)

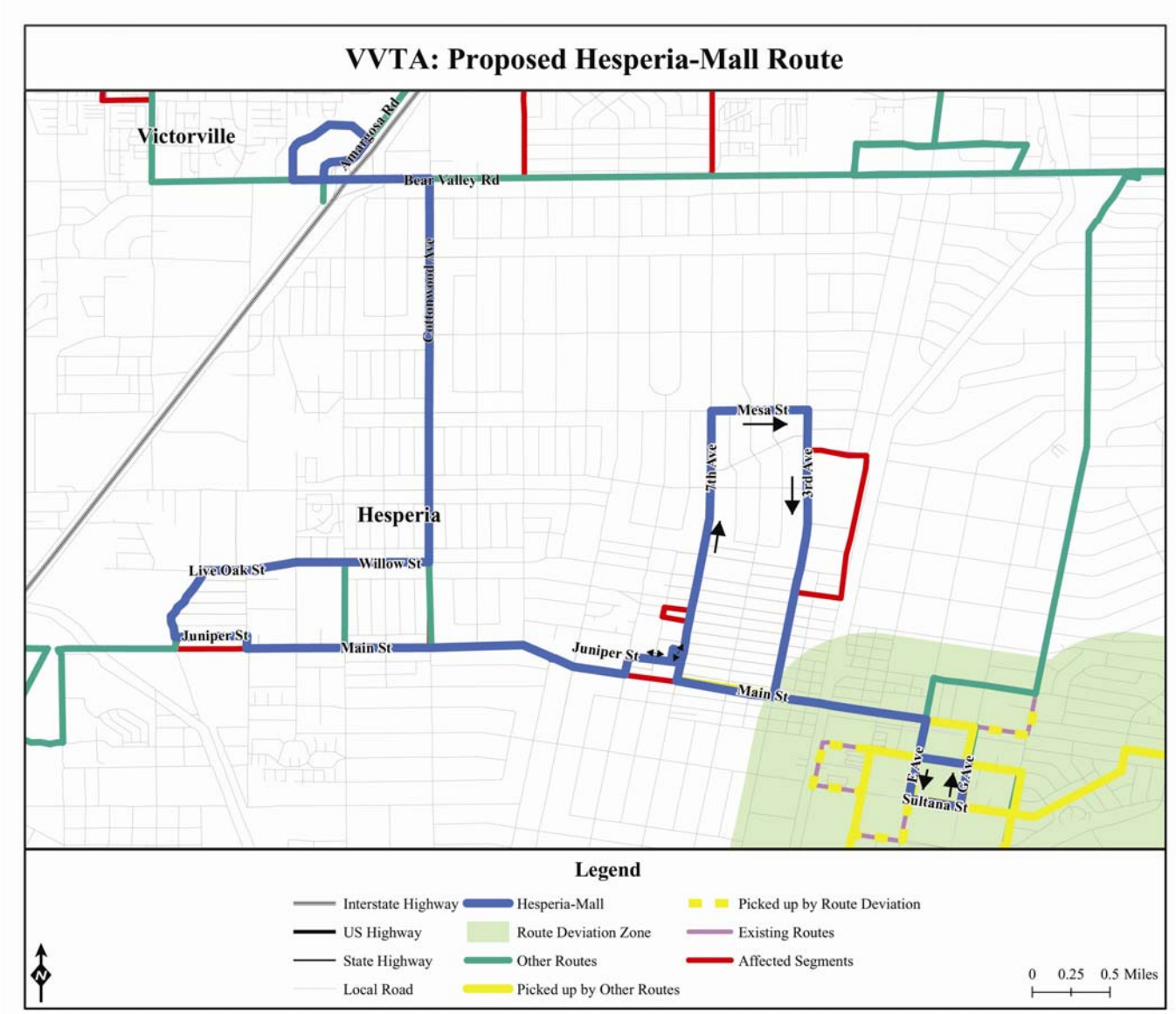
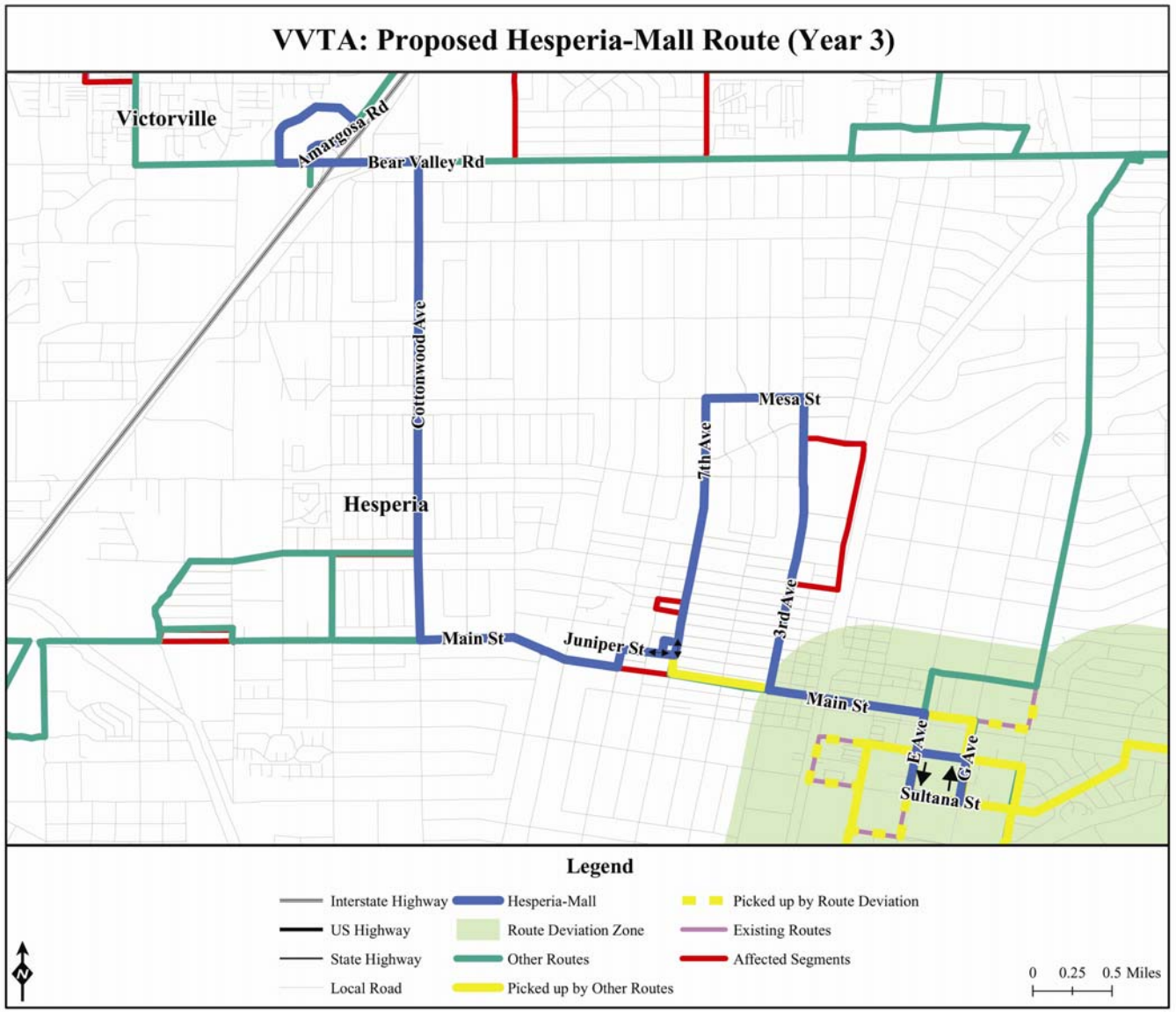


Figure 5-6: Proposed Hesperia-Mall Route (Year 3)



Victorville – Mall (existing Route 52)

This route will replace the current route 52. This route will serve neighborhoods on the west side of I-15 and provide a connection between the Victorville transfer center and the Victor Valley Mall. Service along this route will operate with one vehicle on a 60 minute cycle. The changes to this route remove service from a congested part of Palmdale Road which already is served by other routes. This will also provide service along Hook which is less congested and currently has no service. In year 5, this route will provide service every 30 minutes during the peak periods. Figure 5-7 provides a map of the proposed route.

Victorville – Adelanto North (existing Routes 31 and 51*)*

This new route will provide service between Victorville and the northern part of Adelanto. This new service will replace portions of the Victorville Circulator on the west side of I-15, providing this area with two direction service. This route will also replace portions of route 31 in Adelanto, providing a connection to Adelanto to areas that previously had no service. This route will be timed for transfers at the Victorville transfer center. It will require 1 vehicle on a 60 minute cycle. In year 3, a service to SCLA would be implemented, requiring an additional vehicle to maintain 60 minute service. Figure 5-8 provides a map of the proposed route.

Victorville – Hesperia (existing interlined Route 45)

This route replaces the current route 45. Service will require 2 buses operating a 2 hour cycle. Service will operate between Victorville and Hesperia along I Avenue and local streets through Victorville. This route will serve three transfer locations; Victorville, Victor Valley College, and Hesperia. The changes to this route are being done to provide two-way service along the busy commercial areas of Hesperia Road. Also, non-productive segments of the route in Hesperia are being cut, but will be replaces by a Hesperia route deviation service. The mid-route loop through the southern portion of Victorville will be done in order to maintain service to productive bus stops along Hesperia Road west of Arrowhead. In year 2, this route will provide service every 30 minutes during the peak periods. Figure 5-9 provides a map of the proposed route.

Victorville Circulator (existing Route 51)

This route will replace the current route 51. The route will be modified to cut out segments that will be operated by other routes, as well as segments that have lower productivity. Because this route needs to serve many locations within Victorville All of the alternatives will utilize a single vehicle. These changes were done because a single 60 minute loop is inconvenient for passengers whose destination is in the opposite direction of the direction the route travels, creating a significant travel time penalty. In year 5, this route will provide service every 30 minutes during the peak periods. Figure 5-10 provides a map of the proposed route.

Figure 5-7: Proposed Victorville-Mall Route

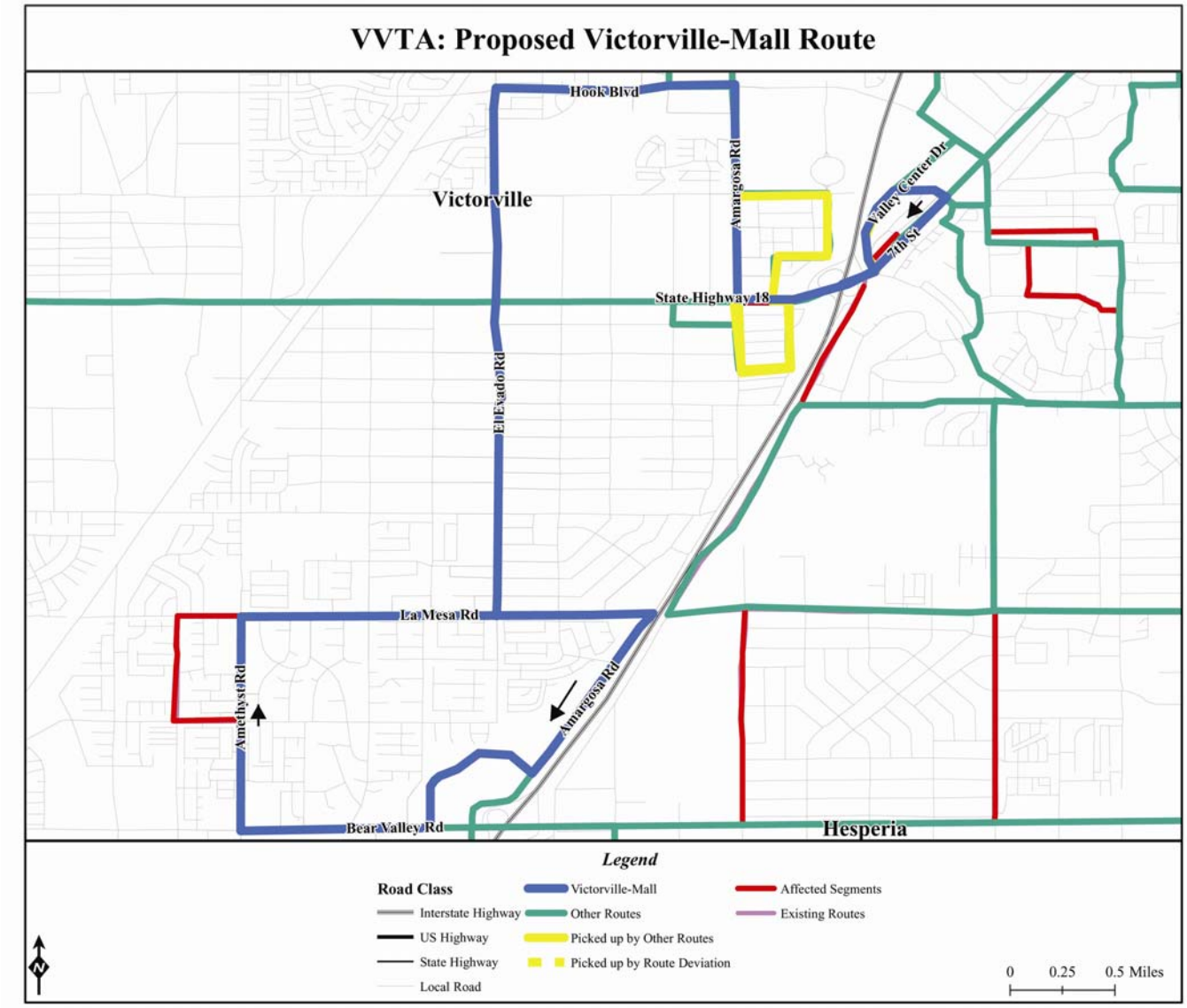


Figure 5-8: Proposed Victorville-Adelanto North Routes

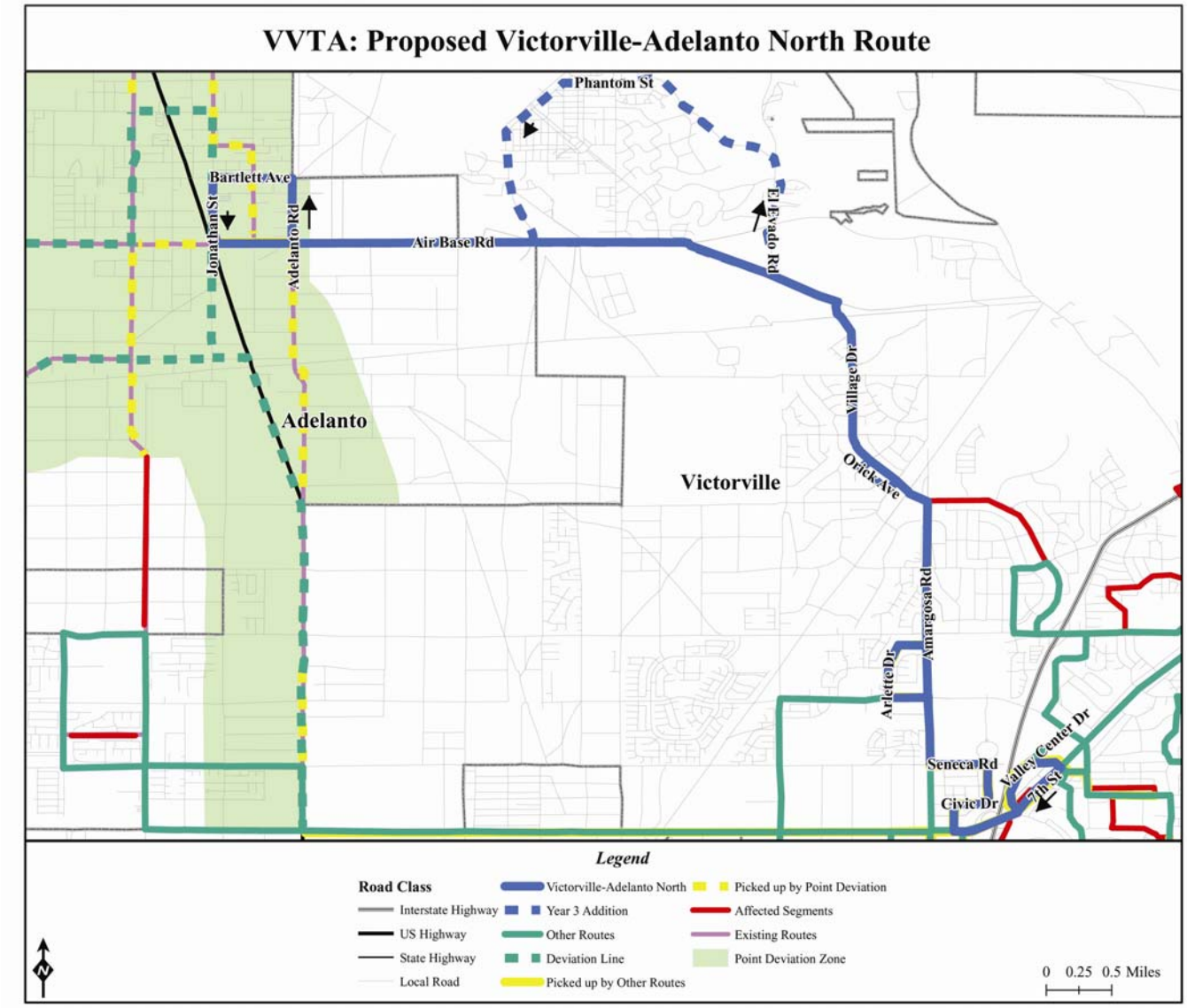


Figure 5-9: Proposed Victorville-Hesperia Route

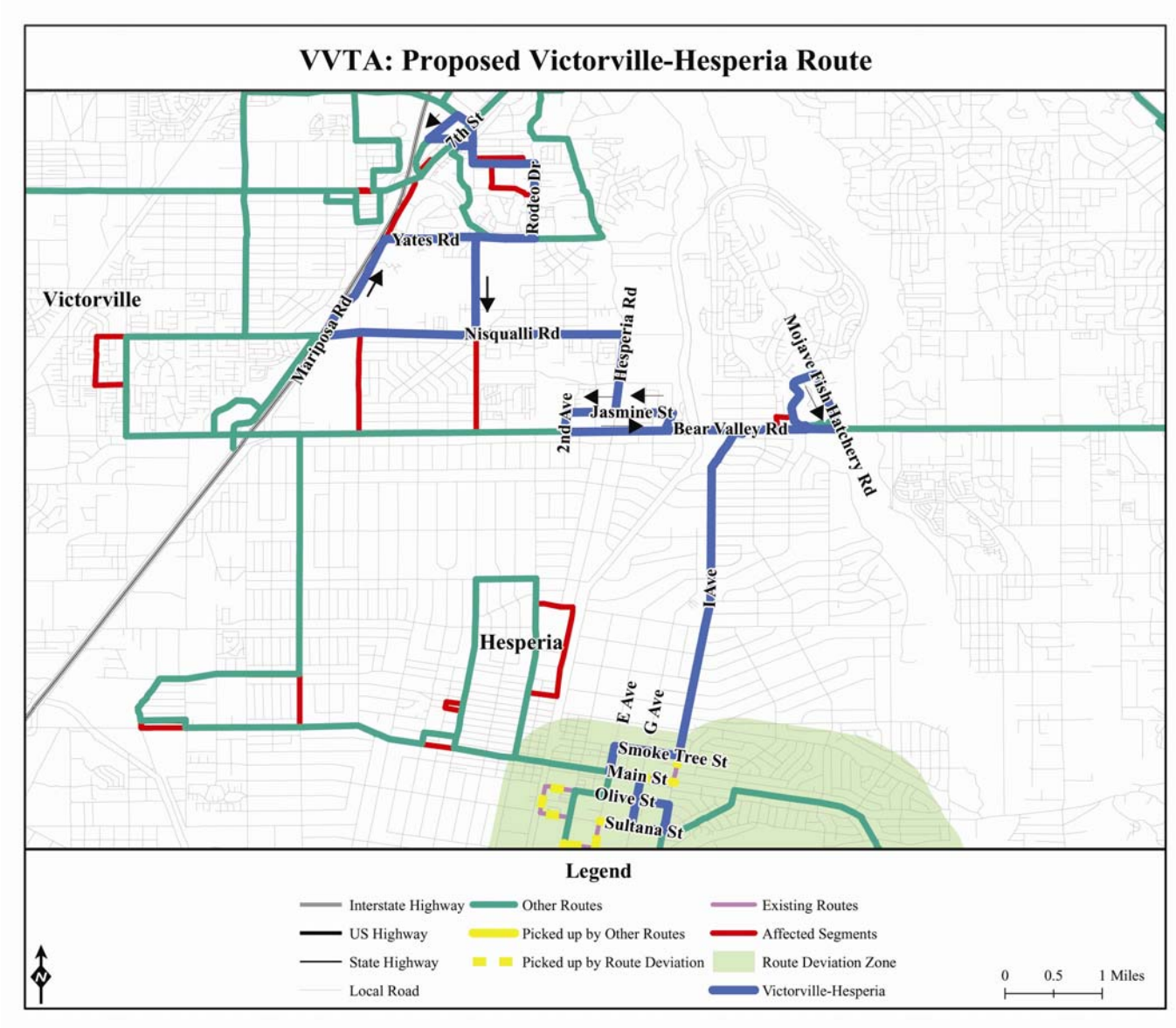
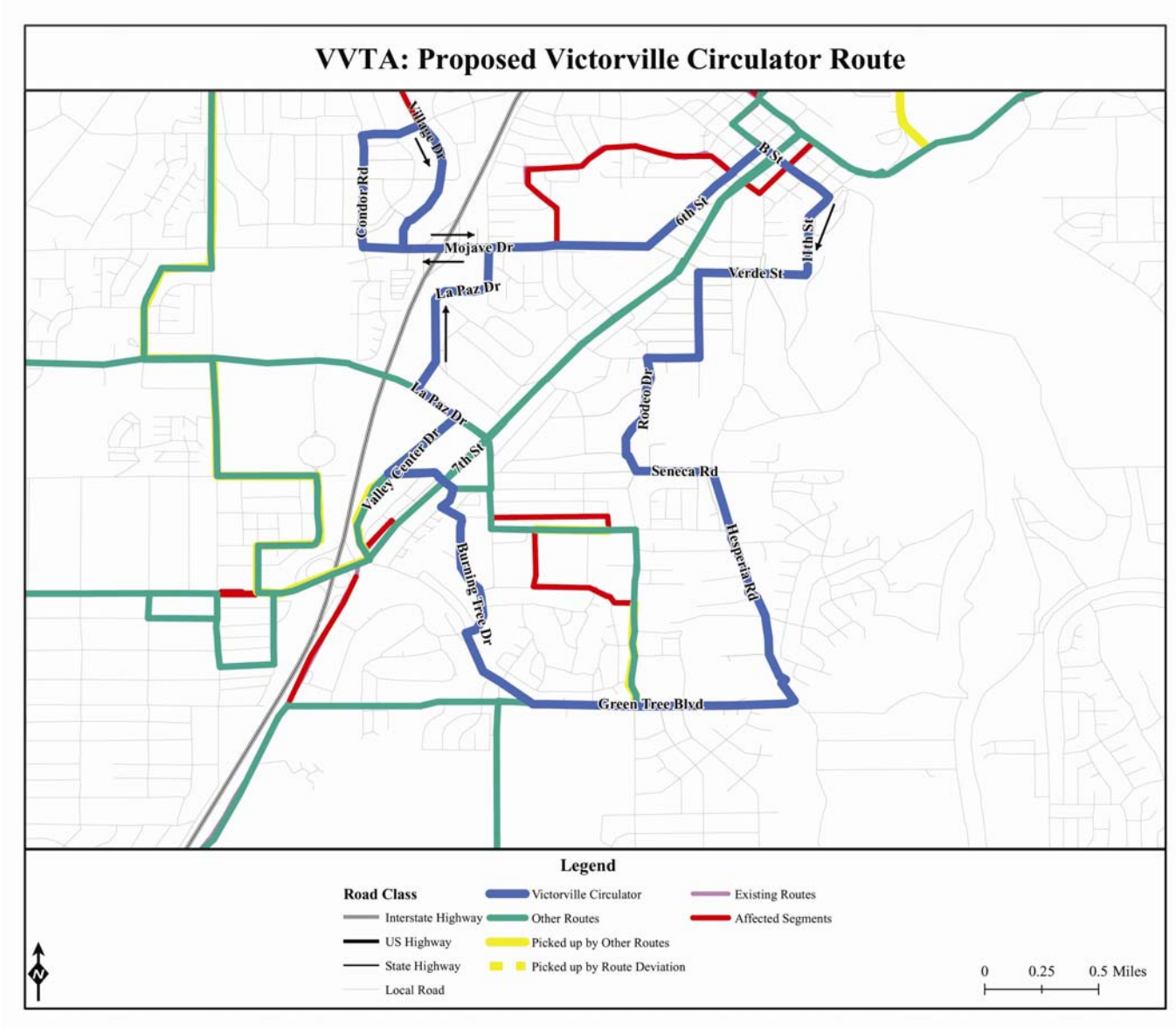


Figure 5-10: Proposed Victorville Circulator Route



Hesperia Main Street (existing Route 44)

This route provides service along the length of Main Street through Hesperia. This route will be implemented in year 3, and will require one vehicle operating every 60 minutes. This will connect the Hesperia transfer center with new and developing areas in the western part of Hesperia, including new retail outlets that will be constructed near Main Street and I-15, as well as residential areas. The implementation of this route will allow for modifications to the Hesperia Mall route by serving the neighborhoods in the western part of Hesperia. Figure 5-11 provides a map of the proposed route.

Route 22 Modification

The Stoddard Wells area is an area that does have demand for transit service, however ridership levels do not warrant the 60 minute service that is provided today. For this reason the modifications implement to Route 41 in order to create the Apple Valley to Victorville route did not include Stoddard Wells service. A modification to County Route 22 is proposed to provide service to Stoddard Wells. This modified Route 22 should operate every 120 minutes versus 180 minutes utilizing 1 vehicle. It is also proposed that the route begins at 6:00 AM and operates until 7:15 PM on weekdays. Figure 5-12 provides a map of the proposed route modifications.

Figure 5-11: Proposed Main Street Hesperia Route

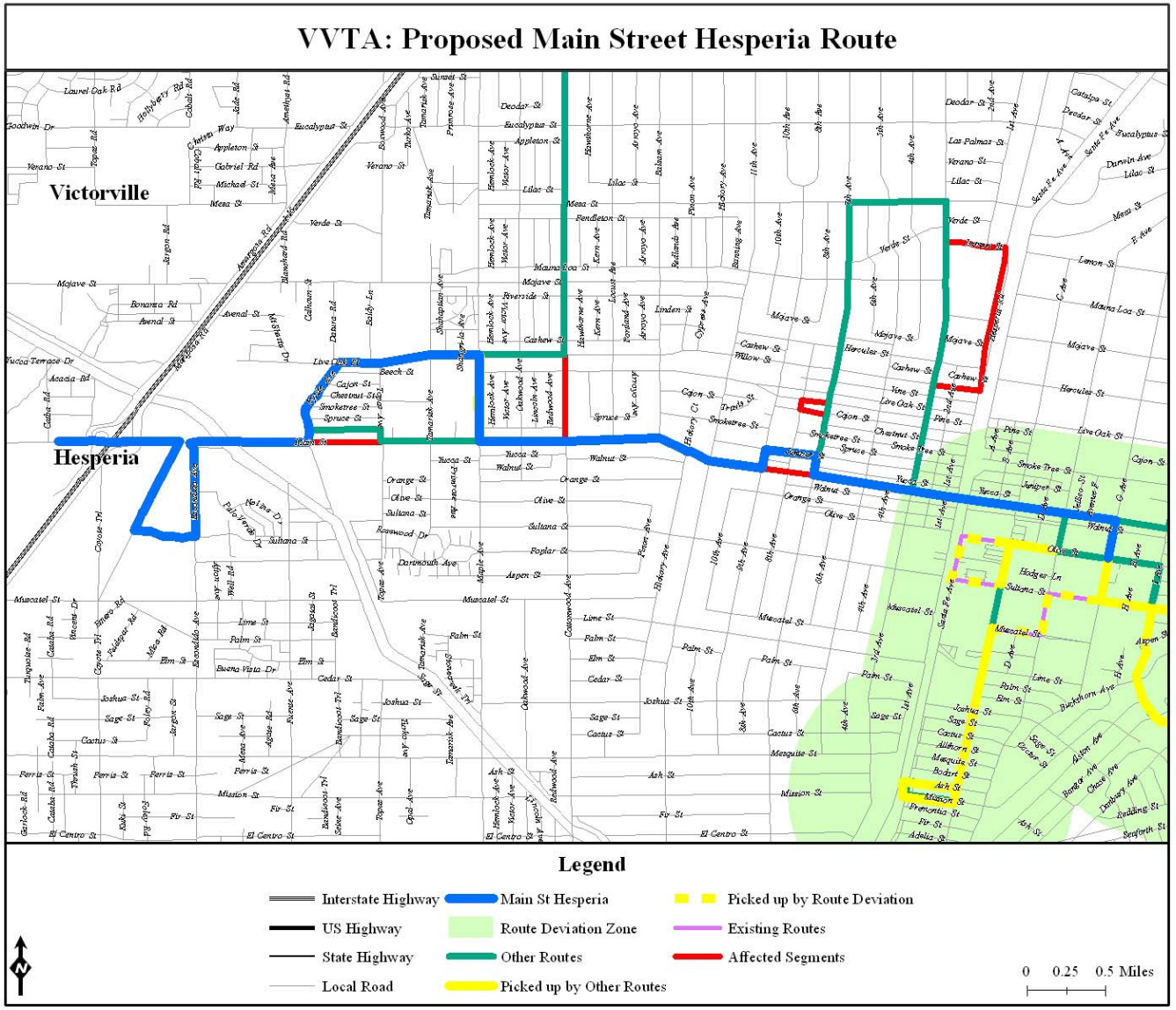
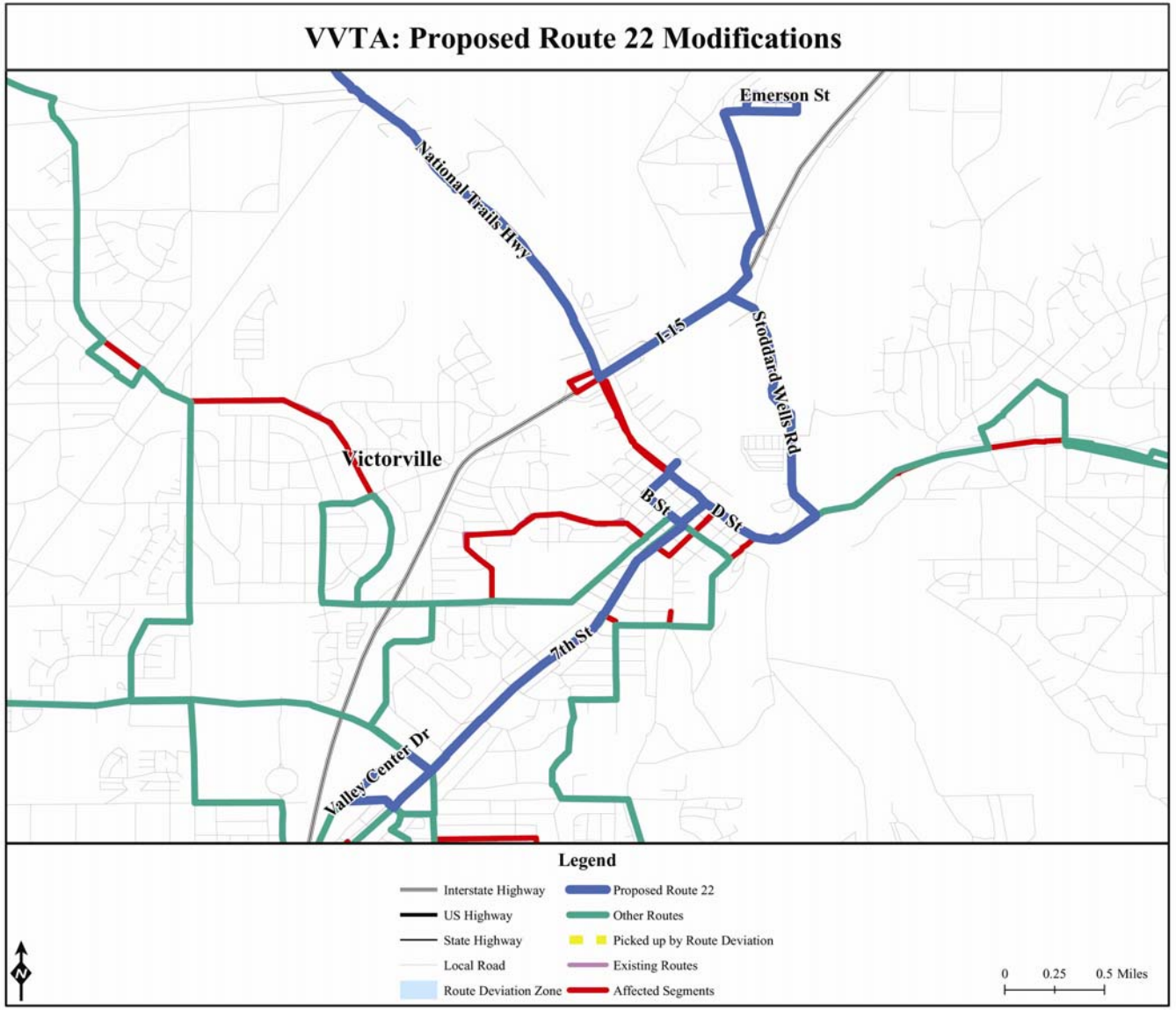


Figure 5-12: Proposed Route 22 Modifications



Route Deviation/Point Deviation Circulator

Many of the areas within Victor Valley that are currently served by fixed routes are lower density and neighborhood areas that can not justify fixed route service. For some of these areas it is proposed that either a route deviation or point deviation service be provided. Route deviation services are routes that have a fixed route and setup to pick-up and drop-off passengers within ¾ mile of that route. The ¾ mile figure is a common distance used for route deviation services; however certain circumstances within the VVTA service area may result in larger or smaller deviation areas. The deviation areas will be talked about on a case by case basis; however the route deviation route maps have all been drawn with the ¾ mile buffer around the routes. Schedules for these routes will be set up with enough time for deviation, and a premium fare can be charged for deviations, however in the case of Adelanto a premium fare is not likely. A point deviation service is a service that has fixed timepoints but no fixed route and will pick-up passengers anywhere requested between the timepoints. Passengers using point deviation services can catch the vehicle at the timepoints for a regular fare, or request service for a premium. Route deviation routes and point deviation services are able to cover the requirements for ADA within the areas they operate, assuming the vehicle is ADA accessible. Three route deviation routes are recommended, and one point deviation service. Each service will utilize one vehicle, for a total of four vehicles, operating a 60 minute cycle.

Apple Valley North with Deviation Zone (existing Route 40)

This circulator replaces current route 40 and for the most part follows the same routing with time for deviation. This route will serve portions of Apple Valley located north of Highway 18. Service is provided primarily along Thunderbird Road, Central Road, and Pawnee Road. This route will provide service to Wal Mart and direct service to the Apple Valley Library and Town Hall. Schedules for this route will be coordinated to allow transfers at the Apple Valley transfer center. This route has been converted to a route deviation route because a lot of the area along this route is open space that would be better serve the areas of northern Apple Valley, and improve ridership along this route. Figure 5-13 provides a map of the proposed route and deviation zone.

Apple Valley South with Deviation Zone (existing Routes 42 and 43)

The Apple Valley south circulator will replace portions of routes 42 and 43 that were discontinued. The route is designed to maintain service to those areas, with flexibility provided in order to provide service to areas that are a bit further away from the streets that were served. Service will operate primarily along Kiowa Road. This will serve parts of Apple Valley located south of Highway 18. Schedules for this route will be coordinated to allow transfers at the Apple Valley transfer center. As a route deviation service, this will provide access to transit service to areas of Apple Valley that previously had not service. Figure 5-14 provides a map of the proposed route and deviation zone.

Figure 5-13: Proposed Apple Valley North Route and Deviation Zone

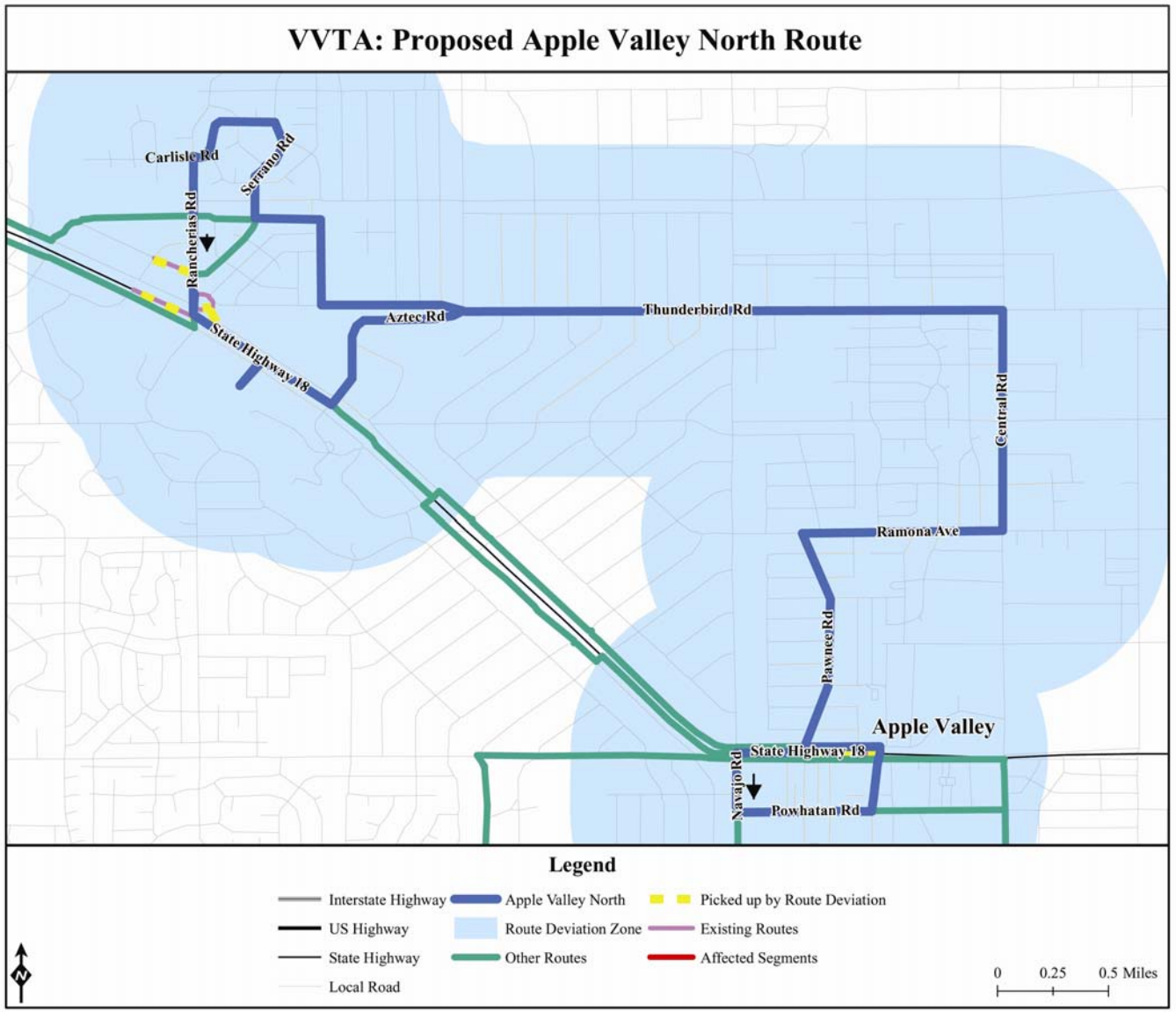
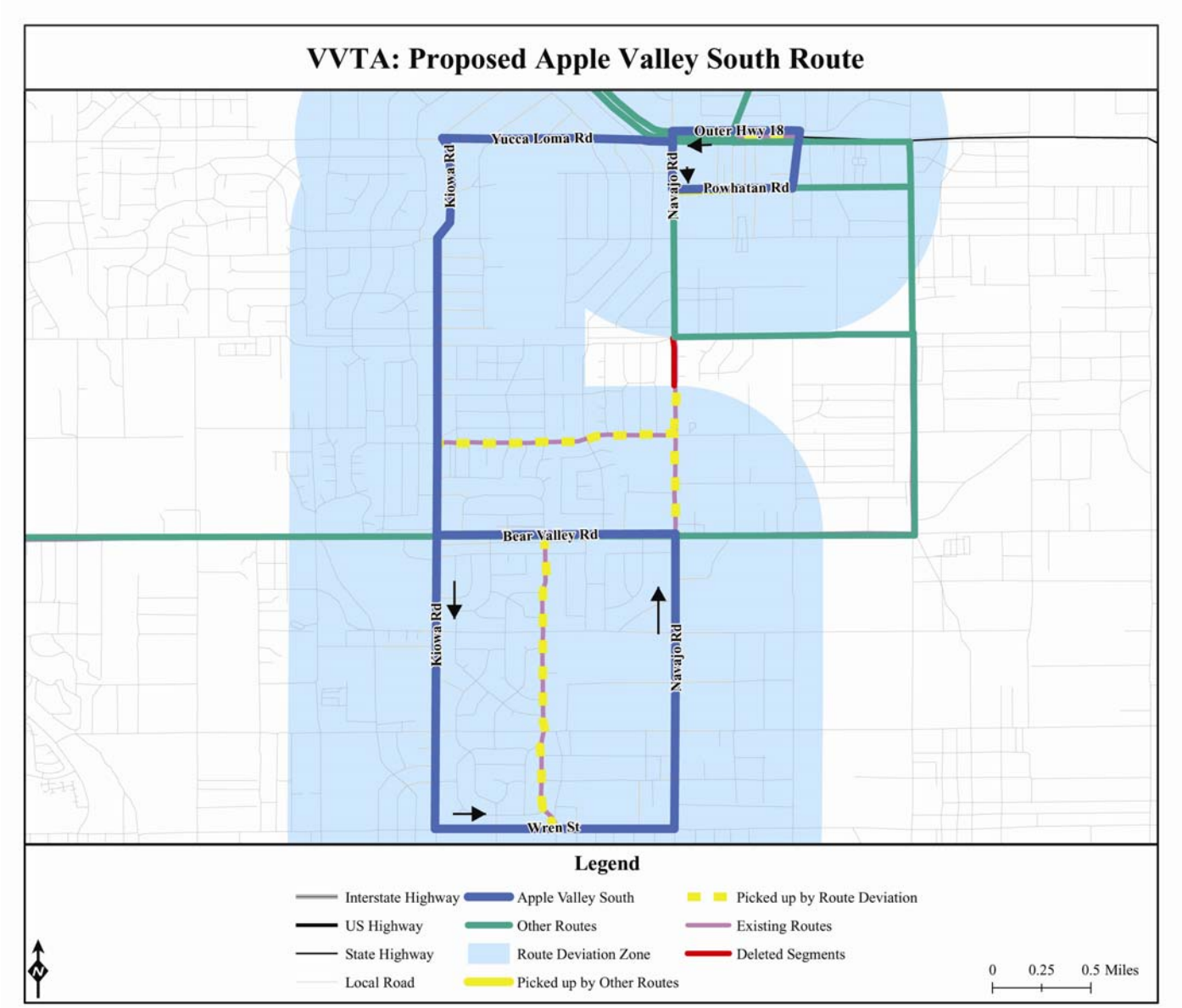


Figure 5-14: Proposed Apple Valley South Route



Hesperia Circulator with Deviation Zone (existing Routes 44, 45)

This circulator replaces portions of routes 44 and 45 in southeast Hesperia that are unserved under the recommended alternatives. The areas served are primarily lower density residential areas that will benefit from a route with more flexibility. This route will be timed to coordinate transfers at the Hesperia transfer point. Figure 5-15 provides a map of the proposed route and deviation zone.

Adelanto Point Deviation Zone (existing Routes 31, 32)

This route will replace the portions of route 31 and 32 that were discontinued. Since this route would cover a large area with small concentrations, this route should not operate as a route deviation, rather a point deviation service with fixed timepoints but no routes. The fixed timepoints were determined by looking at ridecheck information and noting where the bus stops with higher ridership are located. The pattern showed clusters of bus stops with higher ridership, and the timepoints were placed at the most central bus stop within each of the clusters. This service will be timed meet the Adelanto to Victorville route at the Adelanto transfer center. Figure 5-16 provides a map of the proposed point deviation zone.

Demand Response

Demand response services are appropriate for areas that have a large area and can not support any form of fixed route services. They are also good for new service areas, to operate as a trial area for transit services. The demand response services operate like ADA paratransit services, which are open to the general public. Passengers would use the service just like ADA passengers, calling for a ride. The service would operate within specific zones, with travel across zones necessitating a transfer to another vehicle, whether it is a fixed route or a neighboring demand response zone vehicle. Rules and policies will need to be developed prior to implementation

Demand response services can take the place of ADA services. There are areas in Victor Valley that would be suitable for demand response service, such as new expansion areas. Demand response zones should be implemented based on the desire to expand service into new areas.

West Victorville Deviation Zone

Figure 5-17 provides a map of the proposed demand response deviation zone.

Figure 5-15: Proposed Hesperia Circulator Route

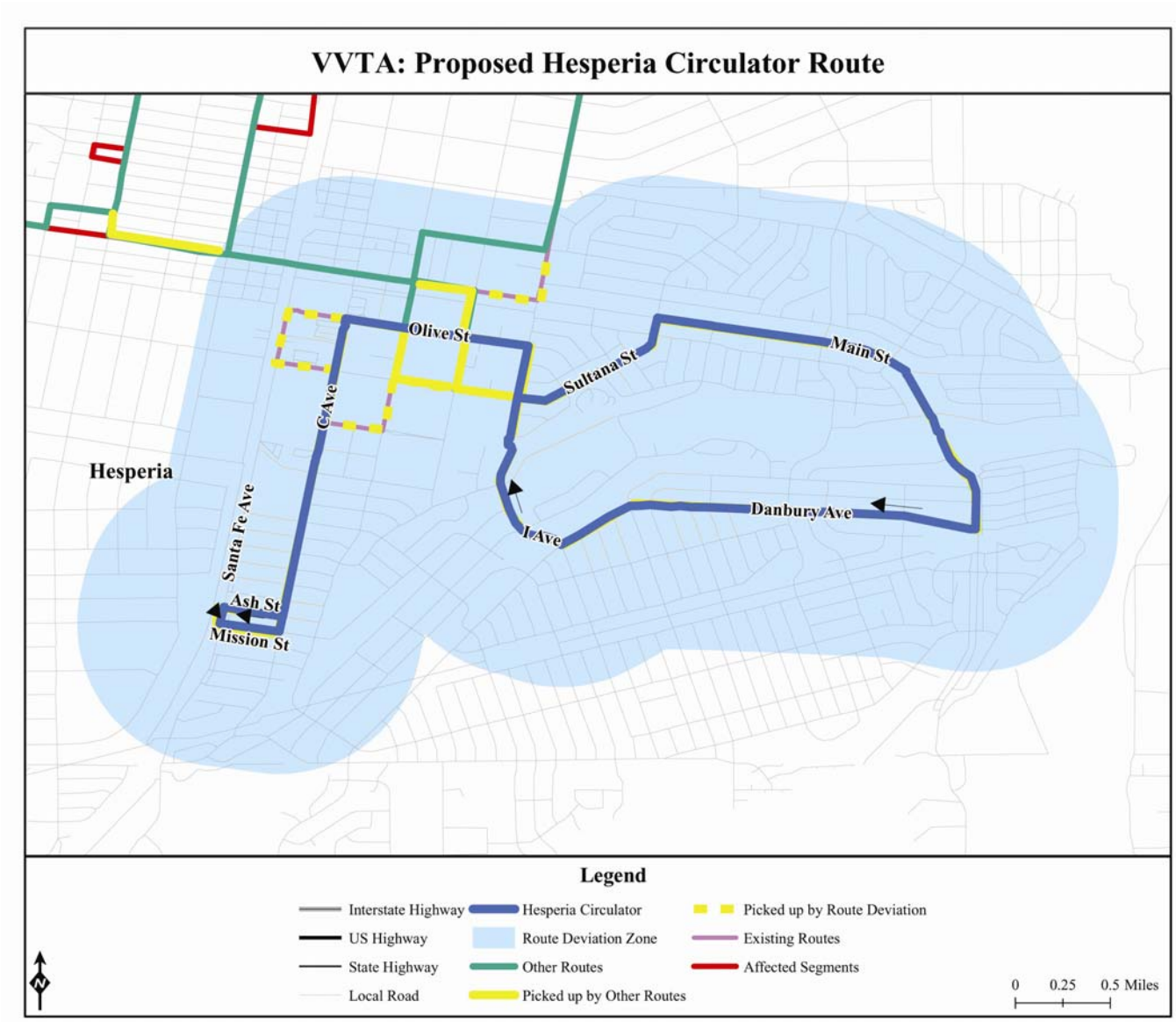


Figure 5-16: Proposed Adelanto Point Deviation Timepoints and Zone

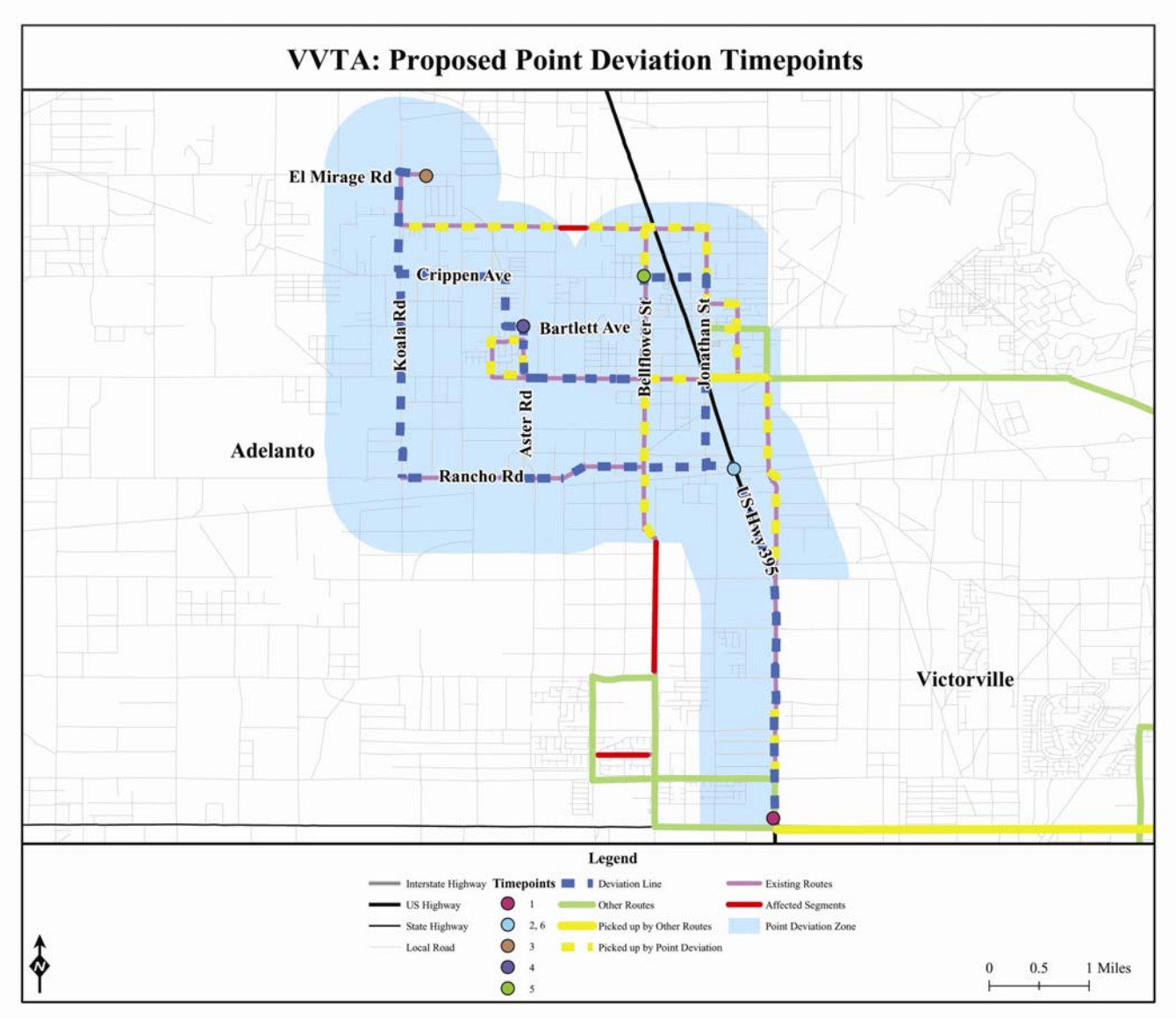
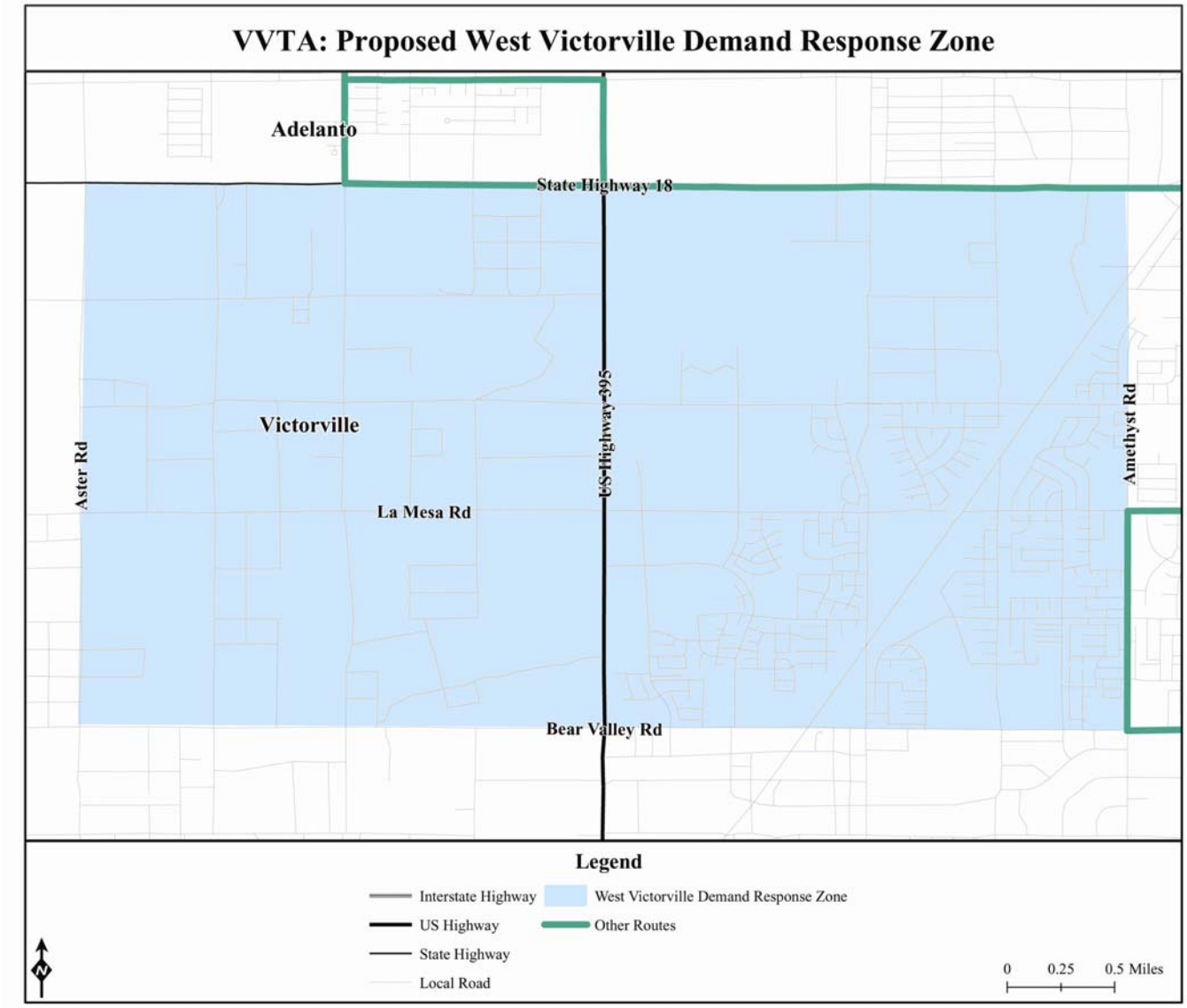


Figure 5-17: Proposed West Victorville Demand Response Zone



Transfer Points

A key feature of the proposed route network, as is a feature of the current route network, is coordination of route times to ensure transfers are made at key locations. It is proposed that coordinated transfers will occur at five key locations; Victorville, Apple Valley, Hesperia, Victor Valley College, and Adelanto. A description of the location where transfers will occur is presented in the section for each location, as well as routes that will serve the locations and timings of the transfers. One location that is currently used as a transfer location that is not proposed as one under the new network is at the Victor Valley Mall, with the reasoning presented below.

Victorville – This transfer point is located at 7th and Lorene in Victorville, which is currently referred to as the Rite Aid stop. Transfers at this location will happen at: 00 of each hour, serving the Victorville to Adelanto route, the Victorville to Apple Valley route, the Victorville to Hesperia route, the Victorville Circulator, the Victorville to Victor Valley Mall route, the Victorville to Adelanto North route, and the SCLA trippers.

Apple Valley – This transfer location is located at the Apple Valley Post Office located at Highway 18 and Quinnault. Transfers at this location will happen at :00 of each hour, serving the Victorville to Apple Valley route, Apple Valley to Victor Valle Mall route, the Apple Valley North route deviation circulator, and the Apple Valley South route deviation circulator.

Hesperia – This transfer location is located at the Hesperia Post Office located at G Avenue and Olive Street. Transfers at this location will happen at :00 of each hour

Victor Valley College – This transfer location is located at the College of Victor Valley transit center. Transfers at this location will happen at :30 of each hour, serving the Apple Valley to Victor Valley Mall route and the Victorville to Hesperia route.

Adelanto – This transfer point is located at the intersection of US 395 and Palmdale Road (Route 18) in Adelanto. Transfers at this location will happen at :30 of each hour, serving the Victorville to Adelanto route, and the Adelanto point deviation circulator.

Victor Valley Mall – While this is the end point for three routes, it is not possible to coordinate transfers at this location so this will not be an official transfer location. This is not expected to be an issue as most patrons who use the bus at the mall are going to and from the mall, and not much transfer activity is occurring. All routes that serve the mall have the opportunity to transfer to routes that serve most other locations in the region at other locations. The routes that serve the mall are the Apple Valley to Victor Valley Mall route, Hesperia to Victor Valley Mall route, and Victorville to Victor Valle Mall route.

Implementation

The implementation schedule for the Victor Valley Transit plan was presented previously. As the implementation schedule shows, implementation will mostly occur in the first year. Most of the route changes and implementation of route deviation and point deviation services will occur in the first year. In Year 2 peak period frequency on routes that serve Victor Valley College will improve from 60 minutes to 30 minutes. Also in Year 2 a demand response service will be implemented in the developing portions of western Victorville that can not be served with fixed route or deviated buses due to the pattern of development. Year 3 will enhance service in Hesperia and provide access to the Southern California Logistics Airport. In year 4 peak period frequency will improve from 60 minutes to 30 minutes on the Victorville to Adelanto and Victorville to Apple Valley routes. In Year 5 peak period frequency will improve from 60 minutes to 30 minutes on the Victorville Circulator and Victorville to Mall route. Fare increases are proposed for years 1, 3, and 5. This is done because it is better, both from the standpoint of ridership as well as from impact to riders, to have smaller fare increases every two to three years versus a large increase every five years.

There were a few proposals that were recommended in earlier phases of this study, however it was decided that these proposals could not be implemented in the five year time frame of this study. These proposals include re-introducing the "Down the Hill" commuter service to San Bernardino and providing a connection to the Barstow Area Transit. These proposals may be revisited in future studies, when the economic development in the region may necessitate these connections.

Ridership Estimate

This section presents the estimated annual ridership for the five years of this plan. The modified route network will affect ridership on all services that Victor Valley Transit operates including urban fixed routes, county services, and ADA Paratransit services. Also, a new type of service, community access circulators, will be implemented in Victor Valley. Transfers also have an affect on ridership. In certain instances certain routes were combined, reducing the number of transfers, thereby reducing the total ridership of the route, with passengers who need to transfer no longer being counted twice. In other instances new transfers are being created, such as from community access circulators to arterial routes. In order to provide a conservative estimate of ridership, these passengers were not double counted for the two routes.

The majority of changes will affect the fixed route network, including the creation of the community access circulators. Below are the assumptions used for estimating annual ridership for each route:

- Ridecheck data was used to distribute ridership from existing routes to the proposed routes, as well as by time of day (presented in appendix B)
- Ridership changes were calculated based on frequency changes using a -0.37 elasticity[2] applied to time routes and time periods when frequency improves from 70 minutes to 60 minutes, as well as in future years when peak period frequency for certain routes improves from 60 minutes to 30 minutes
- Ridership changes based on travel time changes were calculated using a -0.29 elasticity[3] for areas that see changes in travel time
- General public dial-a-ride ridership was calculated based on the average passengers per hour for the community access circulators (6 passengers per hour) with service taking a full year to mature, during the first year ridership will be 75% (4.5 passengers per hour) of full ridership
- A fare elasticity of -0.29[4] applied universally to ridership for fare increases, which is consistent with the Simpson/Curtin Rule
- Background ridership growth of 1% assumed based on regional population growth of 3% per year

The resulting ridership estimates for each route on the fixed route and community access circulator network are presented below on Table 5-3. This table shows the total ridership for each year, as well as the change from year to year. This table shows that during the years where fare adjustments occur, ridership decreases. Overall through the life of the plan, ridership is expected to increase by about 2%, which reverses the trend of decreasing ridership. The routes with higher ridership include the Victorville to Apple Valley route and the Victorville to Hesperia route. The route that is expected to have the lowest ridership is the Hesperia community access circulator;

[2] From *Patronage Impact of Changes in Transit Fares and Services*, US Department of Transportation Urban Mass Transportation Administration, 1980
[3] From *Patronage Impact of Changes in Transit Fares and Services*, US Department of Transportation Urban Mass Transportation Administration, 1980
[4] From *Patronage Impact of Changes in Transit Fares and Services*, US Department of Transportation Urban Mass Transportation Administration, 1980

however, this route is necessary to maintain essential service in parts of Hesperia. Also, the ridership estimates do not take into account the likely shifts from the ADA Paratransit network onto the fixed route and community access circulator network, made possible by deviations that community access circulators make. This type of shift has been noticed in Denver by the RTD on its community dial-a-ride program (Source: In-person interview with RTD Special Services Staff, October 2006)

Table 5-3: Estimated Annual Ridership

Route	Year 1	Year 2	Year 3	Year 4	Year 5
Apple Valley North Deviated	35,600	36,000	35,500	35,900	35,100
Victorville/Apple Valley	150,800	152,300	150,300	162,300	158,700
Mall/College	74,300	82,000	80,900	81,700	79,900
Apple Valley/College	75,900	82,400	81,300	82,100	80,300
Mall/Hesperia	74,900	75,600	49,400	49,900	48,800
Victorville/Hesperia	133,300	146,000	144,000	145,400	142,200
Victorville Circulator	37,500	37,900	37,400	37,700	39,700
Victorville/Mall	86,600	87,500	86,300	87,100	92,700
Adelanto/Victorville	30,300	32,900	32,400	32,800	32,000
Adelanto North/Victorville	51,600	53,100	52,400	53,000	51,800
Hesperia Main Street	0	0	25,200	25,500	24,900
Apple Valley South Deviated	13,900	14,600	14,400	14,600	14,200
Hesperia Deviated	7,300	7,600	7,500	7,500	7,400
Adelanto Deviated	47,400	51,300	50,700	51,200	50,000
West Victorville Dial-a-ride	0	19,200	18,900	19,100	24,900
Total Ridership	819,400	878,400	866,600	885,800	882,600
Ridership Change	-5.00%	7.20%	-1.34%	2.22%	-0.36%

Under the new service plan, the Stoddard Wells area, which is currently served by Route 41, will be served by a county route, Route 22. The county routes were not evaluated as part of this study. However, using the same assumptions that were used for the fixed routes resulted in an estimated 3,200 to 3,300 riders per year using modified Route 22 service in the Stoddard Wells area.

The modified route network will have impacts on Paratransit service. The community access circulators are designed so they can deviate off route to serve ADA eligible passengers. Table 5-4 presents the ADA Paratransit ridership estimate (daily ridership), as well as the percent of ADA passengers that will utilize the new fixed route and community access circulator network. The Paratransit ridership estimate assumes a background growth of 5%. The ADA riders are not reflected in the estimated ridership in the section above.

Table 5-4: Paratransit Ridership Estimate

	Current Year	Year 1	Year 2	Year 3	Year 4	Year 5
Weekday Ridership	215	180	189	196	201	211
Saturday Ridership	107	89	94	98	100	105
Switch to route network	0.0%	20.44%	0.0%	0.91%	2.83%	0.0%

***assumes 5% growth per year**

Chapter 6: Finance and Capital Plans

Finance Plan

The finance plan consists of two items, the proposed cost, and the expected revenue. The cost proposal outlines the various costs to operate the proposed route network as well as the ADA Paratransit service. A section on funding options presents possible revenue sources to finance the plan, and the expected revenue assumed to finance the plan. The VVTA annual budget for Fiscal Years 2006 -2011 provided the foundation for this finance plan.

Cost Proposal

The cost estimate was developed based on the route recommendations and implementation schedule presented above. Table 6-1 provides a breakdown of service by municipality for each of the route recommendations presented above. The percentage of service operated in each municipality was calculated based on the percent of miles operated in each municipality. This percentage represents the percentage of the total fixed route cost burden for the municipality. The cost calculation is based on cost per revenue hour. Revenue hour costs for year 1 are budgeted to be $61.55 per revenue hour, with a growth factor of 4% each year. Base year costs were calculated based on the FY '06 budget. Table 6-2 presents the amount of service per municipality for all regular route service, both regional and county routes, with detail by route presented on Appendix C. The breakdown of costs by route is available in the appendix D.

Table 6-1: Route Level Service for each Municipality

Route		Adelanto	Apple Valley	Hesperia	Victorville	County
Yr. 1	Victorville to Adelanto	34.19%	0.00%	0.00%	65.81%	0.00%
	Victorville to Apple Valley	0.00%	78.36%	0.00%	21.64%	0.00%
	Apple Valley to Victor Valley College	0.00%	85.25%	2.80%	11.95%	0.00%
	Victor Valley College to Victor Valley Mall (single vehicle)	0.00%	0.00%	36.62%	63.38%	0.00%
	Victor Valley College to Victor Valley Mall (2 vehicle)	0.00%	0.00%	31.97%	68.03%	0.00%
	Hesperia to Victor Valley Mall	0.00%	0.00%	94.12%	5.88%	0.00%
	Victorville to Hesperia	0.00%	0.00%	36.26%	63.74%	0.00%
	Victorville Circulator	0.00%	0.00%	0.00%	100.00%	0.00%
	Victorville to Victor Valley Mall	0.00%	0.00%	0.00%	100.00%	0.00%
	Victorville to Adelanto North	22.00%	0.00%	0.00%	78.00%	0.00%
	Apple Valley North Route Deviation	0.00%	100.00%	0.00%	0.00%	0.00%
	Apple Valley South Route Deviation	0.00%	100.00%	0.00%	0.00%	0.00%
	Hesperia Route Deviation	0.00%	0.00%	100.00%	0.00%	0.00%
	Adelanto Point Deviation	100.00%	0.00%	0.00%	0.00%	0.00%
	County Route 21	0.00%	0.00%	0.00%	0.00%	100.00%
	County Route 22 (including Stoddard Wells)	0.00%	0.00%	0.00%	14.00%	86.00%
	County Route 23	0.00%	0.00%	0.00%	0.00%	100.00%
Yr. 2	West Victorville Demand Response	0.00%	0.00%	0.00%	100.00%	0.00%
Yr. 3	Hesperia Main Street	0.00%	0.00%	100.00%	0.00%	0.00%
	Hesperia to Victor Valley Mall	0.00%	0.00%	92.76%	7.24%	0.00%
	Victorville to Adelanto North (SCLA service)	18.55%	0.00%	0.00%	81.45%	0.00%

Table 6-2: Percent of Fixed Route Service by Municipality (all fixed route services)

Municipality	Year 1	Year 2	Year 3	Year 4	Year 5
Adelanto	10.42%	11.75%	11.14%	10.88%	10.63%
Apple Valley	19.73%	18.43%	17.48%	18.90%	18.45%
Hesperia	16.11%	15.45%	18.77%	18.33%	17.90%
Victorville	30.20%	34.16%	33.44%	33.17%	34.74%
County	23.54%	20.21%	19.16%	18.72%	18.28%
Total Cost	$5,279,627	$6,395,803	$7,210,014	$7,710,218	$8,238,965

Based on percent of fixed route miles in each municipality including County Routes

Paratransit costs were calculated based on an annual cost per peak vehicle. This factor was used because the ridership estimates made were able to determine the number of peak vehicles operated. The FY 2006 projections taken from the Annual Budget for Fiscal Years 2006 through 2009, is $2,135,568. In 2005-06 VVTA operated a peak of 23 paratransit vehicles, for an average cost per vehicle of $92,851. The average cost per peak vehicle is estimated to increase by 4% per year. The annual costs are presented on Table 6-4 along with the cost distribution. Paratransit cost by municipality is calculated by the number of passengers using the service in each municipality, and is a number that changes annually. While there have been slight variations, they are quite small, so this cost plan assumes that the percent of passengers for each municipality will be the same throughout the life of the plan as the FY 2006 estimates.

Table 6-3: Cost Estimate by Municipality for Paratransit Service

	Year 1	Year 2	Year 3	Year 4	Year 5
Weekday Vehicles	18	19	20	21	22
Projected Cost per Vehicle	$100,427	$104,445	$108,622	$112,967	$117,486
Annual Cost	$1,807,700	$1,984,400	$2,172,400	$2,372,300	$2,584,700
Municipality					
Adelanto	$59,112	$64,891	$71,039	$77,575	$84,519
Apple Valley	$540,681	$593,548	$649,778	$709,558	$773,080
County	$52,604	$57,747	$63,218	$69,034	$75,214
Hesperia	$513,385	$563,583	$616,975	$673,736	$734,052
Victorville	$641,912	$704,677	$771,435	$842,408	$917,823
Total Cost	$1,807,693	$1,984,446	$2,172,446	$2,372,311	$2,584,689

Funding Options

This section presents a number of sources available to finance the proposed plan, as well as the expected revenue that will finance the services. The first section presents some of the possible funding sources.

Federal Funding

Federal funding options through several programs are discussed below.

SAFETEA –LU

Reauthorization legislation was approved on August 10, 2005. While many of the formula grants will remain the same, there are some provisions in the bill that will have some impact on transit funding for Victor Valley. Some key changes include:

Section 5307(b)(2) Operating Assistance for Small UZAs

During the 2000 census, the Victor Valley region grew to just beyond the 200,000 threshold. Transit agencies that reach this threshold will no longer be allowed to use formula funds for operating expenses. However, urbanized areas that did grow past 2000,000 will be able to continue to use formula funds for operating expenses in FY 2005 at 100 percent of their FY 2002 apportionment, in FY 2006 at 50 percent of their FY 2002 apportionment and in FY 2007 at 25 percent of their FY 2002 apportionment.

Section 5316 Job Access and Reverse Commute (JARC)

The JARC program is changed to become a formula program rather than the existing competitive discretionary grant program. The formula is based on ratios involving the number of eligible low income and welfare recipients with 60 percent of funds going to urban areas with more than 200,000 population, 20 percent going to areas with less than 200,000, and 20 percent for use in rural areas. SAFETEA-LU contains report language directing the FTA to continue its practice of providing maximum flexibility to job access projects designed to meet the needs of individuals who are not effectively served by public transportation. Coordination is required between private, non-profit and public transportation providers and other Federal programs in the JARC program, the New Freedom Program and the Elderly and Disabled program.

Section 5317 New Freedom Program

A new program called the New Freedom Program will provide formula funding for new transportation services and public transportation alternatives beyond those required by ADA to assist persons with disabilities. The New Freedom Program will be apportioned using a formula based on the disabled population in a state, with 60 percent of the funds apportioned to urbanized areas with populations larger than 200,000, 20 percent going to areas with less than 200,000, and 20 percent for use in rural areas. Funds will be made available to transit systems and the states. The program contains language mandating coordination of transportation services with other Federal human service programs.

Table 6-5 shows the expected level of funding from SAFETEA-LU for the Victor Valley areas.

Table 6-3: SAFETEA-LU Estimated Apportionments by Urbanized Area FY04-09

Fiscal Year	Urbanized Areas (5307 & 5340)	Formula JARC	New Freedoms	UZA Total
06	$2,397,753	$132,105	$55,803	$2,585,661
07	$2,494,381	$137,848	$57,949	$2,690,178
08	$2,705,069	$149,336	$62,599	$2,917,004
09	$2,877,301	$157,473	$66,176	$3,100,950
Total	**$10,474,504**	**$576,762**	**$242,527**	**$11,293,793**

Congestion Mitigation and Air Quality Improvement (CMAQ)
A new requirement is established that states and MPOs give priority consideration to projects and programs for diesel retrofits, other cost-effective emission reduction activities and cost-effective congestion mitigation activities that provide air quality benefits. Also established is a requirement to evaluate and assess a representative sample of CMAQ projects to determine the direct and indirect impact of the projects on air quality and congestion levels to ensure the effective implementation of the program.

State Funding

State Transit Assistance (STA)
STA revenues are derived mainly from the sales tax on a portion of the gas excise tax, plus sales tax on diesel fuel sales. Primary source of revenue is fro the county Local Transportation Fund (LTF).

Victorville currently accounts for 30% of the transit funding with the remainder spread between the other cities. Adelanto is currently the only city that is allocating its entire LTF fund to transit. The remaining cities allocate anywhere from 30% from the County to 70% in Victorville of these funds to transit service.

Local Funding

Measure I
San Bernardino County voters overwhelmingly approved the extension of the Measure I sales tax in November 2004 with 80.03% voting to extend the measure. Ninety five percent of the funds will go towards local street and major highway construction while the remaining five percent of revenue collected within each subarea shall be reserved in an account for Senior and Disabled Transit Service. Senior and Disabled Transit is defined as contributions to transit operators for fare subsidies for senior citizens and persons with disabilities or enhancements to transit service provided to seniors and persons with disabilities. In the Victor Valley subarea, the percentage for Senior and Disabled Transit Service shall increase by .5% in 2015 with additional increases of .5% every five years thereafter to a maximum of 7.5%. Such increases shall automatically occur unless each local jurisdiction within the subarea makes a finding that such increase is not required to address unmet transit needs of senior and disabled transit users. Expenditure of Senior and Disabled Transit Service funds shall be approved by the Authority Board of Directors, based upon recommendation of subarea representatives and the Mountain/Desert Committee. It is estimated that $43 million will be collected over the 30 year life of the bill.

Currently, all Measure I funds generated in the Victor Valley region are earmarked for the paratransit service.

Table 6-4: Measure I, Schedule E – Victor Valley Subarea Expenditure Plan

Project Category Measure "I"	Percentage	Amount
Local Street Projects	70%	$ 596 Million
Major Local Highway Projects	25%	$ 213 Million
Senior and Disabled Transit Service	5%	$ 43 Million
Total Victor Valley Subarea Measure "I" Revenue	100%	$852 Million

Victor Valley Expenditure Plan Detail

Local Street Projects

Distribution to cities and County for street repair and improvements. New construction to relieve Bear Valley Rd, Ranchero Rd, new east/west roadways

Local Street Projects Measure "I" Revenue $ 596 Million
State and Federal Revenues $ 39 Million
Contribution from New Development, Major Streets $ 281 Million
Total Local Street Projects Revenues $ 916 Million

Major Local Highway Projects

Contributions to Projects including but not limited to:
New Interchanges at I-15 and Ranchero, Eucalyptus, LaMesa/Nisqualli
High Desert Corridor
I-15 Widening through Victor Valley
SR-138 Widening and Improvements
US-395 Widening and Improvements

Major Local Highway Projects Measure "I" Revenue $ 213 Million
State and Federal Revenues $ 112 Million
Contribution from New Development, Freeway Interchanges $ 88 Million
Total Major Local Highway Projects Revenues $ 413 Million

Senior and Disabled Transit Service $ 43 Million

Source: San Bernardino County Transportation Authority Ordinance No. 04-01

Transportation Development Act

TDA funds are derived from a ¼ percent sales tax on retail sales in the state. Funds are returned to the county of tax generation.

Funding Plan

The section above gave a description and current funding levels for a number of different funding sources. This section presents the funding plan for the VVTA five year plan for both regular urban fixed route and ADA Paratransit. This plan relies on many of the funding sources listed above, including Measure I funding and LTF funding. Fare revenue is also an important funding source and it is a source that is directly linked to ridership. Table 6-7 presents the fare revenue for the fixed routes, while Table 6-8 presents the fare revenue for Paratransit services.

Table 6-7: Fixed Route Fare Revenue

	Year 1	Year 2	Year 3	Year 4	Year 5
Total Ridership	819,400	878,400	866,600	885,800	882,600
Ridership Change	-5.00%	7.20%	-1.34%	2.22%	-0.36%
Average Fare	$0.84	$0.84	$0.90	$0.90	$1.00
Revenue	$686,200	$737,900	$779,900	$797,200	$882,600
Rural Route Revenue[5]	$70,000	$75,000	$79,300	$81,000	$89,700
Total Fare Revenue	$756,200	$812,900	$859,200	$878,200	$972,300
Revenue Change	6.42%	7.53%	5.69%	2.22%	10.71%

Table 6-8: Paratransit Fare Revenue

	Year 1	Year 2	Year 3	Year 4	Year 5
Total Ridership	90,700	95,000	98,500	101,000	106,000
Ridership Change	-16.28%	4.76%	3.70%	2.55%	4.98%
Average Fare	$2.02	$2.02	$2.18	$2.18	$2.42
Revenue	$183,100	$191,900	$214,900	$220,400	$257,000
Revenue Change	4.65%	4.76%	12.00%	2.55%	16.64%

Table 6-9 presents the funding, by source, for regular fixed route services for both county routes and the urban fixed routes. This table shows that the biggest source of money is from the local subsidy. The local subsidy is made up of monies from AB2766 and LTF. The LTF funding required from each municipality is based on the percent of service operated within that municipality. Fare revenue is another significant source of regular urban fixed route funding.

Paratransit funding is presented on Table 6-10. The major sources of funding for Paratransit service comes from local subsidy, which is made up of Measure I funding and LTF. LTF does make up a significant source of Paratransit funding, and is based on the number of passengers from each municipality that utilize Paratransit services.

[5] Routes 21, 22, 23

Table 6-9: Regular Route Funding

	Year 1	Year 2	Year 3	Year 4	Year 5
Total Cost	$5,279,600	$6,395,800	$7,210,000	$7,710,200	$8,239,000
Fare Revenue	$756,200	$812,900	$859,200	$878,200	$972,300
5311	$204,100	$215,800	$227,400	$239,000	$250,700
5307	$583,300	$483,300	$383,300	$283,300	$183,300
Capital LTF Match	$145,800	$120,800	$95,800	$70,800	$45,800
Local Subsidy Required	$3,736,000	$4,763,000	$5,644,300	$6,238,900	$6,786,900
AB2766 Funding by Municipality					
Adelanto	$4,800	$4,800	$4,800	$4,800	$4,800
Apple Valley	$35,000	$35,000	$35,000	$35,000	$35,000
Hesperia	$35,000	$35,000	$35,000	$35,000	$35,000
Victorville	$0	$0	$0	$0	$0
County	$0	$0	$0	$0	$0
LTF Required by Municipality					
Adelanto	$384,500	$554,900	$624,000	$674,000	$716,600
Apple Valley	$722,700	$842,800	$951,600	$1,144,200	$1,217,200
Hesperia	$566,900	$700,900	$1,024,400	$1,108,600	$1,179,900
Victorville	$1,296,800	$1,627,000	$1,887,500	$2,069,400	$2,357,800
County	$690,400	$962,600	$1,081,400	$1,167,900	$1,240,645

Table 6-10: Paratransit Funding

	Year 1	Year 2	Year 3	Year 4	Year 5
Total Cost	$1,807,700	$1,984,400	$2,172,400	$2,372,300	$2,584,700
Fare Revenue	$183,100	$191,900	$214,900	$220,400	$257,000
5307	$64,800	$54,800	$44,800	$34,800	$24,800
Capital LTF Match	$16,200	$13,700	$11,200	$8,700	$6,200
Measure I Subarea	$0	$0	$0	$324,200	$1,041,200
Local Subsidy Required	$1,543,600	$1,724,500	$1,901,500	$1,784,200	$1,255,500
Measure I Funding by Municipality					
Adelanto	$40,000	$43,800	$46,500	$33,000	$0
Apple Valley	$180,000	$124,600	$132,000	$93,800	$0
Hesperia	$300,000	$226,300	$239,900	$170,400	$0
Victorville	$550,000	$375,700	$398,200	$282,800	$0
County	$32,570	$50,200	$55,300	$51,900	$0
LTF Required by Municipality					
Adelanto	$28,500	$11,400	$14,300	$24,100	$40,200
Apple Valley	$264,600	$391,200	$436,700	$439,900	$375,500
Hesperia	$143,900	$263,500	$300,100	$336,300	$356,600
Victorville	$4,000	$236,700	$277,000	$350,800	$445,800
County	$0	$0	$0	$0	$36,500

LTF is the important local source for funding VVTA services, and represents monies allocated to transit and other transportation needs that pass through each of the municipalities. Besides transit service, LTF funding is used for street repairs and paving, thus is an important for each municipality. Table 6-11 presents total LTF for each municipality for both urban fixed route and Paratransit services.

Table 6-11: Total Estimated LTF Required for Fixed Route and Paratransit

Municipality	Type of Service	Current Year (FY 07)	Year 1	Year 2	Year 3	Year 4	Year 5
Adelanto	*Fixed Route*	$233,500	$384,500	$554,900	$624,000	$674,000	$716,600
	Paratransit	$45,000	$28,500	$11,400	$14,300	$24,100	$40,200
	Total	$278,500	$413,00	$566,300	$638,300	$698,100	$756,800
Apple Valley	*Fixed Route*	$394,400	$722,700	$842,800	$951,600	$1,144,200	$1,217,200
	Paratransit	$418,400	$264,600	$391,200	$436,700	$439,900	$375,500
	Total	$812,800	$987,300	$1,234,000	$1,338,300	$1,584,100	$1,592,700
Hesperia	*Fixed Route*	$387,200	$566,900	$700,900	$1,024,400	$1,108,600	$1,179,900
	Paratransit	$345,600	$143,900	$263,500	$300,100	$336,300	$356,600
	Total	$732,800	$710,800	$964,400	$1,324,500	$1,444,900	$1,536,500
Victorville	*Fixed Route*	$728,300	$1,296,800	$1,627,000	$1,887,500	$2,069,400	$2,357,800
	Paratransit	$145,900	$4,000	$236,700	$277,000	$350,800	$445,800
	Total	$874,200	$1,300,800	$1,863,700	$2,164,500	$2,420,200	$2,803,600
County	*Fixed Route*	$513,100	$690,400	$962,600	$1,081,400	$1,167,900	$1,240,600
	Paratransit	$2,500	$0	$0	$0	$0	$36,500
	Total	$515,600	$690,400	$962,600	$1,081,400	$1,167,900	$1,277,100
Total	*Fixed Route*	$2,256,500	$3,661,200	$4,688,200	$5,568,900	$6,164,100	$6,712,100
	Paratransit	$954,400	$441,000	$902,800	$1,028,100	$1,151,100	$1,254,600
	Total	$3,210,900	$4,102,200	$5,591,000	$6,597,000	$7,315,200	$7,966,700

Does not include AB2766 and Measure I Funding

Capital Plan

The capital plan presented for this report presents the fleet requirements to operate the proposed services as well as replacement vehicles. Other aspects, such as shelters or other passenger amenities are not covered by this capital plan, rather these items are mentioned in the service standards section. Also, this capital plan does not take into account the condition of the current revenue bus fleet, which is an issue that is being undertaken as part of a separate audit being conducted by VVTA. The vehicle requirements for the proposed plan are presented below on Table 6-12.

Table 6-12: Peak Vehicle Requirements by Route

Route	Year 1	Year 2	Year 3	Year 4	Year 5
Victorville to Adelanto	1	2	2	2	2
Victorville to Apple Valley	2	2	2	4	4
Apple Valley to Victor Valley College	1	2	2	2	2
Victor Valley College to Victor Valley Mall	2	3	3	3	3
Hesperia to Victor Valley Mall	2	2	2	2	2
Victorville to Hesperia	2	4	4	4	4
Victorville Circulator	1	1	1	1	2
Victorville to Victor Valley Mall	1	1	1	1	2
Victorville to Adelanto North	1	1	2	2	2
Hesperia Main Street	0	0	1	1	1
Apple Valley North Route Deviation	1	1	1	1	1
Apple Valley South Route Deviation	1	1	1	1	1
Hesperia Route Deviation	1	1	1	1	1
Adelanto Point Deviation	1	2	2	2	2
West Victorville Demand Response	0	1	1	1	1

This plan has four different service types; urban fixed route, urban community access circulators, ADA Paratransit, and county routes. The urban fixed routes and county routes both use heavy duty transit vehicles. ADA Paratransit vehicles utilize cutaway vehicles. Due to the need to penetrate into neighborhoods, it is expected that the community access circulators will utilize cutaway vehicles. Table 6-13 presents the total number of vehicles needed for each service, including spares. This plan assumes a 15% spares ratio.

The current bus fleet has a total of 32 revenue ADA vehicles and 32 revenue fixed route vehicles, which includes all the vehicles that are on the property or will be delivered before the end of 2006. The current capital program ahs the following bus purchases programmed:

- 7 heavy duty transit buses for fixed route services in FY ‘06
- 4 cutaway vans for ADA services in FY ‘07
- 6 cutaway vans for ADA services in FY ‘09

Table 6-5: Total Vehicles Needed

Category of Service		Year 1	Year 2	Year 3	Year 4	Year 5
Urban Fixed Route	*Peak Require*	13	18	20	22	24
	Spares	2	3	3	3	4
	Total	15	21	23	25	28
Urban Community Access Circulator	*Peak Require*	4	6	6	6	6
	Spares	1	1	1	1	1
	Total	5	7	7	7	7
Paratransit	*Peak Require*	18	19	20	21	22
	Spares	3	3	3	4	4
	Total	21	22	23	25	26
County Routes	*Peak Require*	3	3	3	3	3
	Spares	1	1	1	1	1
	Total	4	4	4	4	4
Total	*Peak Require*	38	46	49	52	55
	Spares	7	8	8	9	10
	Total	45	54	57	61	65

Besides the vehicles programmed and already purchased, the following is a list of additional vehicle purchases that will be needed to implement the proposed plan. These vehicles include both expansion vehicles as well as replacement vehicles. The timing and number of vehicles are as follows:

- Purchase of 3 cutaway vehicles for community access circulators in FY ‘09
- Purchase of 3 heavy duty buses for fixed route services in FY ‘10
- Purchase of 2 cutaway vehicles for ADA service in FY ‘10
- Purchase of 2 heavy duty buses for fixed route services in FY ‘11
- Purchase of 1 cutaway vehicles for community access circulators in FY ‘11
- Purchase of 16 cutaway vehicles for ADA service in FY ‘11

Appendix A: Stakeholder Survey Questions

Contact Name:
Representing:
Date:
Location:

1. Do you have specific or general complaints or positive feedback about VVTA service?
2. What specific transit needs of your clients/students/etc, if any, are not currently being met by VVTA service? (e.g. service span not long enough, paratransit reservations difficult to make, destinations not served etc)
3. Roughly how many of your clients/students/etc currently utilize VVTA service regularly? What percentage?
4. Have you received any complaints from clients/students/etc seeking transportation who live in areas not served by VVTA?
5. What are the general opinions among your clients/students/etc who utilize VVTA service regularly?
6. What changes do you think would be most helpful to make VVTA service more responsive to the needs of your clients/students/etc?
7. Are there any institutional barriers to more of your clients/students/etc utilizing VVTA service?
8. What are your opinions on VVTA's (or Direct Access Transit's) accommodations for persons with disabilities?
9. What areas should VVTA concentrate on most in the interest of serving rapidly growing areas?
10. Do most Direct Access transit trips tend to be at regular intervals and scheduled in advance or more sporadic?
11. Do you utilize VVTA or Direct Access service as a means of facilitating job placement for those who do not own an automobile?
12. What would you say are the most popular destinations for trips by your clients/students/etc on VVTA buses?
13. Are there additional documents that you feel we should review as part of this study?
14. Is there anyone else you think we should speak to as part of this study?
15. Is there anything else we should be aware of?

Appendix B: Factors Influencing Ridership

Distribution of Current Ridership to New Route Network

Ridership Distribution	31	32	40	41	42	43F	43V	44	45F	45V	51	52
Apple Valley North Deviated	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Victorville/Apple Valley	0.00%	0.00%	0.00%	94.95%	87.62%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mall/College	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	94.95%	0.00%	0.00%	7.57%	0.00%	0.00%
Apple Valley/College	0.00%	0.00%	0.00%	0.00%	0.95%	91.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mall/Hesperia	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	93.91%	0.00%	0.00%	0.00%	0.00%
Victorville/Hesperia	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.05%	0.00%	93.37%	92.43%	5.75%	0.00%
Victorville Circulator	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.84%	0.00%
Victorville/Mall	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Adelanto/Victorville	34.02%	32.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Adelanto North/Victorville	18.05%	11.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	47.41%	0.00%
Apple Valley South Deviated	0.00%	0.00%	0.00%	0.00%	11.43%	8.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Hesperia Deviated	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.09%	6.63%	0.00%	0.00%	0.00%
Adelanto Deviated	47.93%	56.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other (Route 22)	0.00%	0.00%	0.00%	5.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Ridership Affected by Year 1 Frequency Changes

Frequency Changes	31	32	40	41	42	43F	43V	44	45F	45V	51	52
More Frequent	0.00%	0.00%	53.64%	55.27%	48.10%	45.38%	55.40%	52.81%	53.91%	54.60%	54.39%	47.83%
Same	0.00%	0.00%	46.36%	44.73%	51.90%	54.62%	44.60%	47.19%	46.09%	45.40%	45.61%	52.17%
Less Frequent	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Ridership Affected by Peak Period Frequency Improvements

Year	31	32	40	41	42	43F	43V	44	45F	45V	51	52
Year 2	39.49%	39.66%	0.00%	0.00%	0.00%	41.03%	50.52%	0.00%	44.06%	48.06%	0.00%	0.00%
Year 4	39.49%	39.66%	0.00%	34.96%	42.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Year 5	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	41.05%	47.43%

Appendix C: Jurisdictional Mileage by Route

Year 1	RT Miles	Weekday Trips	Weekday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	14	245.70	84.00	0.00	0.00	161.70	0.00
Victorville to Apple Valley	25.51	14	357.14	0.00	279.85	0.00	77.29	0.00
Apple Valley to Victor Valley College	17.83	14	249.62	0.00	212.80	6.99	29.83	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	7	90.79	0.00	0.00	33.25	57.54	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	7	104.02	0.00	0.00	33.26	70.76	0.00
Hesperia to Victor Valley Mall	24.83	14	347.62	0.00	0.00	318.35	29.27	0.00
Victorville to Hesperia Route	30.89	14	432.46	0.00	0.00	156.81	275.65	0.00
Victorville Circulator	10.40	14	145.60	0.00	0.00	0.00	145.60	0.00
Victorville to Mall	16.00	14	224.00	0.00	0.00	0.00	224.00	0.00
Victorville to Adelanto North	21.27	14	297.78	65.51	0.00	0.00	232.27	0.00
Hesperia Main Street	17.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Apple Valley North Route Deviation	15.25	14	213.50	0.00	213.50	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	14	173.60	0.00	173.60	0.00	0.00	0.00
Hesperia Route Deviation	11.50	14	161.00	0.00	0.00	161.00	0.00	0.00
Adelanto Point Deviation	22.50	14	315.00	315.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	0	0.00	0.00	0.00	0.00	0.00	0.00
County 21	32.50	10	325.00	0.00	0.00	0.00	0.00	325.00
County 22	52.80	7	369.60	0.00	0.00	0.00	51.74	317.86
County 23	x	x	402.30	0.00	0.00	0.00	0.00	402.30
Total			4,454.73	464.52	879.76	709.65	1,355.65	1,045.16

Year 1	RT Miles	Saturday Trips	Saturday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	12	210.60	72.00	0.00	0.00	138.60	0.00
Victorville to Apple Valley	25.51	12	306.12	0.00	239.88	0.00	66.24	0.00
Apple Valley to Victor Valley College	17.83	12	213.96	0.00	182.40	5.99	25.57	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	6	77.82	0.00	0.00	28.50	49.32	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	6	89.16	0.00	0.00	28.50	60.66	0.00
Hesperia to Victor Valley Mall	24.83	12	297.96	0.00	0.00	272.87	25.09	0.00
Victorville to Hesperia Route	30.89	12	370.68	0.00	0.00	134.41	236.27	0.00
Victorville Circulator	10.40	12	124.80	0.00	0.00	0.00	124.80	0.00
Victorville to Mall	16.00	12	192.00	0.00	0.00	0.00	192.00	0.00
Victorville to Adelanto North	21.27	12	255.24	56.15	0.00	0.00	199.09	0.00
Hesperia Main Street	17.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Apple Valley North Route Deviation	15.25	12	183.00	0.00	183.00	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	12	148.80	0.00	148.80	0.00	0.00	0.00
Hesperia Route Deviation	11.50	12	138.00	0.00	0.00	138.00	0.00	0.00
Adelanto Point Deviation	22.50	12	270.00	270.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	0	0.00	0.00	0.00	0.00	0.00	0.00
County 21	32.50	9	292.50	0.00	0.00	0.00	0.00	292.50
County 22	52.80	6	316.80	0.00	0.00	0.00	44.35	272.45
County 23	x	x	355.88	0.00	0.00	0.00	0.00	355.88
Total			3,843.32	398.16	754.08	608.27	1,161.99	920.83

Year 2	RT Miles	Weekday Trips	Weekday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	20	351.00	120.01	0.00	0.00	230.99	0.00
Victorville to Apple Valley	25.51	14	357.14	0.00	279.85	0.00	77.29	0.00
Apple Valley to Victor Valley College	17.83	20	356.60	0.00	304.00	9.98	42.61	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	10	129.70	0.00	0.00	47.50	82.20	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	10	148.60	0.00	0.00	47.51	101.09	0.00
Hesperia to Victor Valley Mall	24.83	14	347.62	0.00	0.00	318.35	29.27	0.00
Victorville to Hesperia Route	30.89	20	617.80	0.00	0.00	224.01	393.79	0.00
Victorville Circulator	10.40	14	145.60	0.00	0.00	0.00	145.60	0.00
Victorville to Mall	16.00	14	224.00	0.00	0.00	0.00	224.00	0.00
Victorville to Adelanto North	21.27	14	297.78	65.51	0.00	0.00	232.27	0.00
Hesperia Main Street	17.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Apple Valley North Route Deviation	15.25	14	213.50	0.00	213.50	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	14	173.60	0.00	173.60	0.00	0.00	0.00
Hesperia Route Deviation	11.50	14	161.00	0.00	0.00	161.00	0.00	0.00
Adelanto Point Deviation	22.50	20	450.00	450.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	14	210.00	0.00	0.00	0.00	210.00	0.00
County 21	32.50	10	325.00	0.00	0.00	0.00	0.00	325.00
County 22	52.80	7	369.60	0.00	0.00	0.00	51.74	317.86
County 23	x	x	402.30	0.00	0.00	0.00	0.00	402.30
Total			5,280.84	635.52	970.96	808.35	1,820.86	1,045.16

Year 2	RT Miles	Saturday Trips	Saturday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	12	210.60	72.00	0.00	0.00	138.60	0.00
Victorville to Apple Valley	25.51	12	306.12	0.00	239.88	0.00	66.24	0.00
Apple Valley to Victor Valley College	17.83	12	213.96	0.00	182.40	5.99	25.57	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	6	77.82	0.00	0.00	28.50	49.32	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	6	89.16	0.00	0.00	28.50	60.66	0.00
Hesperia to Victor Valley Mall	24.83	12	297.96	0.00	0.00	272.87	25.09	0.00
Victorville to Hesperia Route	30.89	12	370.68	0.00	0.00	134.41	236.27	0.00
Victorville Circulator	10.40	12	124.80	0.00	0.00	0.00	124.80	0.00
Victorville to Mall	16.00	12	192.00	0.00	0.00	0.00	192.00	0.00
Victorville to Adelanto North	21.27	12	255.24	56.15	0.00	0.00	199.09	0.00
Hesperia Main Street	17.00	0	0.00	0.00	0.00	0.00	0.00	0.00
Apple Valley North Route Deviation	15.25	12	183.00	0.00	183.00	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	12	148.80	0.00	148.80	0.00	0.00	0.00
Hesperia Route Deviation	11.50	12	138.00	0.00	0.00	138.00	0.00	0.00
Adelanto Point Deviation	22.50	12	270.00	270.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	12	180.00	0.00	0.00	0.00	180.00	0.00
County 21	32.50	9	292.50	0.00	0.00	0.00	0.00	292.50
County 22	52.80	6	316.80	0.00	0.00	0.00	44.35	272.45
County 23	x	x	355.88	0.00	0.00	0.00	0.00	355.88
Total			4,023.32	398.16	754.08	608.27	1,341.99	920.83

Year 3	RT Miles	Weekday Trips	Weekday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	20	351.00	120.01	0.00	0.00	230.99	0.00
Victorville to Apple Valley	25.51	14	357.14	0.00	279.85	0.00	77.29	0.00
Apple Valley to Victor Valley College	17.83	20	356.60	0.00	304.00	9.98	42.61	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	10	129.70	0.00	0.00	47.50	82.20	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	10	148.60	0.00	0.00	47.51	101.09	0.00
Hesperia to Victor Valley Mall	22.10	14	309.40	0.00	0.00	287.00	22.40	0.00
Victorville to Hesperia Route	30.89	20	617.80	0.00	0.00	224.01	393.79	0.00
Victorville Circulator	10.40	14	145.60	0.00	0.00	0.00	145.60	0.00
Victorville to Mall	16.00	14	224.00	0.00	0.00	0.00	224.00	0.00
Victorville to Adelanto North	25.23	14	353.22	65.52	0.00	0.00	287.70	0.00
Hesperia Main Street	18.97	14	265.58	0.00	0.00	265.58	0.00	0.00
Apple Valley North Route Deviation	15.25	14	213.50	0.00	213.50	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	14	173.60	0.00	173.60	0.00	0.00	0.00
Hesperia Route Deviation	11.50	14	161.00	0.00	0.00	161.00	0.00	0.00
Adelanto Point Deviation	22.50	20	450.00	450.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	14	210.00	0.00	0.00	0.00	210.00	0.00
County 21	32.50	10	325.00	0.00	0.00	0.00	0.00	325.00
County 22	52.80	7	369.60	0.00	0.00	0.00	51.74	317.86
County 23	x	x	402.30	0.00	0.00	0.00	0.00	402.30
Total			5,563.64	635.53	970.96	1,042.58	1,869.42	1,045.16

Year 3	RT Miles	Saturday Trips	Saturday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	12	210.60	72.00	0.00	0.00	138.60	0.00
Victorville to Apple Valley	25.51	12	306.12	0.00	239.88	0.00	66.24	0.00
Apple Valley to Victor Valley College	17.83	12	213.96	0.00	182.40	5.99	25.57	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	6	77.82	0.00	0.00	28.50	49.32	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	6	89.16	0.00	0.00	28.50	60.66	0.00
Hesperia to Victor Valley Mall	22.10	12	265.20	0.00	0.00	246.00	19.20	0.00
Victorville to Hesperia Route	30.89	12	370.68	0.00	0.00	134.41	236.27	0.00
Victorville Circulator	10.40	12	124.80	0.00	0.00	0.00	124.80	0.00
Victorville to Mall	16.00	12	192.00	0.00	0.00	0.00	192.00	0.00
Victorville to Adelanto North	25.23	12	302.76	56.16	0.00	0.00	246.60	0.00
Hesperia Main Street	18.97	12	227.64	0.00	0.00	227.64	0.00	0.00
Apple Valley North Route Deviation	15.25	12	183.00	0.00	183.00	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	12	148.80	0.00	148.80	0.00	0.00	0.00
Hesperia Route Deviation	11.50	12	138.00	0.00	0.00	138.00	0.00	0.00
Adelanto Point Deviation	22.50	12	270.00	270.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	12	180.00	0.00	0.00	0.00	180.00	0.00
County 21	32.50	9	292.50	0.00	0.00	0.00	0.00	292.50
County 22	52.80	6	316.80	0.00	0.00	0.00	44.35	272.45
County 23	x	x	355.88	0.00	0.00	0.00	0.00	355.88
Total			4,265.72	398.17	754.08	809.04	1,383.61	920.83

Year 4	RT Miles	Weekday Trips	Weekday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	20	351.00	120.01	0.00	0.00	230.99	0.00
Victorville to Apple Valley	25.51	20	510.20	0.00	399.79	0.00	110.41	0.00
Apple Valley to Victor Valley College	17.83	20	356.60	0.00	304.00	9.98	42.61	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	10	129.70	0.00	0.00	47.50	82.20	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	10	148.60	0.00	0.00	47.51	101.09	0.00
Hesperia to Victor Valley Mall	22.10	14	309.40	0.00	0.00	287.00	22.40	0.00
Victorville to Hesperia Route	30.89	20	617.80	0.00	0.00	224.01	393.79	0.00
Victorville Circulator	10.40	14	145.60	0.00	0.00	0.00	145.60	0.00
Victorville to Mall	16.00	14	224.00	0.00	0.00	0.00	224.00	0.00
Victorville to Adelanto North	25.23	14	353.22	65.52	0.00	0.00	287.70	0.00
Hesperia Main Street	18.97	14	265.58	0.00	0.00	265.58	0.00	0.00
Apple Valley North Route Deviation	15.25	14	213.50	0.00	213.50	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	14	173.60	0.00	173.60	0.00	0.00	0.00
Hesperia Route Deviation	11.50	14	161.00	0.00	0.00	161.00	0.00	0.00
Adelanto Point Deviation	22.50	20	450.00	450.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	14	210.00	0.00	0.00	0.00	210.00	0.00
County 21	32.50	10	325.00	0.00	0.00	0.00	0.00	325.00
County 22	52.80	7	369.60	0.00	0.00	0.00	51.74	317.86
County 23	x	x	402.30	0.00	0.00	0.00	0.00	402.30
Total			5,716.70	635.53	1,090.89	1,042.58	1,902.54	1,045.16

Year 4	RT Miles	Saturday Trips	Saturday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	12	210.60	72.00	0.00	0.00	138.60	0.00
Victorville to Apple Valley	25.51	12	306.12	0.00	239.88	0.00	66.24	0.00
Apple Valley to Victor Valley College	17.83	12	213.96	0.00	182.40	5.99	25.57	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	6	77.82	0.00	0.00	28.50	49.32	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	6	89.16	0.00	0.00	28.50	60.66	0.00
Hesperia to Victor Valley Mall	22.10	12	265.20	0.00	0.00	246.00	19.20	0.00
Victorville to Hesperia Route	30.89	12	370.68	0.00	0.00	134.41	236.27	0.00
Victorville Circulator	10.40	12	124.80	0.00	0.00	0.00	124.80	0.00
Victorville to Mall	16.00	12	192.00	0.00	0.00	0.00	192.00	0.00
Victorville to Adelanto North	25.23	12	302.76	56.16	0.00	0.00	246.60	0.00
Hesperia Main Street	18.97	12	227.64	0.00	0.00	227.64	0.00	0.00
Apple Valley North Route Deviation	15.25	12	183.00	0.00	183.00	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	12	148.80	0.00	148.80	0.00	0.00	0.00
Hesperia Route Deviation	11.50	12	138.00	0.00	0.00	138.00	0.00	0.00
Adelanto Point Deviation	22.50	12	270.00	270.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	12	180.00	0.00	0.00	0.00	180.00	0.00
County 21	32.50	9	292.50	0.00	0.00	0.00	0.00	292.50
County 22	52.80	6	316.80	0.00	0.00	0.00	44.35	272.45
County 23	x	x	355.88	0.00	0.00	0.00	0.00	355.88
Total			4,265.72	398.17	754.08	809.04	1,383.61	920.83

Year 5	RT Miles	Weekday Trips	Weekday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	20	351.00	120.01	0.00	0.00	230.99	0.00
Victorville to Apple Valley	25.51	20	510.20	0.00	399.79	0.00	110.41	0.00
Apple Valley to Victor Valley College	17.83	20	356.60	0.00	304.00	9.98	42.61	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	10	129.70	0.00	0.00	47.50	82.20	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	10	148.60	0.00	0.00	47.51	101.09	0.00
Hesperia to Victor Valley Mall	22.10	14	309.40	0.00	0.00	287.00	22.40	0.00
Victorville to Hesperia Route	30.89	20	617.80	0.00	0.00	224.01	393.79	0.00
Victorville Circulator	10.40	20	208.00	0.00	0.00	0.00	208.00	0.00
Victorville to Mall	16.00	20	320.00	0.00	0.00	0.00	320.00	0.00
Victorville to Adelanto North	25.23	14	353.22	65.52	0.00	0.00	287.70	0.00
Hesperia Main Street	18.97	14	265.58	0.00	0.00	265.58	0.00	0.00
Apple Valley North Route Deviation	15.25	14	213.50	0.00	213.50	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	14	173.60	0.00	173.60	0.00	0.00	0.00
Hesperia Route Deviation	11.50	14	161.00	0.00	0.00	161.00	0.00	0.00
Adelanto Point Deviation	22.50	20	450.00	450.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	14	210.00	0.00	0.00	0.00	210.00	0.00
County 21	32.50	10	325.00	0.00	0.00	0.00	0.00	325.00
County 22	52.80	7	369.60	0.00	0.00	0.00	51.74	317.86
County 23	x	x	402.30	0.00	0.00	0.00	0.00	402.30
Total			5,875.10	635.53	1,090.89	1,042.58	2,060.94	1,045.16

Year 5	RT Miles	Saturday Trips	Saturday Miles	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	17.55	12	210.60	72.00	0.00	0.00	138.60	0.00
Victorville to Apple Valley	25.51	12	306.12	0.00	239.88	0.00	66.24	0.00
Apple Valley to Victor Valley College	17.83	12	213.96	0.00	182.40	5.99	25.57	0.00
Victor Valley College to Victor Valley Mall AM/Eve	12.97	6	77.82	0.00	0.00	28.50	49.32	0.00
Victor Valley College to Victor Valley Mall Mid/PM	14.86	6	89.16	0.00	0.00	28.50	60.66	0.00
Hesperia to Victor Valley Mall	22.10	12	265.20	0.00	0.00	246.00	19.20	0.00
Victorville to Hesperia Route	30.89	12	370.68	0.00	0.00	134.41	236.27	0.00
Victorville Circulator	10.40	12	124.80	0.00	0.00	0.00	124.80	0.00
Victorville to Mall	16.00	12	192.00	0.00	0.00	0.00	192.00	0.00
Victorville to Adelanto North	25.23	12	302.76	56.16	0.00	0.00	246.60	0.00
Hesperia Main Street	18.97	12	227.64	0.00	0.00	227.64	0.00	0.00
Apple Valley North Route Deviation	15.25	12	183.00	0.00	183.00	0.00	0.00	0.00
Apple Valley South Route Deviation	12.40	12	148.80	0.00	148.80	0.00	0.00	0.00
Hesperia Route Deviation	11.50	12	138.00	0.00	0.00	138.00	0.00	0.00
Adelanto Point Deviation	22.50	12	270.00	270.00	0.00	0.00	0.00	0.00
West Victorville Demand Response	15.00	12	180.00	0.00	0.00	0.00	180.00	0.00
County 21	32.50	9	292.50	0.00	0.00	0.00	0.00	292.50
County 22	52.80	6	316.80	0.00	0.00	0.00	44.35	272.45
County 23	x	x	355.88	0.00	0.00	0.00	0.00	355.88
Total			4,265.72	398.17	754.08	809.04	1,383.61	920.83

Year 1	Annual Miles	Adelanto	Apple Valley	Hesperia	Victorville	County	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	73,604.70	25,165.45	0.00	0.00	48,439.25	0.00	34.19%	0.00%	0.00%	65.81%	0.00%
Victorville to Apple Valley	106,988.94	0.00	83,836.53	0.00	23,152.41	0.00	0.00%	78.36%	0.00%	21.64%	0.00%
Apple Valley to Victor Valley College	74,779.02	0.00	63,749.11	2,093.81	8,936.09	0.00	0.00%	85.25%	2.80%	11.95%	0.00%
Victor Valley College to Victor Valley Mall AM/Eve	27,198.09	0.00	0.00	9,959.94	17,238.15	0.00	0.00%	0.00%	36.62%	63.38%	0.00%
Victor Valley College to Victor Valley Mall Mid/PM	31,161.42	0.00	0.00	9,962.31	21,199.11	0.00	0.00%	0.00%	31.97%	68.03%	0.00%
Hesperia to Victor Valley Mall	104,137.02	0.00	0.00	98,013.76	6,123.26	0.00	0.00%	0.00%	94.12%	5.88%	0.00%
Victorville to Hesperia Route	129,552.66	0.00	0.00	46,975.79	82,576.87	0.00	0.00%	0.00%	36.26%	63.74%	0.00%
Victorville Circulator	43,617.60	0.00	0.00	0.00	43,617.60	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Mall	67,104.00	0.00	0.00	0.00	67,104.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Adelanto North	89,206.38	19,625.40	0.00	0.00	69,580.98	0.00	22.00%	0.00%	0.00%	78.00%	0.00%
Hesperia Main Street	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Apple Valley North Route Deviation	63,958.50	0.00	63,958.50	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Apple Valley South Route Deviation	52,005.60	0.00	52,005.60	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Hesperia Route Deviation	48,231.00	0.00	0.00	48,231.00	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Adelanto Point Deviation	94,365.00	94,365.00	0.00	0.00	0.00	0.00	100.00%	0.00%	0.00%	0.00%	0.00%
West Victorville Demand Response	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
County 21	98,085.00	0.00	0.00	0.00	30,298.46	67,786.54	0.00%	0.00%	0.00%	30.89%	69.11%
County 22	110,721.60	0.00	0.00	0.00	45,440.14	65,281.46	0.00%	0.00%	0.00%	41.04%	58.96%
County 23	121,092.26	0.00	7,350.30	0.00	0.00	113,741.96	0.00%	6.07%	0.00%	0.00%	93.93%
Total (with County)	1,335,808.79	139,155.85	270,900.05	215,236.62	463,706.32	246,809.96	10.42%	20.28%	16.11%	34.71%	18.48%
Total (no County)	1,005,909.93	139,155.85	263,549.75	215,236.62	387,967.71		13.83%	26.20%	21.40%	38.57%	

Year 2	Annual Miles	Adelanto	Apple Valley	Hesperia	Victorville	County	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	100,456.20	34,345.97	0.00	0.00	66,110.23	0.00	34.19%	0.00%	0.00%	65.81%	0.00%
Victorville to Apple Valley	106,988.94	0.00	83,836.53	0.00	23,152.41	0.00	0.00%	78.36%	0.00%	21.64%	0.00%
Apple Valley to Victor Valley College	102,058.92	0.00	87,005.23	2,857.65	12,196.04	0.00	0.00%	85.25%	2.80%	11.95%	0.00%
Victor Valley College to Victor Valley Mall AM/Eve	37,120.14	0.00	0.00	13,593.40	23,526.74	0.00	0.00%	0.00%	36.62%	63.38%	0.00%
Victor Valley College to Victor Valley Mall Mid/PM	42,529.32	0.00	0.00	13,596.62	28,932.70	0.00	0.00%	0.00%	31.97%	68.03%	0.00%
Hesperia to Victor Valley Mall	104,137.02	0.00	0.00	98,013.76	6,123.26	0.00	0.00%	0.00%	94.12%	5.88%	0.00%
Victorville to Hesperia Route	176,814.36	0.00	0.00	64,112.89	112,701.47	0.00	0.00%	0.00%	36.26%	63.74%	0.00%
Victorville Circulator	43,617.60	0.00	0.00	0.00	43,617.60	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Mall	67,104.00	0.00	0.00	0.00	67,104.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Adelanto North	89,206.38	19,625.40	0.00	0.00	69,580.98	0.00	22.00%	0.00%	0.00%	78.00%	0.00%
Hesperia Main Street	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Apple Valley North Route Deviation	63,958.50	0.00	63,958.50	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Apple Valley South Route Deviation	52,005.60	0.00	52,005.60	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Hesperia Route Deviation	48,231.00	0.00	0.00	48,231.00	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Adelanto Point Deviation	128,790.00	128,790.00	0.00	0.00	0.00	0.00	100.00%	0.00%	0.00%	0.00%	0.00%
West Victorville Demand Response	62,910.00	0.00	0.00	0.00	62,910.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
County 21	98,085.00	0.00	0.00	0.00	30,298.46	67,786.54	0.00%	0.00%	0.00%	30.89%	69.11%
County 22	110,721.60	0.00	0.00	0.00	45,440.14	65,281.46	0.00%	0.00%	0.00%	41.04%	58.96%
County 23	121,092.26	0.00	7,350.30	0.00	0.00	113,741.96	0.00%	6.07%	0.00%	0.00%	93.93%
Total (with County)	1,555,826.84	182,761.38	294,156.16	240,405.32	591,694.02	246,809.96	11.75%	18.91%	15.45%	38.03%	15.86%
Total (no County)	1,225,927.98	182,761.38	286,805.86	240,405.32	515,955.42		14.91%	23.40%	19.61%	42.09%	

Year 3	Annual Miles	Adelanto	Apple Valley	Hesperia	Victorville	County	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	100,456.20	34,345.97	0.00	0.00	66,110.23	0.00	34.19%	0.00%	0.00%	65.81%	0.00%
Victorville to Apple Valley	106,988.94	0.00	83,836.53	0.00	23,152.41	0.00	0.00%	78.36%	0.00%	21.64%	0.00%
Apple Valley to Victor Valley College	102,058.92	0.00	87,005.23	2,857.65	12,196.04	0.00	0.00%	85.25%	2.80%	11.95%	0.00%
Victor Valley College to Victor Valley Mall AM/Eve	37,120.14	0.00	0.00	13,593.40	23,526.74	0.00	0.00%	0.00%	36.62%	63.38%	0.00%
Victor Valley College to Victor Valley Mall Mid/PM	42,529.32	0.00	0.00	13,596.62	28,932.70	0.00	0.00%	0.00%	31.97%	68.03%	0.00%
Hesperia to Victor Valley Mall	92,687.40	0.00	0.00	85,976.83	6,710.57	0.00	0.00%	0.00%	92.76%	7.24%	0.00%
Victorville to Hesperia Route	176,814.36	0.00	0.00	64,112.89	112,701.47	0.00	0.00%	0.00%	36.26%	63.74%	0.00%
Victorville Circulator	43,617.60	0.00	0.00	0.00	43,617.60	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Mall	67,104.00	0.00	0.00	0.00	67,104.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Adelanto North	105,814.62	19,628.61	0.00	0.00	86,186.01	0.00	18.55%	0.00%	0.00%	81.45%	0.00%
Hesperia Main Street	79,560.18	0.00	0.00	79,560.18	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Apple Valley North Route Deviation	63,958.50	0.00	63,958.50	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Apple Valley South Route Deviation	52,005.60	0.00	52,005.60	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Hesperia Route Deviation	48,231.00	0.00	0.00	48,231.00	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Adelanto Point Deviation	128,790.00	128,790.00	0.00	0.00	0.00	0.00	100.00%	0.00%	0.00%	0.00%	0.00%
West Victorville Demand Response	62,910.00	0.00	0.00	0.00	62,910.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
County 21	98,085.00	0.00	0.00	0.00	30,298.46	67,786.54	0.00%	0.00%	0.00%	30.89%	69.11%
County 22	110,721.60	0.00	0.00	0.00	45,440.14	65,281.46	0.00%	0.00%	0.00%	41.04%	58.96%
County 23	121,092.26	0.00	7,350.30	0.00	0.00	113,741.96	0.00%	6.07%	0.00%	0.00%	93.93%
Total (with County)	1,640,545.64	182,764.59	294,156.16	307,928.57	608,886.36	246,809.96	11.14%	17.93%	18.77%	37.11%	15.04%
Total (no County)	1,310,646.78	182,764.59	286,805.86	307,928.57	533,147.76		13.94%	21.88%	23.49%	40.68%	

Year 4	Annual Miles	Adelanto	Apple Valley	Hesperia	Victorville	County	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	100,456.20	34,345.97	0.00	0.00	66,110.23	0.00	34.19%	0.00%	0.00%	65.81%	0.00%
Victorville to Apple Valley	146,019.24	0.00	114,420.68	0.00	31,598.56	0.00	0.00%	78.36%	0.00%	21.64%	0.00%
Apple Valley to Victor Valley College	102,058.92	0.00	87,005.23	2,857.65	12,196.04	0.00	0.00%	85.25%	2.80%	11.95%	0.00%
Victor Valley College to Victor Valley Mall AM/Eve	37,120.14	0.00	0.00	13,593.40	23,526.74	0.00	0.00%	0.00%	36.62%	63.38%	0.00%
Victor Valley College to Victor Valley Mall Mid/PM	42,529.32	0.00	0.00	13,596.62	28,932.70	0.00	0.00%	0.00%	31.97%	68.03%	0.00%
Hesperia to Victor Valley Mall	92,687.40	0.00	0.00	85,976.83	6,710.57	0.00	0.00%	0.00%	92.76%	7.24%	0.00%
Victorville to Hesperia Route	176,814.36	0.00	0.00	64,112.89	112,701.47	0.00	0.00%	0.00%	36.26%	63.74%	0.00%
Victorville Circulator	43,617.60	0.00	0.00	0.00	43,617.60	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Mall	67,104.00	0.00	0.00	0.00	67,104.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Adelanto North	105,814.62	19,628.61	0.00	0.00	86,186.01	0.00	18.55%	0.00%	0.00%	81.45%	0.00%
Hesperia Main Street	79,560.18	0.00	0.00	79,560.18	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Apple Valley North Route Deviation	63,958.50	0.00	63,958.50	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Apple Valley South Route Deviation	52,005.60	0.00	52,005.60	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Hesperia Route Deviation	48,231.00	0.00	0.00	48,231.00	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Adelanto Point Deviation	128,790.00	128,790.00	0.00	0.00	0.00	0.00	100.00%	0.00%	0.00%	0.00%	0.00%
West Victorville Demand Response	62,910.00	0.00	0.00	0.00	62,910.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
County 21	98,085.00	0.00	0.00	0.00	30,298.46	67,786.54	0.00%	0.00%	0.00%	30.89%	69.11%
County 22	110,721.60	0.00	0.00	0.00	45,440.14	65,281.46	0.00%	0.00%	0.00%	41.04%	58.96%
County 23	121,092.26	0.00	7,350.30	0.00	0.00	113,741.96	0.00%	6.07%	0.00%	0.00%	93.93%
Total (with County)	1,679,575.94	182,764.59	324,740.31	307,928.57	617,332.52	246,809.96	10.88%	19.33%	18.33%	36.76%	14.69%
Total (no County)	1,349,677.08	182,764.59	317,390.01	307,928.57	541,593.92		13.54%	23.52%	22.81%	40.13%	

Year 5	Annual Miles	Adelanto	Apple Valley	Hesperia	Victorville	County	Adelanto	Apple Valley	Hesperia	Victorville	County
Victorville to Adelanto	100,456.20	34,345.97	0.00	0.00	66,110.23	0.00	34.19%	0.00%	0.00%	65.81%	0.00%
Victorville to Apple Valley	146,019.24	0.00	114,420.68	0.00	31,598.56	0.00	0.00%	78.36%	0.00%	21.64%	0.00%
Apple Valley to Victor Valley College	102,058.92	0.00	87,005.23	2,857.65	12,196.04	0.00	0.00%	85.25%	2.80%	11.95%	0.00%
Victor Valley College to Victor Valley Mall AM/Eve	37,120.14	0.00	0.00	13,593.40	23,526.74	0.00	0.00%	0.00%	36.62%	63.38%	0.00%
Victor Valley College to Victor Valley Mall Mid/PM	42,529.32	0.00	0.00	13,596.62	28,932.70	0.00	0.00%	0.00%	31.97%	68.03%	0.00%
Hesperia to Victor Valley Mall	92,687.40	0.00	0.00	85,976.83	6,710.57	0.00	0.00%	0.00%	92.76%	7.24%	0.00%
Victorville to Hesperia Route	176,814.36	0.00	0.00	64,112.89	112,701.47	0.00	0.00%	0.00%	36.26%	63.74%	0.00%
Victorville Circulator	59,529.60	0.00	0.00	0.00	59,529.60	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Mall	91,584.00	0.00	0.00	0.00	91,584.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
Victorville to Adelanto North	105,814.62	19,628.61	0.00	0.00	86,186.01	0.00	18.55%	0.00%	0.00%	81.45%	0.00%
Hesperia Main Street	79,560.18	0.00	0.00	79,560.18	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Apple Valley North Route Deviation	63,958.50	0.00	63,958.50	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Apple Valley South Route Deviation	52,005.60	0.00	52,005.60	0.00	0.00	0.00	0.00%	100.00%	0.00%	0.00%	0.00%
Hesperia Route Deviation	48,231.00	0.00	0.00	48,231.00	0.00	0.00	0.00%	0.00%	100.00%	0.00%	0.00%
Adelanto Point Deviation	128,790.00	128,790.00	0.00	0.00	0.00	0.00	100.00%	0.00%	0.00%	0.00%	0.00%
West Victorville Demand Response	62,910.00	0.00	0.00	0.00	62,910.00	0.00	0.00%	0.00%	0.00%	100.00%	0.00%
County 21	98,085.00	0.00	0.00	0.00	30,298.46	67,786.54	0.00%	0.00%	0.00%	30.89%	69.11%
County 22	110,721.60	0.00	0.00	0.00	45,440.14	65,281.46	0.00%	0.00%	0.00%	41.04%	58.96%
County 23	121,092.26	0.00	7,350.30	0.00	0.00	113,741.96	0.00%	6.07%	0.00%	0.00%	93.93%
Total (with County)	1,719,967.94	182,764.59	324,740.31	307,928.57	657,724.52	246,809.96	10.63%	18.88%	17.90%	38.24%	14.35%
Total (no County)	1,390,069.08	182,764.59	317,390.01	307,928.57	581,985.92		13.15%	22.83%	22.15%	41.87%	

Appendix D: Proposed Costs by Route

	Year 1			Year 2			Year 3			Year 4			Year 5		
Weekday	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**
Victorville to Adelanto	14	61.55	$862	14	$64.01	$896	14	$66.57	$932	20	$69.23	$1,385	20	$72.00	$1,440
Victorville to Apple Valley	28	61.55	$1,723	28	$64.01	$1,792	28	$66.57	$1,864	40	$69.23	$2,769	40	$72.00	$2,880
Apple Valley to Victor Valley College	14	61.55	$862	20	$64.01	$1,280	20	$66.57	$1,331	20	$69.23	$1,385	20	$72.00	$1,440
Victor Valley College to Victor Valley Mall AM/Eve	7	61.55	$431	10	$64.01	$640	10	$66.57	$666	10	$69.23	$692	10	$72.00	$720
Victor Valley College to Victor Valley Mall Mid/PM	14	61.55	$862	20	$64.01	$1,280	20	$66.57	$1,331	20	$69.23	$1,385	20	$72.00	$1,440
Hesperia to Victor Valley Mall	28	61.55	$1,723	28	$64.01	$1,792	28	$66.57	$1,864	28	$69.23	$1,939	28	$72.00	$2,016
Victorville to Hesperia Route	28	61.55	$1,723	40	$64.01	$2,560	40	$66.57	$2,663	40	$69.23	$2,769	40	$72.00	$2,880
Victorville Circulator	14	61.55	$862	14	$64.01	$896	14	$66.57	$932	14	$69.23	$969	20	$72.00	$1,440
Victorville to Mall	14	61.55	$862	14	$64.01	$896	14	$66.57	$932	14	$69.23	$969	20	$72.00	$1,440
Victorville to Adelanto North	14	61.55	$862	14	$64.01	$896	28	$66.57	$1,864	28	$69.23	$1,939	28	$72.00	$2,016
Hesperia Main Street	0	61.55	$0	0	$64.01	$0	14	$66.57	$932	14	$69.23	$969	14	$72.00	$1,008
Apple Valley North Route Deviation	14	61.55	$862	14	$64.01	$896	14	$66.57	$932	14	$69.23	$969	14	$72.00	$1,008
Apple Valley South Route Deviation	14	61.55	$862	14	$64.01	$896	14	$66.57	$932	14	$69.23	$969	14	$72.00	$1,008
Hesperia Route Deviation	14	61.55	$862	14	$64.01	$896	14	$66.57	$932	14	$69.23	$969	14	$72.00	$1,008
Adelanto Point Deviation	14	61.55	$862	14	$64.01	$896	14	$66.57	$932	14	$69.23	$969	14	$72.00	$1,008
West Victorville Demand Response	0	61.55	$0	0	$64.01	$0	0	$66.57	$0	14	$69.23	$969	14	$72.00	$1,008
Weekday Daily Cost	231		$14,217	258		$16,514	286		$19,039	318		$22,016	330		$23,761
Saturday	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**	**Revenue Hours**	**Cost per Hour**	**Total Cost**
Victorville to Adelanto	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Victorville to Apple Valley	24	61.55	$1,477	24	$64.01	$1,536	24	$66.57	$1,598	24	$69.23	$1,662	24	$72.00	$1,728
Apple Valley to Victor Valley College	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Victor Valley College to Victor Valley Mall AM/Eve	6	61.55	$369	6	$64.01	$384	6	$66.57	$399	6	$69.23	$415	6	$72.00	$432
Victor Valley College to Victor Valley Mall Mid/PM	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Hesperia to Victor Valley Mall	24	61.55	$1,477	24	$64.01	$1,536	24	$66.57	$1,598	24	$69.23	$1,662	24	$72.00	$1,728
Victorville to Hesperia Route	24	61.55	$1,477	24	$64.01	$1,536	24	$66.57	$1,598	24	$69.23	$1,662	24	$72.00	$1,728
Victorville Circulator	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Victorville to Mall	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Victorville to Adelanto North	12	61.55	$739	12	$64.01	$768	24	$66.57	$1,598	24	$69.23	$1,662	24	$72.00	$1,728
Hesperia Main Street	0	61.55	$0	0	$64.01	$0	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Apple Valley North Route Deviation	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Apple Valley South Route Deviation	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Hesperia Route Deviation	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
Adelanto Point Deviation	12	61.55	$739	12	$64.01	$768	12	$66.57	$799	12	$69.23	$831	12	$72.00	$864
West Victorville Demand Response	0	61.55	$0	0	$64.01	$0	0	$66.57	$0	12	$69.23	$831	12	$72.00	$864
Saturday Daily Cost	198		$12,186	198		$12,674	222		$14,778	234		$16,200	234		$16,848
Annual Cost			**$4,259,128**			**$4,870,195**			**$5,623,388**			**$6,456,459**			**$6,935,042**

ENGINEERS • ARCHITECTS • PLANNERS

Headquarters
71 West 23rd Street
New York, New York 10010
212.366.6200
Fax 212.366.6214

Offices also in
Glen Cove, NY
Newark, NJ
New Haven, CT
Scranton, PA

www.urbitran.com