Corridor 4: Mountain/Euclid Avenue

This north/south corridor in the west San Bernardino Valley has been designated as much for its future growth potential as for its current activity. This corridor has three major north/south arterials that could accommodate BRT services: Euclid, Mountain and Central Avenues. The corridor runs from just north of Foothill Boulevard in the north to the Riverside County Line in the south. It includes the agricultural preserve areas in the Cities of Chino and Ontario, which in the coming decades may be developed to house over 100,000 new residents. Current major activity centers in the corridor include Montclair Plaza, Montclair TransCenter, Ontario Civic Center, Ontario Transit Center, and the Chino prisons.

As displayed in Figure 5-8, the BRT alignment serving Corridor 4 would transition to SR-71 before continuing south to a possible future transit connection at the Corona Metrolink Station.

Potential Alignment

Three preliminary BRT alignments for Corridor 4 were analyzed as part of the LRTP and Euclid Avenue emerged as the strongest alignment. **Sbx Route 4** runs north/south with a northern terminal station at Foothill Boulevard. The alignment follows Euclid Avenue south and services the Ontario Metrolink Station and Ontario Transcenter. The route continues south on Euclid where it crosses Holt Avenue and Corridor 6, and continues through Ontario and Chino where it connects with Corridor 7 Grand/Edison Avenue to a southern terminal station at SR-71. This 12 mile alignment includes 14 transit stations and three park-and-ride lots. One of the stations is an optional station subject to elimination depending on the model-generated ridership potential.

Corridor 5: San Bernardino Avenue

There are two east/west routes that are being studied to provide BRT service between the western and eastern portions of the San Bernardino Valley: the northern strip that includes Corridors 2 and 3; and the southern strip that includes Corridors 5 and 6. Corridor 5 is centered along San Bernardino Avenue from the South Fontana Transit Center to the western boundary of the E Street Corridor. This corridor is generally bounded by Randall Avenue on the north and Interstate 10 on the south. Major activity centers include the Arrowhead Regional Medical Center and the Fontana Kaiser Hospital.

Potential Alignment

Three alignment alternatives are available to connect Corridor 5 to destinations in the E Street Corridor (Corridor 1). The three Corridor 5 alignments studied include alignments connecting Corridor 5 to downtown San Bernardino; to the Hospitality Lane commercial area; and to the city of Loma Linda. All three alignments use a western terminal station at the South Fontana Transfer Center and travel east on San Bernardino Avenue through the city of Rialto. The routes then transition via Pepper Avenue to Valley Boulevard to La Cadena Drive before diverting to different destinations.

sbX Route 5 is the highest performing route heads east on Valley Boulevard, north on Mount Vernon Avenue, diverts north on Mount Vernon Avenue and east on Rialto Avenue to the planned downtown San Bernardino Transcenter and E Street sbX. This 11 mile alignment includes 12 transit stations and one park-and-ride lot. Five of the stations studied are optional stations that are subject to elimination depending on the model-generated ridership potential.

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An alternative route heads east on Valley Boulevard, north on Mount Vernon Avenue, then east on Fairway Drive to Hospitality Lane where it connects with the E Street sbX. From Hospitality Lane the route turns north on Tippecanoe Avenue to a terminal station at the Tippecanoe Avenue Redlands Rail Station. This alignment includes 16 transit stations and one park-and-ride lot. Five of the stations studied are optional stations and three of the stations are also used by the E Street sbX (Corridor 1).

The last alternative route diverts south on La Cadena Avenue, east on M Street, south on Mount Vernon Avenue, east on Washington Street to Barton Road where it connects with the E Street sbX before transitioning north on California Avenue to a terminal at the California Avenue Station of the Redlands Rail line. This alignment includes 18 transit stations and three park-and-ride lots. Nine of the stations studied are optional stations four of the stations are also used by the extended E Street sbX (Corridor 1A).

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Corridor 6: Holt Avenue/4th Street

This corridor starts at the Pomona Transcenter in Los Angeles County. Centered along Holt Avenue and 4th Street, the corridor runs from Pomona through Ontario and on to the South Fontana Transcenter. This corridor also Connects the north/south corridors of Corridor 4 Mountain/Euclid Avenues and Corridor 10 Haven Avenue. Besides the transit centers mentioned above and Ontario International Airport (ONT), major activity centers in this corridor include the Ontario Convention Center, Ontario Mills Mall and the Ontario Transit Center. This corridor is one of three corridors studied that extends beyond the Omnitrans coverage area, into Los Angeles County.

Potential Alignment

sbX Route 6 is an east/west BRT route with a western terminal station at the Pomona Transcenter in Los Angeles County. This route follows Holt Avenue through the cities of Montclair and Ontario to Ontario International Airport where it heads north on Archibald Avenue to Inland Empire Boulevard east and then north on Milliken to east on 4th Street into the city of Fontana where 4th Street changes names to San Bernardino Avenue and the South Fontana Transit Center. This 19 mile alignment (the longest alignment studied here) includes 18 transit stations and three park-and-ride lots. Three of the stations are optional stations, subject to elimination depending on the model-generated ridership potential.

Corridor 7: Grand/Edison Avenues

This east-west corridor is essential to connect the future developments in the Agricultural preserves areas with Chino/Chino Hills and possible inter-county transit connections to Los Angeles and Riverside Counties. A likely point of connection will be from the civic center in Chino Hills.

This east-west strip south of State Route 60 in the western section of the Valley serves the planned growth of the agricultural preserve areas of Chino and Ontario. Significant development is planned for the preserve areas with over 100,000 new residents expected within 20 years. Activity centers include the Chino Community Hospital, the Chino Civic Center, and the Chino Transfer Center. This corridor crosses Corridor 4, Mountain/Euclid Avenues and Corridor 10, Haven Avenue. This corridor is one of three corridors studied that extends beyond the Omnitrans coverage area into Riverside County.

Potential Alignment

sbX Route 7 is an east/west BRT route with a western terminal station at the Chino Hills Civic Center. This route follows Grand Avenue across SR-71, heads north on Pipeline Avenue, east on Chino Avenue, and south on Central Avenue before continuing east on Edison Ave through the agricultural preserve areas of Chino and Ontario. This alignment eventually heads south via Milliken Avenue and to Limonite Avenue and the Limonite Shopping center in Riverside County where a terminal station is located. This 16 mile alignment includes 15 transit stations and three park-and-ride lots. Two of the stations are optional stations, subject to elimination depending on ridership potential.

Corridor 8: Sierra Avenue

This new north/south corridor, not analyzed in the previous system-wide plan, lies entirely within the City of Fontana, serving the Fontana Metrolink Station, South Fontana Transfer Center, and Kaiser Hospital.

Potential Alignment

sbX Route 8 is a north/south BRT route with a northern terminal station at a park-and-ride lot near Interstate 15. This route follows Sierra Avenue through Fontana to a southern terminal station at Kaiser Hospital. This 7 mile alignment (the shortest alignment studied) includes 7 transit stations and three park-and-ride lots. The alignment serves as a spine connecting all four Cross Valley Corridors on Foothill Boulevard and San Bernardino Avenue. Two of the stations are optional stations, subject to elimination depending on ridership potential.

Corridor 9: Riverside Avenue

This north/south corridor, not analyzed in the previous system-wide plan, lies primarily within the City of Rialto, extending south into Riverside County and the City of Riverside. This corridor serves the Rialto Metrolink Station and the RTA Downtown Terminal in Riverside. This corridor is one of three corridors studied that extends beyond the Omnitrans coverage area, into Riverside County.

Potential Alignment

sbX Route 9 is a north/south BRT route with a northern terminal station at a park-and-ride lot near Interstate 15 and Sierra Avenue. This route follows Riverside Avenue Southwest and then south through the city of Rialto and then across the Riverside County line where Riverside Avenue Changes Names to Main Street to the RTA Downtown Terminal in Riverside. This Corridor connects with Corridor 2, foothill Boulevard East and Corridor 5, San Bernardino Avenue. This 16 mile alignment includes 15 transit stations and three park-and-ride lots. Several of the stations are optional, subject to elimination depending on ridership potential.

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Corridor 10: Haven Avenue

This north/south corridor, not analyzed in the original system-wide plan, lies within the Cities of Rancho Cucamonga, Ontario and Chino. This corridor serves Chaffey College at the northern Terminus, the Rancho Cucamonga and the East Ontario Metrolink Station, the Terra Vista Town center, the Ontario airport and would end at Edison Avenue where it joins sbX Route 7.

Potential Alignment

sbX Route 10 is a north/south BRT route with a northern terminal station at the park-and-ride lot at Chaffey College north of Interstate 210. This route follows Haven Avenue south, past the Terra Vista Shopping Center and Corridor 3 Foothill Boulevard West, with a connection at the Rancho Cucamonga Metrolink Station and into Ontario. In the city of Ontario it connects to Corridor 6, Holt

Avenue/4th Street and then south to the East Ontario Metrolink Station to Edison Avenue where it connects to Corridor 7 Grand/Edison Avenue. The 10.4 mile corridor has 9 stops, park-and-ride lots and two connections to Metrolink lines.

Additional Transit Services

In addition, this alternative would introduce new express bus service from park-and ride lots to key destinations. Express buses would use the HOV lanes along freeways such as I-10 and I-215. An initial route could operate from the park-and-ride at I-10/Yucaipa Blvd. to San Bernardino. The following Rail Corridors are included in this alternative:

- Redlands Rail Line Extension from Redlands to Mentone. This would require getting an easement from the MWD.
- Gold Line extension from Montclair to Ontario Airport.
- High Speed Rail connecting Los Angeles to San Diego with a station at the Ontario airport.
- Maglev connecting Anaheim to Las Vegas with a station at the Ontario Airport and a Station in Victorville.
- Aerial Tram to Big Bear from Highland would provide an alternative to the resort area of big bear then the current Highways 18 and 38.

The analysis of the Vision Alternative began by coding all transit routes in the Omnitrans system with high service frequencies – 5-minute headways for BRT services and 15-minute peak period headways for local services. Iterative model runs (equilibration) were used to fine tune the headways to provide cost-effective service with high seating probability throughout the system.

5.5 2035 SUSTAINABLE LAND USE ALTERNATIVE

In order to estimate the potential effect of SB 375 and the potential for transit-oriented development, the LRTP is also analyzing the 2035 Vision alternative using a modified land use not regionally adopted. The transportation networks for the Sustainable Land Use Alternative are identical to the networks studied for the Vision Alternative, as described in Section 5.4 above. This allows the analysis of the Sustainable Land Use Alternative to identify the magnitude of transportation demand impacts that can be directly attributed to land use changes.

Using the regionally adopted land use forecast prepared by SANBAG, the LRTP has reassigned some of the projected growth of each city into ¼ mile station catchment areas. Station areas were increased in density by a maximum of 5 DU/Ac, and 10 Employees per acre. This resulted in an increase of 35-40% of planned growth moved into station areas. Figure 5-4, showing the Sustainable land Use Alternative, displays circles showing the walk area of a ½ mile around BRT stations where the higher density development would be encouraged to increase the potential transit ridership of this alternative. Figures 5-10 and 5-11 display the results of this effect.

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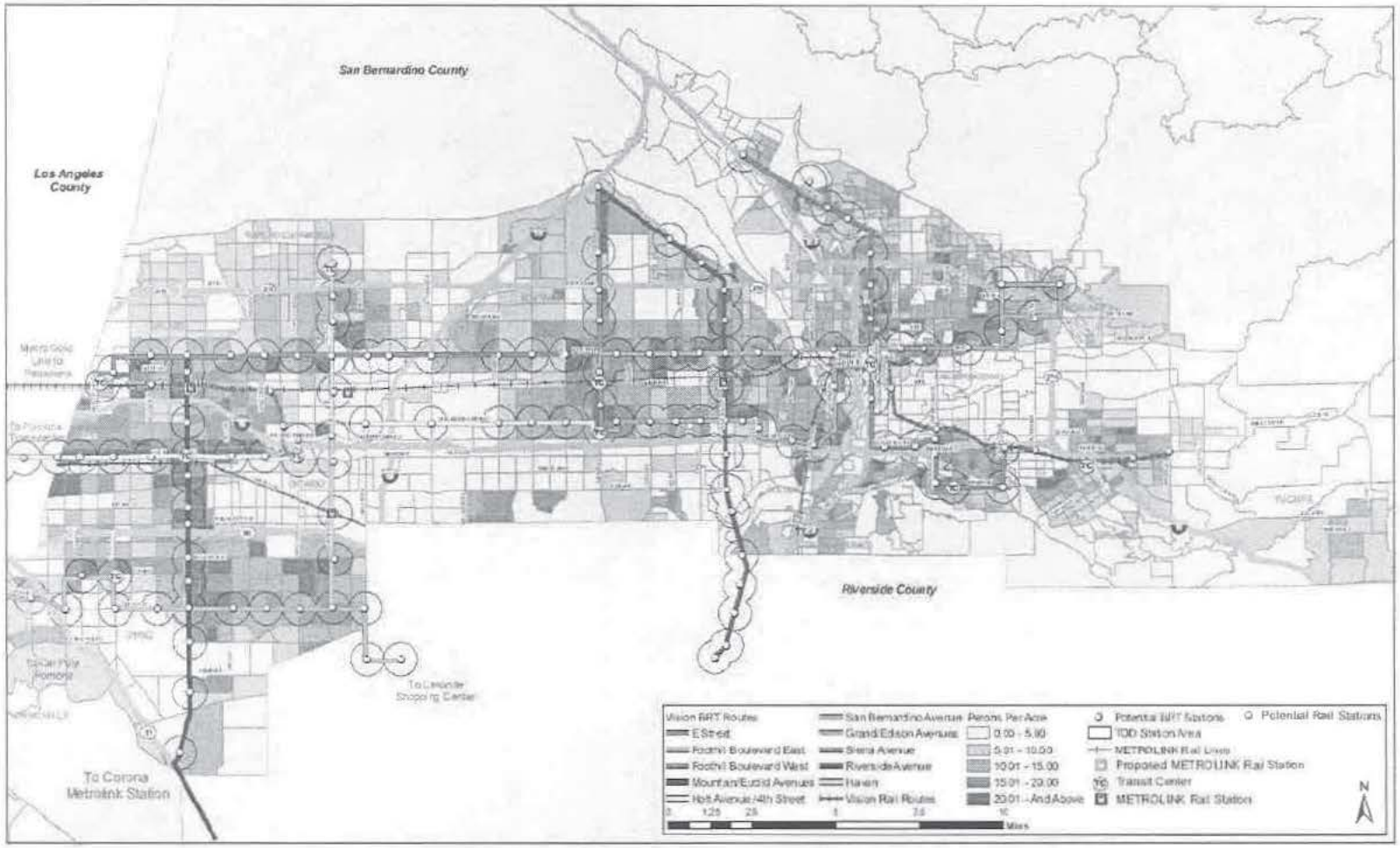

VISION Sustainable Population Density Year 2035
DRAFT LONG RANGE TRANSIT PLAN (LRTP) for the San Bernardino Valley

San Bernardino Associated Governments (SANBAG)
August 2009

Source: Parsons, 2009.

Figure 5-10: Sustainable Population Density Year 2035

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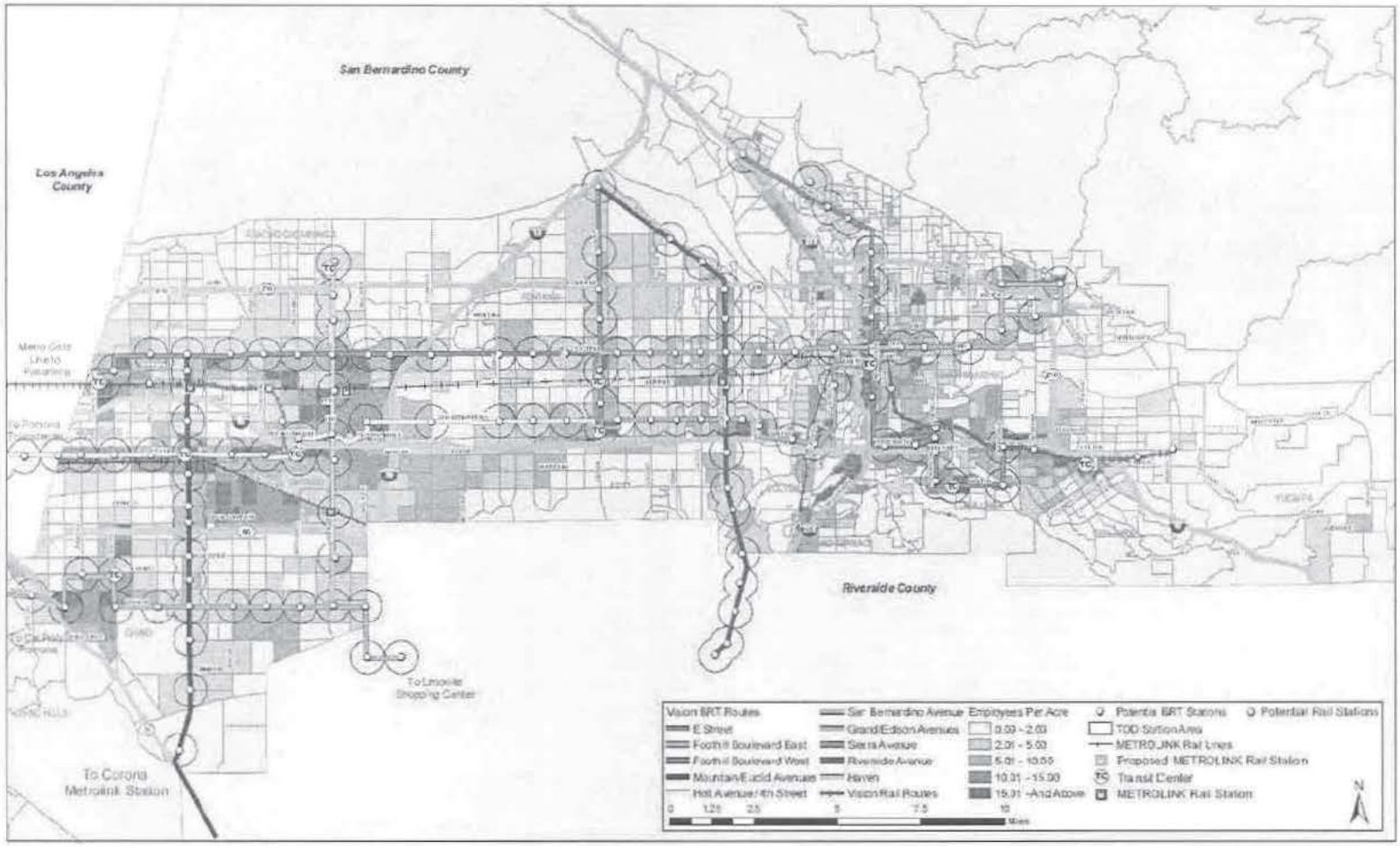

VISION Sustainable Employment Density Year 2035
DRAFT LONG RANGE TRANSIT PLAN (LRTP) for the San Bernardino Valley

San Bernardino Associated Governments (SANBAG)
August 2009

Source: Parsons, 2009.

Figure 5-11: Sustainable Employment Density Year 2035

CHAPTER 6 EVALUATION OF ALTERNATIVES

This chapter begins with a description of existing regional transit plans and planning projects that are under study. These plans form the basis for the four future transit alternatives that are analyzed in the Long Range Transit Plan. The four alternatives are then analyzed for to be able to assess the ridership benefits of different levels of transit investment in the San Bernardino Valley. The four future transit alternatives include:

- The Baseline Alternative, which includes existing transit services;
- The Plan Alternative, which includes an increase in coverage and service frequency designed to serve the future growth in the region;
- The Vision Alternative, which includes an investment in a higher level of transit services – BRT and rail – in the region; and
- The Sustainable Land Use Alternative, which redistributes population and employment growth to transit corridors, allowing us to study the potential ridership benefits of public policy efforts to shape the transit/land use connection in the region.

6.1 EVALUATION METHODOLOGY

By definition, each alternative studied provides a higher level of transit service than previous alternatives. The evaluation process will be used to quantify the ridership impacts of each subsequent alternative. Finally, capital costs and operating costs will be estimated to quantify the relative costs of the alternatives.

Several service standards are used by Omnitrans to judge the quality of service. Some of these standards are subject to the definition of the alternative, such as the standards for span of service, minimum service frequency and bus stop spacing. Other standards can be quantified from an analysis of the ridership impacts to judge the relative performance of the alternatives. The following service standards will be used to compare the alternatives:

- Route coverage – 85% of population should be located within ½ mile of bus stops;
- Vehicle loadings –
  - 120% of seating capacity during peak periods;
  - 100% of seating capacity during off-peak periods;
- Ridership levels –
  - Tier 1 routes: 30+ boardings per vehicle hour;
  - Tier 2 & 3 routes: 15-20 boardings per vehicle hour.

6.2 MODEL RESULTS FOR TRANSIT ALTERNATIVES

BASE ALTERNATIVE

The Year 2035 Base Alternative provides an idea of how the existing transit service would be used in the future if no service improvements were made to account the rapidly growing population in the San Bernardino Valley. Table 6-1 provides a summary of the Base Alternative transit ridership on each of the Omnitrans routes. This table shows that the Omnitrans bus routes in the Base Alternative will carry over 61,000 riders in the Year 2035. This

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Table 6-1: Year 2035 Base Alternative Transit Ridership Forecast

Route	Type	Description	Headway		Riders
			Peak	Off-peak	
1	Local Bus	Colton-Del Rosa	15	15	4,464
2	Local Bus	Cal State-E St-Loma Linda	15	15	5,559
3	Local Bus	Baseline-Highland-San Bernardino	20	20	5,423
5	Local Bus	Cal State-Del Rosa-Downtown SB	30	30	1,674
7	Local Bus	N San Bern-Sierra-Downtown SB	30	60	1,127
8	Local Bus	San Bernardino-Mentone-Yucaipa	60	60	1,562
9	Local Bus	San Bernardino-Redlands-Yucaipa	60	60	1,811
10	Local Bus	Fontana-Baseline-San Bernardino	30	30	1,989
11	Local Bus	San Bernardino-Muscoy	30	30	1,091
14	Local Bus	Fontana-Foothill-San Bernardino	15	15	4,278
15	Local Bus	Fontana-Rialto-SB-Highlands-Redlands	30	30	4,458
19	Local Bus	Redlands-Colton-Fontana	30	30	3,608
20	Local Bus	Fontana-Metrolink	30	30	270
22	Local Bus	S Rialto-N Rialto	30	30	1,701
29	Local Bus	Fontana-Cedar-N Rialto	60	60	124
61	Local Bus	Fontana-Ontario-Pomona	15	15	6,514
63	Local Bus	Chino-Ontario-Upland	30	30	1,385
65	Local Bus	Montclair-Chino Hills	30	30	1,987
66	Local Bus	Fontana-Foothill-Montclair	15	30	2,336
67	Local Bus	Montclair-Baseline-Fontana	60	60	1,133
68	Local Bus	Chino-Montclair-Chaffey	30	30	2,799
80	Local Bus	Montclair-Ontario-Chaffey	30	30	1,607
81	Local Bus	Ontario-Ont. Mills-Chaffey	60	60	930
82	Local Bus	Rancho-Fontana-Sierra Lakes	60	60	1,111
83	Local Bus	Upland-Euclid-Chino	30	60	1,265
215	Express Bus	San Bernardino-Riverside Express	30	30	1,180
Total					61,386

Source: Hexagon, 2009.

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represents a 25 percent increase over current ridership levels. This ridership increase is significantly less than the forecast population growth of 38 percent over the same time frame.

In the Year 2035 Base Alternative only 69 percent of the future population will be located within walking distance of a bus stop, as compared to 80 percent of the existing population with existing service. The coverage provided by the Base Alternative is significantly lower than existing coverage due to the population growth forecast for areas that are currently undeveloped and not served by transit.

Table 6-2 provides a summary of system-wide performance and productivity measures for the Base Alternative. While the overall productivity of the system increases from 24 to 29 passengers per hour of service, this productivity increase is accompanied by an increase in average vehicle loadings and the number of trips that exceed the maximum passenger load standard.

Table 6-2: Year 2035 Base Alternative Omnitrans Performance Measures

	Local Bus	BRT	System Total
Peak Vehicles	139	-	139
Off-Peak Vehicles	127	-	127
Spare Vehicles	28	-	28
Total Fleet	167	-	167
Vehicle Miles Traveled	32,100	-	32,100
Vehicle Hours Traveled	2,100	-	2,100
Daily Riders	61,400	-	61,400
Passenger Miles	263,000	-	263,000
Riders per Vehicle Hour	29.2	-	29.2
Average Load	8.2	-	8.2
Average Speed	15.3	-	15.3

Source: Hexagon, 2009.

Performance standard summary:

- Route coverage – 69% of population located within ½ mile of bus stops – does not meet standard;
- Vehicle loadings –
  - 35% of routes have maximum load exceeding 120% of seating capacity during peak periods;
  - 10% of routes have maximum load exceeding 100% of seating capacity during off-peak periods;
  - does not meet standard;
- Ridership levels –
  - Tier 1 routes: 36 boardings per vehicle hour –meets standard;
  - Tier 2 & 3 routes: 29 boardings per vehicle hour – exceeds standard (ridership warrants service increase).

Plan Alternative

The Year 2035 Plan Alternative tests an enhanced transit system where coverage is improved and service frequencies are increased. Table 6-3 provides a summary of the Plan Alternative transit ridership on each of the Omnitrans routes. This table shows that the Omnitrans bus routes in the Plan Alternative will carry over 109,000 riders in the Year 2035. This represents a 79 percent increase over Base Alternative ridership levels. This ridership forecast indicates that there is a very large potential for increased transit ridership if coverage, accessibility, and service frequency are improved.

In the Year 2035 Plan Alternative 83 percent of the future population will be located within walking distance of a bus stop. This figure is an improvement over the current value of 80 percent with existing service and existing population. The coverage provided by the Plan Alternative provides a significant improvement over the Base Alternative due to the introduction of service to areas that are currently undeveloped and not served by transit.

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Table 6-3: Year 2035 Plan Alternative Transit Ridership Forecast

Route	Type	Description	Headway		Riders
			Peak	Off-peak	
301	BRT	E Street sbX	5	10	8,686
1	Local Bus	Colton-Del Rosa	10	15	4,974
2	Local Bus	Cal State-E St-Loma Linda	20	30	1,757
3	Local Bus	Baseline-Highland-SB-Yucaipa	30	60	2,809
4	Local Bus	Baseline-Highland-San Bernardino	15	20	5,684
5	Local Bus	Cal State-Del Rosa-Downtown SB	30	30	1,366
7	Local Bus	N San Bern-Sierra-Downtown SB	15	30	2,234
8	Local Bus	San Bernardino-Mentone-Yucaipa	15	30	3,626
9	Local Bus	San Bernardino-Redlands-Yucaipa	20	30	2,983
10	Local Bus	Fontana-Baseline-San Bernardino	10	20	4,019
11	Local Bus	San Bernardino-Muscoy	30	30	1,073
14	Local Bus	Fontana-Foothill-San Bernardino	10	15	5,322
15	Local Bus	Fontana-Rialto-SB-Highlands-Redlands	10	15	10,379
19	Local Bus	Redlands-Colton-Fontana	15	15	6,802
22	Local Bus	S Rialto-N Rialto	15	20	2,792
61	Local Bus	Fontana-Ontario-Pomona	10	20	7,963
63	Local Bus	Chino-Ontario-Upland	30	30	1,660
65	Local Bus	Montclair-Chino Hills	15	30	4,085
66	Local Bus	Fontana-Foothill-Montclair	15	20	3,827
67	Local Bus	Montclair-Baseline-Fontana	15	30	2,880
68	Local Bus	Chino-Montclair-Chaffey	15	30	4,418
80	Local Bus	Montclair-Ontario-Chaffey	20	30	2,463
81	Local Bus	Ontario-Ont. Mills-Chaffey	60	60	402
82	Local Bus	Rancho-Fontana-Sierra Lakes	20	30	2,506
83	Local Bus	Upland-Euclid-Chino	15	30	2,515
84	Local Bus	San Bernardino Street E/W Corridor	60	60	352
85	Local Bus	Mountain Avenue N/S Corridor	20	30	2,281
86	Local Bus	Chino-Ontario (Riverside/Milliken)	60	60	697
87	Local Bus	Francis Avenue E/W Corridor	60	0	157
88	Local Bus	Edison Avenue E/W Corridor	30	60	1,257
89	Local Bus	Haven Avenue N/S Corridor	20	60	1,761
93	Local Bus	Cherry Avenue N/S Corridor	60	0	190
94	Local Bus	Cedar/Ayala N/S Corridor	30	60	823
95	Local Bus	Santa Ana Avenue E/W Corridor	60	0	313
96	Local Bus	Sierra Avenue N/S Corridor	30	30	989
97	Local Bus	Chino-Industry Metrolink	60	0	214
98	Local Bus	Yucaipa-Beaumont	30	30	748
99	Local Bus	Palm/Alabama N/S Corridor	30	60	528
215	Express Bus	San Bernardino-Riverside Express	15	30	1,733
Total					109,268

Source: Hexagon, 2009.

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Table 6-4 provides a summary of system-wide performance and productivity measures for the Plan Alternative. With the equilibration of the service frequencies in the Plan Alternative, the overall productivity of the system decreases from 30 to 29 passengers per hour of service. This productivity decrease is accompanied by a significant improvement in the average vehicle loadings and the number of trips that exceed the maximum passenger load standard.

Performance standard summary:

- Route coverage – 83% of population located within ½ mile of bus stops – Almost meets standard;
- Vehicle loadings –
  - 5% of routes have maximum load exceeding 120% of seating capacity during peak periods;
  - 2% of routes have maximum load exceeding 100% of seating capacity during off-peak periods;
  - Almost meets standard;
- Ridership levels –
  - Tier 1 routes: 31 boardings per vehicle hour –meets standard;
  - Tier 2 & 3 routes: 17 boardings per vehicle hour – meets standard.

Vision Alternative

The Year 2035 Vision Alternative tests a transit system where local bus routes are replaced by faster, higher capacity BRT services in ten corridors in the San Bernardino Valley. Table 6-5 provides a summary of the Vision Alternative transit ridership on each of the Omnitrans routes. This table shows that the Omnitrans bus routes in the Vision Alternative will carry almost 133,000 riders in the Year 2035. This represents a 21 percent increase over Plan Alternative ridership levels. Over 53,000 of the transit riders in this alternative use BRT routes. This ridership forecast indicates that there is a significant potential for increased transit ridership if vehicle speeds and service frequency are improved in key corridors.

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Table 6-4: Year 2035 Plan Alternative Omnitrans Performance Measures

	Local Bus	BRT	System Total
Peak Vehicles	304	21	325
Off-Peak Vehicles	187	10	197
Spare Vehicles	61	5	66
Total Fleet	365	26	391
Vehicle Miles Traveled	59,100	4,300	63,400
Vehicle Hours Traveled	3,690	230	3,920
Daily Riders	100,600	8,700	109,300
Passenger Miles	449,000	34,000	483,000
Riders per Vehicle Hour	27.3	37.8	27.9
Average Load	7.6	7.9	7.6
Average Speed	16.0	18.7	16.2

Source: Hexagon, 2009.

Table 6-5: Year 2035 Vision Alternative Transit Ridership Forecast

Route	Type	Description	Headway		Riders
			Peak	Off-peak	
301	BRT	E Street sbX Redlands Extension	5	10	10,458
302	BRT	Foothill East sbX	5	10	8,485
303	BRT	Foothill West sbX - Foothill	10	15	4,628
304	BRT	Euclid sbX	10	15	5,504
305	BRT	San Bernardino Avenue sbX - San Bernardino	10	10	5,305
306	BRT	Holt/Fourth sbX	10	15	5,977
307	BRT	Grand/Edison sbX	10	20	2,123
308	BRT	Sierra sbX	10	20	1,561
309	BRT	Riverside sbX	10	10	6,360
310	BRT	Haven sbX	10	15	2,946
1	Local Bus	Colton-Del Rosa	10	15	4,280
2	Local Bus	Cal State-E St-Loma Linda	20	30	1,809
3	Local Bus	Baseline-Highland-SB-Yucaipa	60	60	2,136
4	Local Bus	Baseline-Highland-San Bernardino	20	20	4,817
5	Local Bus	Cal State-Del Rosa-Downtown SB	20	30	1,928
7	Local Bus	N San Bern-Sierra-Downtown SB	20	30	1,843
8	Local Bus	San Bernardino-Mentone-Yucaipa	15	30	3,567
9	Local Bus	San Bernardino-Redlands-Yucaipa	30	30	2,272
10	Local Bus	Fontana-Baseline-San Bernardino	15	30	2,741
11	Local Bus	San Bernardino-Muscoy	30	30	1,127
14	Local Bus	Fontana-Foothill-San Bernardino	20	20	1,747
15	Local Bus	Fontana-Rialto-SB-Highlands-Redlands	10	15	9,874
19	Local Bus	Redlands-Colton-Fontana	20	20	5,043
22	Local Bus	S Rialto-N Rialto	20	30	1,442
61	Local Bus	Fontana-Ontario-Pomona	20	30	3,316
63	Local Bus	Chino-Ontario-Upland	30	30	1,760
65	Local Bus	Montclair-Chino Hills	15	30	3,055
66	Local Bus	Fontana-Foothill-Montclair	20	30	1,837
67	Local Bus	Montclair-Baseline-Fontana	20	30	2,333
68	Local Bus	Chino-Montclair-Chaffey	20	30	3,229
80	Local Bus	Montclair-Ontario-Chaffey	15	30	3,274
81	Local Bus	Ontario-Ont. Mills-Chaffey	60	60	363
82	Local Bus	Rancho-Fontana-Sierra Lakes	20	30	2,922
83	Local Bus	Upland-Euclid-Chino	30	30	844
84	Local Bus	San Bernardino Street E/W Corridor	30	60	652
85	Local Bus	Mountain Avenue N/S Corridor	20	30	1,847
86	Local Bus	Chino-Ontario (Riverside/Milliken)	30	60	980
87	Local Bus	Francis Avenue E/W Corridor	60	60	317
88	Local Bus	Edison Avenue E/W Corridor	30	30	1,225
89	Local Bus	Haven Avenue N/S Corridor	30	30	828
91	Local Bus	Vineyard/Carnelian N/S Corridor	60	0	112
93	Local Bus	Cherry Avenue N/S Corridor	30	60	632
94	Local Bus	Cedar/Ayala N/S Corridor	20	30	1,714
95	Local Bus	Santa Ana Avenue E/W Corridor	60	0	257

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Route	Type	Description	Headway Peak	Headway Off-peak	Riders
96	Local Bus	Sierra Avenue N/S Corridor	30	60	578
97	Local Bus	Chino-Industry Metrolink	30	60	487
98	Local Bus	Yucaipa-Beaumont	30	30	746
99	Local Bus	Palm/Alabama N/S Corridor	60	60	839
215	Express Bus	San Bernardino-Riverside Express	30	60	563
BRT Sub-total					53,347
System Total					132,683

Source: Hexagon, 2009.

In the Year 2035 Vision Alternative 83 percent of the future population will be located within walking distance of a bus stop. This figure is identical to the coverage for the Plan Alternative because these two alternatives share common bus stop locations. As with the Plan Alternative, the coverage for the Vision Alternative represents an improvement over the current value of 80 percent with existing service and existing population.

Table 6-6 provides a summary of system-wide performance and productivity measures for the Vision Alternative. With the equilibration of the service frequencies in the Vision Alternative, the overall productivity of the system is maintained at 29 passengers per hour of service.

Performance standard summary:

- Route coverage – 83% of population located within ½ mile of bus stops – almost meets standard;
- Vehicle loadings –
  - 4% of routes have maximum load exceeding 120% of seating capacity during peak periods;
  - 0% of routes have maximum load exceeding 100% of seating capacity during off-peak periods;
  - Almost meets standard;
- Ridership levels –
  - Tier 1 routes: 32 boardings per vehicle hour –meets standard;
  - Tier 2 & 3 routes: 17 boardings per vehicle hour – meets standard.

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Table 6-6: Year 2035 Vision Alternative Omnitrans Performance Measures

	Local Bus	BRT	System Total
Peak Vehicles	256	120	376
Off-Peak Vehicles	176	70	246
Spare Vehicles	52	25	77
Total Fleet	308	145	453
Vehicle Miles Traveled	52,900	29,000	81,900
Vehicle Hours Traveled	3,290	1,420	4,710
Daily Riders	84,300	53,300	137,600
Passenger Miles	332,000	247,000	579,000
Riders per Vehicle Hour	25.6	37.5	29.2
Average Load	6.3	8.5	7.1
Average Speed	16.1	20.4	17.4

Source: Hexagon, 2009.

SUSTAINABLE LAND USE ALTERNATIVE

The Year 2035 Sustainable Land Use Alternative tests the impacts of a significant redistribution of the future growth in the San Bernardino Valley. Table 6-7 provides a summary of the Sustainable Land Use Alternative transit ridership on each of the Omnitrans routes. This table shows that the Omnitrans bus routes in the Sustainable Land Use Alternative will carry almost 144,000 riders in the Year 2035. This represents an 8 percent increase over Vision Alternative ridership levels. Over 62,000 of the transit riders in this alternative use BRT routes, which represents a 17 percent increase over Vision Alternative BRT ridership. This ridership forecast indicates that there is a significant potential for increased transit ridership in the San Bernardino Valley if the nature of future development can be controlled.

Table 6-7: Year 2035 Sustainable Land Use Alternative Transit Ridership Forecast

Route	Type	Description	Headway		Riders
			Peak	Off-peak	
301	BRT	E Street sbX Redlands Extension	5	10	12,165
302	BRT	Foothill East sbX	5	10	10,192
303	BRT	Foothill West sbX - Foothill	10	15	5,557
304	BRT	Euclid sbX	10	15	6,508
305	BRT	San Bernardino Avenue sbX - San Bernardino	10	10	6,420
306	BRT	Holt/Fourth sbX	10	15	6,770
307	BRT	Grand/Edison sbX	10	20	2,386
308	BRT	Sierra sbX	10	20	1,893
309	BRT	Riverside sbX	10	10	7,342
310	BRT	Haven sbX	10	15	3,361
1	Local Bus	Colton-Del Rosa	10	15	4,427
2	Local Bus	Cal State-E St-Loma Linda	20	30	2,065
3	Local Bus	Baseline-Highland-SB-Yucaipa	60	60	2,097
4	Local Bus	Baseline-Highland-San Bernardino	20	20	4,764
5	Local Bus	Cal State-Del Rosa-Downtown SB	20	30	1,959
7	Local Bus	N San Bern-Sierra-Downtown SB	20	30	1,866
8	Local Bus	San Bernardino-Mentone-Yucaipa	15	30	3,573
9	Local Bus	San Bernardino-Redlands-Yucaipa	30	30	2,256
10	Local Bus	Fontana-Baseline-San Bernardino	15	30	2,695
11	Local Bus	San Bernardino-Muscoy	30	30	1,101
14	Local Bus	Fontana-Foothill-San Bernardino	20	20	1,996
15	Local Bus	Fontana-Rialto-SB-Highlands-Redlands	10	15	9,915
19	Local Bus	Redlands-Colton-Fontana	20	20	5,095
22	Local Bus	S Rialto-N Rialto	20	30	1,527
61	Local Bus	Fontana-Ontario-Pomona	20	30	3,775
63	Local Bus	Chino-Ontario-Upland	30	30	1,787
65	Local Bus	Montclair-Chino Hills	15	30	3,591
66	Local Bus	Fontana-Foothill-Montclair	20	30	2,015
67	Local Bus	Montclair-Baseline-Fontana	20	30	2,331
68	Local Bus	Chino-Montclair-Chaffey	20	30	3,138
80	Local Bus	Montclair-Ontario-Chaffey	15	30	3,090

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Route	Type	Description	Headway Peak	Headway Off-peak	Riders
81	Local Bus	Ontario-Ont. Mills-Chaffey	60	60	381
82	Local Bus	Rancho-Fontana-Sierra Lakes	20	30	2,887
83	Local Bus	Upland-Euclid-Chino	30	30	955
84	Local Bus	San Bernardino Street E/W Corridor	30	60	657
85	Local Bus	Mountain Avenue N/S Corridor	20	30	1,876
86	Local Bus	Chino-Ontario (Riverside/Milliken)	30	60	948
87	Local Bus	Francis Avenue E/W Corridor	60	60	285
88	Local Bus	Edison Avenue E/W Corridor	30	30	1,381
89	Local Bus	Haven Avenue N/S Corridor	30	30	874
91	Local Bus	Vineyard/Camelian N/S Corridor	60	0	112
93	Local Bus	Cherry Avenue N/S Corridor	30	60	558
94	Local Bus	Cedar/Ayala N/S Corridor	20	30	1,573
95	Local Bus	Santa Ana Avenue E/W Corridor	60	0	274
96	Local Bus	Sierra Avenue N/S Corridor	30	60	614
97	Local Bus	Chino-Industry Metrolink	30	60	573
98	Local Bus	Yucaipa-Beaumont	30	30	760
99	Local Bus	Palm/Alabama N/S Corridor	60	60	823
215	Express Bus	San Bernardino-Riverside Express	30	60	543
BRT Sub-total					62,594
System Total					143,731

Source: Hexagon, 2009.

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In the Year 2035 Vision Plan Alternative 85 percent of the future population will be located within walking distance of a bus stop. This figure is higher than the coverage for the Plan and Vision Alternatives because much of the population growth in the Sustainable Land Use Alternative is redistributed to BRT station areas.

Table 6-8 provides a summary of system-wide performance and productivity measures for the Sustainable Land Use Alternative. With the service frequencies maintained from the Vision Alternative, the overall productivity of the system increases from 29 to 31 passengers per hour of service.

Table 6-8: Year 2035 Sustainable Land Use Alternative Omnitrans Performance Measures

	Local Bus	BRT	System Total
Peak Vehicles	256	120	376
Off-Peak Vehicles	176	70	246
Spare Vehicles	52	25	77
Total Fleet	308	145	453
Vehicle Miles Traveled	52,900	29,000	81,900
Vehicle Hours Traveled	3,290	1,420	4,710
Daily Riders	86,100	62,600	148,700
Passenger Miles	357,000	294,000	651,000
Riders per Vehicle Hour	26.2	44.1	31.6
Average Load	6.7	10.1	7.9
Average Speed	16.1	20.4	17.4

Source: Hexagon, 2009.

Performance standard summary:

- Route coverage – 85% of population located within ½ mile of bus stops –meets standard;
- Vehicle loadings –
  - 4% of routes have maximum load exceeding 120% of seating capacity during peak periods;
  - 0% of routes have maximum load exceeding 100% of seating capacity during off-peak periods;
  - Almost meets standard;
- Ridership levels –
  - Tier 1 routes: 35 boardings per vehicle hour –meets standard;
  - Tier 2 & 3 routes: 18 boardings per vehicle hour – meets standard.

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6.3 COMPARISON OF ALTERNATIVES

All Four Alternatives are compared according to three sets of criteria: Omnitrans Performance Measures; Fleet Expansion and Capital Costs; and Operating and Maintenance Costs.

Omnitrans Performance Measures

As Omnitrans is the local transit provider in the San Bernardino Valley comparing the alternatives has a direct impact on Omnitrans service and operation requirements. The performance statistics documented here display the results of the equilibration efforts described earlier in this chapter.

Table 6-9 presents a summary comparison of Omnitrans fixed-route system-wide performance measures for the four alternatives. The four alternatives range in vehicle requirements and total fleet size from 167 vehicles in the Base Alternative, up to 391 vehicles in the Plan Alternative and 453 vehicles in the Vision and Sustainable Alternatives. Other service measures (VMT and VHT) exhibit similar growth through the alternatives. Ridership statistics (riders and passenger miles) increase along with service growth for the Plan and Vision Alternatives. Additional ridership growth is associated with the development changes in the Sustainable Land Use Alternative.

Fleet Expansion and Capital Costs

Table 6-10 presents a summary comparison of the Omnitrans fixed-route fleet expansion programs for the Base, Plan and Vision alternatives. These expansion programs assume that the fleet expansion will be constrained for the next five years, due to existing funding constraints, and that fleet expansion in the Plan and Vision Alternatives will begin in Year 2014 and continue at a rapid pace through the Year 2035. The replacement schedule for both standard and BRT vehicles assumes a 12-year lifespan for each vehicle.

Table 6-11 presents a summary comparison of capital costs for Omnitrans fleet expansion for the Base, Plan and Vision Alternatives. All tables display the capital costs in constant Year 2009 dollars, and bus costs are assumed to be $517,000 for standard coaches and $998,000 for articulated coaches for BRT service. This table shows that the total cost for vehicle purchase will almost double from $182 million in the Base Alternative to $343 million in the Plan Alternative. Under the Vision Alternative the total cost for vehicle purchases will be $473 million, almost 40 percent higher than in the Plan Alternative.

Table 6-9: Comparison of Alternatives for Omnitrans Performance Measures

	Base Alt.	Plan Alt.	Vision Alt.	Sustainable Alt.
Peak Vehicles	139	325	376	376
Off-Peak Vehicles	127	197	246	246
Spare Vehicles	28	66	77	77
Total Fleet	167	391	453	453
Vehicle Miles Traveled	32,100	63,400	81,900	81,900
Vehicle Hours Traveled	2,100	3,920	4,710	4,710
Daily Riders	61,400	109,300	137,600	148,700
Passenger Miles	263,000	483,000	579,000	651,000
Riders per Vehicle Hour	29.2	27.9	29.2	31.6
Average Load	8.2	7.6	7.1	7.9
Average Speed	15.3	16.2	17.4	17.4
Annual Riders	18,911,000	33,664,000	42,381,000	45,800,000

Source: Hexagon, 2009.

Table 6-10: Fleet Expansion Plans for Alternatives

	2009	2014	2020	2025	2030	2035
Base Alternative						
Standard Bus						
Peak	139	139	139	139	139	139
Off-Peak	127	127	127	127	127	127
Spare	28	28	28	28	28	28
Total Standard	167	167	167	167	167	167
Replacement		70	84	70	70	70
Expansion		0	0	0	0	0
Total Standard Purchase		70	84	70	70	70
Total Fleet	167	167	167	167	167	167
Total Purchase		70	84	70	70	70
Plan Alternative						
Standard Bus						
Peak	139	134	169	205	249	304
Off-Peak	127	122	138	153	169	187
Spare	28	27	34	42	50	61
Total Standard	167	161	203	247	299	365
Replacement		64	84	67	85	103
Expansion		0	42	44	52	66
Total Standard Purchase		64	126	111	137	169
BRT Bus						
Peak	0	11	11	11	21	21
Off-Peak	0	7	7	7	10	10
Spare	0	3	3	3	5	5
Total BRT Bus	0	14	14	14	26	26
Replacement		0	0	14	0	0
Expansion		14	0	0	12	0
Total BRT Bus Purchase		14	0	14	12	0
Total Fleet	167	175	217	261	325	391
Total Purchase		78	126	125	149	169

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	2009	2014	2020	2025	2030	2035
Vision Alternative						
Standard Bus						
Peak	139	134	161	188	219	256
Off-Peak	127	122	135	147	160	176
Spare	28	27	33	38	44	52
Total	167	161	194	226	263	308
Replacement		64	84	67	81	94
Expansion		0	33	32	37	45
Total Standard Purchase		64	117	99	118	139
BRT Bus						
Peak	0	11	32	59	93	120
Off-Peak	0	7	19	34	54	70
Spare	0	3	7	12	19	25
Total	0	14	39	71	112	145
Replacement		0	0	14	16	30
Expansion		14	25	32	41	33
Total BRT Bus Purchase		14	25	46	57	63
Total Fleet	167	175	233	297	375	453
Total Purchase		78	142	145	175	202

Source: Hexagon, 2009.

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Table 6-11: Omnitrans Fleet Replacement and Expansion Capital Costs for Alternatives

	2010 – 2015	2016 – 2020	2021 – 2025	2026 - 2030	2031 - 2035	2010-2035 Total
Base Alternative						
Total Standard Purchase	84	70	70	70	70	364
Fixed Cost ($M 2009) [1]	$43.43	$36.19	$36.19	$36.19	$36.19	$188.19
Other Costs	$71.2	$59.3	$59.3	$59.3	$59.3	$308.4
Plan Alternative						
Total Standard Purchase	79	111	111	137	169	607
Fixed Cost ($M 2009)[1]	$40.84	$57.39	$57.39	$70.83	$87.37	$313.82
Total BRT Bus Purchase	14	0	14	12	0	40
Fixed Cost ($M 2009)[2]	$13.97	$0.00	$13.97	$11.97	$0.00	$39.90
Total Fixed Cost	$54.81	$57.39	$71.35	$82.80	$87.37	$353.72
Other Costs	$67.9	$85.8	$103.3	$102.6	$197.8	$482.9
Vision Alternative						
Total Standard Purchase	77	104	99	118	139	537
Fixed Cost ($M 2009)[1]	$39.81	$53.77	$51.18	$61.01	$71.86	$277.63
Total BRT Bus Purchase	14	25	46	57	63	205
Fixed Cost ($M 2009)[2]	$13.97	$24.94	$45.89	$56.86	$62.84	$204.49
Total Fixed Cost	$53.77	$78.71	$97.07	$117.86	$134.71	$482.12
Other Costs	$66.6	$81.3	$95.5	$110.3	$141.3	$495.0

[1]Assumes replacement cost of $517,000 per standard bus.
[2]Assumes cost of $998,000 per BRT vehicle.
Source: Hexagon, 2009.

This table also includes an estimate of other capital costs that are likely to be incurred through the year 2035. These other capital costs include the costs for preventive maintenance, non-service vehicles, Transcenter construction, facility upgrades and security elements that are currently funded by capital funding sources. These elements are projected as a function of the vehicle capital costs, and reflect the higher capital costs that will be required to maintain a larger vehicle fleet.

Table 6-12 presents a summary of capital costs for BRT projects in the Vision Alternative. The cost estimates include capital costs that are subject to possible FTA New Starts/Small Starts funding. These costs include running way, stations, and full fleet requirement for the year 2035, not just the opening year fleet requirement. The costs in Table 6-12 don't account for replacement costs for BRT vehicles after their 12 year lifespan. Replacement vehicle costs are covered in Table 6-11.

The capital cost estimates are allocated to potential BRT projects using the capital cost estimates for the E Street BRT project as a basis. The total cost estimate for the E Street Corridor Project between Palm Station in northern San Bernardino and the VA Hospital in Loma Linda is $170 million (in Year 2009 dollars). The E Street Project includes 5.3 miles of exclusive guideway along a 15.7 mile alignment, with 16 stations and 11 vehicles in peak service. The E Street capital cost estimate is used to allocate costs for other BRT projects, based on the relative alignment lengths, and numbers of stations and peak vehicles in service.

Table 6-12 shows that the total capital cost for the ten BRT corridors under study in the Vision Alternative will amount to over $1.67 billion in Year 2009 dollars.

Table 6-13 presents a summary comparison of capital costs for major transit investments in the San Bernardino Valley that vary for the Base, Plan and Vision Alternatives. This table is in a preliminary form that will require further research to refine the cost estimates and timing for several of the capital cost elements. The Base Alternative includes only

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Table 6-12: Capital Costs for BRT Corridors in Vision Alternative

sbX Corridor	Description	Length (mi)	Stations	Peak Vehicles	Capital Costs
1	E Street Corridor (to California)	18.3	16	24	$235.0
2	Foothill Boulevard East	16.6	16	21	$214.5
3	Foothill Boulevard West	16.2	15	10	$165.5
4	Euclid Avenue to Corona	17.9	14	12	$179.3
5	San Bernardino Avenue	11.0	12	7	$118.7
6	Holt Avenue/4th Street	20.4	18	13	$207.6
7	Grand/Edison Avenues	17.4	16	11	$178.7
8	Sierra Avenue	7.6	7	5	$78.7
9	Riverside Avenue	16.4	16	11	$173.6
10	Haven Avenue	10.4	10	7	$109.4
	Total	152.2	140	121	$1,661.1

Source: Hexagon, 2009.

Table 6-13: Total Capital Costs for Alternatives

	2010 - 2015	2016 - 2020	2021 - 2025	2026 - 2030	2031 - 2035	2010-2035 Total
Base Alternative						
Omnitrans Fleet	$43.43	$36.19	$36.19	$36.19	$36.19	$188.19
ADA Fleet *	$11.25	$13.50	$11.25	$11.25	$11.25	$58.50
Omnitrans Other Costs	$71.2	$59.3	$59.3	$59.3	$59.3	$308.4
Metrolink Strategic	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Base Alternative Total	$125.88	$108.99	$106.74	$106.74	$106.74	$555.09
Plan Alternative						
Omnitrans Fleet (exclude NS)	$40.84	$57.39	$71.35	$70.83	$87.37	$327.78
ADA Fleet *	$11.25	$13.50	$11.25	$11.25	$11.25	$58.50
Omnitrans Other Costs	$67.9	$85.8	$103.3	$102.6	$197.8	$482.9
BRT Corridor New Starts	$170.65	$0.00	$0.00	$36.00	$0.00	$206.65
Redlands Rail	$0.00	$240.00	$0.00	$0.00	$0.00	$240.00
Gold Line	$0.00	$50.00	$0.00	$0.00	$0.00	$50.00
Metrolink Extension	$0.00	$40.00	$0.00	$0.00	$0.00	$40.00
Metrolink Strategic	$120.00	$110.00	$0.00	$0.00	$0.00	$230.00
Plan Alternative Total	$410.65	$596.69	$185.90	$220.68	$296.42	$1,635.84
Vision Alternative						
Omnitrans Fleet (exclude NS)	$39.81	$53.77	$65.15	$76.97	$101.79	$337.48
ADA Fleet *	$11.25	$13.50	$11.25	$11.25	$11.25	$58.50
Omnitrans Other Costs	$66.6	$81.3	$95.5	$110.3	$141.3	$495.0
BRT Corridor New Starts	$170.65	$375.70	$375.70	$375.70	$375.70	$1,673.45
Redlands Rail	$0.00	$240.00	$0.00	$0.00	$0.00	$240.00
Gold Line	$0.00	$50.00	$100.00	$100.00	$0.00	$250.00
Metrolink Extension	$0.00	$40.00	$0.00	$0.00	$0.00	$40.00
Metrolink Strategic	$120.00	$110.00	$0.00	$0.00	$0.00	$230.00
Vision Alternative Total	$408.31	$964.27	$647.60	$674.22	$630.04	$3,324.43

*Assumes 90 vehicle fleet size and 4-year life span for ADA vehicles with $100,000 replacement cost.

Source: Hexagon, 2009.

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the $555 million cost for replacement of standard coaches for Omnitrans fixed-route services, and other capital costs associated with the current fleet. The Plan Alternative adds the costs of expanding the Omnitrans fixed-route services, plus introduction of the E Street sbX BRT service, the Redlands Rail Commuter Rail service, MTA Gold Line extension to Montclair, Metrolink extension from the Santa Fe Depot to the San Bernardino Transit Station, and funding elements of the SCRRA for the 2015 and 2020 A Scenarios. These projects will increase the capital cost burden of the Plan Alternative to over $1.1 billion dollars over the next 26 years.

The Vision Alternative adds the costs of completing a system of ten BRT corridors, and extending the MTA Gold Line to Ontario Airport. These projects will increase the capital cost burden of the Vision Alternative to almost $3.3 billion over the next 26 years.

Operating Costs

Tables 6-14 through 6-16 present operating and maintenance cost summaries for the Base, Plan and Vision Alternatives. These tables display the gross operating cost estimates for six representative years from 2009 to 2035, before accounting for farebox recovery revenue. The operating cost estimates are calculated as function of the total vehicle hours of service operated by each service component in the alternative.

Operating and maintenance costs for the Base Alternative are summarized in Table 6-14. This alternative includes the provision of Omnitrans fixed-route services, Omnitrans ADA services (Omnilink and Access), and Metrolink services. The costs for Omnitrans services are derived from Omnitrans' Year 2009 operating plan and budget. The cost of Metrolink services includes only San Bernardino County's share of the total Metrolink costs, based on the Year 2009-2010 SCRRA budget. Table 6-14 shows that the O&M cost of the Base Alternative will remain constant into future years.

Operating and maintenance costs for the Plan Alternative are summarized in Table 6-15. This alternative includes the provision of Omnitrans fixed-route, BRT and ADA services, Metrolink, Redlands Rail and Metro Gold Line (to Montclair) services. The O&M cost of Metrolink service include the implementation of the Extension of Metrolink services to the San Bernardino Transit Center and implementation of the Metrolink Strategic Plan. The cost of Redlands Rail services are based on preliminary operating plans and cost estimates for the Redlands Rail Alternatives Analysis. The cost of Metro Gold Line services includes only San Bernardino County's share of the planned Gold Line extension into San Bernardino County, with operating unit costs based on recent MTA documentation. Table 6-15 shows that the yearly O&M cost of the Plan Alternative will increase steadily from less than $90 million in Year 2009 to more than $170 million in 2035.

Operating and maintenance costs for the Vision Alternative are summarized in Table 6-16. This alternative includes the provision of Omnitrans fixed-route, BRT and ADA services, Metrolink, Redlands Rail and Metro Gold Line (to Ontario Airport) services. Table 6-16 shows that the O&M cost of the Vision Alternative will increase steadily from less than $90 million in Year 2009 to more than $207 million in 2035.

Table 6-17 presents a summary of net O&M costs for the Base, Plan and Vision Alternatives. This table uses constant farebox recovery ratios to convert gross O&M costs to net O&M costs for each of the systems in the alternatives. The farebox recovery ratios are based on recently collected data. The data in Table 6-17 shows that the net O&M costs for the Plan and Vision Alternatives would increase by 90 percent and 130 percent, respectively, from current levels.

Table 6-18 presents a summary comparison of system-wide O&M costs aggregated to different time periods through the year 2035. This table shows that the total net O&M cost burden for the Base Alternative through the year 2035 will be approximately $1.62 billion, as compared to $2.35 billion for the Plan Alternative and $ 2.63 billion for the Vision Alternative.

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Table 6-14: Gross Operating and Maintenance Costs for Base Alternative

	2009	2014	2020	2025	2030	2035
Omnitrans - Standard Bus						
Annual VHT	646,800	646,800	646,800	646,800	646,800	646,800
Annual O&M Cost ($M)	$57.03	$57.03	$57.03	$57.03	$57.03	$57.03
Omnitrans - ADA Vehicle						
Annual VHT	164,900	164,900	164,900	164,900	164,900	164,900
Annual O&M Cost ($M)	$10.90	$10.90	$10.90	$10.90	$10.90	$10.90
Metrolink *						
Annual VHT	48,950	48,950	48,950	48,950	48,950	48,950
Annual O&M Cost ($M)	$21.54	$21.54	$21.54	$21.54	$21.54	$21.54
Total O&M Costs ($M)	$89.47	$89.47	$89.47	$89.47	$89.47	$89.47

*San Bernardino County share of total.

Source: Hexagon, 2009.

Table 6-15: Gross Operating and Maintenance Costs for Plan Alternative

	2009	2014	2020	2025	2030	2035
Omnitrans - Standard Bus						
Annual VHT	646,800	622,200	736,100	850,100	979,400	1,136,500
Annual O&M Cost ($M)	$57.03	$54.87	$64.91	$74.96	$86.36	$100.22
Omnitrans - BRT Bus						
Annual VHT	0	30,600	43,100	43,100	70,800	70,800
Annual O&M Cost ($M)	$0.00	$3.91	$3.80	$3.80	$6.24	$6.24
Omnitrans - ADA Vehicle						
Annual VHT	164,900	164,900	164,900	164,900	164,900	164,900
Annual O&M Cost ($M)	$10.90	$10.90	$10.90	$10.90	$10.90	$10.90
Metrolink *						
Annual VHT	48,950	74,809	92,015	92,015	92,015	92,015
Annual O&M Cost ($M)	$21.54	$32.92	$40.49	$40.49	$40.49	$40.49
Redlands Rail						
Annual VHT	0	0	20,400	20,400	20,400	20,400
Annual O&M Cost ($M)	$0.00	$0.00	$9.18	$9.18	$9.18	$9.18
MTA Gold Line *						
Annual VHT	0	0	8,400	8,400	8,400	8,400
Annual O&M Cost ($M)	$0.00	$0.00	$3.19	$3.19	$3.19	$3.19
Total O&M Costs	$89.47	$102.60	$132.47	$142.52	$156.36	$170.22

*San Bernardino County share of total.

Source: Hexagon, 2009.

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Table 6-16: Gross Operating and Maintenance Costs for Vision Alternative

	2009	2014	2020	2025	2030	2035
Omnitrans - Standard Bus						
Annual VHT	646,800	622,200	714,600	800,800	896,300	1,013,300
Annual O&M Cost ($M)	$57.03	$54.87	$63.01	$70.61	$79.04	$89.35
Omnitrans - BRT Bus						
Annual VHT	0	30,600	117,000	212,500	335,700	437,400
Annual O&M Cost ($M)	$0.00	$3.91	$10.32	$18.74	$29.60	$38.57
Omnitrans - ADA Vehicle						
Annual VHT	164,900	164,900	164,900	164,900	164,900	164,900
Annual O&M Cost ($M)	$10.90	$10.90	$10.90	$10.90	$10.90	$10.90
Metrolink *						
Annual VHT	48,950	74,809	92,015	92,015	92,015	92,015
Annual O&M Cost ($M)	$21.54	$32.92	$40.49	$40.49	$40.49	$40.49
Redlands Rail						
Annual VHT	0	0	20,400	20,400	20,400	20,400
Annual O&M Cost ($M)	$0.00	$0.00	$9.18	$9.18	$9.18	$9.18
MTA Gold Line *						
Annual VHT	0	0	8,400	8,400	49,000	49,000
Annual O&M Cost ($M)	$0.00	$0.00	$3.19	$3.19	$18.62	$18.62
Total O&M Costs	$89.47	$102.60	$137.09	$153.11	$187.83	$207.11

*San Bernardino County share of total.

Source: Hexagon, 2009.

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Table 6-17: Net Operating and Maintenance Costs for Alternatives (SANBAG Costs in $M 2009)

	Farebox Recovery	2009	2014	2020	2025	2030	2035
Base Alternative							
Omnitrans - Standard Bus	24%	$43.40	$43.40	$43.40	$43.40	$43.40	$43.40
Omnitrans - ADA Vehicle	12%	$9.59	$9.59	$9.59	$9.59	$9.59	$9.59
Metrolink *	57%	$9.35	$9.35	$9.35	$9.35	$9.35	$9.35
Total Net O&M Costs		$62.34	$62.34	$62.34	$62.34	$62.34	$62.34
Plan Alternative							
Omnitrans - Standard Bus	24%	$43.40	$41.76	$49.40	$57.04	$65.72	$76.27
Omnitrans - BRT Bus	24%	$0.00	$2.98	$2.89	$2.89	$4.75	$4.75
Omnitrans - ADA Vehicle	12%	$9.59	$9.59	$9.59	$9.59	$9.59	$9.59
Metrolink *	57%	$9.35	$14.29	$17.57	$17.57	$17.57	$17.57
Redlands Rail	25%	$0.00	$0.00	$6.89	$6.89	$6.89	$6.89
MTA Gold Line	15%	$0.00	$0.00	$2.71	$2.71	$2.71	$2.71
Total Net O&M Costs		$62.34	$68.61	$89.05	$96.70	$107.23	$117.78
Vision Alternative							
Omnitrans - Standard Bus	24%	$43.40	$41.76	$47.95	$53.73	$60.15	$68.00
Omnitrans - BRT Bus	24%	$0.00	$2.98	$7.85	$14.26	$22.53	$29.35

	Farebox Recovery	2009	2014	2020	2025	2030	2035
Omnitrans - ADA Vehicle	12%	$9.59	$9.59	$9.59	$9.59	$9.59	$9.59
Metrolink *	57%	$9.35	$14.29	$17.57	$17.57	$17.57	$17.57
Redlands Rail	25%	$0.00	$0.00	$6.89	$6.89	$6.89	$6.89
MTA Gold Line	15%	$0.00	$0.00	$2.71	$2.71	$15.83	$15.83
Total Net O&M Costs		$62.34	$68.61	$92.57	$104.76	$132.55	$147.22

*Recovery ratio includes other operating revenue.

Source: Hexagon, 2009.

Table 6-18: Total Operating and Maintenance Costs for Alternatives

	2010 - 2015	2016 - 2020	2021- 2025	2026- 2030	2031- 2035	2010- 2035
Base Alternative						
Gross O&M Costs	$536.82	$447.35	$447.35	$447.35	$447.35	$2,326.22
Net O&M Costs	$374.04	$311.70	$311.70	$311.70	$311.70	$1,620.84
Plan Alternative						
Gross O&M Costs	$589.34	$602.61	$692.50	$754.12	$823.38	$3,461.95
Net O&M Costs	$399.12	$404.37	$468.19	$515.08	$567.79	$2,354.56
Vision Alternative						
Gross O&M Costs	$589.34	$616.47	$733.51	$869.71	$996.99	$3,806.02
Net O&M Costs	$399.12	$414.92	$499.40	$607.17	$706.77	$2,627.38

Source: Hexagon, 2009.

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CHAPTER 7 VICTOR VALLEY TRANSIT ALTERNATIVES

7.1 VICTOR VALLEY TRANSIT AUTHORITY

Victor Valley Transit Authority (VVTA) is a Joint Powers Authority (JPA) established in 1991 and comprised of five jurisdictions; the cities of Adelanto, Hesperia, and Victorville, the town of Apple Valley, and several unincorporated areas of San Bernardino County including Phelan, Pinon Hills, Wrightwood, Lucerne Valley, Helendale, and Oro Grande. The Board of Directors of the Victor Valley Transit Authority includes representatives from the above jurisdictions, who contract out management and operations.

VVTA is the second largest transit operator in San Bernardino County and operates 18 local fixed routes with a mixed fleet of 38 buses. The local bus routes include eight core bus routes that connect at least two major activity centers, seven circulator (or deviation) routes that connect sparsely populated neighborhoods to the core routes, and three remote routes that connect remote unincorporated areas to the heart of the Victor Valley cities.

The eighteen fixed bus routes currently operated by VVTA are summarized in Tables 7-1 and 7-2. Table 7-1 displays the type of service, service frequency, and number of peak vehicles used on each route. Table 7-2 summarizes the cities and activity centers served by each route. The city of Victorville is served by 12 routes; the city of Hesperia and the town of Apple Valley are each served by five routes; and the city of Adelanto is served by three routes. Buses operate from 6:00 a.m. to 9:00 p.m. Monday through Friday and from 7:00 a.m. to 8:00 p.m. on Saturday. There is no Sunday service. In addition to the 18 fixed-route schedules, VVTA operates a fleet of 27 cutaway vehicles for ADA Complementary paratransit bus services for the Victor Valley Area. Additional deviated service to Wrightwood, Pinon Hills, Phelan, Helendale, and Lucerne Valley is available by reservation.

The most recent comprehensive analysis of transit service in the Victor Valley is documented in *Operations and Growth Analysis – Victor Valley Transit Authority – Draft Final Report* (March 2007). This data resource shows that, in 2006, VVTA fixed route service carried approximately 3,300 daily transit riders. Significant system-wide performance statistics from this report include: 1.07 average boardings per vehicle mile and 17.3 average boardings per vehicle hour. The average mode share for fixed route transit is less than 0.15% of total trips in the Victor Valley. By comparison, the average mode share in the San Bernardino Valley is 0.77%.

The VVTA system is designed primarily to provide reliable coverage to a sparsely populated area. GIS estimates show that over 80 percent of the Victor Valley population is within one-quarter mile of a VVTA bus route. Almost all of the local fixed routes operated by VVTA are less than 12 miles in length which allows them to operate at 60 minute headways, thus allowing each route to be served by a single vehicle while providing easy to use clock-face service.

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Table 7-1: Existing VVTA Transit Routes

Route	Description	Type	Miles	2009 Headway			Peak Vehicles
				AM	Mid	PM	
21	Tri-Community	County	33.2	90	90	90	2
22	Helendale	County	48.1	120	120	120	1
23	Lucerne Valley	County	50.7	90	90	90	1
31	Adelanto-Victorville	Core	17.8	60	60	60	2
32	Adelanto-Victorville North	Core	20.6	60	60	60	1
33	Adelanto Circulator	Circulator	25.0	60	60	60	1
40	Apple Valley North	Circulator	15.1	60	60	60	1
41	Apple Valley/Victorville	Core	23.7	60	60	60	2
43	Apple Valley/Victor Valley College	Core	17.8	60	30	30	2
44	Victor Valley Mall/Hesperia	Core	28.5	60	60	60	2
45	Victorville/Hesperia	Core	47.9	30	30	30	3
46	Hesperia Deviation	Circulator	11.4	60	60	60	1
47	Apple Valley South Deviation	Circulator	11.7	60	60	60	1
48	Hesperia West	Circulator	20.0	60	60	60	1
51	Victorville Circulator	Circulator	11.6	60	60	60	1
52	Victorville/Mall	Circulator	17.3	60	60	60	1
53	Victor Valley College/Mall	Core	14.7	60	30	30	3
54	Victorville West	Circulator	15.4	60	60	60	1
Total Vehicles							27

Source: Hexagon, 2009.

Table 7-2: VVTA Transit Route Service Areas

Cities	VVTA Route														
	31	32	33	40	41	43	44	45	46	47	48	51	52	53	54
Adelanto	X	X	X												X
Apple Valley				X	X	X									
Hesperia						X	X	X	X	X	X			X	
Victorville	X	X			X		X	X				X	X	X	
Activity Centers															
Adelanto City Hall		X	X												
Apple Valley City Hall				X	X										
Apple Valley High School						X				X					
Apple Valley Post Office				X	X	X				X					
Desert Valley Hospital								X						X	
Hesperia High School							X				X				
Hesperia Post Office							X		X		X				
Mall of Victor Valley							X						X	X	
Rite Aid	X	X			X			X				X	X		
Saint Mary's Hospital					X										
SCLA		X													
Silverado High School	X														X
Sultana High School							X		X						
Victor Valley Community College						X	X	X						X	
Victor Valley Hospital					X							X			
Victor Valley Transit Center					X							X			
Victorville City Hall	X												X		

Source: Hexagon, 2009.

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Transit service into the San Bernardino Valley is currently provided by Greyhound Lines. SANBAG and VVTA have implemented a ticket subsidy program that provides discounted fares for trips from Victor Valley into San Bernardino Valley and into Barstow.

7.2 Existing Activity Centers

Seven major activity centers are used to anchor the core transit routes in the existing VVTA transit network. These include Adelanto City Hall, Apple Valley Post Office, Hesperia Post Office, Mall of Victor Valley, 7th and Lorene (Rite Aid), Victor Valley College, and Victor Valley Transit Center.

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 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 surrounding area, and this commercial area is continuing to intensify. Additionally, there are multiple shopping centers and strip malls that offer shopping and dining options.

The Victor Valley Community College, located off Bear Valley Road, generates many trips, as well as the various high schools dispersed around the valley.

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 and Victor Valley Community Hospital. Desert Valley Hospital is located on the campus of Prime Care Desert Valley Medical Center on Bear Valley Road. St. Mary's Hospital in Apple Valley is located on Kasota Road, just off Highway 18; and Victor Valley Community Hospital is located on Eleventh Street in Victorville.

7.3 Existing Demographics

The socioeconomic data is derived from the SCAG RTP, aggregated to 60 TAZ in the Victor Valley. The population and employment for the individual cities in the Victor Valley is displayed in Table 7-3.

The Victor Valley currently has very low density development that is not conducive to efficient high-capacity transit service. The average existing population density in the Victor Valley cities is approximately 1.6 persons per acre, as compared to 5.2 persons per acre in the San Bernardino Valley. The existing population and employment densities for the TAZ in the Victor Valley are displayed graphically in Figures 7-1 and 7-2, respectively.

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Table 7-3: Victor Valley Population and Employment

City	2005 Population	2005 Employment
Adelanto City	24,156	5,125
Apple Valley Town	65,760	12,488
Hesperia City	78,284	14,934
Victorville City	90,913	31,425
Total Victor Valley	259,113	63,972

Source: SCAG, 2009.

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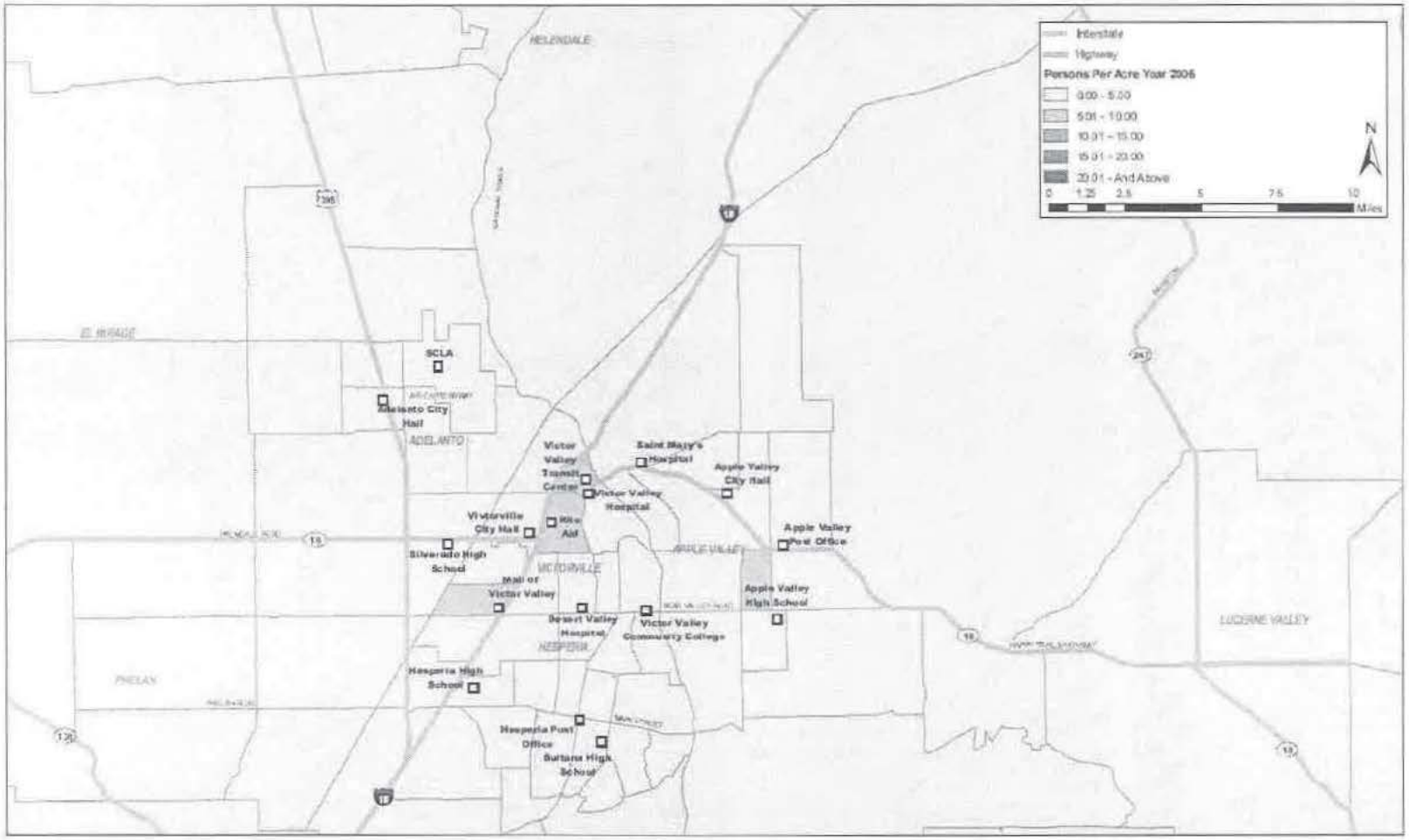


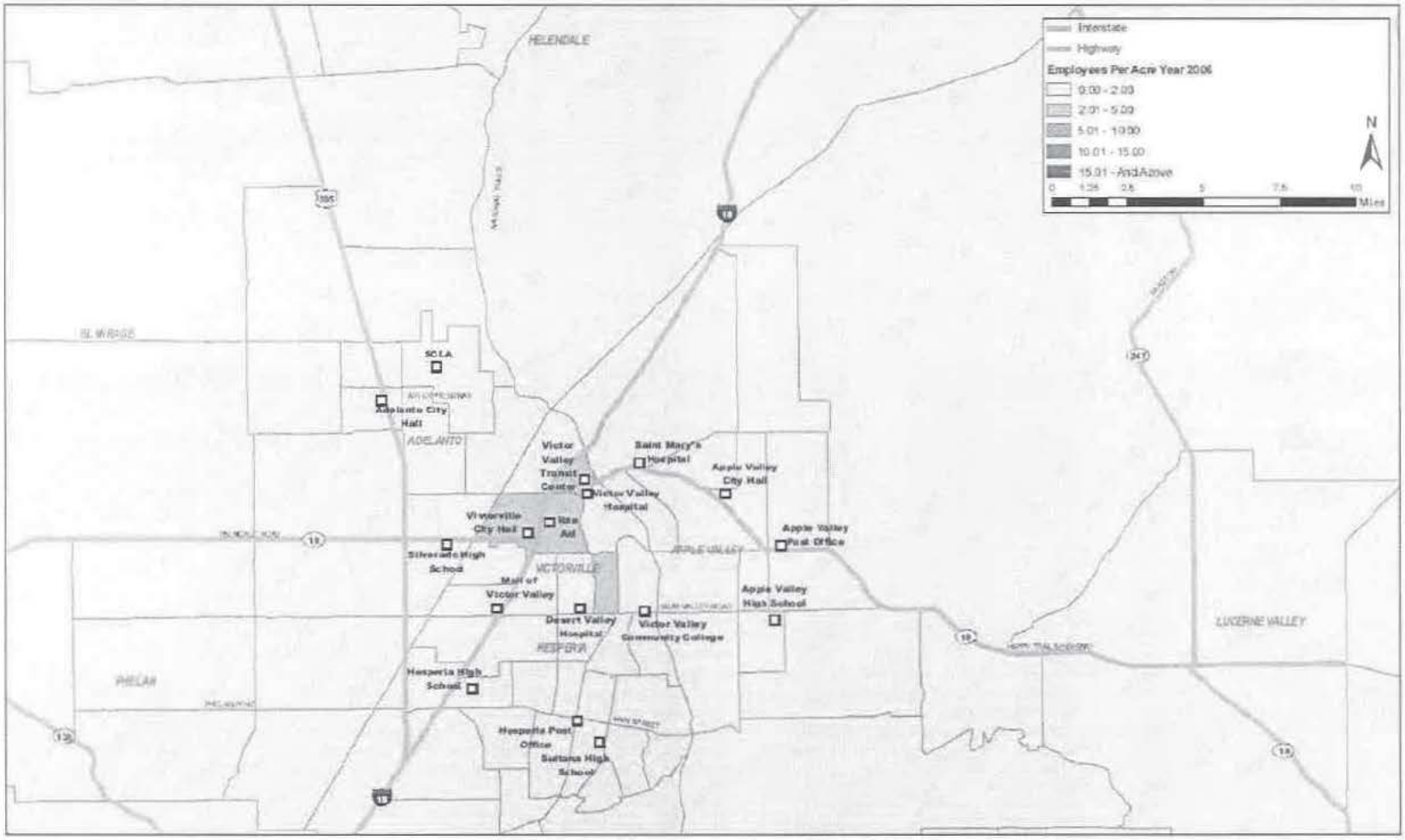
VVTA Existing Population Density

DRAFT LONG RANGE TRANSIT PLAN (LRTP) for the Victor Valley

San Bernardino Associated Governments (SANBAG)
August 2009

Source: Parsons, 2009.

Figure 7-1: Victor Valley Existing Population Density



VVTA Existing Employent Density

DRAFT LONG RANGE TRANSIT PLAN (LRTP) for the Victor Valley

San Bernardino Associated Governments (SANBAG)
August 2009

Source: Parsons, 2009.

Figure 7-2: Victor Valley Existing Employment Density

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7.4 PLANNED DEVELOPMENT PROJECTS

The Victor Valley region is a pro-growth region that has experienced rapid development during the last economic growth cycle. It is expected that the pro-growth attitude will continue once favorable economic conditions return. Growth in the area has been characterized by low-density development, however to comply with SB 375 it is expected that any future growth take into consideration the Vehicle Miles Traveled (VMT) generated.

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. SCLA is currently undergoing construction and will operate 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 however Ontario International Airport will still primarily serve travel needs. Almost none of the demand for this airport will originate from outside the Mojave desert. In order to accommodate this service, this airport is planned for a new passenger terminal facility, passenger parking, ground access improvements and ramp improvements. With a 2030 forecast of 4 million annual passengers, the airport would be similar to current passenger activity at Reno/Tahoe International Airport.

7.5 TRAVEL DEMAND FORECASTING AND FUTURE CONDITIONS

The Victor Valley Transit Alternatives were tested using the San Bernardino Valley Focus Model (see Chapter 4). The Victor Valley portion of this model was calibrated to existing conditions using current transit routes and recently collected transit ridership data. This model maintains the SCAG zone system in the Vector Valley area, which is less refined than the focus zone system in the San Bernardino Valley. This zone system is sufficient for testing the ridership and operational impacts of core transit routes in the VVTA system.

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As shown in Table 7.4, the Victor Valley is forecast to experience rapid growth in the next three decades. The existing population of less than 300,000 is forecasts to grow to over 600,000 by the year 2035. The year 2035 population and employment densities for the TAZ in the Victor Valley are displayed graphically in Figures 7-3 and 7-4, respectively.

In spite of this growth spurt, the overall level of density in the Victor Valley will remain relatively low. The population density for the Victor Valley cities is expected to grow from its current level of 1.6 persons per acre to approximately 3.4 persons per acre in the year 2035, as compared to an existing population density of 5.2 persons per acre in the San Bernardino Valley.

7.6 Development of Transit Alternatives

As it is currently structured, the VVTA system is designed primarily to provide reliable coverage to a sparsely populated area (the average population density in the Victor Valley is only 1.6 persons per acre). The existing Core Transit routes operated by VVTA are typically less than 12 miles in length which allows them to operate at 60 minute headways. These core routes are supplemented by several circulators and deviated routes to provide coverage to populated areas.

As population and employment density grow in the Victor Valley region it will become beneficial for the VVTA system to evolve into a grid-like system of trunk routes, with a similar system of and circulator services. This evolution of services is described in the development of the transit alternatives for the Victor Valley.

Three transit alternatives were developed to study potential transit service scenarios in the Victor Valley: the Base Alternative; the Plan Alternative; and the Vision Alternative.

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Table 7.4: Victor Valley Population and Employment Growth Forecasts

City	2005	2015	2025	2035	Growth 2005-2035 Net	Growth 2005-2035 Percent
Population						
Adelanto City	24,156	56,674	86,629	114,398	90,242	374%
Apple Valley Town	65,760	77,115	86,749	95,681	29,921	46%
Hesperia City	78,284	126,456	170,384	211,108	132,824	170%
Victorville City	90,913	122,205	153,376	182,275	91,362	100%
Total Victor Valley	259,113	382,450	497,138	603,462	344,349	133%
Employment						
Adelanto City	5,125	10,501	15,232	20,884	15,759	307%
Apple Valley Town	12,488	16,243	18,500	23,662	11,174	89%
Hesperia City	14,934	25,706	32,787	47,998	33,064	221%
Victorville City	31,425	49,131	61,972	84,335	52,910	168%
Total Victor Valley	63,972	101,581	128,491	176,879	112,907	176%

Source: SCAG, 2009.

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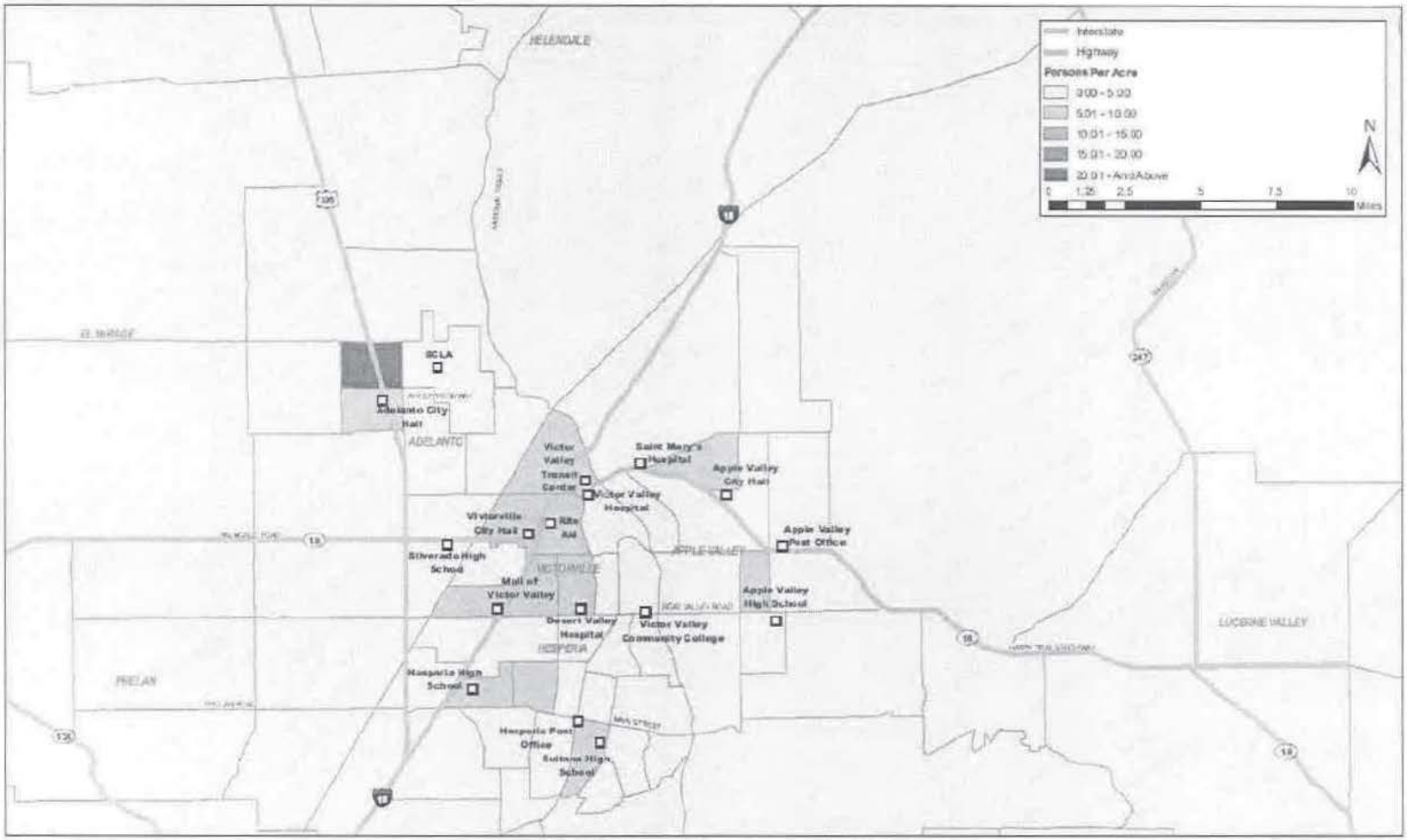
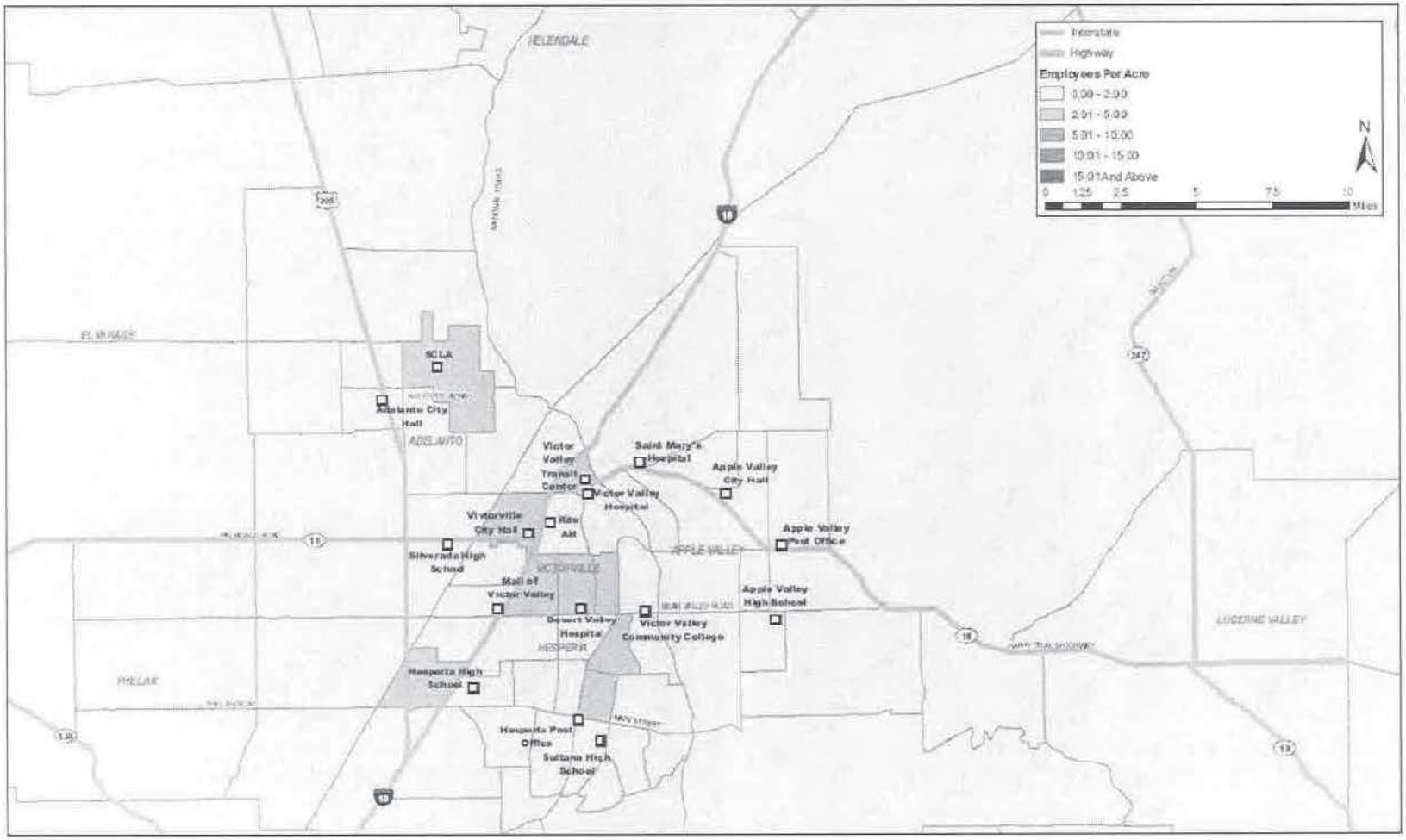


VVTA VISION Population Density Year 2035
DRAFT LONG RANGE TRANSIT PLAN (LRTP) for the Victor Valley

San Bernardino Associated Governments (SANBAG)
August 2009

Source: Parsons, 2009.

Figure 7-3: Victor Valley Population Density Year 2035



VVTA VISION Employment Density Year 2035
DRAFT LONG RANGE TRANSIT PLAN (LRTP) for the Victor Valley

San Bernardino Associated Governments (SANBAG)
August 2009

Source: Parsons, 2009.

Figure 7-4: Victor Valley Employment Density Year 2035

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BASE ALTERNATIVE

The Base Alternative for the Victor Valley, as shown in Figure 7-5, is coded and modeled in coordination with the Base Transit Alternative for the San Bernardino Valley. This alternative includes the existing transit services operated by VVTA, as described in Section 7.1. Base Alternative transit routes and operating statistics are summarized in Table 7-5. This alternative operates 23 vehicles in peak service.

PLAN ALTERNATIVE

The Plan Alternative for the Victor Valley, as shown in Figure 7.6, is coded and modeled in coordination with the Plan Transit Alternative for the San Bernardino Valley. This alternative includes the Base Alternative transit routes with headways equilibrated to serve the Year 2035 transit demand.

Additional circulator services are also included to provide coverage to newly developed areas of the Victor Valley.

The Plan Alternative also introduces express bus services between the Victor Valley and San Bernardino Valley. Two express bus routes are coded, providing services between major activity centers and transfer locations in Victor Valley and two destinations in San Bernardino Valley: the Palm Station of the E Street BRT route in San Bernardino; and the Metrolink Station and Ontario Mills Mall in Rancho Cucamonga. These express bus routes are displayed in Figure 7-6.

Plan Alternative transit routes and operating statistics are summarized in Table 7-6. This alternative operates 40 vehicles in peak service.

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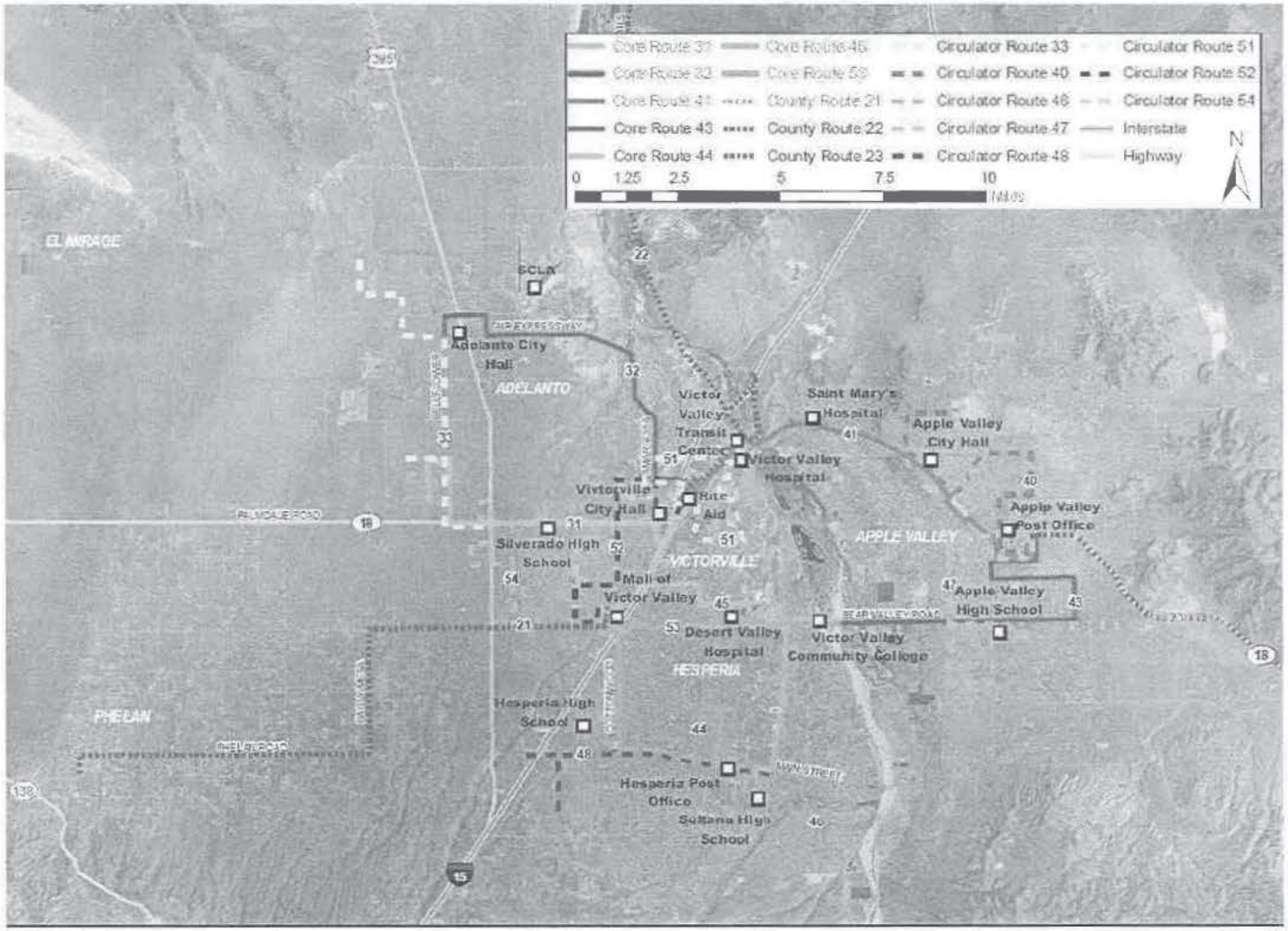
Table 7-5: Year 2035 Base Alternative – Weekday VVTA Transit Service

Route	Description	Headway		Peak Vehicles	VMT	VHT
		Peak	Off-peak			
21	Tri-Community	90	90	1	366	17.5
22	Helendale	120	120	1	385	14.2
23	Lucerne Valley	90	90	1	558	14.6
31	Adelanto-Victorville	60	60	1	313	23.8
32	Adelanto-Victorville North	60	60	2	349	14.9
33	Adelanto Circulator	60	60	2	387	15.0
40	Apple Valley North	60	60	1	323	14.9
41	Apple Valley/Victorville	60	60	1	411	29.1
43	Apple Valley/Victor Valley College	60	30	2	503	20.8
44	Victor Valley Mall/Hesperia	60	60	1	355	29.8
45	Victorville/Hesperia	30	30	3	901	38.9
46	Hesperia Deviation	60	60	1	169	14.8
47	Apple Valley South Deviation	60	60	1	223	14.9
48	Hesperia West	60	60	1	296	15.0
51	Victorville Circulator	60	60	1	174	14.9
52	Victorville/Mall	60	60	1	261	14.9
53	Victor Valley College/Mall	60	30	1	345	28.5
54	Victorville West	60	60	1	240	15.0
Total				23	6,559	351

Source: Hexagon, 2009.



Source: Parsons, 2009.

Figure 7-5: VVTA Baseline Alternative

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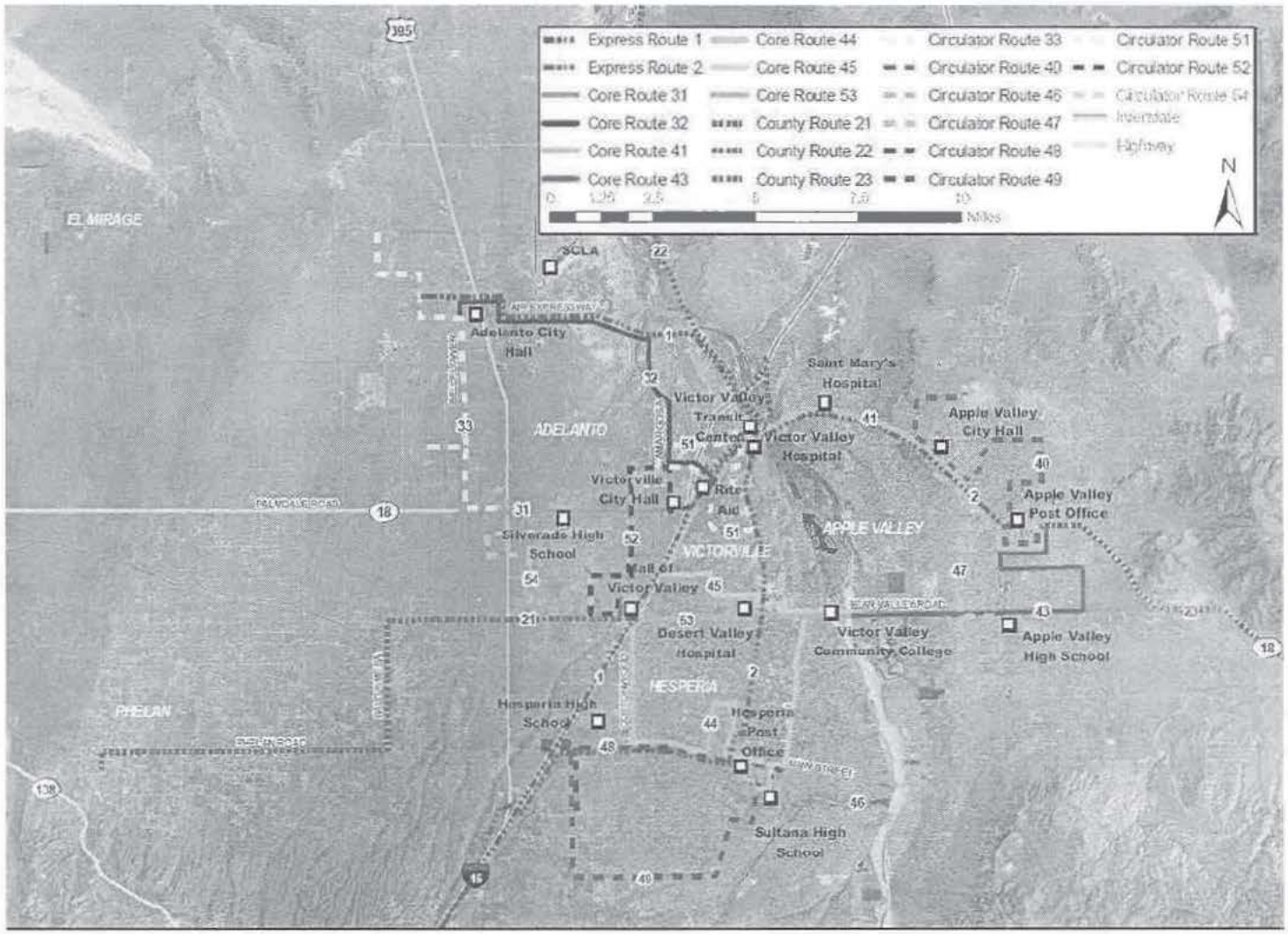

Source: Parsons, 2009.

Figure 7-6: VVTA Plan Alternative

Table 7-6: Year 2035 Plan Alternative – Weekday VVTA Transit Service

Route	Description	Headway		Peak	VMT	VHT
		Peak	Off-peak	Vehicles		
1	Victor Valley-CSU/Rialto	120	180	2	544	20.2
2	Victor Valley-Fontana	120	180	2	706	26.4
21	Tri-Community	90	90	1	366	17.5
22	Helendale	120	120	1	385	14.2
23	Lucerne Valley	90	90	1	558	14.6
31	Adelanto-Victorville	30	30	2	626	32.3
32	Adelanto-Victorville North	20	30	5	830	55.4
33	Adelanto Circulator	45	60	2	435	24.5
40	Apple Valley North	60	60	1	323	14.9
41	Apple Valley/Victorville	30	30	2	821	35.1
43	Apple Valley/Victor Valley College	30	60	2	425	19.7
44	Victor Valley Mall/Hesperia	20	30	3	843	39.1
45	Victorville/Hesperia	15	30	5	1,239	60.5
46	Hesperia Deviation	60	60	1	169	14.8
47	Apple Valley South Deviation	60	60	1	223	14.9
48	Hesperia West	60	60	1	296	15.0
49	South Hesperia Circulator	60	60	1	335	16.5
51	Victorville Circulator	60	60	1	174	14.9
52	Victorville/Mall	30	30	2	523	24.1
53	Victor Valley College/Mall	15	30	3	583	28.2
54	Victorville West	60	60	1	240	15.0
Total				40	10,644	518

Source: Hexagon, 2009.

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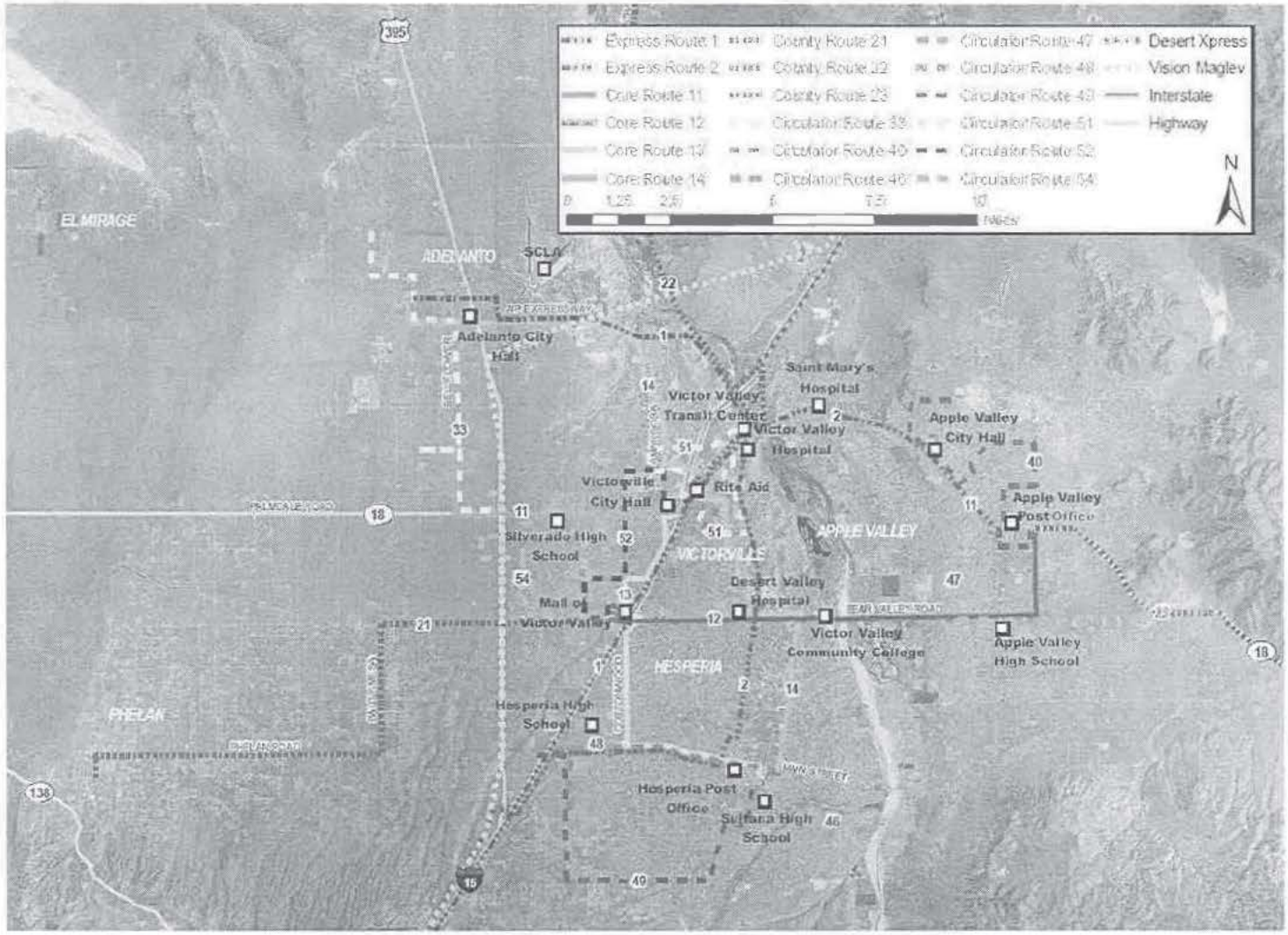
Vision Alternative

The Vision Alternative for the Victor Valley, as shown in Figure 7-7, is coded and modeled in coordination with the Vision Transit Alternative for the San Bernardino Valley. This alternative includes a restructuring of the Core Transit routes to provide more direct service between major activity centers at a higher level of service. Seven Core Transit routes are combined and restructured to create four trunk routes, which are displayed in Figure 7-7.

The Plan Alternative circulator services are maintained to provide coverage to the Victor Valley communities. These transit routes are coded with headways equilibrated to serve the Year 2035 transit demand. Vision Alternative transit routes and operating statistics are summarized in Table 7-7. This alternative operates 42 vehicles in peak service. The fleet requirement and VHT for the Vision Alternative are almost identical to the operating statistics for the Plan Alternative, which allows us to directly compare the ridership and productivity impacts of the revised service plan.



Source: Parsons, 2009.

Figure 7-7: VVTA Vision Alternative

Table 7-7: Year 2035 Vision Alternative – Weekday VVTA Transit Service

Route	Description	Headway		Peak Vehicles	VMT	VHT
		Peak	Off-peak			
1	Victor Valley-CSU/Rialto	120	180	2	544	20.2
2	Victor Valley-Fontana	120	180	2	706	26.4
11	Adelanto/Victorville/Apple Valley	20	30	5	1,382	63.3
12	Hesperia/Apple Valley	15	30	5	1,122	52.6
13	Victorville/Hesperia	30	30	3	893	41.1
14	Adelanto/Victorville/Hesperia	15	30	11	1,795	108.1
21	Tri-Community	90	90	1	366	17.5
22	Helendale	120	120	1	385	14.2
23	Lucerne Valley	90	90	1	558	14.6
33	Adelanto Circulator	45	60	2	435	24.5
40	Apple Valley North	60	60	1	323	14.9
46	Hesperia Deviation	60	60	1	169	14.8
47	Apple Valley South Deviation	60	60	1	223	14.9
48	Hesperia West	60	60	1	296	15.0
49	South Hesperia Circulator	60	60	1	335	16.5
51	Victorville Circulator	60	60	1	174	14.9
52	Victorville/Mall	30	30	2	425	19.5
54	Victorville West	60	60	1	240	15.0
Total				42	10,371	508

Source: Hexagon, 2009.

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7.7 Evaluation of Alternatives

The Year 2035 Victor Valley Transit Alternatives described in the preceding section were tested using the San Bernardino Valley Focus Model. These model runs employed a single set of land use and socioeconomic assumptions to test three transit alternatives. The model was used to produce ridership estimates for each transit route. These ridership estimates were used to estimate system-wide operating requirements and efficiency statistics for the transit alternatives. All costs are expressed in constant Year 2009 dollars.

Base Alternative

The Base Alternative for the Victor Valley includes the existing transit services operated by VVTA, including fixed-route and paratransit services. Ridership, operating statistics and performance statistics for the Base Alternative transit routes are summarized in Table 7-8. This transit alternative, which operates 23 fixed-route vehicles and 25 ADA vehicles in peak service, is forecast to carry over 5,000 daily transit trips in 2035. The annual net operating cost of approximately $8.25 million is comparable to the existing operating cost of VVTA fixed route services.

Table 7-8: Year 2035 Base Alternative – VVTA Performance Measures

	Type of Service					
	Core	County	Circulator	Express	ADA	Total
Peak Vehicles	14	3	6	0	25	48
Vehicle Miles Traveled	3,908	1,309	1,342	0	2,200	8,759
Vehicle Hours Traveled	231	46	75	0	126	477
Daily Riders	3,944	287	425	0	370	5,026
Passenger Miles	14,904	954	1,652	0	4,700	22,209
Riders per Vehicle Hour	17.1	6.2	5.7	-	2.9	10.5
Average Load	3.8	0.7	1.2	-	2.1	2.5
Average Speed	17.0	28.3	18.0	-	17.5	18.3
Gross Annual Cost	$4,174,200	$992,700	$1,352,700	$0	$3,067,800	$9,587,400
Fare Revenue	$623,100	$160,600	$201,900	$0	$350,600	$1,336,200
Net Annual Cost	$3,551,100	$832,100	$1,150,800	$0	$2,717,200	$8,251,200

Source: Hexagon, 2009.

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The system-wide operating statistics include 10.5 passengers per VHT, which is to the statistics reported in the recent *FY 2006-2008 Triennial Performance Audit of Victor Valley Transit Authority*. This level of ridership reflects an average mode share of 0.12%, as compared to a 0.17% mode share for existing transit services. This decrease from the existing mode share is due to the expansion of development in the Victor Valley into areas not currently served by circulator or deviation bus services.

Total net O&M costs for the Base Alternative are summarized in Table 7-9. This alternative will cost over $214 million to operate for the years 2010-2035, after accounting for fare revenue.

The VVTA fleet and capital cost requirements of the Base Alternative are displayed in Table 7-10. The Base Alternative assumes that the standard bus fleet for fixed-route services will be maintained at 30 vehicles through the year 2035, and the ADA fleet will be maintained at 33 vehicles. The vehicle replacement estimates assume that standard buses have a life span of 12 years, and ADA vehicles have a life span of 4 years. Capital cost estimates assume that standard buses cost $400,000 to replace and ADA vehicles cost $85,000 to replace (in constant year 2009 dollars).

Table 7-10 shows that the total capital cost for fleet replacement through the year 2035 for the Base Alternative is almost $45 million. This table also includes an estimate of additional capital costs for the Base Alternative. The additional capital costs for the 2010-2015 time period covers the cost of a new administrative facility in Hesperia. The additional capital costs for the subsequent time periods are estimated as a function of the fleet replacement and expansion costs, similar to the methodology used for estimating Omnitrans capital costs in Chapter 6. The total capital cost for the Base Alternative through the year 2035 is estimated to be over $107 million.

Table 7-9: VVTA Operating and Maintenance Cost – Base Alternative

	2010 - 2015	2016 - 2020	2021 - 2025	2026 - 2030	2031 - 2035	2010 - 2035
Total O&M Costs	$49.5	$41.3	$41.3	$41.3	$41.3	$214.6

Source: Hexagon, 2009.

Table 7-10: VVTA Fleet Requirement and Capital Cost – Base Alternative

	2009	2010 - 2015	2016 - 2020	2021 - 2025	2026 - 2030	2031 - 2035	2010 - 2035
Standard Bus							
Peak	23	23	23	23	23	23	
Spare	7	7	7	7	7	7	
Total Fleet	30	30	30	30	30	30	
Fleet Replacement		15	13	13	13	13	67
Fleet Expansion		0	0	0	0	0	0
Total Standard Purchase		15	13	13	13	13	67
Capital Cost ($M)		$6.00	$5.20	$5.20	$5.20	$5.20	$26.80
ADA Vehicle							
Total Fleet	33	33	33	33	33	33	
ADA Vehicle Purchase		50	41	41	41	41	214
Capital Cost ($M)		$4.25	$3.49	$3.49	$3.49	$3.49	$18.19
Total Fleet	63	63	63	63	63	63	
Total Purchase		65	54	54	54	54	281
Total Fleet Cost ($M)		$10.25	$8.69	$8.69	$8.69	$8.69	$44.99
Other Capital Costs ($M)		$19.00	$10.86	$10.86	$10.86	$10.86	$62.43
Total Capital Cost ($M)		$29.25	$19.54	$19.54	$19.54	$19.54	$107.42

Source: Hexagon, 2009.

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Plan Alternative

The Plan Alternative for the Victor Valley includes an improved level of service on existing Core Transit routes operated by VVTA, increased circulator service to newly developed areas of Victor Valley, and new express bus service to the San Bernardino Valley. Ridership, operating statistics and performance statistics for the Plan Alternative transit routes are summarized in Table 7-11. This transit alternative, which operates 40 fixed-route vehicles and 25 ADA vehicles in peak service, is forecast to carry approximately 9,100 daily transit trips in 2035, which is 82 percent higher than the ridership forecast for the Base Alternative. This ridership includes approximately 300 daily trips between the Victor Valley and San Bernardino Valley on new express bus services. The annual net operating cost of $10.46 million for the Plan Alternative represents a 27% increase over the Base Alternative costs.

The system-wide operating statistics for the Plan Alternative, including 14.6 passengers per VHT, is a modest improvement over the productivity rating for the Base Alternative. This level of ridership reflects an average mode share of 0.21%. While this mode share

Table 7-11: Year 2035 Plan Alternative – VVTA Performance Measures

	Type of Service					
	Core	County	Circulator	Express	ADA	Total
Peak Vehicles	27	3	6	4	25	65
Vehicle Miles Traveled	6,695	1,309	1,390	1,250	2,200	12,844
Vehicle Hours Traveled	333	47	74	47	126	627
Daily Riders	7,159	352	337	931	370	9,149
Passenger Miles	28,105	1,088	1,318	15,251	4,700	50,463
Riders per Vehicle Hour	21.5	7.5	4.6	20.0	2.9	14.6
Average Load	4.2	0.8	0.9	12.2	2.1	3.9
Average Speed	20.1	27.7	18.9	26.8	17.5	20.5
Gross Annual Cost	$6,041,000	$1,014,200	$1,334,300	$728,300	$3,067,800	$12,185,600
Fare Revenue	$901,700	$164,100	$199,200	$108,700	$350,600	$1,724,300
Net Annual Cost	$5,139,300	$850,100	$1,135,100	$619,600	$2,717,200	$10,461,300

Source: Hexagon, 2009.

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represents a significant improvement over both the existing mode share (0.17%) and the Base Alternative mode share (0.11%), it is still very small in comparison to the mode shares observed in more densely populated areas, such as the existing 0.8% mode share in the San Bernardino Valley.

Total net O&M costs for the Plan Alternative are summarized in Table 7-12. This alternative will cost over $243 million to operate for the years 2010-2035, after accounting for fare revenue.

The VVTA fleet and capital cost requirements of the Plan Alternative are displayed in Table 7-13. The Plan Alternative assumes that the standard bus fleet for fixed-route services will grow from 30 vehicles to 49 vehicles by the year 2035, and the ADA fleet will be maintained at 33 vehicles. The vehicle replacement and capital cost estimates use the same assumptions described for the Base Alternative.

Table 7-13 shows that the total capital cost for fleet replacement through the year 2035 for the Plan Alternative is over $56 million, which represents a 26% increase over the fleet capital costs for the Base Alternative. This table also includes an estimate of additional capital costs for the Plan Alternative. The additional capital costs for the 2010-2015 time period covers the cost of a new administrative facility in Hesperia. The additional capital costs for the subsequent time periods are estimated as a function of the fleet replacement and expansion costs, similar to the methodology used for estimating Omnitrans capital costs in Chapter 6. The total capital cost for the Plan Alternative through the year 2035 is estimated to be over $131 million, which represents a 22% increase over the capital costs for the Base Alternative.

Table 7-12: VVTA Operating and Maintenance Cost –Plan Alternative

	2010 - 2015	2016 - 2020	2021 - 2025	2026 - 2030	2031 - 2035	2010 - 2035
Total O&M Costs	$50.8	$44.8	$47.0	$49.2	$51.4	$243.3

Source: Hexagon, 2009.

Table 7-13: VVTA Fleet Requirement and Capital Cost – Plan Alternative

	2009	2010 - 2015	2016 - 2020	2021 - 2025	2026 - 2030	2031 - 2035	2010 - 2035
Standard Bus							
Peak	23	28	32	35	38	40	
Spare	7	7	7	8	8	9	
Total Fleet	30	35	39	43	46	49	
Fleet Replacement		15	13	15	16	18	77
Fleet Expansion		5	4	4	3	3	19
Total Standard Purchase		20	17	19	19	21	96
Capital Cost ($M)		$8.00	$6.80	$7.60	$7.60	$8.40	$38.40
ADA Vehicle							
Total Fleet	33	33	33	33	33	33	
ADA Vehicle Purchase		50	41	41	41	41	214
Capital Cost ($M)		$4.25	$3.49	$3.49	$3.49	$3.49	$18.19
Total Fleet	63	68	72	76	79	82	
Total Purchase		70	58	60	60	62	310
Total Fleet Cost ($M)		$12.25	$10.29	$11.09	$11.09	$11.89	$56.59
Other Capital Costs ($M)		$19.00	$12.86	$13.86	$13.86	$14.86	$74.43
Total Capital Cost ($M)		$31.25	$23.14	$24.94	$24.94	$26.74	$131.02

Source: Hexagon, 2009.

VISION ALTERNATIVE

The Vision Alternative for the Victor Valley includes a restructuring of the Core Transit routes to provide more direct service between major activity centers at a higher level of service. Ridership, operating statistics and performance statistics for the Vision Alternative transit routes are summarized in Table 7-14. This transit alternative, which operates 42 vehicles in peak service, is forecast to carry approximately 9,900 daily transit trips in 2035, which is eight percent higher than the ridership forecast for the Plan Alternative. The annual operating cost of $10.31 million for the Vision Alternative is slightly lower than the Plan Alternative costs. This indicates that the revised service plan in the Vision Alternative will generate a reasonable improvement in transit ridership for a slightly lower cost.

The system-wide operating statistics for the Vision Alternative, including 16.1 passengers per VHT, is a significant improvement over the productivity rating for the Base Alternative. This level of ridership reflects an average mode share of 0.25%, which is also a significant improvement over the Plan Alternative mode share (0.21%)

Total net O&M costs for the Vision Alternative are summarized in Table 7-15. This alternative will cost over $241 million to operate for the years 2010-2035, after accounting for fare revenue.

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Table 7-14: Year 2035 Vision Alternative – VVTA Performance Measures

	Type of Service					
	Core	County	Circulator	Express	ADA	Total
Peak Vehicles	24	3	11	4	25	67
Vehicle Miles Traveled	5,192	1,309	2,620	1,250	2,200	12,571
Vehicle Hours Traveled	265	47	132	47	126	617
Daily Riders	7,409	266	941	929	370	9,915
Passenger Miles	31,907	923	3,703	15,352	4,700	56,585
Riders per Vehicle Hour	27.9	5.6	7.1	19.9	2.9	16.1
Average Load	6.1	0.7	1.4	12.3	2.1	4.5
Average Speed	19.6	27.7	19.8	26.8	17.5	20.4
Gross Annual Cost	$4,804,700	$1,014,200	$2,393,100	$728,300	$3,067,800	$12,008,100
Fare Revenue	$717,200	$164,100	$357,200	$108,700	$350,600	$1,697,800
Net Annual Cost	$4,087,500	$850,100	$2,035,900	$619,600	$2,717,200	$10,310,300

Source: Hexagon, 2009.

Table 7-15: VVTA Operating and Maintenance Cost – Vision Alternative

	2010 - 2015	2016 - 2020	2021 - 2025	2026 - 2030	2031 - 2035	2010 - 2035
Total O&M Costs	$50.7	$44.6	$46.6	$48.7	$50.7	$241.3

Source: Hexagon, 2009.

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The VVTA fleet and capital cost requirements of the Vision Alternative are displayed in Table 7-16. The Vision Alternative assumes that the standard bus fleet for fixed-route services will grow from 30 vehicles to 51 vehicles by the year 2035, and the ADA fleet will be maintained at 33 vehicles. The vehicle replacement and capital cost estimates use the same assumptions described for the Base Alternative.

Table 7-16 shows that the total capital cost for fleet replacement through the year 2035 for the Vision Alternative is over $57 million, which represents a 28% increase over the capital costs for the Base Alternative. This table also includes an estimate of additional capital costs for the Vision Alternative. The additional capital costs for the 2010-2015 time period covers the cost of a new administrative facility in Hesperia. The additional capital costs for the subsequent time periods are estimated as a function of the fleet replacement and expansion costs, similar to the methodology used for estimating Omnitrans capital costs in Chapter 6. The total capital cost for the Plan Alternative through the year 2035 is estimated to be over $133 million, which represents a 24% increase over the capital costs for the Base Alternative.

ANALYSIS

The existing ridership in the Victor Valley is very low because the existing development patterns (and socioeconomic profile) of the Victor Valley aren't conducive to a larger transit ridership and the existing transit service is able to attract only transit dependents. Our analysis shows that, while new transit service in the Victor Valley can be designed to improve the productivity of the system, it is not likely to attract significant transit ridership or mode shares similar to transit service in more densely populated areas, such as the San Bernardino Valley.

Table 7-16: VVTA Fleet Requirement and Capital Cost – Vision Alternative

	2009	2010 - 2015	2016 - 2020	2021 - 2025	2026 - 2030	2031 - 2035	2010 - 2035
Standard Bus							
Peak	23	28	33	36	39	42	
Spare	7	7	7	8	8	9	
Total Fleet	30	35	40	44	47	51	
Fleet Replacement		15	13	15	17	18	78
Fleet Expansion		5	5	4	3	4	21
Total Standard Purchase		20	18	19	20	22	99
Capital Cost ($M)		$8.00	$7.20	$7.60	$8.00	$8.80	$39.60
ADA Vehicle							
Total Fleet	33	33	33	33	33	33	
ADA Vehicle Purchase		50	41	41	41	41	214
Capital Cost ($M)		$4.25	$3.49	$3.49	$3.49	$3.49	$18.19
Total Fleet	63	68	73	77	80	84	
Total Purchase		70	59	60	61	63	313
Total Fleet Cost ($M)		$12.25	$10.69	$11.09	$11.49	$12.29	$57.79
Other Capital Costs ($M)		$19.00	$13.36	$13.86	$14.36	$15.36	$75.93
Total Capital Cost ($M)		$31.25	$24.04	$24.94	$25.84	$27.64	$133.72

Source: Hexagon, 2009.

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CHAPTER 8 RURAL TRANSIT AGENCIES

8.1 FUTURE CONDITIONS

According to regional growth forecasts the majority of the rural areas of the county are forecasted to grow at a rapid pace from 2005 levels over the next 25 years. However the ability and desire to attract and maintain jobs and the necessary corresponding population is currently being debated. Rural transit agencies currently operate in a difficult environment that provides significant challenges to providing mobility and accessibility to transit dependent populations. In 2007, SANBAG prepared the *Public Transit-Human Services Transportation Coordination Plan* for San Bernardino County to identify service improvements for five rural areas of the county. It is anticipated that many of the challenges that result from the geographic isolation of these areas will be addressed in the upcoming *Rural Connectivity Study*. Growth in these areas will present new opportunities for transit as new employment centers are created and new populations arrive, but it is anticipated that these opportunities are best addressed in a short range planning process. The long range transit plan for the rural areas focuses on maintaining existing transit service and funding sources over the life of the plan.

Table 8-1 provides population and employment data by city boundaries prepared by SCAG in 2007. Barstow, served by Barstow Area Transit (BAT) and Twentynine Palms, served by Morongo Basin Transit Authority (MBTA), are expected to grow and a rapid rate, however this growth is tied to the potential growth of the nearby military installations of Fort Irwin and Twentynine Palms. Yucca Valley, also served by MBTA, is also expected to grow as nearby Twentynine Palms expands. The city of Big Bear, served by the Mountain Area Regional Transit Authority (MARTA), is expected to grow as a tourist destination, providing transit opportunities to both tourists and employees of the ski resorts and hotels. Needles, served by Needles Area Transit (NAT), is expected to maintain existing levels of population and employment.

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Table 8-1: Population and Employment Growth

CITY	Population 2005	Population 2035	% Growth	Households 2005	Households 2035	% Growth	Employment 2005	Employment 2035	% Growth
Barstow city	23,601	69,533	195%	8,123	25,079	209%	12,209	35,527	191%
Big Bear Lake city	6,173	10,657	73%	2,514	4,466	78%	5,887	11,546	96%
Needles city	5,622	5,840	4%	2,134	2,246	5%	3,049	3,049	0%
Twentynine Palms city	27,442	69,823	154%	7,139	19,205	169%	3,020	14,786	390%
Yucca Valley town	20,155	37,485	86%	7,869	16,856	114%	4,313	11,308	162%

Source: SCAG, 2009

8.2 FUTURE SERVICE

The Long Range Transit Plan for the rural areas of the county provides the focus of SANBAG and rural transit operators on the maintenance of existing transit services and funding sources. In addition to maintaining the current level of transit service over the next 25 years, opportunities identified include increased transit service to military installations, as well as increased mobility and accessibility for health and human services, both of which will be looked at in further detail in the short range planning process in these areas.

FLEET REQUIREMENTS

The majority of the rural operators fleet consists of 8 passenger to 24 passenger paratransit vehicles. MARTA operates one 30 passenger coach vehicle. The current vehicle fleet for the rural operators and replacement cost over the next 25 years is shown in Table 8-2. The replacement assumes a 12-year service lifespan and Year 2009 dollars.

OPERATING COST

Gross operating costs, included ADA service, for the rural operators are shown in Table 8-3. The costs assume similar levels of service from current conditions and costs are shown in Year 2009 dollars. Net operating costs are shown in Table 8-4 with the respective fare recovery ratios.

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Table 8-2: Fleet Size, Average Age and Replacement Cost

	Fleet Size	Average Vehicle Year	Fleet Replacement Cost ($M)
NAT	7	2004	1.4
MBTA	31	2003	6.2
MARTA	30	2002	6
BAT	29	2003	5.8

Source: Parsons, 2009.

Table 8-3: Gross Operating Costs

	FY2008	FY 2010-2035
NAT	295,991	7,399,769
MBTA	2,074,516	51,862,895
MARTA	2,357,023	58,925,579
BAT	2,884,999	72,124,965

Source: Parsons, 2009.

Table 8-4: Net Operating Costs

	FY 2008	FY 2010-2035	FY 2008 Farebox Recovery Ratio
NAT	262,596	6,564,899	11.28%
MBTA	1,692,886	42,322,146	18.40%
MARTA	2,110,972	52,774,290	10.44%
BAT	2,544,276	63,606,894	11.58%

Source: Parsons, 2009.

CHAPTER 9 PUBLIC OUTREACH

9.1 PUBLIC WORKSHOPS

SANBAG convened a series of community workshops and agency outreach efforts regarding the LRTP for San Bernardino County. The initial public workshop efforts occurred between July 18 and August 1, 2006. City outreach meetings were held in May 2009 with city staff of jurisdictions with identified BRT corridors. Final public outreach efforts were held August 18 -20, 2009. Complete Public Workshop summaries are provided under separate cover.

INITIAL PUBLIC WORKSHOPS

SANBAG's initial public outreach efforts in 2006 were held in conjunction with workshops on the Redlands Passenger Rail Extension. The purpose of the initial workshops was to inform community members about the potential transportation options being considered for the County of San Bernardino, and in particular the San Bernardino Valley, as well as to receive community feedback on the LRTP Alternatives.

The workshops occurred in the San Bernardino Valley and approximately 85 community members signed in as participants in the workshops. Participants were encouraged to provide both verbal and written comments, and overall impressions were primarily positive. Meeting materials included separate workshop booklets and discussions were provided for each subject.

Each workshop involved self-paced visits, facilitated by agency and consultant staff, where participants could view, discuss and provide input on options for transit technologies, routing, stations and proposed "transit villages" that could include housing, retail centers, offices, entertainment venues and parks near each station.

OVERALL IMPRESSIONS

In both the written and verbal comments, participants provided many positive responses. They indicated strong support for completing a Long Range Transit Plan and phasing projects for development. Participants expressed considerable frustration about traffic and were interested in options that would best address current conditions. Some expressed frustration with the length of time it takes to get mass transit projects built and wanted the projects delivered sooner.

While there was overall support for the local bus service, many participants believed that frequency, hours of service and bus stops needed to be improved. There were also requests for more information on the service.

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In terms of technologies, participants' preferences ranged from bus transit, to bus rapid transit, to passenger rail, to combinations of these modes. Others expressed interest in energy efficient technologies such as low emission, self-generating, electric, and hybrid vehicles. A few expressed interests in Maglev or monorail technologies, but others expressed concerns about their feasibility and cost.

Participants reviewed five (5) alternatives for long range transit plan. The five transit alternatives include:

- Year 2035 Baseline
- Year 2035 Planned
- Transit Vision #1 – Bus and Bus Rapid Transit Emphasis
- Transit Vision #2 – Rail Emphasis
- Transit Vision #3 – Ultimate

As part of the LRTP Process, the three Vision Alternatives were combined into one Vision Alternative, combining the best performing elements of each.

9.2 City and Agency Outreach

During May of 2009, SANBAG held City outreach meetings at the SANBAG office with jurisdictions with premium transit corridors identified. Representatives from SANBAG's transit department and planning department staff were in attendance as well as OMNITRANS staff. Topics of discussion included a review of the identified Transit Corridors, growth forecasts for the each city in the travel demand model, an update of the SB 375 process, land use plans and policies, Federal Transit Administration guidelines for project development and OMNITRANS role in the development of the corridors. Overall, most of the city staff supported the transit corridors identified. Almost all of the planned development areas expected to accommodate future growth were deemed to be satisfactorily served in the plan. The City of Ontario requested that Haven Avenue also be identified as a potential transit corridor, and this request was analyzed and included in the LRTP.

9.3 Final Public Meeting(s)

SANBAG hosted Final Public Meetings on August 18, 19, and 20, 2009. The purpose of the meetings was to provide an update on the planning process and new developments, review the potential alternatives for expanding the transit system in the County of San Bernardino, and in particular the East San Bernardino Valley, the West San Bernardino Valley, and the Victor Valley, and answer questions and receive feedback from the community.

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Approximately 36 community members signed in as participants in the public meetings. Each public meeting was composed of two parts: a self-paced open house featuring informational exhibits, followed by a presentation and group discussion. Participants learned about the purpose, need, process and objectives of the LRTP, and viewed and discussed potential alternatives, or scenarios, of transit infrastructure improvements from the LRTP. Participants also viewed illustrations of new types of development and transit technologies proposed in the LRTP, including transit oriented development (TOD) and bus rapid transit (BRT).

Afterwards, a presentation was given expanding on topics covered in the open house exhibits. Each meeting concluded with a discussion session where participants shared questions or comments. During this portion of the meeting, project team members recorded discussion points on a large piece of paper at the front of the room. Participants also provided written feedback via a comment card.

Overall Impressions

The greatest number of questions and comments from participants addressed BRT fuel efficiency and technology. Participants also expressed concerns about how new transit technologies and route changes would impact street configuration and traffic flow. Additionally, many participants inquired as to how LRTP improvements would be funded, and specifically, how much of the cost is covered by local, state and federal sources. Participants also asked questions about Senate Bill (SB) 375 and how it affects the LRTP. Finally, participants had specific questions about the plan itself, including routing and placement of stations.

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CHAPTER 10 FINANCIAL PLAN

10.1 FUNDING SOURCES AND AMOUNTS

FEDERAL TRANSIT FUNDS

The Federal Public Transportation Act of 2005 authorizes funding under the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) legislation for FY 2005 through FY 2009. The Federal Transit Administration (FTA) administers these funds primarily on a formula basis.

Federal funds for San Bernardino County are allocated under three separate urbanized areas in addition to the rural area allocations. Urbanized area funds are made available to individual transit operating agencies that are designated recipients or grantees. Rural transit systems receive funds from the FTA through the State of California Department of Transportation (Caltrans).

Revenue estimates have been provided for four Federal transit programs, as summarized in the following.

- **Federal 5317 New Freedom Program** The FTA Section 5317 New Freedom Program began in FY 2006. This program provides funding for new transportation services beyond those required by the Americans with Disabilities (ADA). Development of a plan to coordinate transportation services with other federal human service programs is required prior to use of these program funds. Funds are allocated using a formula based on the disabled population of an area (using 2000 Census data), with 60% going to urbanized areas with population greater than 200,000, 20% to states for use in small urban areas with populations less than 200,000, and 20% for use in rural areas.
- **Federal 5316 Job Access & Reverse Commute (JARC) Program** The FTA Section 5316 Program provides maximum flexibility to job access projects designed to meet the needs of individuals who are not effectively served by public transportation. The program requires coordination between public, private, and non-profit transportation providers and other federal programs in the JARC Program, New Freedom Program, and Elderly and Disabled Program. The JARC Program was changed in FY 2005 to a formula program from a competitive discretionary program. Funds are allocated using a formula based on the number of eligible low-income and welfare recipients in each area (using 2000 Census data), with 60% going to urbanized areas with population greater than 200,000, 20% to states for use in small urban areas with populations less than 200,000, and 20% for use in rural area.
- **Federal Section 5311 Rural Program** The FTA Section 5311 Program provides formula funds for rural transit systems. Funds are allocated based on population with land area receiving 20% of these funds as of FY 2005.
- **Federal Section 5307 Urbanized Area Formula Program** The FTA Section 5307 Program provides formula funds to urbanized areas with population of 200,000 or more according to the 2000 Census. Funds are apportioned based on formula involving population, population density, and revenue miles. Categories include fixed guideway incentive and basic bus/urbanized areas, as well as new programs for small-urbanized areas, small transit intensive cities, and growing and high-density states.

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- **Federal Section 5309 Rail and Fixed Guideway Modernization Program** The FTA Section 5309 Program provides formula funds for the modernization and improvement of existing fixed guideways. A fixed guideway refers to any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. Funds are allocated by a statutory formula to urbanized areas with rail systems that have been in operation for at least seven years.

Federal funds are also available for fixed guideway Transit Projects in the form of Federal 5309 New/Starts Small Starts funds. This competitive funding source is distributed by project ranking and is an expected source of funding for BRT corridors and new rail projects. Flexible funds are also available to transit providers in the form on Surface Transportation Program (STP) funds and Congestion Management and Air Quality (CMAQ) funds.

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STATE FUNDS

Transportation Development Act (TDA) funds include revenues available from the Local Transportation Fund (LTF) and the State Transit Assistance (STA) Fund. STA has been suspended by the State and is not included in the forecasts. The LTF is derived from a ¼ cent of the general sales tax collected statewide and returned to source-county by the State Board of Equalization (BOE).

MEASURE I FUNDS

Measure I is a half-cent sales tax collected throughout San Bernardino County for transportation improvements.
San Bernardino County voters first approved the measure in November 1989 to ensure that needed transportation projects were implemented countywide through 2010. In 2004, San Bernardino County voters overwhelmingly approved the extension of the Measure I sales tax, with 80.03% voting to extend the measure through 2040.

SANBAG administers Measure I revenue and is responsible for determining which projects receive Measure I funding, and ensuring that transportation projects are implemented.

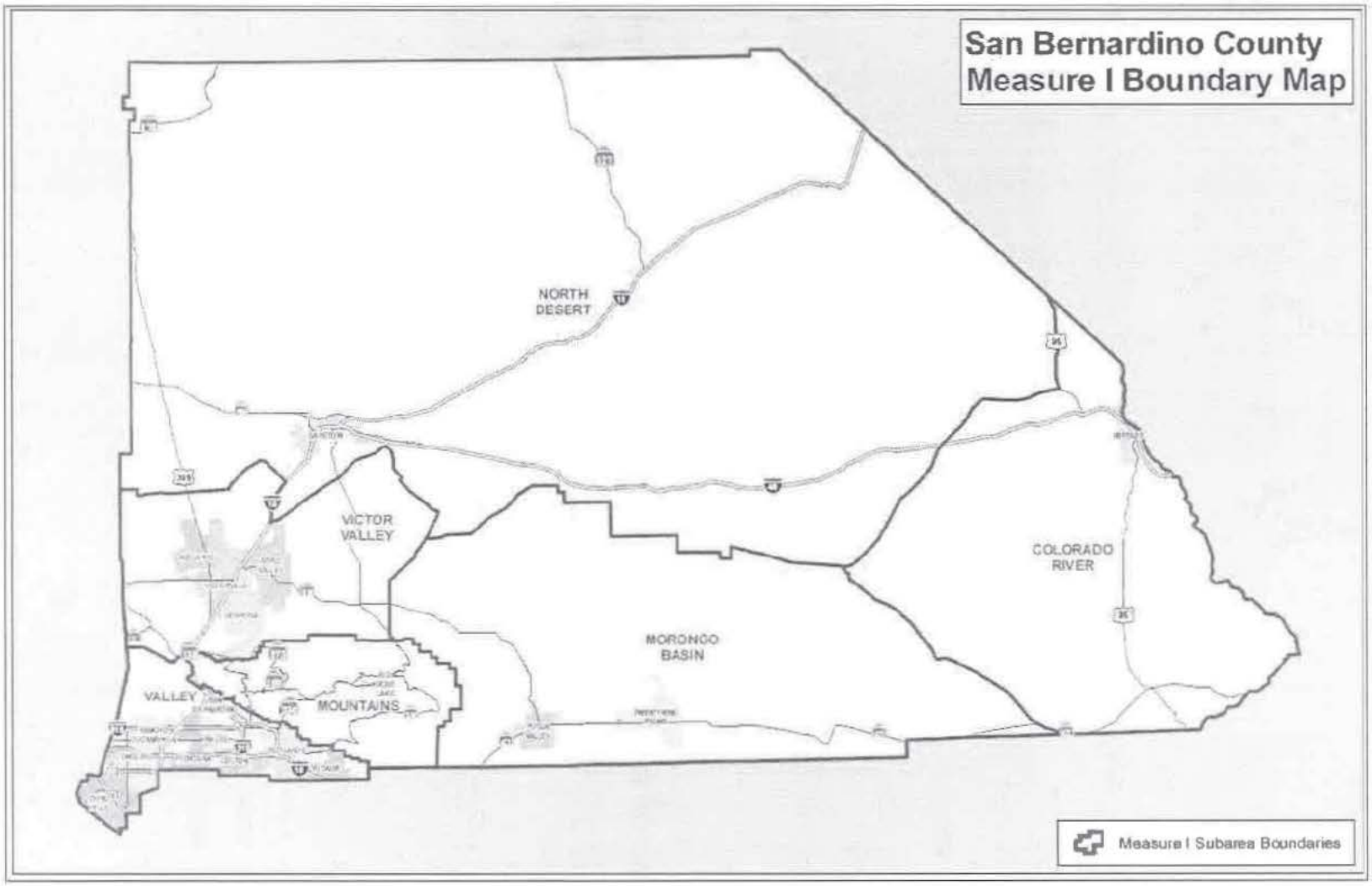
Funds are distributed geographically, with the county divided into subareas, shown in Figure 10-1. Table 10-1 summarizes measure I funding. Measure I funding for Express bus/BRT modes is currently funded at 5% of total revenues and this amount can increase 5% to 10% in 2015, if approved by SANBAG.

10.2 POSSIBLE INNOVATIVE FINANCIAL STRATEGIES

Private Public Partnerships

U.S. DOT cites the following as the six basic examples of PPP with some transit applications.

- **Private Contract Fee Services** – This is a broad arrangement where the private sector can be responsible for a variety of services, such as operations and maintenance (O&M) and management and administration of a public endeavor. Foothill Transit is a good example of this arrangement for overall transit outsourcing by a public entity. A classic transit industry practice is private operation of certain services – specific routes or types of bus service; paratransit services; heavy maintenance activities or even fare and revenue collection and management. In Southern California, Los Angeles County contracts for part of the Catalina Ferry service as part of its public transit program. The Metrolink system contracts out all operations for the SCRRA commuter rail operation.



Source: SANBAG, 2009.

Figure 10-1: Measure I Sub Areas

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Table 10-1: Measure I Funding Estimates

	Estimate of Measure I Revenues for Valley and Mountain/Desert Transit Programs ($1,000)							
	Valley Transit Programs			Mountain/Desert Senior and Disabled Transit				
	Metrolink	Express Bus/BRT	S&D Transit	Colorado River	Morongo Basin	Mtns.	No. Desert	V. Valley
FY 10/11 - FY 14/15	34,678	8,669	34,678	67	564	486	652	2,922
FY 15/16 - FY 24/25	77,441	34,819	77,441	111	1,401	1,213	1,390	7,932
FY 25/26 - FY 34/35	99,890	62,432	99,890	98	2,075	1,808	1,688	13,143
TOTAL	**212,009**	**105,920**	**212,009**	**276**	**4,040**	**3,508**	**3,730**	**23,997**

Source: SANBAG, 2009.

- **Design-Build (DB) –** This arrangement combines two services that are traditionally separated into a single process, project design and project construction, into a single continuous contract. The public will retain ownership of the facility and operate the facility. The Minneapolis Hiawatha LRT is an example of this concept. In Southern California, the Los Angeles County MTA's Mid-Cities Exposition LRT and Gold-Line LRT are both examples of this arrangement. Both Houston's MTA and Denver's RTD are advancing transit projects under this concept.

- **Design-Build-Operate-Maintain (DBOM)** - This arrangement is a further development of the DB into one where the private entity designs, builds, operates and maintains the facility under contract to the public sector. The public sector is responsible for financing the project. The 21-miles Hudson-Bergen LRT in New Jersey is a DBOM project.

- **Long-Term Lease Agreement** – In this arrangement typically a public facility is leased to a private firm for a specific period and considerations, such as an up-front concession fee or long-term payments. The private firm collects revenues and maintains and operates the facility to set standards. Fees or payments charged to users reimburse the private investment. There is no good U.S. transit example for this arrangement. It has only been applied to existing toll roads sold to private investors and some airport cases (e.g. the Chicago Skyway, the Indiana Toll Road and proposals to sell off the Pennsylvania Turnpike and Florida's Alligator Alley Toll Road and recently the City of Chicago turned Midway Airport over to private investors under this concept.)

- **Design Build-Finance-Operate (DBFO)** – This concept goes one step beyond the DBOM example and requires to private sector to finance the project as well. Again, user fees, typically toll road charges reimburse the private investors over a set time-period. There could be public sector grants to the project from taxes, right-of-way or in-kind support. In the U.S. this example has been applied to the Dulles Airport Toll Road in Northern Virginia. Florida is proposing several road projects that fall under this concept (I-595 HOT lanes and the Port of Miami tunnel). There is no transit example in the U.S. However, a foreign example is in Dublin, Ireland where the region's LRT system (LUAS) is being developed under this arrangement. The government

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guarantees a return to the private sector based on an assumed cost to build and operate the facility. If farebox or other revenues collected by the private operator fall below set indicators then government subsidies the difference. Financing and O&M costs are borne by a private entity that designed and built the system to government specifications as set-up by the Dublin Transit Office (DTO) and the Rail Procurement Agency (RPA). At the end of a period (30-years) the facility reverts to full public control. Tax laws and government practices influence the viability of this arrangement.

- **Build-Own-Operate (BOO) –** In this arrangement the government grants the private sector the right to design, build, operate, maintain and own a facility in perpetuity (or a very long-term). Usually the private sector initiates this concept. The Las Vegas Monorail system is an example of this concept and is owned and controlled by the Las Vegas Monorail Company, a private venture, but incorporated as a non-profit entity, permitting government assistance in bond financing by the State of Nevada. BOO was common in the late 19th and early 20th centuries to develop railroads and street car systems throughout the United Sates.

Facility Naming Rights

Naming rights are an interesting and innovative method to raise capital funds, long-term O&M funds or a blend of the two for transit projects. Common in the sports world internationally through naming rights to stadiums and sponsorships of all types of highly visible sporting events, public transit in the U.S. and abroad have sought to use techniques from this concept in the development of new transit facilities and to maintain older ones. Below is an overview of some specific examples.

- **Dubai Metro – United Arab Emirates[12] –** Dubai's Roads and Transportation Authority (RTA) will open the first line of the Metro rail system in late 2009 and the second in 2010 with continuous expansion programmed through the decade. The system capital costs are estimated at $5-6 billion.

  Twenty-three (23) of the 47 stations on the two lines were opened for naming rights purposes. The RTA gained nearly $500 million in revenue from sponsorships, which in some cases included the private sector actually building the stations. Many major developers along the line were successful bidders. Terms and conditions of the arrangements were not open and it is not clear how long the rights are in place or how payments are structured. Needless to say the real estate development climate and need for development exposure are important in influencing the number of bidders and their investments in the corridor or at a specific location. Thus, shopping developer interests bid for stations near their properties and office space, banks, airline and hotel interests did likewise, tying a station to their buildings or commercial activity.

- **Cleveland Silver Line – Euclid Avenue BRT – Cleveland Ohio [13]–** In 2008, the Regional Transportation Authority (RTA) for greater Cleveland developed a substantial 10-mile BRT facility through the city's eastside that serves the region's main hospital complex. The Cleveland Clinic Foundation and University Hospitals of Cleveland have sponsored the facility now known as the "Health Line." There is a 25-year agreement that will generate $250,000 yearly in revenue to help RTA

[12] Dubai Gulf News, 22 December 2008
[13] The RTA Letter – Volume 91, Issue 2

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maintain the corridor and provide amenities. The total sponsorship will contribute $6.25 million toward facility operating and maintenance costs. There is a special logo for the facility and it will appear on the 32-stations and 21-buses dedicated to the corridor.

- **TECO Streetcar –Tampa, Fl**[14] – Tampa Electric Company (TECO) is paying $1 million over 10-years for naming rights to the City's 3.5 mile streetcar system. Time-Warner and Sun-Trust Bank both obtained car naming rights for $250,000 each for 10-years. The streetcar system opened in 2002 and is operated by the Hillsborough Area Regional Transit (HART) Authority, but owned by a special non-profit foundation. Stations on the line are available for individual sponsorship of $100,000 annually for a 10-year term. Purchasers had 3-years to complete payment to HART. The trolley website identifies sponsors. Rights have been sold at 8 of the 10-stations. The line connects Tampa's business district with its convention center, port and tourist oriented Ybor City historic district. Because the trolley is under the control of a non-profit foundation, sponsors get state tax credit for 50% of their contribution.
- **Las Vegas Monorail – Las Vegas Convention Center Station – Las Vegas, NV**[15] - Nextel Communications sponsors the Convention Center station of the privately funded and operated Las Vegas Monorail system. The naming rights cost $50 million for 12-years at the nation's largest Convention Center.
- **River Rail – Little Rock, Arkansas**[16] – Opened in 2004, this 2.5 mile street car has 11 stations. The entire line, individual stations and streetcar vehicles are available for sponsorship. Naming rights for the entire line are available for $1 million for a 10-year period; street cars cost $250,000 each for a 10-year period; and stations cost $100,000 each for a 10-year period. To date only 3-stations have been successfully tendered. Sponsors will be able to have private use of the facility a few times a year for special events.
- **Rapid Ride Bus Line – Albuquerque, NM**[17] – In 2004 the transit authority opened an 11-mile BRT with 28-stops. Sponsorship of 23 individual stops is on offer, but there has been limited interest to date. Funds will go to defray O&M costs.

ADVERTISING AND SPONSORSHIPS

Some transit systems have created very innovative and aggressive advertising campaigns with fixed guideway elements. Some examples of innovative advertising efforts are cited below.

- **The Trolley – Galveston, Texas** – The system yields about $100,000 monthly in advertising revenue from car interiors and exteriors. Vehicle wraps are also available. The Trolley serves a very active tourist area and market.
- **Tri-Met - Street Car and LRT - Portland, Oregon** – Sponsorships raise nearly $200,000 toward O&M costs of $2.4 million annually. Streetcar sponsorship is $15,000 yearly with the sponsor's name and logo on the vehicle. A station sponsorship is $400 per month, or $500 a month for two stations. The sponsor's name and logo appear on the station.

[14] Toronto Transit Commission (TTC), August 28, 2008, Report – Sale of Naming Rights for TTC Stations and Transit Lines.
[15] Ibid
[16] Ibid
[17] Ibid

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Bulk Ticket Sales

In Seattle, one of the ideas to obtain revenue for a new street car line was to offer bulk sales to institutions and users along the line to raise fare box revenues for the new street car. The report noted that typically these are system-wide efforts, but given the nature of the transit line, specific sites might be interested in a street car specific prepaid bulk fare arrangement. They noted that when coupled with changes in parking policies and parking rates, the fare program could both induce transit ridership and raise revenues. The study cited the following[18]:

- **The Trolley – Galveston, Texas -** The University of Texas Medical Center pays the Galveston Trolley $250,000 annually for free service to patients and employees. The Port of Galveston pays $300,000 annually for passes on the trolley for cruise ship passengers to tour the city. Merchants and social service agencies along the corridor also buy tickets for customers and employees.
- **Memphis Trolley – Memphis, Tennessee** – The Convention Center purchases bulk tickets for convention attendees allowing them to use the streetcar which links the convention center and the city's tourist area along Beale Street. Memphis is not a major convention destination and revenue has not been great.
- **University Pass Sales – varied sites –** Several universities such as the University of Colorado in Boulder, the University of Washington in Seattle, and an example from Halifax, Nova Scotia were cited for bulk pass sales to colleges. These bulk sales can be system-wide or limited to one facility or a specific shuttle service. The University of Washington combined bulk sales with changes in on-campus parking policies resulting in a surge in transit use. Recently the University of Miami (Florida) Medical Center undertook a similar program, with increases in parking fees and bulk purchase of transit passes, resulting in increased transit use.

Operating Endowment

This is an unusual arrangement where a large amount of capital is set aside with interest and other earnings dedicated towards operating the transit line or public facility. Extensively used at universities, colleges and charitable institutions, use for public transit service is innovative. A business improvement district (BID) could act as a foundation or be a major source of endowment funds. The prime example is the endowment set-up for Tampa's TECO streetcar.[19]

- **TECO Streetcar –Tampa, Fl** – Tampa Electric Company (TECO) established a non-profit foundation to operate the street car. As a non-profit charitable foundation there are a number of tax benefits to this arrangement. A separate board governs the operation, which is contract to the local public transit operator, HART. An $8 million endowment was created to cover O&M costs after accounting for other revenues. Contributions to the foundation were tax-deductible and came from major corporate sources. Endowment income is dedicated towards system O&M costs. The concept has had success, but recently O&M costs are exceeding endowment income and the foundation has used principal to maintain service[20].

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[18] Michael Mann, City of Seattle Office of Policy and Management, Summary of Financing Options for South Lake Union Streetcar, April 4, 2005

[19] Ibid

[20] Ibid

LEVERAGE REVENUES FOR EQUITY INVESTMENT

The impetus to build street cars and downtown transit malls or guideways is often connected to urban redevelopment as much as transit service. Therefore, the creation of Program-Related Investments (PRIs) could be a financing vehicle. Improvement beneficiaries or non-profit interest groups can act as investors in the project with promise that the improvement will repay the private investors. Since these are typically foundations or other non-profit groups – long-term repayment of private loans or other equity can be structured to guarantees financial returns at a lower cost than other financing mechanisms. The interest groups can use the benefit of the improvement in a faster and less costly way than typical financing. Usually non-profit foundations invest in housing, historic buildings, open space, conservation areas, etc. But transit investment could be a use of these instruments. A BID could act as the investor. In Houston and Philadelphia, BID's backed bonds that were used in transit improvements created in their districts. Economic development agencies could also carry some of the investment effort. BID's have been important in New York MTA's restoration efforts at many subway stations through financing the improvement. No BID or non-profit investment in a BRT is reported, but the mechanism could help local property owners and other interests to directly invest in improvements that will increase their business and property values through capital investment and improved transit service.[21]

[21] Ibid

10.3 REVENUE FROM DEVELOPMENT AND TRANSIT ORIENTED DEVELOPMENT (TOD)[22]

This description of potential Transit Oriented Development (TOD) schemes is taken from Mass Transit Magazine cited below. It is a concise statement of potential strategies to raise revenue from land use tie-ins and TOD in connection with transit infrastructure development. The 10-points below outline various development opportunities that the authors deemed interesting possibilities for revenue generation in conjunction with new transit facilities.

Overview - One of the most powerful techniques to solve any "gap financing" requirements is to optimize non-tax income generated by government-owned land serving as the TOD site and from any proposed public facilities on site.

LAND LEASES TO DEVELOPERS

Public partners should view their real estate assets as a potential major source of income. Under a land lease arrangement, the government entity, or public partner is able to retain ownership of the project site and also realize any appreciation in land value achieved to date and in the future. Developers like land lease arrangements because they can avoid upfront cash outlays required to purchase a TOD site. Depending on the results of preparing a developer pro forma, the public partner, and their consultant should structure a land lease, which includes up to nine types of land lease payments paid by the selected developer to the public partner, the land owner. The nine types of land lease payments include: 1)

[22] A 10-Part TOD Finance Plan, Mass Transit Magazine June 2007 by John Stainback, President/CEO of Stainback Public/Private Real Estate, LLC (SPPRE) and. Will Reed, Vice President for finance with SPPRE.

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construction rent, 2) base rent, 3) index rent, 4) participation rent, 5) participation in any sale proceeds, or refinancing, 6) maintenance, operation and security (MOS) payment, 7) home-run insurance, 8) land lease payouts, and 9) interest income.

Public partners should also be able to generate non-tax income, or operating income from any on-site public facilities. Many public facilities throw off traditional operating income, such as user fees, or admission charges, but there are other creative types of operating income that can be realized. These more creative types of income include:

- Introduce complimentary retail space, such as a coffee shop or café.
- Lease advertising space in appropriate areas of the facility.
- Lease naming rights.
- If the facility or system is large enough, lease pouring rights.

Public partners should also consider leveraging selected types of non-tax income generated by the proposed commercial development and public facility. The land lease payments which are not contingent on developer performance can be used to cover the debt service on a revenue bond. For example, the base rent described above can often be structured to be a guaranteed annual payment by the private developer to the public owner of the project site. The revenue bond supported by the base rent can be used to cover all, or a portion of the cost of the transit station and/or any transit improvements required by the TOD. This revenue bond is often referred to as a land lease-backed revenue bond.

The use of air rights over stations, maintenance yards, and parking facilities is common. Los Angeles transit agencies are seeking developers for air rights at Metrolink's Taylor yard facility and the MTA for its Red Line yard. In Chicago an old Chicago Transit Authority rail yard's air space is now becoming a mixed-use development. Small scale examples are very common at commuter rail stations, LRT stations, and metro stations, as well as, yard and garage sites.

Tax Revenue Generated by the Project

Another important source of income from a TOD is the multiple types of tax revenue generated by commercial leasehold improvements developed on government-owned land. In addition, if the project site is owned or purchased by the private developer, the land will generate property tax annually. Depending on the building types included in the commercial development portion of the proposed TOD, projects will generate substantial tax revenue, such as:

- Property tax
- Personal property tax
- Sales tax
- Hotel occupancy tax
- Corporate income tax
- Local and state income tax
- Utility taxes

In most instances, these taxes are distributed to varying government jurisdictions, such as the city, county and state, as well as school districts and other government entities. For most public/private development projects, the focus is on capturing the property and sales tax generated by the commercial development portion of a TOD. One of the most powerful economic development tools available to public partners is tax increment financing (TIF). TIF is an economic development tool available to a city (a potential partner with a transit agency) to publicly finance specific needed improvements consisting of, but not limited

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to, buildings, streets, parks and other improvements within a defined area commonly known as a TIF District.

TIF is not a new or additional tax imposed by a government entity. Therefore, citizens and property owners are not required to pay any new or additional tax. If the city is the primary public partner, city officials and their consultant will need to determine the annual tax revenue generated by the redevelopment project for each government entity. Using the results of this analysis, city officials should approach each entity receiving tax revenue from the project to negotiate using their respective portion of the property and/or sales tax increment. City officials should then leverage their portion, or all of the annual tax increment to support a TIF-backed revenue bond. Like the non-tax income, the tax increment generated by the TOD can be leveraged to fully support a sizeable revenue bond, which covers all, or a major portion of a TOD and transit-related facilities and improvements. In other words, for many TODs the income realized by the public partner can cover 100 percent of the transit facilities, amenities and improvements, so there is little, or no capital outlay required of the transit agency.

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FEDERAL FUNDING PROGRAMS

There are a multitude of Federal funding programs available from several agencies. The limitations of this single chapter does not allow a comprehensive listing of funding programs, so the focus will be on programs directly related to TODs. The Federal agencies focused primarily on real estate development include:

- U.S. Department of Housing and Urban Development (HUD)
- U.S. Department of the Treasury
- Federal Housing Administration (FHA)
- Fannie Mae
- Freddie Mac
- Federal Home Loan Bank
- Federal Transit Administration (FTA)

These Federal agencies have established a wide variety of financial assistance techniques, which include:

- Direct investment
- Below-market rate subordinate loans
- Grants (direct investment or as additional security for a loan)
- Interest rate buy-downs on third-party loans
- Loan guarantees
- Soft second mortgages
- Credit enhancement
- Tax credit programs
- Program to increase a homebuyer's purchasing power

Conduits for these funds vary from state and city governments, community development entities (CDE), syndication partners and private developers.

STATE AND LOCAL FUNDING PROGRAMS

Like Federal funding programs, there are a multitude of state, county and local government funding programs and an enormous number of finance instruments. State and local governments have the power to tax and the ability to issue tax-exempt debt. Under the U.S. Internal Revenue code, the interest payments on most debt issued by state and local governments are exempt from Federal income taxes. Based on this policy, investors accept a lower interest rate on tax-exempt municipal debt than on taxable debt. Debt issued by state and local government entities is categorized by the source of revenue pledged to cover the debt service. General obligation (GO) bonds are backed by the full faith and credit of the issuing government entity, while revenue bonds are backed by the pledge of specific

income stream(s) generated by the project. GO bonds are used to finance facilities which are considered essential to a functioning government.

In addition to traditional municipal bonds, state and local governments provide a wide range of financial assistance to finance redevelopment projects or solve the required "gap financing". At last count there are nearly 30 public/private finance instruments available to state and local partners to finance redevelopment projects. Instruments such as:

- Tax increment financing (TIF)-backed revenue bond
- Certificates of participation (COP)
- Assessment district bonds
- Special tax bonds (supported by the levy of special taxes)
- Lease revenue bonds
- Tax lien bonds

In addition, many state governments have established funding programs such as:

- State infrastructure bank (SIB)
- State revolving loan funds
- Economic development programs

Federal, State and Local Operational, Development and Investment Incentives

There are two fundamental types of incentives provided by government entities to private companies: Tax and non-tax incentive programs. Tax related incentives include tax credits, exemptions, abatements and deferrals. Non-tax incentives include: grants, loans and/or guarantees provided directly to private companies or indirectly to communities. The primary objectives of government provided incentives are to create jobs, income and tax revenues, which can be used to improve the quality of life of residents. Incentives can reduce cost and/or enhance cash flow for three aspects of business: 1) development of facilities and infrastructure, 2) investment in facilities, equipment, and/or technology, and 3) business operations.

Tax Credits

Tax credit programs are increasingly important to private developers, and while the limitations of space in this chapter does not allow a detailed description of the tax credit industry, public and private partners of redevelopment projects should be aware of the four primary federal tax credit programs: 1) historic preservation tax credits, 2) federal brownfield expensing tax credits, 3) new market tax credits (NMTC), and 4) low-income housing tax credits (LIHTC).

Transit Station Operating Income

There are at least five types of non-farebox income that transit agencies should attempt to capture in order to enhance cash flow, or solve a financing shortfall. These sources of income other than the farebox include:

- Tenant lease income from support retail space for commuters.
- Income from advertising placed on the exterior and interior of transit stations and commuter parking facilities.
- Income from the shared use of commuter parking facilities.
- Income from naming rights and possibly pouring rights for the entire transit system.
- Interest income from Land Lease Payouts (a payment based on the Present Value of the land lease payment for land under condominium housing developments).
- If the financial feasibility of the TOD and/or transit station is in the balance, these types of non-farebox income could

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- Interest income from Land Lease Payouts (a payment based on the Present Value of the land lease payment for land under condominium housing developments).
- If the financial feasibility of the TOD and/or transit station is in the balance, these types of non-farebox income could

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be the difference between a "go and no-go" decision.

TRI-PARTY AND PUBLIC-PUBLIC PARTNERSHIPS

Another source of funding or cost sharing is "Public-Public Partnerships" or Intergovernmental Agreements between a transit agency and other governmental entities, such as a city, county or state governments. If public-public partnerships were structured a transit agency could share the cost, risks and responsibilities for financing, designing, developing and constructing a TOD. Before transit agencies approach a potential public partner, they should document how the TOD will generate economic benefits and improve the quality of life for local residents.

For situations where a transit agency does not own any, or adequate land around a transit station, the agency may have to structure a Tri-Party Agreement between the agency, private landowner(s) and a private developer. If the transit agency does not have sufficient funds to acquire the land, they will need to demonstrate the financial return for the landowner(s) to provide the land in exchange for an equity position in the TOD.

INFRASTRUCTURE FUNDS

Over the last few years Infrastructure Funds have been formed in the capital market. Infrastructure funds allow investors to own part of a professionally managed portfolio of infrastructure assets, such as:

- Rail facilities and other transport assets
- Toll roads
- Utilities
- Airports
- Communications assets, such as broadcasting towers
- Materials handling facilities

Most of these funds include one to three asset allocations: transportation, utilities and building development. The five largest funds include:

- Goldman Sachs: $6.5 billion
- Macquarie: $4.0 billion
- Deutsche Bank/RREEF: $3.0 billion
- JP Morgan: $3.0 billion
- CIT Group: $2.5 billion

THE BASIS FOR GOVERNMENTS TO RECEIVE A RETURN ON THEIR INVESTMENTS

Transit agencies and governments across the country have made substantial investment in land, infrastructure and transit systems. Commercial developments at transit stations, or TODs should generate enormous amounts of non-tax income and tax revenue for the participating government entities. In other words, private developers of TODs should provide a competitive ROI to the government entities, which have invested in the land around transit stations, infrastructure required by the TOD, and the transit system. The transit system can be heavy rail, light rail and/or bus rapid transit (BRT). In addition to the major investments made by governments, private developers are achieving premium rental rates for housing, retail and office space at TODs.

IMPACT AND CONCURRENCY DEVELOPMENT FEES

A number of jurisdictions have been able to fund significant portions of transit infrastructure requirements through the use of various types of developer impact fees or special assessments that can be used to provide funding (or repay bonds) for major transit facility development. The procedures vary from state to state and are not legally available for use everywhere. California has some significant examples of this type of development. In almost all cases, the impact

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fee program is created and managed by the local government with land use powers, not the transit agency. But municipal levies can be transferred to the entity building the project or can repay the local government for contributions or funds given to the transit agency to develop the project. In most places funds can only be used for capital costs. Some examples are summarized below.

City of San Francisco

The City of San Francisco has a general transit impact fee ordinance - Transit Development Impact Fee (TDIF). This assessment based on non-residential development funds both capital and O&M costs resulting from new development and the increased need for capital and increased transit service. This dual nature is unique, but has been upheld in California courts since its adoption in 1981. It funds only the direct local costs for the service or facility impacted. A life-cycle of 45-years is used. The TDIF has gone through extensive legal challenges and minor modifications have been made, but the TDIF has survived all major rulings.[23]

Cities of Portland, Oregon and Seattle, Washington

Both use standard impact fee legislation to fund transit capital projects. The project needs to be part of a planned improvement and the development is then assessed for its impact on that facility – showing a direct connection or "nexus." The development then pays the portion of the impact that the development will have on the proposed improvement. Cities use similar systems to assess impacts for school, public safety and other improvements. In Portland, over $30 million in city funds went to partly fund a light rail line and $7.5 million was given to a streetcar project. The City will repay the debt, while the projects are developed by the Tri-Met Transit District.[24]

Tax Increment Financing

This method has already been described. The growth in property taxes in the impacted area connected to the improvements are dedicated towards repayment of part or all of the costs related to the capital improvement. In Texas, the City of San Antonio is considering this concept to help VIA, the transit district, build a BRT system. In Miami, this concept was used to fund extension of the downtown automated people mover system – Metromover. In Chicago, the City of Chicago allocated $773 million for specific transit improvements to Chicago Transit Authority's infrastructure. Again, the municipal government collects the taxes and works out payment with the transit operator. In Pennsylvania, municipal governments have created Transit Investment Revitalization Districts (TRID) under 2005 state legislation to assist in TOD facility investments. There are numerous examples for transit and other types of public improvements.[25]

Transit Concurrency Fees

This is another type of impact fee. It is used in Broward County, Florida (Fort Lauderdale) to fund capital improvements including bus system growth, expansion of transit support facilities, bus stops, and transit centers. The fee, known as the Transit Oriented Currency (TOC) is levied on new development throughout the county. Fees are adjusted based on planned sub-regional improvements (10-districts) so that the developer impact fee is related to improvements that are connected to the specific development and area. Broward County with about 1.7 million people and a 200-bus transit operation expects to receive

[23] Transit Cooperative Research Program – Legal Research Digest 28, December 2008 – page 11

[24] Ibid. page 12

[25] Ibid. page 23

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a few million dollars annually toward transit capital needs. Portland, Oregon has a similar charge known as the System Development Charge (SDC) on new development to develop transit capital improvements. The charge is based on the development's impact on the proposed facility or specific project. Both the City of Portland and Broward County have adopted transit improvement capital plans that legally underpin these assessments on new development. The project program has the capital cost for each project. [26] This permits development impacts to be measured and fees can be calculated on a fair proportional basis. Plans are adjusted about every five years with updated projects and capital costs.

10.4 FINANCIAL PROJECTIONS

Financial Projections were prepared for the LRTP through FY2035 and are shown in Table 10-2. Both historical data and recently prepared short range estimates were used to prepare the forecasts. Given the current economic climate, including the suspension of STA funds, projections were prepared for federal funding and Local Transportation Funds. Measure I, the half-cent sales tax collected throughout San Bernardino County for transportation improvements presented earlier in this chapter, estimates were provided by SANBAG. Federal Funds for New Starts/Small Starts funds are also available for individual projects based on specific requirements. Since these funds are distributed on a project-by-project basis projections are not available for this funding source. It is expected that most capital projects identified in the LRTP would have these funds available to them.

METHODOLOGY

The Financial projections are included in Appendix C and summarized in Table 10-1. The projections were prepared using historical data and short-term estimates to develop straight-line projections through FY2035 for a variety of transit funding sources. Because the current economic recession that started in FY2008 is expected to produce lower than average funding for some years, SANBAG determined that new straight-line projections would not be appropriate at this time.

Instead, SANBAG provided actual numbers for FY2008 and estimates for FY2009 through FY2014. From there the FY2014 estimates were escalated from FY2015 through FY2035 using the historical escalation rate annual percentage of change found in the 2006 report worksheets. Where the percentage of change in the SANBAG estimates through FY2014 and the 2006 report figures for FY2015 differ, the numbers are smoothed over six years. After that the 2006 report figures are used.

Some revenue sources for San Bernardino County are allocated based on urbanized area (UZA). San Bernardino County receives allocations from the Riverside / San Bernardino UZA, the Victorville / Hesperia / Apple Valley UZA and the Los Angeles / Long Beach / Santa Ana UZA.

[26] Ibid. pages 27-29

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Table 10-2: Funding Projections

	Total 2010-2015	Total 2016-2025	Total 2026-2035	Total 25 Years FY 2010-FY2035
FTA Section 5317 New Freedom Funds				
San Bernardino Valley	$2,782,130	$6,153,932	$8,197,128	$17,538,191
Victor Valley UZA	$494,630	$1,096,405	$1,460,427	$3,123,262
FTA Section 5316 JARC Funds				
San Bernardino UZA	$6,859,360	$15,438,585	$20,664,404	$43,958,348
Victor Valley UZA	$1,072,560	$2,413,476	$3,230,415	$6,871,451
FTA Section 5311 Rural Area Revenues				
Rural Areas	$7,508,255	$16,102,540	$20,486,145	$45,186,739
FTA Section 5309 Rail Modernization Funds				
San Bernardino Valley	$26,249,822	$55,210,726	$70,240,779	$160,171,107
FTA Section 5307 Urban Formula Funds				
Hesperia/Apple Valley/Victorville UZA	$16,815,911	$36,033,061	$45,842,365	$101,115,037
San Bernardino Valley Fixed Guideway Formula Apportionment	$33,412,400	$68,437,883	$84,469,679	$191,019,962
San Bernardino Valley Bus Formula Apportionment	$99,174,200	$211,316,230	$268,842,990	$593,933,420
Federal Funds	***$194,549,268***	***$412,202,837***	***$523,434,332***	***$1,162,917,517***
LTF Funds*	***$398,813,633***	***$852,769,306***	***$1,084,919,268***	***$2,479,614,378***
Measure I Funds	***$82,715,973***	***$201,748,933***	***$281,023,753***	***$565,488,659***
Total Projected Funding	***$676,078,874***	***$1,466,721,075***	***$1,889,377,353***	***$4,130,956,686***

*Does not include County apportionment of LTF.

Source: PP&A, SANBAG, Parsons, 2009.

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Chapter 11 Recommended Long Range Transit Plan

11.1 San Bernardino Valley alternatives

The LRTP aims to provide the best possible future transit network for San Bernardino County. This chapter begins with an analysis of the alternatives studied for the San Bernardino Valley, followed by the choice of the Recommended LRTP for the San Bernardino Valley in Section 11.2. Section 11.3 summarizes the Victor Valley alternatives and chooses a recommended Plan. Section 11.4 summarizes the future of the rural operators in San Bernardino County.

Acknowledging the challenges and opportunities that are inherent in planning for the future, four alternatives were developed for the San Bernardino Valley, and presented in Chapter 5, to provide a range of options for recommending the LRTP. The four alternatives are compared in Table 11-1, which presents the annual boardings and passenger miles as well as capital and operating cost. This table also provides a summary of two performance measures designed to evaluate the relative cost effectiveness of the alternatives.

Table 11-2 presents a summary of the funding projections for the valley and the costs of the alternatives. The funding sources listed in Table 11-2 are limited to sources that are in available funding projections, and don't include possible sources such as FTA 5309 New Starts, STA, CMAQ, STP funds or bonding mechanisms.

The Baseline Alternative assumes the lowest total cost option, provides the lowest level of service to the residents and communities of the valley, and attracts the lowest transit ridership at close to 19 million annual riders. No operational shortfalls are expected for the Base Alternative, as shown in Table 11-2. This alternative has the highest ratio of service for operational costs and the highest ratio of service for capital costs.

The Plan Alternative provides transit service to 34 million annual boardings at double the annual cost of the baseline. Due to the planned implementation schedule of current projects, Table 11-2 identifies funding gaps of $300 million during the 2010-2015 time period and $535 million during the 2016-2025 time period. The table also shows that the funding gap would narrow during the 2026-2035 time period to $155 million. The larger funding shortfall during the early life of the plan occurs because many of the capital projects are phased for implementation in the earlier years. The availability of Federal Small Starts funding for both the Redlands Rail Project as well as the E Street sbX would cover some of the projected funding gap during the early time periods.

The Vision Alternative serves almost 10 million additional annual boardings, as compared to the Plan Alternative, and serves 30 million additional passenger miles annually. The cost is tied for the highest of all four alternatives, and the Vision alternative achieves the second best ridership. For this alternative, the performance measure of operating costs divided by annual riders provides the second highest ratio. Funding projections identify an increased shortfall of funds available for capital projects; however the alternative is operationally affordable. Other funding sources, such as FTA New Starts funds or bonding mechanisms would be needed in order to fund the capital improvements in this alternative.

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Table 11-1: SB Valley Alternatives Comparison

Alternative	Annual Boardings	Annual Passenger Miles	Costs ($M 2009)						Annual Boardings per Million $		Passenger Miles per Million $	
			Net O&M		Capital			Total Annual				
			Total	Annual	Total	Fleet	Annual		Total	Operating	Total	Operating
Baseline	18,911,000	81,004,000	1,621	62.3	555.09	188.2	51.7	114.1	165,764	303,352	710,040	1,299,386
Plan	33,664,000	148,764,000	2,355	90.6	1,635.84	353.7	142.8	233.4	144,236	371,731	637,389	1,642,711
Vision	42,381,000	178,332,000	2,627	101.1	3,324.43	482.1	278.9	380.0	111,542	419,393	469,350	1,764,733
Sustainable	45,800,000	200,508,000	2,627	101.1	3,324.43	482.1	278.9	380.0	120,541	453,226	527,715	1,984,182

Source: Hexagon, 2009.

Table 11-2: SB Valley Alternatives and Financial Projections

	Total 2010-2015	Total 2016-2025	Total 2026-2035	Total 2010-2035
Measure I	$78,023,002	$189,698,002	$262,211,001	$529,935,003
LTF	$290,410,703	$628,916,538	$800,817,777	$1,825,004,607
Federal *	$142,228,090	$301,346,630	$382,174,201	$846,449,921
Total Funding	**$510,661,796**	**$1,119,961,170**	**$1,445,202,979**	**$3,201,389,531**
Net Operating Costs				
Baseline	$374,041,140	$623,401,900	$623,401,900	$1,620,844,940
Plan	$399,123,820	$872,561,630	$1,082,875,500	$2,354,560,950
Vision (and Sustainable LU)	$399,123,820	$914,317,700	$1,313,942,860	$2,627,384,380
Capital Costs				
Baseline	$125,878,000	$215,730,000	$213,480,000	$555,088,000
Plan	$410,647,000	$782,589,000	$517,102,000	$1,710,338,000
Vision (and Sustainable LU)	$408,313,000	$1,611,864,187	$1,304,252,187	$3,324,429,375
Revenue Surplus (Deficit)				
Baseline	$37,172,478	$336,039,995	$678,561,858	$1,185,627,698
Plan	$(272,679,202)	$(479,978,735)	$(84,533,742)	$(703,338,312)
Vision (and Sustainable LU)	$(270,345,202)	$(1,351,009,992)	$ (1,102,751,289)	$(2,590,253,116)

*Excluding 5309 New Starts Funding.

Source: Parsons, 2009.

The Sustainable Land Use Alternative, which includes the same level of service and costs as the Vision Alternative, looks only at policy changes and higher development densities at locations around transit stations. Consequently, 3 million annual boardings and over 20 million passenger miles are added to this alternative over the Vision Alternative, with the same costs. These increases result from focused population and employment growth along BRT corridors. The funding sources project the same capital shortfall as the Vision Alternative. Because of the higher ridership forecasts for this alternative, the performance measures exceed the values calculated for the Vision Alternative.

11.2 SAN BERNARDINO VALLEY RECOMMENDED LRTP

The Sustainable Land Use Alternative provides the most annual boardings and serves the highest annual passenger miles. Additionally, this alternative provides the opportunity to guide development in line with the implementation of SB 375 and provide the communities of the San Bernardino Valley a

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vehicle to promote economic development. SANBAG recommends the entire Sustainable Land Use Alternative as the recommended LRTP. SANBAG further recommends that partnering cities adopt policies to support transit as recommended in Chapter 3. It is anticipated that future project development will progress only when the transportation / land use connection is appropriately addressed.

The deficit of the alternative can be addressed by the inclusion of Federal New Start/Small Start funding as well as altering the implementation schedule of the sbX BRT Corridors. Table 11-3 prioritizes the sbX corridors and groups them into funded projects and unfunded projects. Corridor 6 is recommended as a funded corridor to serve the Ontario Airport and the key attraction centers of the Ontario Civic Center, Convention center, and new colony model colony area. The unfunded projects are likely to be funded in future updates of the LRTP as other funding sources become available. Funding for Maglev, High Speed Rail, Aerial Tram to Big Bear Valley and the Metro Gold Line extension to Ontario is not included in this analysis and these projects are currently identified as unfunded.

Table 11-4 shows the financial impact of New Starts funding, including Small Starts funding for the Redlands Rail and the four sbX corridors, and the potential implementation schedule. A funding deficit is shown for the life of the plan and reaches 1.1 billion dollars. Measure I funds for Express Bus/BRT, if increased in 2015 to 10% would result in $120,804,000 over the last 20 years of the plan.

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Table 11-3: BRT Corridors

	Description	Length (mi)	Stations	Riders	Capital Costs	Potential Implementation Schedule
Funded Corridors						
1	E Street Corridor (to California)	18.3	16	12165	$241.9	2012
2	Foothill Boulevard East	16.6	16	10192	$215.3	2015-2025
6	Holt Avenue/4th Street	20.4	18	6770	$208.4	2025-2035
4	Euclid Avenue to Corona	17.9	14	6508	$180.0	2025-2035
	Total	73.2	64	35635	$845.6	
Unfunded Corridors						
5	San Bernardino Avenue	11	12	6420	$119.2	2025-2035*
3	Foothill Boulevard West	16.2	15	5557	$166.2	2025-2035*
7	Grand/Edison Avenues	17.4	16	2386	$179.4	2035-2045
8	Sierra Avenue	7.6	7	1893	$79.0	2035-2045
9	Riverside Avenue	16.4	16	7342	$174.2	2035-2045
10	Haven Avenue	10.4	10	3361	$109.9	2035-2045
	Total	79.0	76	26959	$827.9	

*If additional funding becomes available.
Source: Hexagon, Parsons, 2009.

Table 11-4: Recommended LRTP

	Total 2010-2015	Total 2016-2025	Total 2026-2035	Total 2010-2035
Omnitrans Fleet* (exclude NS)	$51,060,000	$143,670,000	$174,500,000	$369,230,000
BRT Corridor New Starts**	$170,650,000	$214,500,000	$346,200,000	$772,050,000
Omnitrans Other Costs	$66,600,000.00	$176,800,000	$251,600,000	$495,000,000
Redlands Rail	-	$240,000,000	-	$240,000,000
Metro Goldline to Montclair		$50,000,000		$50,000,000
Metrolink Extension		$40,000,000	-	$40,000,000
Metrolink Strategic	$120,000,000	$110,000,000	-	$230,000,000
Total Capital Costs	$408,310,000	$974,970,000	$813,000,000	$2,196,280,000
Total Net Operating Costs	$399,123,820	$914,317,700	$1,313,942,860	$2,627,384,380
Projected Revenue	537,091,618	1,175,171,895	$ 1,515,443,758	$ 3,361,560,638
Projected 5309 Funding of Recommended Corridors***	$75,000,000	$150,000,000	$150,000,000	$375,000,000
Total	$(195,342,202)	$(564,115,805)	$(461,499,102)	$(1,087,103,742)

*Includes ADA Fleet
**E Street without Extension
***Redlands Rail and four sbX Corridors
Source: Hexagon, Parsons, 2009.

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11.3 VICTOR VALLEY

The three alternatives studied for the Victor Valley were evaluated based on a cost-effectiveness measure, by calculating the ratio of annual boardings over the annual cost of the system. A comparison of the three alternatives is shown in Table 11-5.

The Baseline Alternative serves the least amount of future riders and provides no additional services to future travel markets.

The Plan Alternative serves a larger number of riders, and contains new services that provide additional transit connections. This alternative is also the most costly.

The Vision Alternative serves the largest number of people and reduces the operational cost of the system by restructuring key routes to provide more efficient service.

As shown in Table 11-6, all three alternatives are well within the funding projections, and no shortfall in funding is expected for these alternatives. It is anticipated that only a percentage of the LTF funds will be utilized by the transit network for the area, providing funding for short term services identified in the *Public Transit-Human Services Transportation Coordination Plan.*

Table 11-5: Victor Valley Alternatives Comparison

	Daily Boardings	Passenger Miles	Annual O&M Cost (Million $)	Daily Boardings / Annual Cost	Passenger Miles / Annual Cost
Baseline Alternative	4,556	17,109	4.95	920	3,456
Plan Alternative	8,779	45,763	8.25	1,064	5,547
Vision Alternative	9,445	51,485	8.08	1,169	6,372

Source: Hexagon, 2009.

Table 11-6: Victor Valley Alternatives Costs and Financial Projections

	Total 2010-2015	Total 2016-2025	Total 2026-2035	Total FY 2010-FY2035
Total Federal Funding	$21,846,074	$41,086,975	$52,434,927	$115,367,976
Total LTF Funds	$89,811,125	$151,358,521	$192,562,954	$433,732,600
Measure I Funding	$2,921,001	$7,932,000	$13,142,001	$23,995,002
Total Funding	**$114,578,200**	**$200,377,497**	**$258,139,881**	**$573,095,578**
Net O&M Cost				
Baseline	$49,510,000	$82,520,000	$82,520,000	$214,550,000
Plan	$50,830,000	$91,790,000	$100,630,000	$243,250,000
Vision	$50,740,000	$91,160,000	$99,400,000	$241,300,000
Capital Cost				
Baseline	$29,250,000	$39,082,500	$39,082,500	$107,415,000
Plan	$31,250,000	$48,082,500	$51,682,500	$131,015,000
Vision	$31,250,000	$48,982,500	$53,482,500	$133,715,000
Revenue Surplus (Deficit)				
Baseline	$35,818,200	$78,774,997	$136,537,381	$251,130,578
Plan	$32,498,200	$60,504,997	$105,827,381	$198,830,578
Vision	$32,588,200	$60,234,997	$105,257,381	$198,080,578

Source: Parsons, 2009.

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The Vision Alternative, as the highest ranked alternative, is the Selected LRTP for the Victor Valley. Victor Valley is a key growth area in the county and with the implementation of SB 375 it is unclear what effect the legislation will have on the development patterns of this valley. Transit's role in providing a choice in mobility to residents of the valley is expected to remain a challenge, and due to the low density nature of the Victor Valley, new services will be implemented primarily as they become feasible in the short range planning process.

11.4 Rural Transit Operators

The Rural Transit Agencies of San Bernardino County each operate in unique circumstances from the remainder of San Bernardino County. The operating characteristics of each service are dependent on local land use patterns and short range planning opportunities. The LRTP assumes that operational costs will remain similar to 2008 levels with fleet replacement as the only substantial capital costs identifiable in the long term. Table 11-7 provides a summary of costs and funding sources for the rural operators. All costs are shown in Year 2009 dollars, and Measure I and LTF funding are both distributed geographically. The County portion of the LTF is distributed based on 2007 distribution percentages to the transit agencies to cover any projected shortfalls as needed. Federal 5311 funds are distributed to the Victor Valley and to the rural transit operators by population.

Needles Transit Authority is projected to operate in the short term in a deficit of $1.3 million dollars, but over the life of the plan remains viable. MBTA is projected to operate in a $14 million surplus, and not receive any portion of the county's LTF. MARTA is expected to operate in a deficit of $42 million

over the life of the plan, due to high operating costs and low regional LTF distributions. However, the county LTF distribution could rise to 20% for MARTA, which would result in a $10 million surplus over the life of the plan and leave the County LTF Funding source with $168,155,362 over the life of the plan. BAT is expected to operate in a shortfall the first periods of the plan and overall operate in a $6.7 million surplus. In summary, there are enough funding sources to ensure the current levels of transit services over the life of the plan.

Table 11-7: Rural Transit Operators

	Total 2010-2015	Total 2016-2025	Total 2026-2035	Total FY 2010-FY2035
NAT				
Operating and Fleet Costs	$2,960,672	$3,175,190	$3,175,190	$9,311,052
Measure I Colorado River	$66,793	$111,456	$98,011	$276,260
LTF	$1,127,647	$2,442,041	$3,109,523	$6,679,211
Federal 5311 Funding	$12,751	$24,416	$31,090	$68,257
County LTF Distribution	$454,103	$991,855	$1,262,958	$2,708,916
Surplus/(Deficit)	**$(1,299,377)**	**$394,579**	**$1,326,391**	**$421,592**
MBTA				
Operating and Fleet Costs	$9,680,583	$19,361,166	$19,361,166	$48,402,915
Measure I Morongo Basin	$563,837	$1,401,377	$2,074,700	$4,039,913
LTF	$9,560,616	$20,704,523	$26,363,674	$56,628,813
Federal 5311 Funding	$245,907	$470,884	$599,590	$1,316,382
County LTF Distribution				
Surplus/(Deficit)	**$689,777**	**$3,215,618**	**$9,676,798**	**$13,582,193**
MARTA				
Operating and Fleet Costs	$11,731,781	$23,463,562	$23,463,562	$58,658,905
Measure I Mountains	$485,691	$1,213,444	$1,808,469	$3,507,604
LTF	$1,214,838	$2,630,863	$3,349,955	$7,195,657
Federal 5311 Funding	$23,680	$45,344	$57,738	$126,763
County LTF Distribution	908,206	1,983,710	2,525,915	5,417,833
Surplus/(Deficit)	**$(9,099,365)**	**$(17,590,200)**	**$(15,721,484)**	**$(42,411,049)**
BAT				
Operating and Fleet Costs	$13,859,071	$27,718,142	$27,718,142	$69,295,356
Measure I North Desert	$652,445	$1,390,286	$1,687,508	$3,730,240
LTF	$4,651,178	$10,072,618	$12,825,758	$27,549,553
Federal 5311 Funding	$158,474	$303,459	$386,403	$848,335
County LTF Distribution	6,951,275	15,183,011	19,332,971	41,467,258
Surplus/(Deficit)	**$(1,445,699)**	**$(768,768)**	**$6,514,498**	**$4,300,431**

Source: Parsons, 2009.

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Maximum Density

Residential Densities up to 24 DU/AC

Transit Policies

Action A3-4.1.2 Shuttle Service. Develop and offer incentives to employment centers which provide, operate, and maintain shuttle service from local Park-and-ride facilities, the Montclair Transcenter, and possible future commuter rail terminals, to the City's civic center area.
Action A3-4.2.1 Ridesharing Match Service. Require employers with 100 or more full-time employees to participate in ridesharing matching services as a condition of business permit approval and business licensing. Participation includes: land dedications for park-n-ride facility, in lieu fees, and active employee encouragement programs.
Action A3-4.2.2 Shuttle service. Require employers with 100 or more full-time employees and major retailers to provide shuttle service from local park-n-ride facilities to the employment or shopping center.
Action A3-5.1.2 Fee Assessments. Establish fee assessments for new development projects not providing transit facilities; base fees on anticipated transit trip generation. Encourage employers to pay for transit passes for their employees who agree not to drive to work.
Policy P3-4.1 TDM Facilitators, Inducements, and Infrastructure Require all new industrial and commercial developments to be aware of and, as appropriate, participate in TDM programs.

Parking Management Strategies

Action A3-4.1.5 Park-n-Ride. Investigate the possibility of locating park-n-ride or similar facilities along SR60, SR71 and the Euclid Avenue corridors. Possible sites could include existing parking structures and surfaces which are utilized mainly during evening or weekends, (e.g. fraternal meeting houses, religious facilities, movie theaters, or public properties). Establish a program to assess fees for the land acquisition, construction, and maintenance of such parking facilities if none currently exist.
Action A3-4.1.6 Park-n-Ride Facilities. Require large developments (commercial or industrial development with on aggregate of 100 or more employees) to either dedicate land or participate financially to assist in the development of future park-n-ride facilities.

TOD Policies

The City's overall land use pattern shall street higher density development in the Central portion of the City and along Euclid Avenue, and lower density development in the outlying areas.
Higher density residential development shall be located conveniently to major circulation and transportation corridors such arterial streets. Densities shall, in general, decrease as the distance from major arterials increases.

Shopping areas which serve a community-wide function shall be located close to or along Central Avenue. Shopping centers which serve the daily shopping needs of an immediate neighborhood shall be located away from Central Avenue, but they should be no closer to each other than one mile...

Urban Design Policies

Action A3-4.1.4 Pedestrian Facilities. Require sidewalks on arterials and other roadways within industrial and commercial areas. Link bus loading bays, employment centers, and employee services (restaurants, etc.) with sidewalks.
Buildings shall be well designed, shall respect the suburban image of the community and shall be designed with an awareness of existing neighboring buildings, appropriate architectural relief will be encouraged, with large expanses of blank, unrelieved walls being avoided, especially where fronting on a major street.
To the maximum extent possible, land use patterns shall be planned so as to minimize Vehicles miles traveled.
Higher density projects shall be kept to a small scale (number of units, heights, etc.) and shall, in general, reflect design characteristics of single family homes.

Growth Management

Regional Coordination

Action A3-5.1.10 SCAG - City of Chino Regional Commuter Rail Study. Work with SCAG to include the Southern Pacific, Chino Branch and the Santo Fe Rail Line in its regional commuter rail study.

Financial Strategies

The City shall work closely with developers "and other interested parties to develop means by which needed capital facilities can be provided on a long term basis at little or no capital cost to the City. This could include the use of special assessment districts, developer reimbursement techniques. Private-public joint ventures, tax increment financing (redevelopment), and the such.
The City shall explore alternative financing techniques which are not subject to the provisions of recent tax legislation such as Proposition 13 and Proposition 4.

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Governments SANBAG Working Together

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Chino Hills
1994

Maximum Density

Residential Densities up to 35 DU/AC

Transit Policies

Local transit services should be expanded to serve more of the residential areas of Chino Hills and provide access to the major new developments to be built under the Land Use Plan. These new local services should include: Service along Peyton Drive from Riverside Drive to Soquel Canyon Road to Central, and along Central Avenue to Chino Hills Parkway; and increased frequency on Omnitrans route #72 along Grand Avenue, Chino Hills Parkway, and Pipeline Avenue. In addition to these local services, regional transit service should be provided to provide transit access to other counties. These regional services should include: Grand Avenue service from Chino to Diamond Bar, passing through Chino Hills; Carbon Canyon Road service from Chino to Brea, including the Brea Mall passing through Chino Hills; The Chino Valley Freeway commuter express service to Los Angeles via SR-60; and Park-and-Ride lots near the Chino Valley Freeway.

Parking Management Strategies

Park-and-ride areas shall be provided at village cores, general commercial areas and mixed land use areas. These facilities shall be designed to maximize security and provide ease of access. Each park-and-ride lot shall have a capacity equal to 10% of the required parking of the adjacent commercial area, except that no more than 50 spaces per facility shall be constructed.

All park-and-ride lots shall be acquired, constructed and maintained by the appropriate local entity.

TOD Policies

Urban Design Policies

Bus turnouts and bus shelters shall be provided in village core areas and other commercial, industrial and public use areas. These facilities shall be designed to maximize security features and shall be located in proximity to both traffic signals and pedestrian crosswalks, so as to provide for ease of ingress for buses and ease of access for pedestrians, respectively.

Growth Management

Policy 1-2. Preserve significant natural features such as ridges, knolls, and vistas, Including those identified on the City of Chino Hills Visual and Scenic Resources Diagram, through special development standards and guidelines.

Regional Coordination

Policy 3-8. Work with local agencies and jurisdictions to promote employment growth coordinated with the availability of adequate housing and transportation.

Objective 3-1. Continue to strive towards the Southern California Association of Governments (SCAG) projected jobs/housing ratio for the year 2010 for the West San Bernardino Valley, which includes the city of Chino Hills, of 1.16 jobs per housing unit.

Financial Strategies

Colton
May-87

Mixed Use Designation

Special Designation – Multi Use area
This area has been established along the Mount Vernon corridor for the purpose of creating a long-term vehicle for upgrading the economic and aesthetic environment. The multi-use area designation permits a two-pronged approach by allowing existing parcels to be used for residential or commercial activities subject to aesthetic upgrades and by encouraging more significant residential and commercial projects in the future using density bonuses and design modifications based on the size of the development site. The multi-use designation is not intended to create an immediate or near term transformation of the Mount Vernon Corridor, but rather to establish significant investment and community improvement opportunities which may be eventually realized as surrounding land costs continue to increase.

Maximum Density

Residential Densities up to 22 DU/AC

Transit Policies

Goal 2: Encourage the use of alternative transportation modes

Policy 2.1: Continue to cooperate with Omnitrans for the provision of public bus service in the planning area.
Policy 2.2: Establish bus Shelters at Omnitrans stops to increase public recognition and use of the local and regional transit system.
Policy 2.3 Cooperate with Caltrans and the County of San Bernardino in providing sites and improvements for park-and-ride facilities.
Policy 2.4: take a leadership role in regional planning efforts to provide community rail service throughout the planning area, while protecting railroad right-of-way.
Implementation Measure 3: Transportation Demand Management (TDM): Following the air quality management plan for the south coast air basin, employers of over 100 employees will be involved in a program aimed at reducing the number of vehicles using the roadway system during peak hours though vanpooling , ride sharing, staggered work hours and other methods.
Public transportation linkages between residential areas and major commercial corridors are necessary to make purchase opportunities available to all segments of the community.

Parking Management Strategies

Implementation Measure 8: Off-street (parking) requirements: the City's Zoning Ordinance includes off-street parking requirements for various types of development, allowances for parking reductions of development incentives where effected demand management programs are utilized, and allowances for joint use of parking facilities where an appropriate mix of land uses exist.
Establish minimum improvements and standards, such as off-street parking, to be required on all properties based on the scale of operations and proposed development.

TOD Policies

Urban Design Policies

Well-designed human-scaled commercial developments featuring an attractive and efficient pedestrian environment should be encouraged as they add to the responsiveness of commercial growth to localized needs.

Growth Management

Regional Coordination

Financial Strategies

The City shall seek and utilize any available Federal funds and programs in implementing qualifying portions of the Land Use Element and other elements of the General Plan. This includes taking advantage of the "Enterprise Zone" designation to be granted along the Agua Mansa and Mount Vernon corridors in the near future.

Draft

Fontana
Oct-03

Mixed Use Designation

Regional Mixed Use (RMU)
0.1 – 1.0 FAR for non-residential; 12-24 du/acre for residential
Preferred Mix and Range of Uses: 10-30% retail; 5-15% office; 15-30% light industrial/business park; 25-35% residential; 4-6% public open space.

Maximum Density

Residential Densities up to 24 DU/AC

Transit Policies

Implement traffic signal systems and intelligent transportation systems (ITS) components (not limited to signal coordination, highway advisory radio, closed circuit television, emergency vehicle signal preemption, etc.) along arterial roadways and sub-areas, in accordance to the City's Traffic Signal System Conceptual Buildout Plan and in compliance with regional and appropriate ITS Architecture Master Plans.
To encourage transit ridership and transportation demand management including carpooling, required vanpool parking spaces, plan for the provision of additional transportation centers to be used as a park-and-ride for ridesharing, high-occupancy vehicle lanes, regional bus and passenger rail services.

Recognize alternative and private transportation services (vans, buses, shuttles, taxis and limousines) as an integral part of public transportation.

Where needed and appropriate, require new development to provide transit facilities and accommodations, such as bus shelters and turnouts, consistent with regional agency plans and existing and anticipated demands.
Encourage commuters and employers to reduce vehicular trips by offering incentives such as reduced price transit passes and preferential parking for ridesharing.
Provide appropriate transportation terminal facilities for inter-city and regional travel by public and private transportation modes.

Parking Management Strategies

Parking areas shall continue to be buffered from the street and provide, where practical, a pedestrian spine for safe access to shopping and activity areas.

TOD Policies

Urban Design Policies

Improvements shall be made to transportation corridors that promote physical connectivity and reflect consistently high aesthetic values.
Commercial and industrial uses adjacent to or within designated corridors shall be developed and revitalized to reflect contemporary design standards as
Buildings in activity centers shall be oriented toward major thoroughfares, sidewalks and public spaces with convenient but not visually dominating parking on site.
Activity centers should be linked with residential neighborhoods and be accessible by multiple modes of transportation.
Areas adjacent to freeway and major arterial corridors shall be given special land use and development standards guidance.
Downtown, its Metrolink Station and Transit Plaza, and the surrounding community shall be accessible and connected by multiple modes of transportation including pedestrian, bicycle, transit and automobile.
Require street dedications from adjacent properties when the land is necessary for additional transportation capacity and enhanced mobility for the welfare
A well-integrated network of bike and pedestrian paths should connect residential areas to schools, parks, and shopping centers
Major arterial highways shall be improved according to customized design guidance within and adjacent to public rights-of-way.
Adopt arterial streetscape improvement plans as part of the City's Capital Improvement Program and Capital Re-Investment Program.
Adopt design guidelines for Foothill Boulevard, Valley Boulevard and Sierra Avenue that incorporate the unique qualities of each thoroughfare.

Growth Management

Regional Coordination

Work with Caltrans, San Bernardino County, and neighboring cities to ensure that functional and aesthetically pleasing design of transportation corridors is consistently implemented (see Action 1, above, related specifically to the I-10 corridor).
Continue to coordinate transit planning with the Southern California Association of Governments (SCAG), the San Bernardino Associated Governments (SANBAG), the Los Angeles County Metropolitan Transportation Authority (MTA), the Southern California Regional Rail Authority (Metrolink), Omnitrans and adjacent communities.
Work with the Caltrans for Transportation Enhancement Activities funding from TEA-21 (Transportation Equity Act, 1998)
Coordinate street system improvements and traffic signalization with regional transportation efforts in particular on roadways that are at the City's boundaries, are shared with neighboring jurisdictions, and/or are part of regionally significant corridors including those that are on Congestion Management Plan routes.
Continue to support the regional bus system to provide intra-city service, inter-city service to major employment centers, and connection to other regional transportation transfer points.

Financial Strategies

Grand Terrace

Dec-88

Mixed Use Designation

Mixeduse development which can demonstrate superior use of land, more efficient utilization of public facilities, and more effective conservation of natural resources shall be strongly encouraged by the city of Grand Terrace.

Maximum Density

Medium Residential Density - 12 DU/AC

Transit Policies

Public transit will be encouraged by city participation in local and regional transit programs and, by special consideration in large, new developments wherever feasible.

Encourage the continuance of a public transportation system that will: 1) provide a viable alternative to the automobile; 2) satisfy the transportation needs of commuters, the economically disadvantaged, the aged, the young, and the handicapped; 3) promote service at a reasonable and equitable cost both to the users and the general community.

Parking Management Strategies

TOD Policies

Urban Design Policies

Design of new development shall respect and preserve the view opportunities of existing development in the area.

Growth Management

Regional Coordination

The city will work closely with the regional transit agencies to ensure the convenient and affordable bus service continues to be available to local residents.

Encourage State, regional, and local governments and agencies to achieve a coordinated and balanced regional transportation system consistent with the city's social, economic, and environmental needs and goals.

Financial Strategies

Commitment of public funds to provide necessary off-site improvements for development of vacant private property will consider the net revenue which the development will produce for the city over the time.

Draft

Highland
Mar-06

Mixed Use Designation

Mixed-Use (MU) Maximum Intensity: 18 dwelling units per 1.0 acre, or 1.0 FAR

Maximum Density

Residential Density up to 8 DU/AC

Transit Policies

Provide access to multiple modes of travel, including pedestrian, bicycle, transit and automobile.
Encourage major employers to reduce vehicular trips by offering incentive concepts discussed in the General Plan Circulation Element, including but not limited to reduced transit passes and preferential parking for ridesharing.
Continue to support the regional bus system to provide intracity service, intercity service to major employment centers, and connection to regional transportation transfer points.
Work with Omnitrans to ensure that transit services are extended to serve residents in the eastern portion of the study area.
Coordinate with Omnitrans to provide safe, clean and attractive bus shelters at bus stops and transfer stations.

Parking Management Strategies

Investigate the implementation of Variable Parking District Overlays along Base Line, Highland Historic District and other areas where appropriate, to encourage the enhancement of existing parking-deficient development.
Assess the adequacy of existing or proposed on- and off-street parking as needed, especially in urban and commercial areas, to ensure that an adequate supply is provided.
Explore strategies for the management of parking supply, which can include parking fees, metered on-street parking and staggered work schedules.
Develop strategies for the control of parking demand such as improved transit service, amenities for bicyclists and rideshare vehicles.
Develop strategies for shared parking opportunities in mixed-use and multiple-use development.
Encourage the use of well-designed, aesthetically enhanced parking structures as an alternative to large, expensive surface parking lots in retail and employment centers.
Provide convenient and consolidated parking where cars are screened from view, wherever possible.
Segregate residential parking from commercial and office parking.
Minimize the visual impact of surface parking by providing berms, landscape buffering and/or locating parking lots to the rear or side of buildings or below buildings.
Locate buildings and building frontages close to the street and street corners with parking behind or to the side of the buildings. Where this is not possible or practical, ensure that street-facing parking is shielded through landscaping or berms.
Reduce the visual impact of parking through consolidated parking arrangements, shared driveway access, alley-accessed designs, landscape buffers and recessed, covered parking structures.
Plan for the provision of areas within the City to be used as park-and-ride regional bus and car pool facilities.

TOD Policies

Urban Design Policies

Prevent future strip commercial development by encouraging lot consolidation within commercially designated areas and by limiting commercial designations to areas of sufficient size to accommodate larger scale, quality development.

Connect the Town Center physically and visually with the Historic Village District with pedestrian connections, historically compatible architecture, signage, landscaping and other streetscape elements.
Prohibit freestanding drive-through commercial structures and convenience commercial uses, except at the major intersection of Palm Avenue and Base Line.
Encourage and improve pedestrian connections from residential neighborhoods to retail activity centers, employment centers, schools, parks, open space areas and community centers.
Add raised, landscaped medians and bulb-outs, where appropriate, to reduce exposure to cross traffic at street crossings.
Pursue unifying streetscape elements for major corridors, including coordinated streetlights, landscaping, public signage, street furniture and hardscaping.
Locate commercial/retail uses near the sidewalk to provide high visibility from the street.
In multi-use development, locate retail and commercial development close to street for higher visibility and residential uses behind for convenience and privacy.
Provide pedestrian access and connections to nearby retail, transportation, recreation and educational centers, where practical.
Incorporate small sitting areas and/or shaded courtyards close to shopping areas but buffered from parking and traffic impacts.
Clearly delineate pedestrian routes from parking areas to retail uses to allow easy and safe pedestrian movement.

Growth Management

Regional Coordination

Participate in a wide range of regional transportation planning and programs to improve the capacity, efficiency and safety of the shared circulation system.
Participate in all regional transportation committees and regularly coordinate with other local agencies regarding their plans, programs and services that affect the quality and safety of the Highland roadway system.
Coordinate street system improvements and traffic signal coordination with regional transportation efforts.
Coordinate transit planning with the Southern California Association of Governments, SANBAG, Omnitrans and adjacent communities.
Work with the Southern California Commuter Rail Council and the San Bernardino Association of Governments and Omnitrans to establish a transit connection with the Metrolink Commuter Rail System, a new freeway interchange at Victoria Avenue and to facilitate applicable roadway improvements.

Financial Strategies

Maximize sales-tax-generating uses through the strategic location of commercial areas, particularly at freeway interchanges, at major intersections, and within the Town Center and Golden Triangle (see also Town Center, Golden Triangle and Victoria Avenue Corridor Community Policy Areas).
Encourage an appropriate mix of retail, office and civic uses to ensure the economic viability of the area.

Loma Linda
Jun-06

Mixed Use Designation

Special Planning Areas A-F, H, I

Maximum Density

Residential Densities up to 20 DU/AC

Transit Policies

Facilitate the synchronization of traffic signals along Redlands Boulevard, Barton Road, Anderson Street, and Mountain View Avenue.
Where a series of traffic signals is provided along a route, facilitate the coordination of traffic signals to optimize traffic progression on a given route. Traffic signalization should emphasize facilitating access from neighborhood areas onto the City's primary roadway network, and should work to discourage through traffic from using local streets.
Preserve options for future transit use when designing roadway and highway improvements.
When applicable, such as adjacent to E Street Locally Preferred Alternative station(s), include Omnitrans in the review of new development projects, and require new development to provide transit improvements in proportion to traffic demands created by the project. Transit improvements may include direct and paved access to transit stops; provision of bus turnout areas and bus shelters; and roadway geometric designs to accommodate bus traffic.
Encourage ridership on public transit through use of City information sources (e.g., City web site, and mail-outs) to provide information on transit services
Require community care facilities and large age-restricted developments (50 units or more, but excluding facilities designed for "active" adults) to provide transportation services for the convenience of residents as a condition of development.

Parking Management Strategies

Though pedestrian access is the focus, also provide convenient vehicular parking via nearby parking in an adjacent parking lot located to the side or rear of the building and/or on-street parking (where feasible considering traffic). Permit off-street parking standards to be met with a convenient off-site parking
Pursue construction of parking structures within the downtown area to serve projected parking demand and facilitate mixed-use development without the need to meet off-street parking standards on each individual parcel.

TOD Policies

Support transit-oriented development in proximity to E Street Locally Preferred Alternative station(s). Such development would include a variety of retail housing, employment opportunity, healthcare, and civic/governmental uses in walking distances of stations to encourage transit ridership and address air quality and traffic congestion concerns. In addition, support integration of E Street Locally Preferred Alternative transit stations into nearby planned developments and attractively landscaped pedestrian linkages interconnecting transit supportive uses to the transit stations.

Urban Design Policies

Place commercial and office development so that it has a strong relationship with the street, such as by siting the buildings so that they are close to the street, or for buildings that need to be set back from the street with a large parking lot, locate pad buildings along the street to maintain an attractive street edge and visually buffer the parking lot.
Design streets to accommodate slow to moderate moving local traffic (e.g., two lanes maximum each direction) or close streets to provide for pedestrian use only. Thus, through traffic on arterials would be provide on the periphery of pedestrian oriented development.
Ensure that the site design of new developments provides for pedestrian access to existing and future transit routes and transit centers through specific review during the development review process.
3.1.1.1 Pedestrian-Oriented Development Guiding Policy
For pedestrian oriented development (located within commercial or mixed-use land use designations as indicated in the Land Use Element) ensure that the features that make for attractive and functional pedestrian-oriented development are provided.

Growth Management

The Public Open Space land use category applies to lands within the Loma Linda South Hills area that is owned by the City, and intended for long-term natural open space and trails. The intent of this designation is to preclude the development of buildings, and to permit only such improvements and facilities as are consistent with the permanent protection of natural open space. Thus, while recreational trails are encouraged within this area, their design and use is to be consistent with the environmental values of the lands they traverse.

Regional Coordination

Financial Strategies

Attract new, and maintain existing, commercial and office uses to better serve the retail and service needs of the community, to keep the sales tax revenues from purchases by the Loma Linda community from going elsewhere, to reduce the length of trips necessary to meet retail and service needs, and to expand employment opportunities within the community.

Governments SANBAG Working Together

Draft

Draft

Montclair
Jun-99

Mixed Use Designation

Maximum Density

Residential Medium Density up to 14 DU/AC

Transit Policies

CE-1.1.10. Promote the provision of public modes of transportation between strategic locations such as the Montclair Plaza Shopping Center, and other traffic generators, such as the Montclair Transcenter and potential Metrolink station on the Riverside Line.

Parking Management Strategies

TOD Policies

CD-1.6.0. To encourage the development of parcels along Central Avenue and Holt and Mission Boulevards where development has previously been hindered due to parcel size and configuration, access and multiple ownership.

Urban Design Policies

LU-1.5.0. To ensure that commercial areas within the City are conveniently located, efficient, attractive, safe for pedestrian and vehicular circulation and concentrated into districts and centers in order to better serve a larger portion of the City's needs, while also continuing to provide regional commercial services as the dominant proportion of the regional market in recognition of the economic contribution and image identification associated with regional centers.
LU-1.1.5. Promote the assemblage of commercial parcels found in strip commercial areas along Central, Holt, Moreno and Mission.
LU-1.1.25. Encourage the design of these properties to create an enjoyable environment for shopping by promoting improved architectural appearance of buildings, excellent landscaping, and appropriate regulated signing, parking and traffic circulation.
CE-1.1.5. Promote the beautification of streets by promoting and maintaining a tree planting, tree replacement, tree maintenance and landscaping program on all streets, with special emphasis on the entrance to the city, to screen from view service road areas, and along major/minor roadway corridors and median dividers.
CD-1.1.1. Continue the establishment of an individual and distinctive identity by encouraging the highest quality design in architecture, landscape architecture, sign graphics, and in the design of street furniture and fixtures.

Growth Management

Regional Coordination

LU-1.1.4. Participate in and support the regional activities of the Southern California Associated Governments, the San Bernardino Associated Governments, City/County Planning Commissioners Conference, and other such agencies.

Financial Strategies

Ontario
2005

Mixed Use Designation

Community Development Element Matrix Section 7.3: Land Use Goals and Implementation Policies.
Policy 7.3.5.4: Support and encourage development of mixed use projects, which combine residential uses commercial uses in a planned environment

Maximum Density

Transit Policies

M3-2 Transit Facilities at New Development. We require new development to provide transit facilities, such as bus shelters and turnouts, as necessary.
M3-4 Bus Rapid Transit (BRT) Corridors. We work with regional transit agencies to implement BRT service to target destinations and along corridors, as shown in the Transit Plan.
M3-5 Light Rail. We support extension of the Metro Rail Gold line to Ontario, and will work to secure station locations adjacent to the Meredith site and at the proposed multimodal transit center.
M3-6 Metrolink Expansion. We advocate expansion of Metrolink service to include the Downtown and and the multimodal transit center.
M3-7 High Speed Rail. We encourage the development of high-speed rail systems that would enhance regional mobility in Southern California and serve the City of Ontario.
M3-8 Feeder Systems. We work with regional transit agencies to secure convenient feeder service from the Metrolink station and the proposed multimodal transit center to employment centers in Ontario.

M3-9 Ontario Airport Metro Center Circulator. We will explore development of a convenient mobility system, including but not limited to shuttle service, people mover, and shared car system, for the Ontario Airport Metro Center.
M3-10 Multimodal Transit Center. We will explore development of a multimodal transit center near LAONT airport to serve as a transit hub for local buses, BRT, the Gold Line, high-speed rail, the proposed Ontario Airport Metro Center circulator and other future transit modes.
Transit Implementation
Work with transit providers to identify and implement appropriate infrastructure improvements and minimize potential impediments to enhance the effectiveness of BRT (Bus Rapid Transit) service in Ontario, including consideration of strategies such as traffic signal preemption and queue-jumper lanes.
Evaluate the provision of incentives, such as but not limited to reduced parking standards and density/intensity bonuses, to those projects near transit stops that include transit-friendly uses such as child care, convenience retail, and housing.
Establish a development impact fee for the Ontario Airport Center to help fund the intermodal transit center and Ontario Airport Metro Center circulator.

Parking Management Strategies

TOD Policies

M3-3 Transit-Oriented Development. We consider the provision of development related incentives for projects that promote transit use.

Urban Design Policies

LU1-3 Mobility. We promote development and urban design that reduces reliance on the automobile and capitalizes on multi-modal transportation opportunities.
LU3-2 Design Incentives. We offer design incentives to help projects achieve the Vision.
The incentive program is intended to realize improved value, a rich palette of amenities, locational landmarks, and to create identitative places through the use of the following types of qualities/features:
1. Improved or intensified commercial and/or mixed use developments on the intersections of arterial roadways
2. Innovative site plans and layouts
3. Ideal mixture and placement of uses
4. Residential infill projects near transit facilities, recreational amenities, and/or service and employment centers
5. Replacement of under-performing, mid-block strip commercial uses with new residential uses or the improvement and/or intensification of existing, mid-block residential uses.
6. Lot consolidation and development of desired projects
7. Residential or employment uses within a five minute walk to transit
8. Shared/consolidated parking facilities
9. Local-serving uses that reduce trips and improve community identity (e.g. day care centers, video rental stores, community centers, or parks)
10. Creation of community activity centers
11. Pedestrian building orientation and design
12. Public plazas
The menu of incentives below describes the types of incentives that will be considered in return for the features noted above.
1. Density transfers
2. Combinations of adjoining land use designations (e.g. Low Density and Neighborhood Commercial land use designations) using the combined maximum density as base development ceiling.
3. Minor adjustments of land use boundaries
4. Reduced parking requirements
5. Increased floor area ratio (FAR)
6. Increased residential density
7. Increased maximum height
8. Reduced setbacks
9. Modifications to create open space (private and common) requirements
CD1-4 Transportation Corridors. We will enhance our major transportation corridors within the City through landscape, hardscape, signage and lighting.
CD2-4 Mixed Use, Urban Office and Transit Serving Areas. We require mixed use, urban office and transit serving areas to be designed and developed as pedestrian-oriented "villages" that promote a vibrant, comfortable and functional environment.
CD2-5 Streetscapes. We design new and, when necessary, retrofit existing streets to improve walkability, bicycling, and transit integration, to strengthen connectivity, and enhance community identity through improvements to the public right of way such as sidewalks, street trees, parkways, curbs, street lighting, and street furniture.
CD3-A Connectivity. We promote development of local street patterns and pedestrian networks that create and unify neighborhoods, rather than divide them, and create cohesive and continuous corridors, rather than independent "islands" through the following means:
- local street patterns that provide access between subdivisions, within a neighborhood and discourage through traffic
- a local street system that is logical and understandable for the user. A grid system is preferred to avoid circuitous and confusing travel paths between internal neighborhood areas and adjacent arterials; and
- neighborhoods, centers, public schools, and parks that are linked by pedestrian greenways/open space networks. These may also be used to establish clear boundaries between distinct neighborhoods and/or centers.
CD3-1 Pedestrian Circulation. We require that pedestrian, vehicular and bicycle circulation on both public and private property be coordinated and designed to maximize safety, comfort and aesthetics.
CD3-2 Connectivity Between Streets, Sidewalks, Walkways and Plazas. We require landscaping and paving be used to optimize visual connectivity between streets, sidewalks, walkways and plazas for pedestrians.
CD3-7 Transit Stops. We require transit stops be well lit, safe, appealing to and accessible by pedestrians.

Growth Management

LU1-1 Strategic Growth. We concentrate growth in strategic locations that help create place and identity, maximize available and planned infrastructure, and foster the development of transit.

Regional Coordination

LU1-4 Jobs-Housing Balance. We coordinate land use, infrastructure, and transportation planning and analysis with regional, county and other local agencies to further regional and subregional goals for jobs-housing balance.

Financial Strategies

Draft

Governments SANBAG Working Together

Rancho Cucamonga
Mar-06

Mixed Use Designation	2.5.3.6 Mixed Use (Probable FAR of 0.40 and Maximum FAR of 1.0)
Maximum Density	Residential Densities up to 30 DU/AC
Transit Policies	3.5.5 We shall pursue trip reduction and transportation systems management measures to reduce congestion on roadways and at intersections. 3.5.8 We shall continue to coordinate with Omnitrans to provide transit service (bus or shuttle) to our major centers of activity, employment, and housing. 6.4.4.3 Require the design of transit stops to be compatible with adjacent development and provide for adequate seating, signage, and shade.
Parking Management Strategies	
TOD Policies	2.6.1.5.7 Development projects should be designed to facilitate non-vehicular and transit system access and use. 6.4.1.5 Mixed use areas should be developed as higher intensity "urban centers" where there is sensitive integration of land uses, convenient modes of transportation, and a focused "sense of place" that emanates from the architectural and landscape design.
Urban Design Policies	Include an integrated circulation system of arterial access, internal circulation, parking facilities, pedestrian pathways, bicycle routes, transit stops (where applicable), and related signage. It is intended that movement within the entire opportunity area be feasible on site without being forced to use adjacent arterial highways to move to other portions of the mixed-use development. 2.6.1.2.1 Key opportunity areas should be given priority in the further development of the City by focusing City efforts on bringing about their development or conservation, as appropriate, as soon as possible. 2.6.1.3.2 Restrict strip commercial development in favor of more focused commercial or mixeduse centers. 2.6.1.3.3 Commercial and office development should have equally convenient access for pedestrians, bicycles, buses and automobiles. 2.6.1.3.9 Allow medium and high density residential uses along transit routes in mixed-use areas and in the vicinity of activity centers. 3.5.11 We shall require the implementation of sidewalks and paths to enable safe and convenient pedestrian travel within our community. 6.4.1.6 The intersection of Foothill Boulevard and Haven Avenue, extending south to 4th Street, should form the central business hub of the City with higher intensity office, commercial, and public/quasi-public uses. 6.4.4.4 Continue to pursue the placement of public art in prominent locations, particularly along major travel corridors and intersections within the City.
Growth Management	
Regional Coordination	2.6.1.1.2 Regionally oriented uses should be located near the regional transportation network. 2.6.1.1.3 Access to regional serving uses shall be designed to provide maximum access capability and permit maximum dispersal of traffic.
Financial Strategies	

Redlands

1995

Amended Dec 1997

Mixed Use Designation

Maximum Density

Residential Densities up to 27 DU/AC

Density Limitation: Under Measure N, a zoning ordinance, no land designated by the General Plan as urban reserve as of June 1, 1987 is to be redesignated for a higher density than one dwelling unit per 14,000 square feet of net site area, except by a four-fifths vote of the City Council with findings of "no significant adverse environmental impact."

Current City policy that specifies a maximum density on slopes of 15 to 30 percent at one unit per two and one-half acres and, on slopes exceeding 40 percent, one unit per 10 acres. On slopes between 30 and 40 percent, required site area increases approximately proportionally from five acres to 10 acres per unit depending on slope and soil type.

Transit Policies

5.40a Ensure that employers implement TDM programs to reduce peak period trip generation.

5.40b Cooperate with public agencies and other jurisdictions to promote local and regional public transit serving Redlands.

5.40c Support the Congestion Management Program for San Bernardino County.

5.40e Favor TDM measures that limit vehicle use over those that extend the commute hour.

Programs such as ridesharing and public transit reduce overall vehicle travel while flex time and staggered work hours simply shift traffic to less congested times of day.

5.40f Support local feeder bus service to and from current and future regional transit lines.

5.40g Preserve options for future transit use when designing improvements to roadways.

5.40h Work with Omnitrans to plan for local bus routes that are better able to penetrate neighborhoods to improve service for potential riders. Designate local bus routes in Specific Plan areas.

5.40i Future commuter rail services are planned within the Santa Fe rail corridor, with stops at California Street, Orange Street and Mentone Blvd. Improvements to these streets should be planned for feeder transit services, and park-and-ride provisions should be made at these locations. Another logical stop would be at University Street to serve the campus at the University of Redlands. Other potential stops could be at Judson Street and at Crafton Avenue. Residents in these areas might use short, trip commuter rail to downtown Redlands, either to work or shop.

5.40j Work with Omnitrans to plan for bus shelters and turnouts.

5.40k Incorporate bus shelters and turnouts into design and approvals of new developments as necessary.

Parking Management Strategies

TOD Policies

Urban Design Policies

4.40g Locate high and Medium-Density development near regional access routes, employment centers, shopping areas, and public services.

4.40i Encourage incorporation of residential units in Downtown mixed-use projects.

Growth Management

1A.40 Principle Four

Agricultural uses of land are important to the culture, economy and stability of the City of Redlands and shall be preserved to the greatest extent possible consistent with the will of the people as expressed in Proposition R and Measure N, and consistent with the policies of the State of California set forth in Government Code Section 51220.

2.0e Encourage and promote orderly development and growth of urban areas while maintaining and encouraging the best possible use of agricultural land, protecting it against premature encroachment of non-agricultural development. Consider the costs of extending urban facilities and services in the review of urban development.

Regional Coordination

Financial Strategies

Governments SANBAG Working Together

Draft

Rialto
Mar-92

Mixed Use Designation

CD Policy 1.2.3 - In that the mixed use character of neighborhoods may be a positive influence (promoting self sufficiency), as well as a negative influence (spot zoning and incursion of incompatible land uses), the City will discourage such spot zoning and incompatible land uses within its neighborhoods. At the same time, the City will encourage a variety of compatible land uses within walking distance of residential neighborhoods. This may be accomplished by encouraging master planned, mixed use projects which incorporate the basic range of uses, facilities, and services necessary for neighborhoods to sustain themselves. The City shall consider such projects only when accompanied by a design program demonstrating that an innovative urban village concept can be created which meets the objectives of this element.

Maximum Density

Residential Densities up to 21 DU/AC

Transit Policies

3.2.3.4 Alternative modes of travel such as commuter rail, park and ride facilities, bus transit and bicycle trails shall continue to receive cooperation and support from the City.

3.2.3.5 Ride sharing, flexible work scheduling and telecommuting provisions of the AQMP and CMP shall be supported by the City for its own employees as well as for the major businesses and industries within the City.

Goal 5.1. Maximize the benefits of commuter rail service to Rialto. Policies:

5.1.1.1 Work with SANBAG to adopt the commuter rail line plan which includes thirteen stops, thus assuring a stop in Rialto.

5.1.1.2 Plan for a commuter rail station which includes:

-Required parking of 300 spaces,

-An adjoining transit center convenient for passenger transfer between commuter rail and bus lines,

-Shopping and services for commuters adjacent to the station site, and

-Maximum accessibility to the Downtown Area.

5.1.1.3 Apply the T – C (Transportation Corridor Zone) provisions' to both mid-City railroad lines in Rialto in order to ensure that

-Public improvements and other conditions of approval necessitated by development are provided.

Goal 6.1.1 Improve public support and use of local Omnitrans service. Policies

6.1.1.1 Provide an Omnitrans terminal at the Commuter Terminal/ Transit Center.

6.1.1.2 Work with Omnitrans to use its Transit Center Terminal as the hub of routes within and through Rialto.

6.1.1.3 Work with Omnitrans to coordinate bus schedules with commuter rail schedules.

6.1.1.4 Continue providing clean and lighted bus passenger shelters.

Goal 6.1.2 Recognize paratransit as an important adjunct to transportation services in Rialto. Policies:

6.1.2.1 Encourage major employers to use van pools and other HOV's for home to work journeys, as required by the AQMP.

6.1.2.2 Encourage employers to use vans, small buses and other HOV's to link work places with the Transit Center.

6.1.2.3 Investigate the feasibility of -intra-City van or municipal bus service for shopping, recreation and other transportation needs of residents, workers and the transit dependent.

Parking Management Strategies

4.1.1.1 Develop a Parking Management Plan as a tool for assessing Citywide parking supply and demand and meeting changing parking needs as they occur throughout City.

4.1.2.1 Provide priority parking spaces for ride share and HOV (high occupancy vehicles) in transit center parking lots.

4.1.3.2 Require priority parking spaces for ride share and HOV at employment centers, when required by AQMP or CMP.

4.1.3.3 Support additional AQMP and CMP parking standards as required.

4.1.2.1 Monitor Transit Center/Commuter Rail parking to prevent "spill-over" parking by commuters using spaces designated for Downtown business customers.

TOD Policies

Urban Design Policies

Goal 4.1.3 Enhance Riverside Avenue to be the signature street of the City of Rialto.

Policies

4.1.3.1 Create a portal at the City's north west entrance on Riverside Avenue.

4.1.3.2 Provide planted median strips, parkway planting and turning pockets on Riverside Avenue throughout the City. (Refer to the Community Design Element, Chapter VIII, Street Enhancement Program.)

4.1.3.3 Preserve and improve the northern section of Riverside Avenue as an enhancement to some of the City's finest neighborhoods.

4.1.3.4 Prevent strip commercial development and other inappropriate land uses on northern Riverside Avenue which is inconsistent with the goals and policies of the General Plan

1.3.5 Within industrial and commercial developments, discourage rectangular building footprints along street frontages, and encourage the arrangement of structures on the site to allow for adequate visibility of the site, to promote visual interest as well as for security measures.

1.3.6 Encourage and provide for adequate pedestrian and/or bicycle linkages in, and between, commercial areas.

3.1.7 Parking lots at the rear of a commercial development shall not be isolated from the fronts of buildings. Commercial developments shall provide either mid-building pedestrian access or fully treated rear entrances. Delivery areas shall be separated from pedestrian areas.

3.1.8 Rather than relating only the parking lots, commercial projects should also include internal corridors or passages which are not jeopardized by automobile noise and congestion. These should be designed with the type of visual and social elements which can draw the pedestrian from building to building, patio to courtyard.

3.1.11 Bus shelters shall be incorporated in all new commercial and industrial projects, and in all residential, institutional or other developments fronting major highways as defined in Chapter V, Circulation. Bus shelters may also be required in rehabilitation projects affecting existing commercial and industrial projects.

3.1.12 The City will incorporate the construction of bus shelters for existing projects into its capital improvement program.

Growth Management

Regional Coordination

3.2.1.4 Coordinate east-west arterial improvements with the cities of Colton, San Bernardino and Fontana.

Financial Strategies

4.1.2.2 At such time as growth and development in the Downtown area make the current inventory of Downtown streetside parking space insufficient to meet the needs of Downtown businesses, additional parking shall be provided in municipal lots adjacent to Downtown businesses. Land acquisition, construction and maintenance of these parking facilities are to be funded by a special assessment district.

San Bernardino
Nov-05

Mixed Use Designation

Regional Commercial. Commercial Regional -2 (CR-2) Downtown - "Non-Residential Intensity - 3.0 floor area ratio (4.0 floor area ratio if a vertical mixed use project). Residential Density - 54 dwelling units per acre."

Maximum Density

Residential Densities up to 35 DU/AC

Transit Policies

Goal 6.6 Promote a network of multi-modal transportation facilities that are safe, efficient, and connected to various points of the City and the region.
Policies:
6.6.2 Create a partnership with Omnitrans to identify public transportation infrastructure needs that improve mobility.
6.6.3 In cooperation with Omnitrans, require new development to provide transit facilities, such as bus shelters and turnouts, as necessary and warranted by the scale of the development. (LU-1)
6.6.4 Ensure accessibility to public transportation for seniors and persons with disabilities.
6.6.5 In cooperation with Omnitrans, explore methods to improve the use, speed, and efficiency for transit services. These methods might include dedicated or priority lanes/signals, reduced parking standards for selected core areas, and incorporating Intelligent Transportation System architecture.
6.6.6 Support and encourage the provision of a range of paratransit opportunities to complement bus and rail service for specialized transit needs.
6.6.7 Encourage measures that will reduce the number of vehicle-miles traveled during peak periods, including the following examples of these types of measures:
-Incentives for car-pooling and vanpooling.
-Preferential parking for carpools and vanpools.
-An adequate, safe, and interconnected system of pedestrian and bicycle paths.
-Conveniently located bus stops with shelters that are connected to pedestrian/bicycle paths. (A-1)
6.6.8 Promote the use of car-pools and vanpools by providing safe, convenient park-and-ride facilities.
6.6.9 Work with Omnitrans to create transit corridors such as the one currently being explored on E Street, linking CSUSB to Hospitality Lane, to increase transit ridership, reduce traffic congestion, and improve air quality.
6.6.10 Consider the provision of incentives, such as reduced parking standards and density/intensity bonuses, to those projects near transit stops that include transit-friendly uses such as child care, convenience retail, and housing.

Parking Management Strategies

Goal 6.9 Achieve a balance between parking supply and demand.
Policies:
6.9.1 Ensure that developments provide an adequate supply of parking to meet its needs either on-site or within close proximity. (LU-1)
6.9.2 Study the parking standards in the Development Code to determine if adequate flexibility is available to accommodate desirable situations, such as shared parking, Corridor Improvement actions, or transit oriented developments. (A-1)
6.9.3 Continue to expand the supply of public parking in off-street parking facilities in downtown San Bernardino.
6.9.4 Continue to provide an in-lieu parking fee option for developments in the Downtown area to satisfy all or part of their parking requirement through the payment of an in-lieu fee which will be utilized to provide parking in consolidated public parking facilities.
6.9.5 Require that new developments submit a parking demand analysis to the City Engineer for review and approval whenever a proposal is made to provide less than the full code requirement of parking. (LU-1)
6.9.6 Develop parking and traffic control plans for those neighborhoods adversely impacted by spillover parking and traffic. (C-3)

TOD Policies

Encourage mixed use development and pedestrian friendly uses/development adjacent to transit stops.
2.3.2 Promote development that is compact, pedestrian-friendly, and served by a variety of transportation options along major corridors and in key activity areas. (LU-1)
2.4.6 Work with Omnitrans to explore initiatives that promote redevelopment near transit stops in order to encourage transit ridership, reduce vehicular trips, improve air quality, and improve traffic congestion:
-Concentrate mixed use development, retail, employment, entertainment, educational, and civic/government uses within walking distance of transit stops.
-Explore the use of incentives that can be awarded to projects that provide pedestrian amenities (wide sidewalks, public plazas, seating areas, etc...) and/or include desirable uses located within walking distance (1/2 mile) of transit stops. Incentives may include density bonuses, increases in non-residential floor area, reductions in parking requirements, and modified development standards.

Urban Design Policies

Promote downtown revitalization by seeking and facilitating mixed-use projects (e.g. combinations of residential, commercial, and office uses).
Parking should be located to the rear, below, or above the ground floor of the street-facing commercial/office structure.
2.3.1 Commercial centers, open spaces, educational facilities, and recreational facilities should be linked to residential neighborhoods. (LU-1)
2.3.7 Improvements shall be made to transportation corridors that promote physical connectivity and reflect consistently high aesthetic values. (CD-1)
2.4.2 Continue to provide special incentives and improvement programs to revitalize deteriorated housing stock, residential neighborhoods, major business corridors, and employment centers. (LU-3 and LU-4)
2.5.6 Require that new developments be designed to complement and not devalue the physical characteristics of the surrounding environment, including consideration of:
-Linkages to pedestrian, bicycle, and equestrian paths;
-The use of consistent and well designed street signage, building signage, and entry monumentation
-The location of parking at the rear, above, or below the ground floor of non-residential buildings to enhance pedestrian connectivity. (LU-1)
5.3.3 A well-integrated network of bike and pedestrian paths should connect residential areas to schools, parks, and shopping centers. (LU-1 and CD-1)
5.5.5 Provide continuous sidewalks and links to nearby community facilities and retail centers. (LU-1)
5.6.3 Reduce the visual impact of parking areas by utilizing interior courtyard garages, parking structures, subterranean lots, or tuck-under, alley-loaded designs. (LU-1)
5.6.5 Provide convenient pedestrian access from multi-family development to nearby commercial centers, schools, and transit stops. (LU-1)
5.7.2 Orient buildings toward major thoroughfares, sidewalks, and public spaces so that parking is convenient but not visually dominating. (LU-1)
5.7.5 Parking areas shall provide, where practical, pedestrian pathways for safe access to shopping and activity areas that are defined by landscaped planters and incorporated into the parking lot design. (LU-1
5.7.7 Minimize the visual impact of surface parking lots by locating them behind buildings, away from the street or through perimeter and interior landscaping, berming, and small-scale fencing. (LU-1)
Purpose: The Corridor Improvement Program is an optional package of policy, regulatory, and incentive programs that, if applied, are intended to stimulate private investment and result in desired development within the Corridor Strategic Areas. This is accomplished by providing optional incentives, in the form of density bonuses and varied development standards, to developments that qualify. While the underlying land use designations still apply, the property owner may request, and the City may choose to apply, aspects of this program to stimulate desirable development.
A) Priority Locational Projects are those that:
1) Develop or improve commercial and/or mixed uses on the intersections of arterials, and/or 2) replace strip commercial use with residential uses or improve existing residential uses between the intersections of arterials.
-In Priority Locational Projects, mixed-use projects are permitted with a floor area ratio of 2.0 for commercial and office uses and residential density of 24 units per acre. Commercial only projects are permitted at a maximum floor area ratio of 1.5. A maximum height of 3 stories is permitted for projects that combine residential and commercial uses and 2 stories for commercial only projects. Parking areas are required to be located in the rear of the lot with the buildings oriented to the sidewalk.
B) Lot Consolidation: Projects that combine parcels are eligible to receive a 2.5% density bonus and a 10% floor area ratio bonus for each lot combined.
C) Encourage the development of desired projects or provide public amenities through the use of incentives. The following incentives are not cumulative and the City can choose to award the greatest level of incentives to projects that incorporate numerous desirable features.
-Proximity to transit. Projects with a residential component that are located within 500 feet of a designated transit stop are eligible to receive up to a 15% density bonus. Mixed-use projects would also receive a 10% increase in floor

Growth Management

Regional Coordination

6.4.3 Continue to participate in forums involving the various governmental agencies, such as Caltrans, SANBAG, SCAG, and the County that are intended to evaluate and propose solutions to regional transportation problems.
6.6.1 Support the efforts of regional, state, and federal agencies to provide additional local and express bus service in the City.

Financial Strategies

Draft

Upland
Jun-82
Updates Compiled: Jul 1992
Circulation & Land Use 1996

Mixed Use Designation

Mixed Use Commercial/Industrial - Redesign industrial/commercial sites, or allow for adaptive reuse of industrial areas through redesignation of land use to regional commercial or industrial/commercial mixed use designation.

Maximum Density

Medium Residential Densities up to 20 DU/AC

Transit Policies

Public transportation facilities shall be promoted that: (1) provide a viable alternative to the automobile; (2) satisfy the transportation needs of the commuters, the economically disadvantaged, the aged, the young, and the disabled; and (3) promote service at a reasonable and equitable cost to both the users and the general community.
Regional commuter rail service shall be encouraged.
Increased inter-community and regional bus service shall be encouraged.

Parking Management Strategies

Parking concepts that relate to joint or shared parking use to maximize utilization of existing and proposed parking facilities shall be considered.
Whenever a development proposes to provide less parking than that required by the City Zoning Code, the applicant for that development shall submit a parking demand analysis to the City Public Works Director for review and approval.

TOD Policies

Urban Design Policies

Provide for the development of Foothill Boulevard frontages for commercial as well as residential uses subject to development standards intended to control vehicular access and improve visual quality of the thoroughfare.
Consider the implementation of a variety of Redevelopment Agency incentives within the Foothill Corridor project area.
Revise the Zoning Ordinance
8. Establishment of standards to enhance the pedestrian character of streets in the commercial industrial districts including the types of use, architectural design, and siting of structures at the ground floor elevation.
Lot Consolidation Program
The City, in cooperation with the Redevelopment Agency and local property owners may develop a program for the consolidation of small lots into larger parcels of greater economic viability in the Town Center, in the 7th and 9th Streets study areas, and Foothill Boulevard. This should occur with specific short term development programs for these areas and developer participation.
Urban Design Improvements
The City shall provide for formulation of Urban Design Guidelines, define a funding program, and implement public space improvements for key activity areas and entry points to the City, as defined by the land use strategy. This will include street trees and landscape, street furniture, lighting, signage, sidewalk and special paving, other pedestrian amenities, and physical integration of individual developments for pedestrian and vehicular customer convenience. Locations for which plans should be prepared and improvements implemented include:
-City entries
-Town Center,
-Major commercial/industrial corridors.
-Foothill Boulevard,
-Euclid Avenue.
Pedestrian connections shall be encouraged between commercial uses and adjacent residential development through the City site planning review process.

Encourage combining vehicular and pedestrian traffic patterns between separate adjoining developments to reduce hard surface aspect along major corridors.
All new development shall be encouraged to provide landscaped parkways, appropriate pedestrian amenities and other streetscape improvements that improve the aesthetics of the roadway to both vehicular and pedestrian traffic.

Growth Management

Regional Coordination

Financial Strategies

Rehabilitation/Renovation Incentives
The City shall continue to expand programs of low interest loans and grants for the renovation, rehabilitation, and/or adaptive reuse of existing residential, commercial, and industrial structures. Additionally, the City shall establish educational programs to train property owners and tenants in renovation and rehabilitation construction techniques and provide technical assistance to low income individuals. The latter should include building surveys and improvement specifications by structural and mechanical engineers and architects and construction assistance by contractors. The City should solicit programs of voluntary participation by local architects, engineers, contractors, and construction workers.

Yucaipa
Jul-04

Mixed Use Designation	Planned Development (PD). (Future Land Use)
Maximum Density	Medium Residential Densities up to 8 DU/AC
Transit Policies	Identify long-range transportation corridors in conjunction with the plans of regional transportation agencies; develop a program to protect the right-of-way for long range transit corridors. Develop and implement a TDM ordinance Coordinate with Omnitrans for the provision of appropriate public transit routes and issues for the elderly and other city residents. Develop incentive programs for the use of alternative transportation modes such as city sponsored vanpools and other measures such as flexible working hours and four-day work weeks. Design land use patterns in new developments that minimize the number of automobile trips by providing neighborhood shopping facilities and pedestrian and bicycle paths. Because public transit is a vital element in meeting transportation demands in urban areas, the city shall implement the following actions: -Assist Omnitrans and other transit agencies in coordinating the location and scheduling of public transit services and facilities. -Urge the timely extension of public transit between residential areas and industrial/urban employment centers. -Support the establishment of transportation services and public transit between Ontario airport, orange county airport and Los Angeles International airport.
Parking Management Strategies	Designate existing park and ride facilities on the GP circulation maps, work with Caltrans to identify appropriate future park-and-ride facilities, and develop a program to acquire and develop sites for such facilities in areas where there is an identified need.
TOD Policies	
Urban Design Policies	Adopt regulations encouraging innovative residential development. Continue to use the planning development process to permit flexible design and siting standards such as setbacks, yards, and building relationships. Promote clustering as a means of achieving more efficient housing construction and providing larger areas of common open space. Establish a system to award density bonuses in return for special design, infrastructure improvements, extra amenities, useable open space or other developer efforts. Encourage the design and implementation of land uses, development standards, and capital improvement programs which maximize the use of public transit.
Growth Management	Utilize the provisions of the Williamson act to further the preservation of commercially viable agricultural open space. Require site development plans to provide adequate sidewalk and safe pedestrian trails.
Regional Coordination	
Financial Strategies	

Governments SANBAG Working Together

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Appendix B – Transit Riders Survey

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Draft

San Bernardino Associated Governments
Profile of Transit Riders in San Bernardino County

Final Report
March, 2007

Submitted to:

SANBAG
1170 West 3rd Street, 2nd Floor
San Bernardino, California 92410

Submitted by:

Parsons Transportation Group

PARSONS

CERTIFICATE OF SERVICE

I, Malinda Markland, do hereby certify that copies of the foregoing "Petition for Special Relief" were sent this 16th day of March, 2015, via electronic mail, to the following:

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