WESTERN RIVERSIDE COUNTY
NON-MOTORIZED TRANSPORTATION PLAN

Part 2 of 2

JUNE 2010

SECTION 3.0 LOCAL PEDESTRIAN PATH AND BIKEWAY PLANS

Non-motorized plans include bikeways, recreational trails, and pedestrian walkways. At the local level, proposed and existing networks are typically identified within a jurisdiction's Circulation Element but may be found in other sections of a General Plan. Regional plans may represent an assemblage of local plans within a defined area, focus upon broader-based regional network such as the County of Riverside's plan, or represent a combination of these systems. Network components may be explicitly identified through a discrete map or guidance document such as a Bike Plan or implied like a sidewalk system through street cross sections and classifications. Recreational and multi-use trails may also be the subject of a specifically identified network.

Within western Riverside County, each jurisdiction approaches non-motorized planning differently. This section highlights key elements within each planning zone. These local networks play an important role in development of the potential regional route system presented in Section 5.0 of this Plan. The regional network compliments local plans and relies upon community connections to extend the reach of proposed routes.

3.1 Local Plan Approach

Local bikeway and trails plans are updated periodically, usually as part of a General Plan update, to reflect changing land uses, community input and funding opportunities. Routes are planned for connecting neighborhoods, schools, parks, shopping centers, employment, and other destinations within the jurisdictions. Bikeways include on-street and off-road paths or lanes. Pedestrian facilities include traditional sidewalks, paved paths and dirt trails. Multi-use paths host a multitude of uses including pedestrians, bicycles, horses and golf carts, where appropriate. Design guidelines are presented in Section 6.0 of this Plan but may be modified in each jurisdiction to address specific community needs and preferences.

Although the local plan may be coordinated with neighboring jurisdictions, the emphasis is usually based upon local circulations. Implementation of local paths and bikeways is often done in small sections either in conjunction with a larger project or based upon limited budget resources. Planning, design, construction, maintenance, and security of the local system is left up to the local jurisdiction or addressed through community programs such as an assessment district, homeowners association or other sources. Grant funding may be available for certain facilities.

Most jurisdictions in western Riverside County have established bikeway and/or trails plans and some are being reviewed as part of General Plan updates to reflect current and anticipated changes in the their land plans, legislative changes and future opportunities.

Plans developed at the local level are reflective of the community character. The City of Norco is known as "Horse Town" and their extensive trail network is devoted almost exclusively to an equestrian lifestyle. The cities of Corona and Temecula have plans devoted to recreational and pedestrian uses. The cities of Riverside and Moreno Valley have plans geared toward commuting and mobility. The plans can be found on the following pages.

3.2 Local Plan Role in Regional System Planning Process

A regional plan should complement rather than compete with local plans. Connections should be deliberate and purposeful rather than random or simply convenient. The regional network is intended to serve multiple jurisdictions over greater distances. These routes will provide direct connection to regional transportation centers, recreation facilities, and major activity centers where possible. Where direct connections are not possible along the regional route, a link with the local system can be used.

The local network was reviewed extensively to help identify gaps in the system and areas that would benefit from greater trail exposure. The regional plan can be modified and implemented independently of local plans.

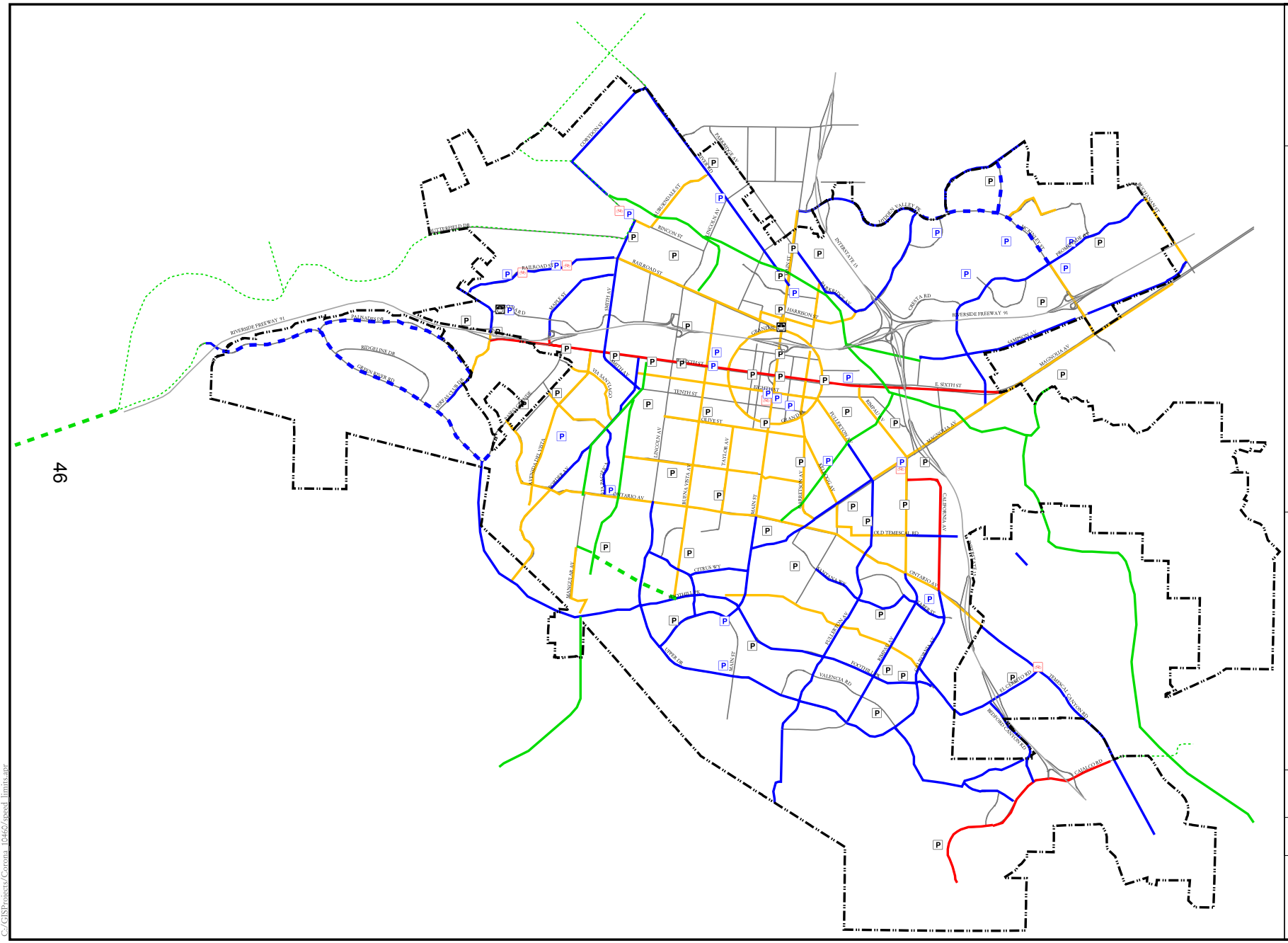


FIGURE 16
EXISTING AND PROPOSED BIKE TRAILS

Corona General Plan Update

Corona, CA

- Metrolink Station
- Planned Bike Parking
- Existing Bike Parking
- Existing Bike Amenities

- Potential Class I
- Existing Class I
- Existing Class II

- Planned Class I
- Planned Classs II
- Planned Class II/III
- Planned Class III

GIS Data Projection: CA State Plane, Zone 6, NAD 83, Units Feet.

N

0 2,250 4,500
Feet

0 0.5 1 1.5
Miles

Source: City of Corona, City Boundary, July 10, 2003, and Streets; November 15, 2002, Meyer Mohaddes, Bicycle Facilities, and Metrolink Stations January 22 , 2002; and EIP Associates GIS Program, November 10, 2003.

PROJECT NUMBER: 10460-00

Requested by: WT Created by: PP Date: 11/10/03

EIP ASSOCIATES

C:/GISProjects/Corona 10460/speed limits.apr

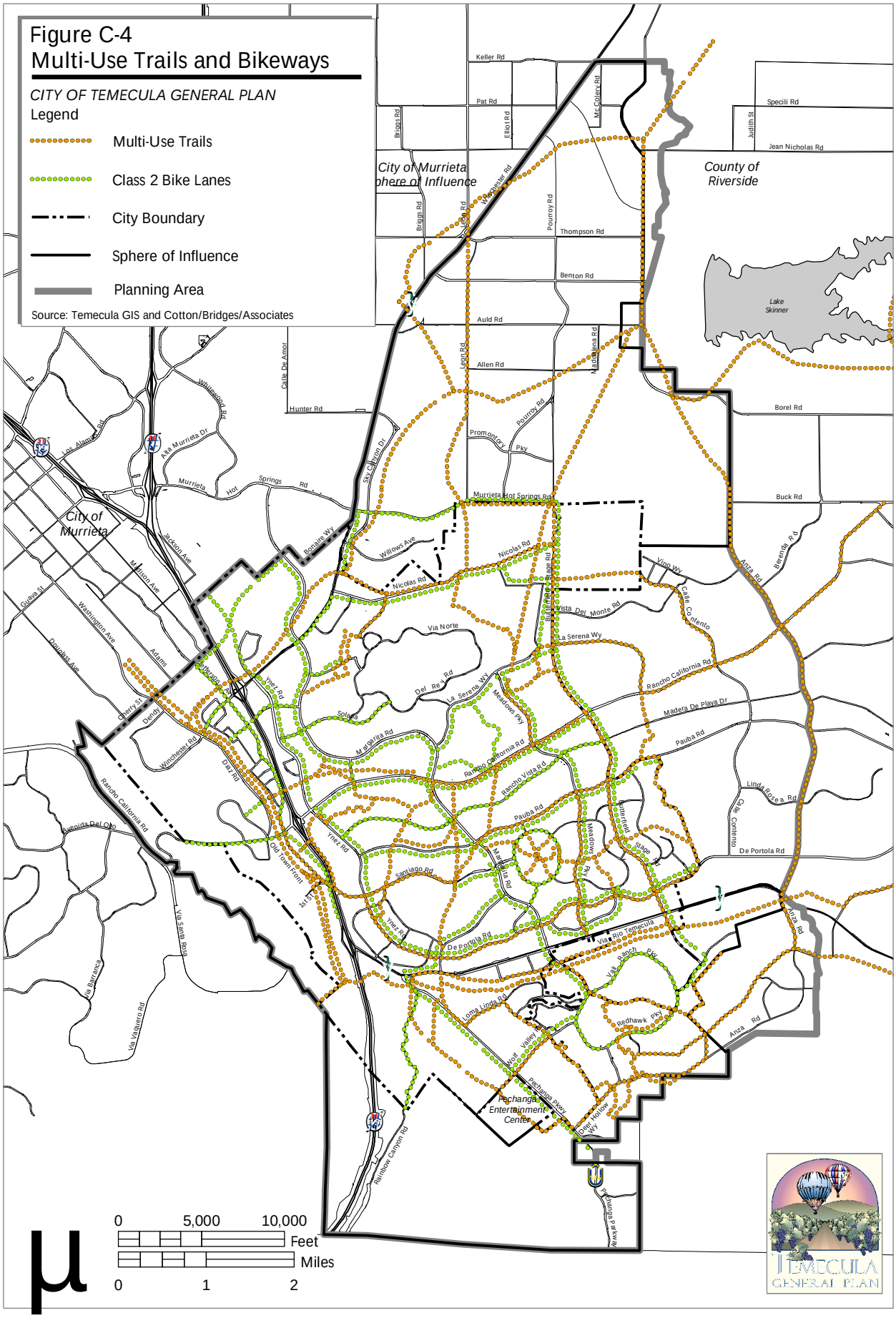
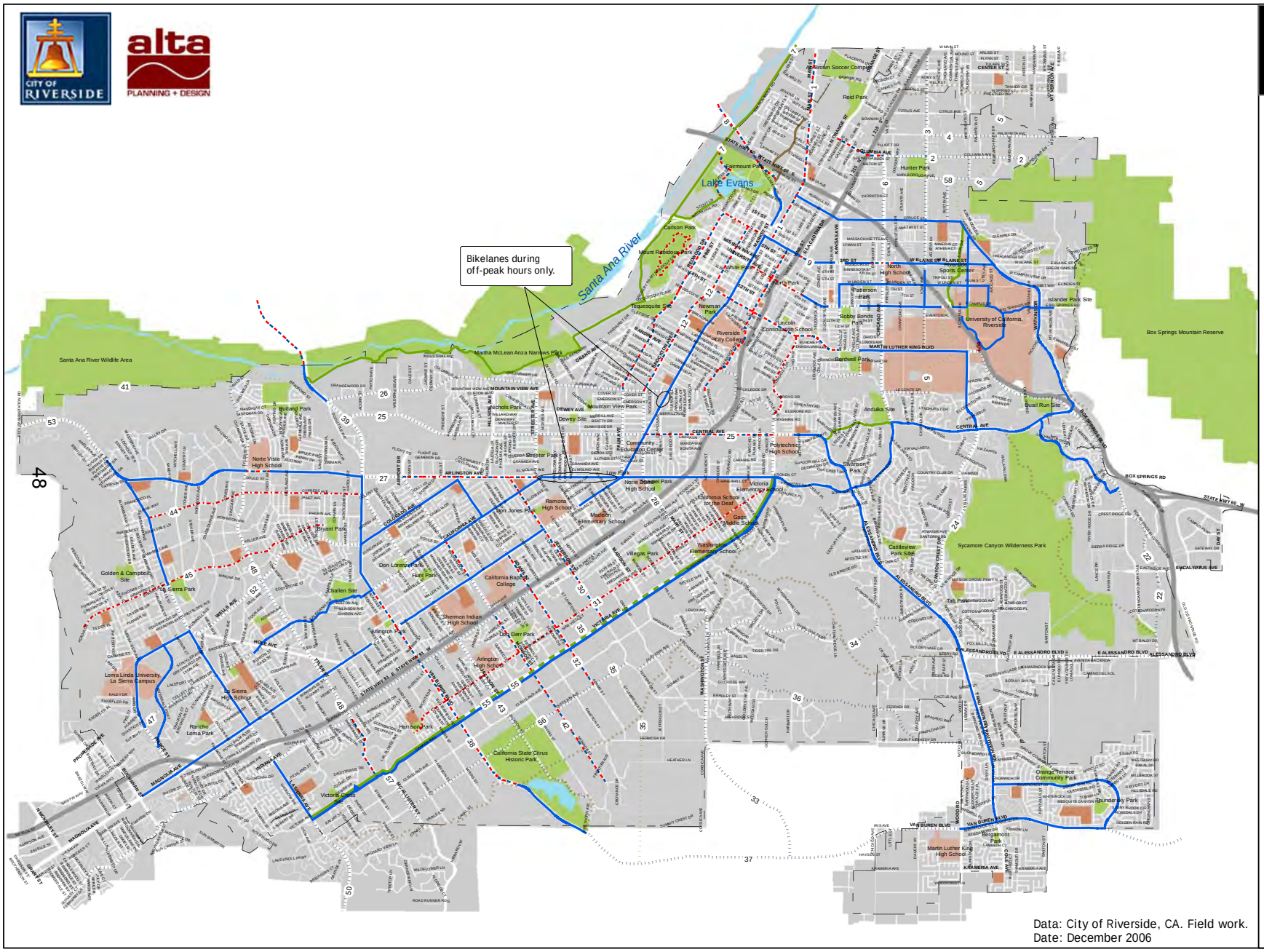


Figure C-4
Multi-Use Trails and Bikeways
CITY OF TEMECULA GENERAL PLAN
Legend
Multi-Use Trails
Class 2 Bike Lanes
City Boundary
Sphere of Influence
Planning Area
Source: Temecula GIS and Cotton/Bridges/Associates
City of Murrieta Sphere of Influence
County of Riverside
City of Murrieta
Lake Skinner
Pechanga Entertainment Center
0 5,000 10,000 Feet
0 1 2 Miles
TEMECULA GENERAL PLAN

FIGURE 6-1
CITY OF RIVERSIDE EXISTING AND PROPOSED BIKEWAYS



Legend

- Highways
- Parks
- Elementary Schools
- High Schools and Universities

Bikeways

- Bike Path and Lane - Proposed*
- Bike Path and Lane- Existing
- BikePath - Existing
- Bike Lane- Existing
- Bike Path - Proposed
- Bike Lane - Proposed
- Bike Route/Lane - Proposed**
- Bike Route - Proposed
- Trail- Existing
- Trail- Proposed

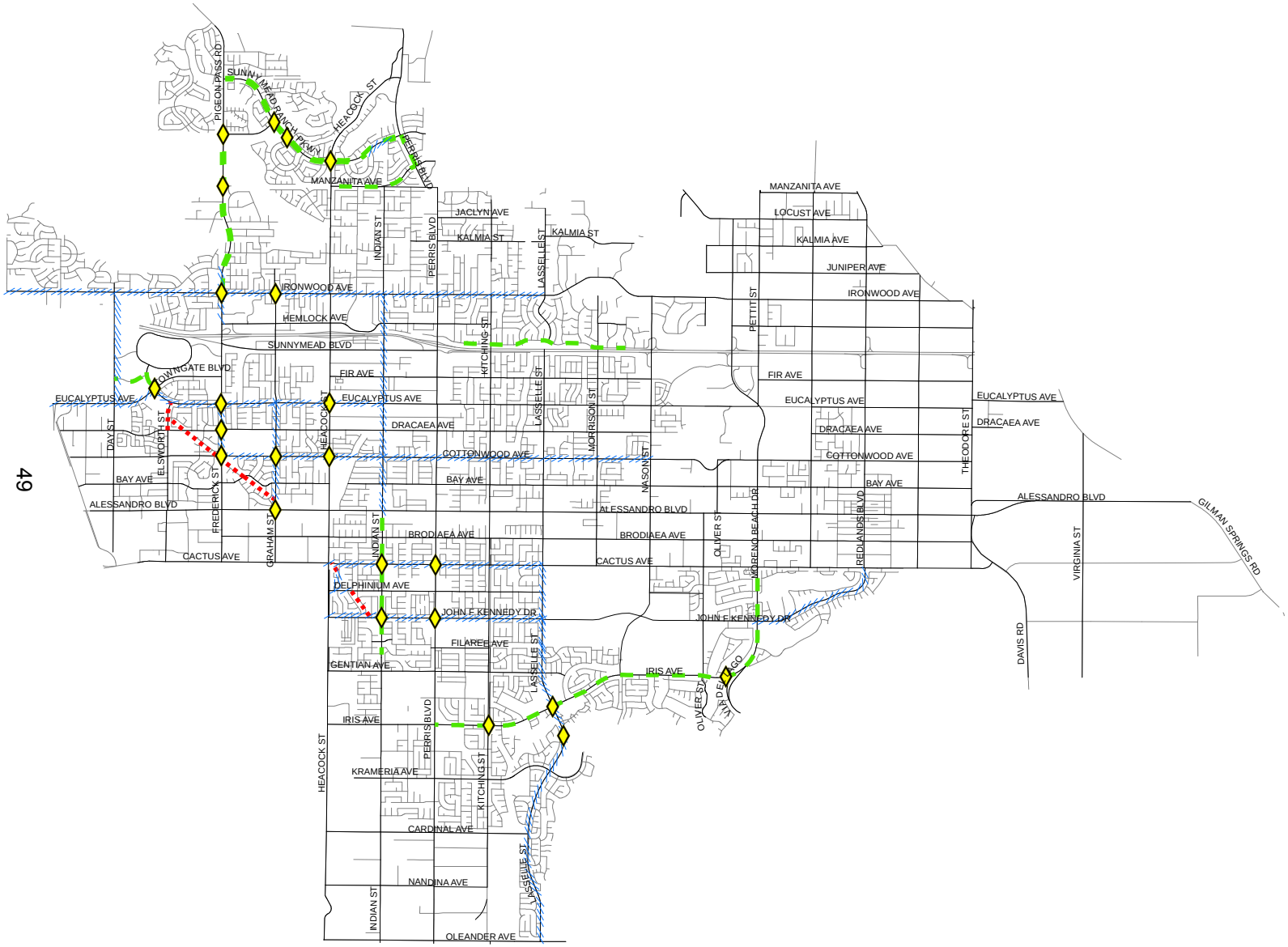
* Though bike lanes and a path exist on Victoria Ave. between Van Buren Blvd. and Washington St., the path does not currently meet Caltrans Class I bike path standards.

** These proposed segments require additional field work to determine the feasibility of striping bicycle lanes. Installing bicycle lanes on these segments may require lane reduction, road widening, or other major adjustments to the roadway.

Miles

0 0.5 1 1.5 2

City of Moreno Valley
Existing Bikeways



Class I Bike Lanes

Class II Bike Lanes

Class III Bike Lanes

Signal w/Bike Logic Installed

Class I: Off street, marked with broken yellow lines, with signage

Class II: On street, striped with solid white lines, with "No Parking" signs

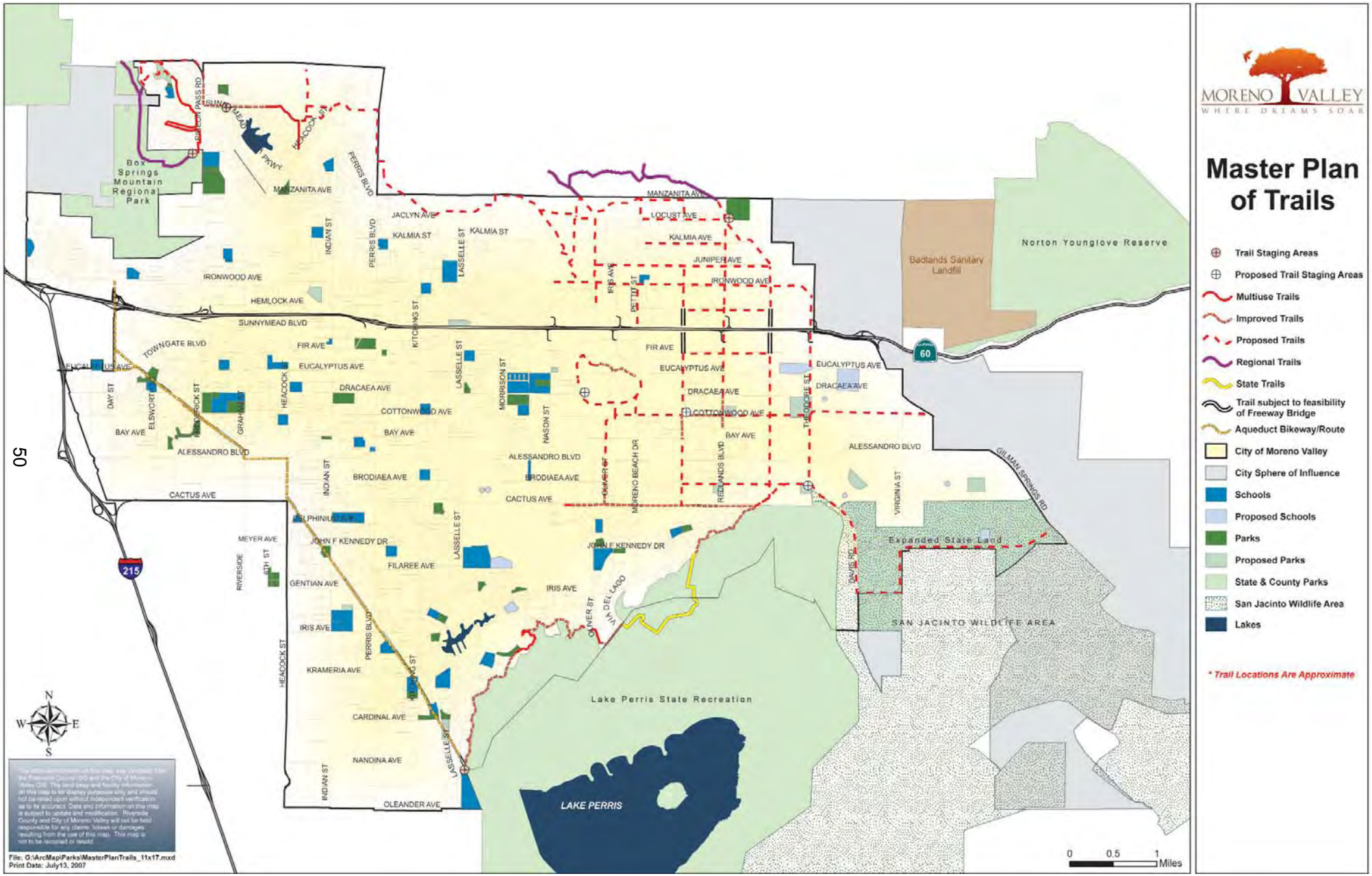
Class III: On street, striped with solid white lines, no signage, parking may occur

Map Produced by Moreno Valley Geographic Information System

Geographic Information in:
State Plane NAD 83 California Zone 6 Feet
G:\ArcMap\Transportation\existing_bikeways_newtemplate
August 12, 2008

The information shown on this map was compiled from the Riverside County GIS and the City of Moreno Valley GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

MORENO VALLEY
WHERE DREAMS SOAR


MORENO VALLEY
WHERE DREAMS SOAR
Master Plan of Trails
Trail Staging Areas
Proposed Trail Staging Areas
Multiuse Trails
Improved Trails
Proposed Trails
Regional Trails
State Trails
Trail subject to feasibility of Freeway Bridge
Aqueduct Bikeway/Route
City of Moreno Valley
City Sphere of Influence
Schools
Proposed Schools
Parks
Proposed Parks
State & County Parks
San Jacinto Wildlife Area
Lakes
* Trail Locations Are Approximate
Box Springs Mountain Regional Park
Badlands Sanitary Landfill
Norton Younglove Reserve
Expanded State Land
SAN JACINTO WILDLIFE AREA
Lake Perris State Recreation
LAKE PERRIS
MANZANITA AVE
JACLYN AVE
KALMIA ST
LOCUST AVE
JUNIPER AVE
IRONWOOD AVE
HEMLOCK AVE
SUNNYMEAD BLVD
TOWNGATE BLVD
FIR AVE
EUCALYPTUS AVE
DRACAEA AVE
COTTONWOOD AVE
BAY AVE
ALESSANDRO BLVD
BRODIAEA AVE
CACTUS AVE
JOHN F KENNEDY DR
FILAREE AVE
GENTIAN AVE
IRIS AVE
KRAMERIA AVE
CARDINAL AVE
NANDINA AVE
OLEANDER AVE
MEYER AVE
PERRIS BLVD
INDIAN ST
LASSELLE ST
KITCHING ST
MORRISON ST
NASON ST
OLIVER ST
MORENO BEACH DR
REDLANDS BLVD
THEODORE ST
VIRGINIA ST
GILMAN SPRINGS RD
DAVIS RD
VIA DEL LAGO
HEACOCK ST
DAY ST
ELSWORTH ST
GRAHAM ST
RIVERSIDE
6TH ST
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Print Date: July13, 2007

SECTION 4.0 SUB REGIONAL GOALS AND STRATEGIES

All jurisdictions in western Riverside County have plans and policies in place for development of a system of routes for bicycling and walking throughout their communities. The Sub-Regional Non-Motorized Transportation Plan is intended to provide a framework for key routes and facilities that will ensure connections between communities, major transportation facilities, and nodes of activity. The following overarching goals and strategies relate to the purpose and long-term implementation of this Non-Motorized Transportation Plan.

4.1 Goals of the WRCOG Non-Motorized Transportation Plan

G-1. Increase the range of transportation options for travel within and between western Riverside jurisdictions and neighboring counties.

G-2. Create safer travel accommodations for pedestrians and cyclists.

G-3. Establish a sub regional backbone network of routes that enhances access to and from public transportation services and major attractions. The resulting network should complement rather than conflict with local plans. Ideally, regional components will be integrated into local plans as updates occur.

G-4. Establish design classifications and typical design standards for the various corridor types that are adopted by individual WRCOG jurisdictions.

G-5. Reduce auto generated emissions while encouraging healthier lifestyles and more sustainable development patterns.

G-6. Maximize opportunities to fund bicycle and pedestrian improvements, as well as operations and maintenance costs associated with the sub regional backbone network, in cooperation with local jurisdictions.

G-7. Achieve implementation of the sub regional backbone network by 2035.

G-8. Determine an annual funding goal for Regional Backbone Network projects every year in western Riverside County, through both local and sub regional efforts.

G-9. Create a branding program for the sub regional system that distinguishes it from local-serving routes and includes special signage and general promotion.

4.2 Strategies to Achieve the Long-Term Implementation

4.2.1 Planning the Sub Regional Backbone Network

P-1. Plan for the sub regional backbone network to provide city-to-city connectivity; connectivity between cities and the unincorporated County area; and connectivity between western Riverside and adjacent counties (Orange and San Bernardino counties) for broader regional connections.

P-2. Plan for the sub regional backbone network to connect to major activity areas, including civic and county facilities, hospitals, libraries, major parks and recreation areas, colleges and universities, malls and major retail centers and large employment centers.

P-3. Plan for the sub regional backbone network to connect to existing and future planned transit facilities including Metrolink stations, bus stops, major bus and/or Bus Rapid Transit (BRT) stations and future high speed rail.

P-4. Pursue opportunities to use existing natural and manmade corridors for future bicycle and pedestrian paths, including drainage channels and other utility easements, abandoned rights-of-way, and designated open space corridors.

P-5. Base the sub regional backbone network upon existing and planned routes to the extent feasible.

4.2.2 Coordination with Local Jurisdictions and Updates to the Plan

C-1. Coordinate with local jurisdictions to encourage consistency between the Non-Motorized Transportation Plan and local General Plans. Use existing WRCOG committees as a means to review and comment on issues of mutual concern.

C-2. Future amendments to the WRCOG Non-Motorized Transportation Plan Adoption should maintain the original intent of creating a regional backbone network of routes that can be implemented in the near term and protected in the long-term.

C-3. Regularly monitor implementation of route segments, connections, and improvements, and update maps accordingly.

C-4. Provide updated route maps reflecting construction of facilities and improvements to local jurisdictions in GIS on an annual basis.

C-5. Coordinate with the Riverside County Transportation Commission (RCTC), Riverside Transit Agency (RTA) and Southern California Association of Governments (SCAG) to ensure that WRCOG's Non-Motorized Transportation Plan is integrated with the Regional Transportation Plan and consistent with sub-regional initiatives.

C-6. Ensure that design standards and policies are consistent with FHWA and state regulations.

C-7. Work cooperatively with bicycle organizations, transportation agencies, local jurisdictions, large employers and activity centers to publicize the sub regional system; sponsor annual bicycling events such as Bike to Work Week, adult safety courses, and similar events in conjunction with other regional efforts and programs.

C-8. Coordinate with local jurisdictions to encourage consistency throughout western Riverside in addressing AB1358 (Complete Streets Act) in future updates to General Plan Circulation Element policies and standards. Such updates must address the provision of a balanced, multimodal transportation network that meets the demand of all users (including pedestrians, bicyclists, children, seniors, and public transit riders) in a manner that is tied to the context (rural, urban, and suburban).

C-9. Coordinate with local jurisdictions to establish an Adopt-a-Bikeway program that will supplement funding of improvements and ongoing operation and maintenance costs.

C-10. Coordinate with local jurisdictions on a consistent maintenance program for the sub regional system.

4.2.3 Establishing Design Classifications

D-1. Establish design classifications for each of the routes in the regional backbone network, based on feasibility and cost considerations.

D-2. Establish design classifications to accommodate both on-road and off-road facilities.

D-3. Encourage jurisdictions to adopt the design classifications to ensure that final improvements are as seamless as possible between jurisdictions.

D-4. Establish preferred or "typical" design standards for route classifications, and include standards for adequate bicycle parking/storage, sidewalk design, use and maintenance of materials for both on-road and off-road facilities, optional street crossing standards, and other standards related to pedestrian and bicycle safety.

D-5. Incorporate best practices into the Non-Motorized Transportation Plan related to street network configurations that support/encourage safe and secure bicycle and pedestrian travel, and convenient access to transit facilities and major attractions.

4.2.4 Funding and Implementation

F-1. Prepare rough order magnitude (ROM) cost estimations for improvements necessary to complete each route and segment on the sub regional backbone network and provide estimates to local jurisdictions using generic cost factors on a per lane mile basis.

F-2. Prioritize improvements for near term implementation through a five-year Strategic Implementation Plan (SIP) to be updated periodically by participating agencies. Priority rankings should mirror Bicycle Trust Account (BTA) and RCTC's SB821 program guidelines to improve competitive standing.

F-3. Encourage local jurisdictions to include bicycle and pedestrian improvements in their Capital Improvement Plans (CIP), including expenses for maintenance and operations as appropriate.

F-4. Educate local jurisdictions about all bicycle and pedestrian funding sources and provide application assistance if needed.

F-5. Encourage and facilitate multi-jurisdictional funding applications.

F-6. Advocate regional priority consideration for Non-Motorized Regional Backbone Network improvement applications for competitive programs.

F-7. Encourage local jurisdictions to use their Measure 'A' Local Streets and Road funds for bicycle and pedestrian improvements along the Regional Backbone Network within their jurisdictions.

F-8. Coordinate funding of planned bicycle and pedestrian improvements to the Measure 'A' Regional Arterial System whenever other improvements are made to roads on the system with Measure 'A' funds.

F-9. Coordinate funding of planned bicycle and pedestrian improvements to the Transportation Uniform Mitigation Fee (TUMF) Regional Arterial System whenever other improvements are made to roads on the system with TUMF funds.

F-10. Encourage local jurisdictions to require land developers to include the bicycle and pedestrian improvements that are on the Regional Backbone Network when they widen or construct roads as part of their development projects.

F-11. Encourage local jurisdictions to require land developers to include the bicycle and pedestrian improvements that link to the Regional Backbone Network when they widen or construct roads and paths as part of their development projects.

F-12. Coordinate with RCTC and Metrolink to evaluate and complete, when feasible, the Regional Backbone Network projects within new or existing rail rights-of-way.

F-13. Coordinate with the County of Riverside Regional Park and Open Space District to acquire state and federal funds to complete bicycle and pedestrian paths that are on the Regional Backbone Network.

F-14. Coordinate with transportation departments of local jurisdictions and Caltrans to phase planned bicycle and pedestrian roadway projects on the Regional Backbone Network.

F-15. Encourage bicycle manufacturers to support or sponsor bicycle routes along the Regional Backbone Network.

4.3 WRCOG Nonmotorized Backbone Network Goals and Strategies Matrix

		Plan Implementation								
		Plan Goals								
	POLICIES	**Goal 1**	**Goal 2**	**Goal 3**	**Goal 4**	**Goal 5**	**Goal 6**	**Goal 7**	**Goal 8**	**Goal 9**
Planning the Sub Regional Backbone Network										
P-1	Plan for the sub regional backbone network to provide city-to-city connectivity; connectivity between cities and the unincorporated County area; and connectivity between western Riverside and adjacent counties (Orange and San Bernardino counties) for broader regional connections.	✓								
P-2	Plan for the sub regional backbone network to connect to major activity areas, including civic and county facilities, hospitals, libraries, major parks and recreation areas, colleges and universities, malls and major retail centers and large employment centers.	✓		✓		✓				
P-3	Plan for the sub regional backbone network to connect to existing and future planned transit facilities, including Metrolink stations, bus stops, major bus and/or Bus Rapid Transit (BRT) stations and future high speed rail.	✓		✓		✓				
P-4	Pursue opportunities to use existing natural and manmade corridors for future bicycle and pedestrian paths, including drainage channels and other utility easements, abandoned rights-of-way, and designated open space corridors.		✓			✓		✓		
P-5	Base the sub regional backbone network upon existing and planned routes to the extent feasible.			✓	✓					
Coordination with Local Jursidictions and Updates of the Plan										
C-1	Coordinate with local jurisdictions to encourage consistency between the Non-Motorized Transportation Plan and local General Plans. Use existing WRCOG committees as a means to review and comment on issues of mutual concern.			✓						
C-2	Future amendments to the WRCOG Non-Motorized Transportation Plan Adoption should maintain the original intent of creating a backbone network of routes that can be implemented in the near term and protected in the long-term.			✓					✓	
C-3	Regularly monitor implementation of route segments, connections, and improvements, and update maps accordingly.			✓				✓	✓	
C-4	Provide updated route maps reflecting construction of facilities and improvements to local jurisdictions in GIS on an annual basis.			✓						
C-5	Coordinate with the Riverside County Transportation Commission (RCTC), Riverside Transit Agency (RTA) and Southern California Association of Governments (SCAG) to ensure that WRCOG's Non-Motorized Transportation Plan is integrated with the Regional Transportation Plan and consistent with sub-regional initiatives.	✓		✓					✓	
C-6	Ensure that design standards and policies are consistent with FHWA and state regulations.		✓		✓		✓			
C-7	Work cooperatively with bicycle organizations, transportation agencies, local jurisdictions, large employers and activity centers to publicize the sub regional system; sponsor annual bicycling events such as Bike to Work Week, adult safety courses, and similar events in conjunction with other regional efforts and programs.		✓			✓				✓
C-8	Coordinate with local jurisdictions to encourage consistency throughout western Riverside in addressing AB1358 (Complete Streets Act) in future updates to General Plan Circulation Element policies and standards. Such updates must address the provision of a balanced, multimodal transportation network that meets the demand of all users (including pedestrians, bicyclists, children, seniors, and public transit riders) in a manner that is tied to the context (rural, urban, and suburban).			✓	✓					
C-9	Coordinate with local jurisdictions to establish an Adopt-a-Bikeway program that will supplement funding of improvements and ongoing operation and maintenance costs.						✓		✓	✓
C-10	Coordinate with local jurisdictions on a consistent maintenance program for the sub regional system.			✓	✓		✓			
Establishing Design Classifications										
D-1	Establish design classifications for each of the routes in the regional backbone network, based on feasibility and cost considerations.				✓					
D-2	Establish design classifications to accommodate both on-road and off-road facilities.		✓		✓					
D-3	Encourage jurisdictions to adopt the design classifications to ensure that final improvements are as seamless as possible between jurisdictions.				✓					
D-4	Establish preferred or "typical" design standards for route classifications, and include standards for adequate bicycle parking/storage, sidewalk design, use and maintenance of materials for both on-road and off-road facilities, optional street crossing standards, and other standards related to pedestrian and bicycle safety.		✓		✓					✓
D-5	Incorporate best practices into the Non-Motorized Transportation Plan related to street network configurations that support/encourage safe and secure bicycle and pedestrian travel, and convenient access to transit facilities and major attractions.		✓		✓	✓				✓
Funding and Implementation										
F-1	Prepare rough order magnitude (ROM) cost estimations for improvements necessary to complete each route and segment on the sub regional backbone network and provide estimates to local jurisdictions.							✓	✓	
F-2	Prioritize improvements for near term implementation through a five-year Strategic Implementation Plan (SIP) to be updated periodically by participating agencies. Priority rankings should mirror Bicycle Transportation Account (BTA) and RCTC's SB 821 program guidelines to improve competitive standing.						✓	✓	✓	
F-3	Encourage local jurisdictions to include bicycle and pedestrian improvements in their Capital Improvement Plans (CIP), including expenses for maintenance and operations as appropriate.								✓	
F-4	Educate local jurisdictions about all bicycle and pedestrian funding sources and provide application assistance if needed.						✓	✓	✓	
F-5	Encourage and facilitate multi-jurisdictional funding applications.	✓					✓	✓	✓	

		Plan Implementation								
		Plan Goals								
POLICIES		Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9
F-6	Advocate regional priority consideration for Non-Motorized Backbone Network improvement applications for competitive programs.						✓	✓	✓	
F-7	Encourage local jurisdictions to use their Measure A Local Streets and Road funds for bicycle and pedestrian improvements along the Regional Backbone Network within their jurisdictions.							✓	✓	
F-8	Coordinate funding of planned bicycle and pedestrian improvements to the Measure A Regional Arterial System whenever other improvements are made to roads on the system with Measure A funds.						✓		✓	
F-9	Coordinate funding of planned bicycle and pedestrian improvements to the Transportation Uniform Mitigation Fee (TUMF) Regional Arterial System whenever other improvements are made to roads on the system with TUMF funds.						✓		✓	
F-10	Encourage local jurisdictions to require land developers to include the bicycle and pedestrian improvements that are on the Regional Backbone Network when they widen or construct roads as part of their development projects.			✓		✓		✓	✓	
F-11	Encourage local jurisdictions to require land developers to include the bicycle and pedestrian improvements that link to the Regional Backbone Network when they widen or construct roads and paths as part of their development projects.			✓		✓		✓	✓	
F-12	Coordinate with RCTC and Metrolink to evaluate and complete, when feasible, the Regional Backbone Network projects within new or existing rail rights-of-way and station facilities.		✓				✓		✓	
F-13	Coordinate with the County of Riverside Regional Park and Open Space District to acquire state and federal funds to complete bicycle and pedestrian paths that are on the Regional Backbone Network.						✓	✓	✓	
F-14	Coordinate with transportation departments of local jurisdictions and Caltrans to phase planned bicycle and pedestrian roadway projects on the Regional Backbone Network.						✓	✓	✓	

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SECTION 5.0 PROPOSED NON-MOTORIZED SYSTEM

The Western Riverside Non-Motorized Transportation Plan includes a network of 28 distinct regional routes spanning more than 440 miles. This network represents potential Class I (off road), Class II (on-road striped and signage) and Class III (on-road, signage only) routes that interconnect the six Western Riverside zones and the local jurisdictions within each zone and provide access to five Metrolink stations, planned transit centers, an extensive local system, and key activity centers throughout the sub-region. In addition, connections to neighboring County systems are anticipated. A summary of these routes is shown in the table below. The overall network configuration is presented in Exhibit 5.0.1. The network's inter-zonal and inter-jurisdictional connections are illustrated in exhibits 5.0.2 – 5.0.7.

Table 5-1 Proposed Routes

Route	Name	Classification	Zone	Length (mi.)
1	Santa Ana River	Class I	Northwest	28.0
2	Cucamonga Creek – Mission	Class I/II	Northwest	15.2
3	91 Corridor – Magnolia	Class I/II	Northwest	20.8
4	Van Buren – Washington	Class I/II	Northwest	20.3
5	15 Corridor – Temescal Canyon	Class II/III	Northwest	20.3
6	El Sobrante – Lake Perris	Class I/II/III	Northwest/Central	21.9
7	Hidden Valley – La Sierra	ClassI/II	Northwest	8.5
8	Arlington – Alessandro	Class II	Northwest	20.0
9	Fairmount – Iris	Class II/III	Northwest/Central	15.5
10	San Jacinto River – Bautista Creek	Class I/II	Central/SJ-Hemet	28.5
11	Iris – Redlands	Class II	Central/Pass	12.1
12	Alessandro – Davis	Class I/II	Central/SJ-Hemet	7.0
13	San Timoteo – Interstate 10 Pass Area	Class I/II	Pass	31.3
14	San Jacinto – Diamond Valley	Class I/II	SJ-Hemet	11.5
15	Salt Creek – Domenigoni	Class I/II	SW/Central/SJ-Hemet	23.7
16	Lake Elsinore – Murrieta/Temecula Creek	Class I/II	Southwest	31.1
17	Nichols – Perris Boulevard	Class I/II	Southwest/Central	18.1
18	San Diego Canal – Eastern Bypass	Class I/II	SJ-Hemet/Southwest	17.5
19	Bundy Canyon – Scott	Class II	SW/Central	12.7
20	Murrieta Creek – French Valley	Class II	Southwest	9.9
21	Three Creeks	Class I/II	SW/Central/SJ-Hemet	6.5
22	Gibbel – Fairview	Class I/II	SJ-Hemet	7.8
23	215 South Corridor	Class I/II	Southwest/Central	14.0
24	Case – Leon	Class II	Central	15.9
25	Lasselle – Perris Valley Channel	Class I/II	Central	7.9
26	Bryant – Singleton	Class II	Pass	3.9
27	Oak Valley – San Jacinto River	Class I	Pass/Central/SJ-Hemet	9.8
28	Rainbow Canyon – Interstate 15 Frontage	Class II	Southwest	3.3

Key elements of each proposed route are described in the following sections. These routes may be reviewed from time to time and precise alignments and configuration is expected to be determined through focused planning and engineering efforts prior to implementation. Class I paths are proposed as multi-use trails. NEVs may be operated on certain Class I trails and Class II lanes subject to right of way availability and legislative approval. Initial candidate NEV facilities are noted in the "Profile" description of each route. Implementation issues and rough order magnitude (ROM) estimated costs are provided for each route. ROM cost assumptions are included in Appendix C.

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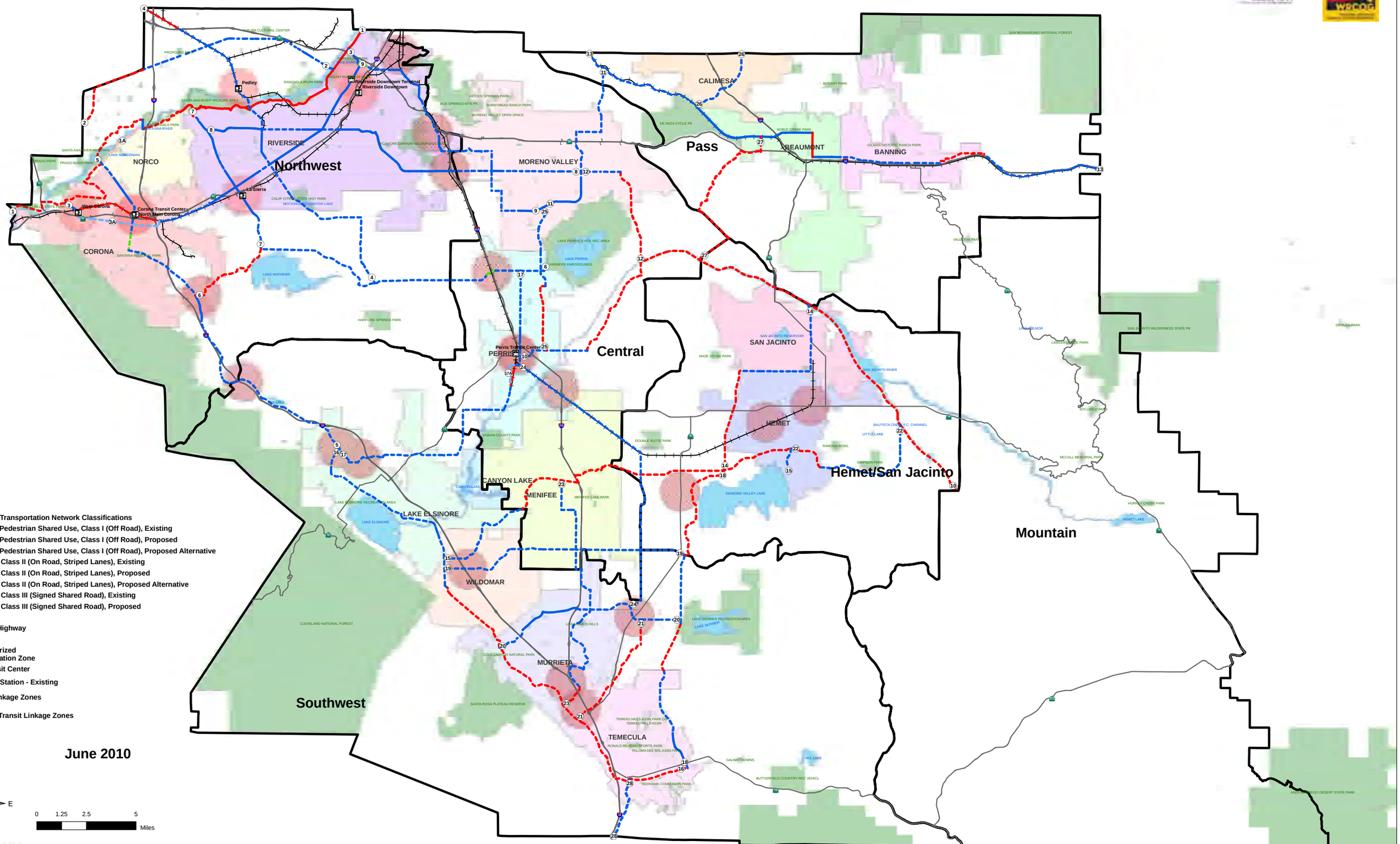
Exh

WRCOG NON-MOTORIZED TRANSPORTATION NETWORK



URBAN CROSSROADS

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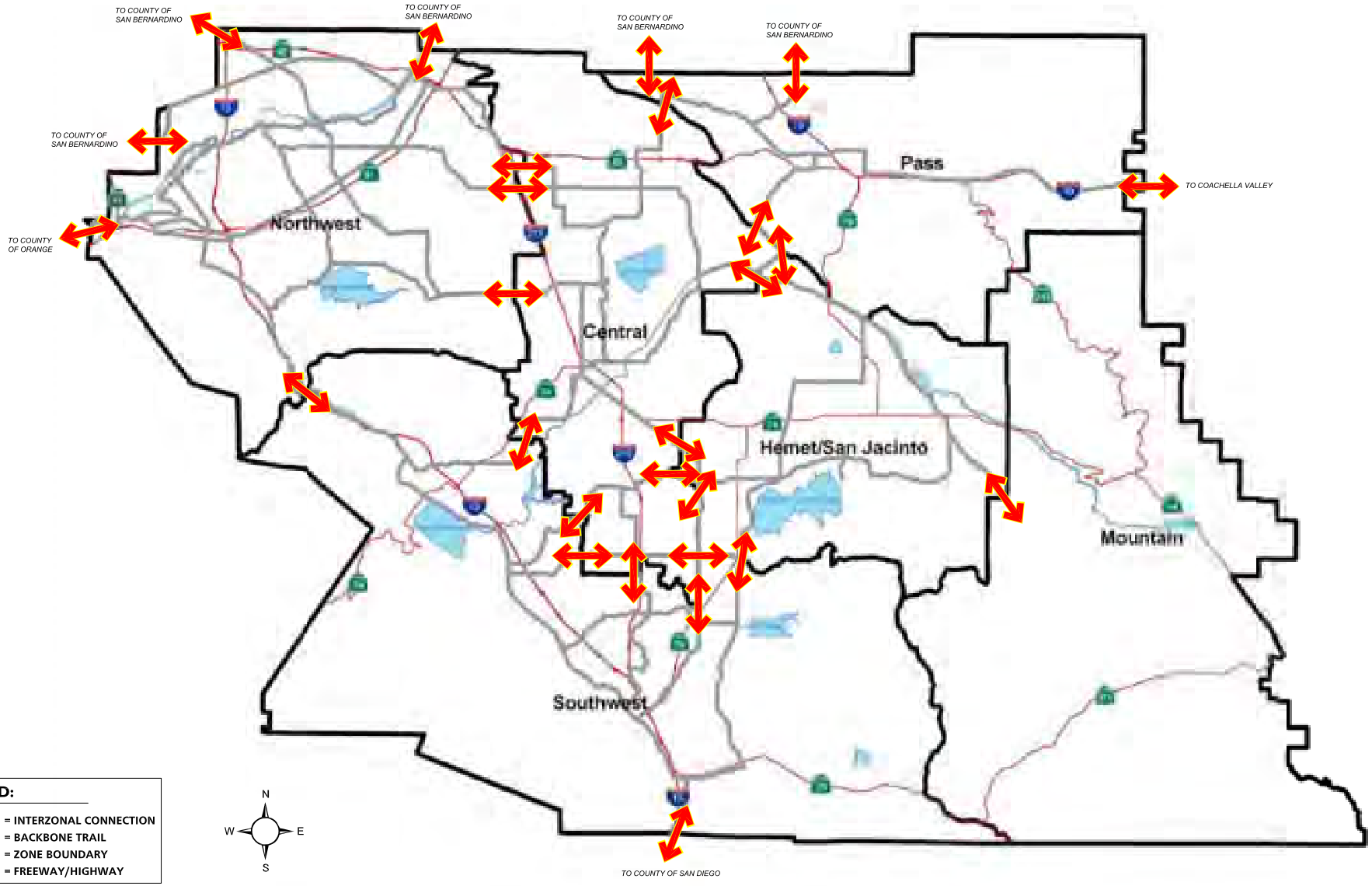
EXHIBIT 2.2.2

OVERALL NETWORK CONNECTIVITY BETWEEN WRCOG TUMF ZONES



LEGEND:

- = INTERZONAL CONNECTION
- = BACKBONE TRAIL
- = ZONE BOUNDARY
- = FREEWAY/HIGHWAY

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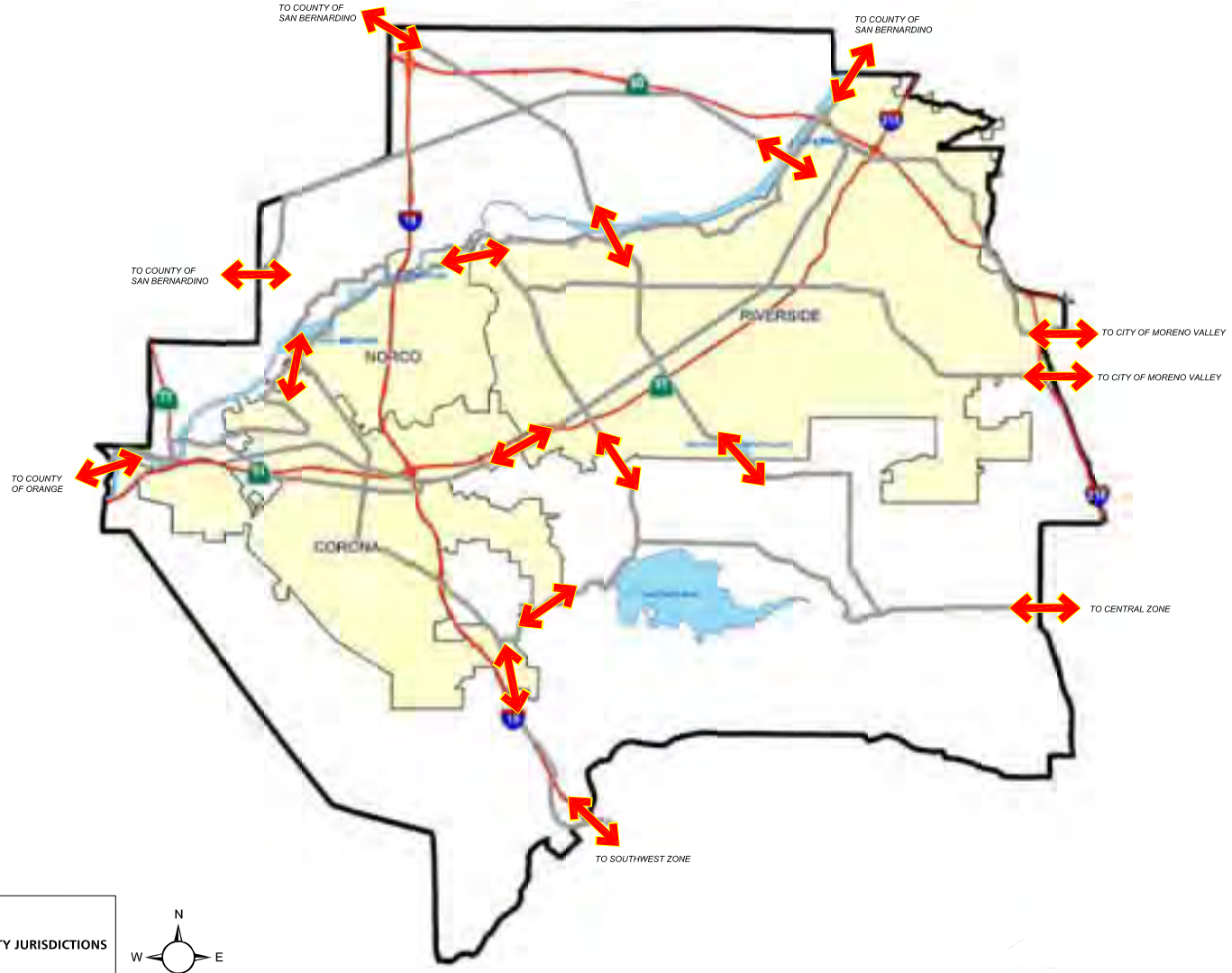
Task 6 Non-Motorized System\Connection Maps\
Exhibit 2.2.2 Overall Network Connectivity.dwg

EXHIBIT 2.2.1 A

NORTHWEST ZONE - NETWORK CONNECTIVITY BETWEEN JUSRISDICTIONS



LEGEND:

- = CONNECTION BETWEEN CITY/COUNTY JURISDICTIONS
- = BACKBONE TRAIL
- = ZONE BOUNDARY
- = FREEWAY/HIGHWAY

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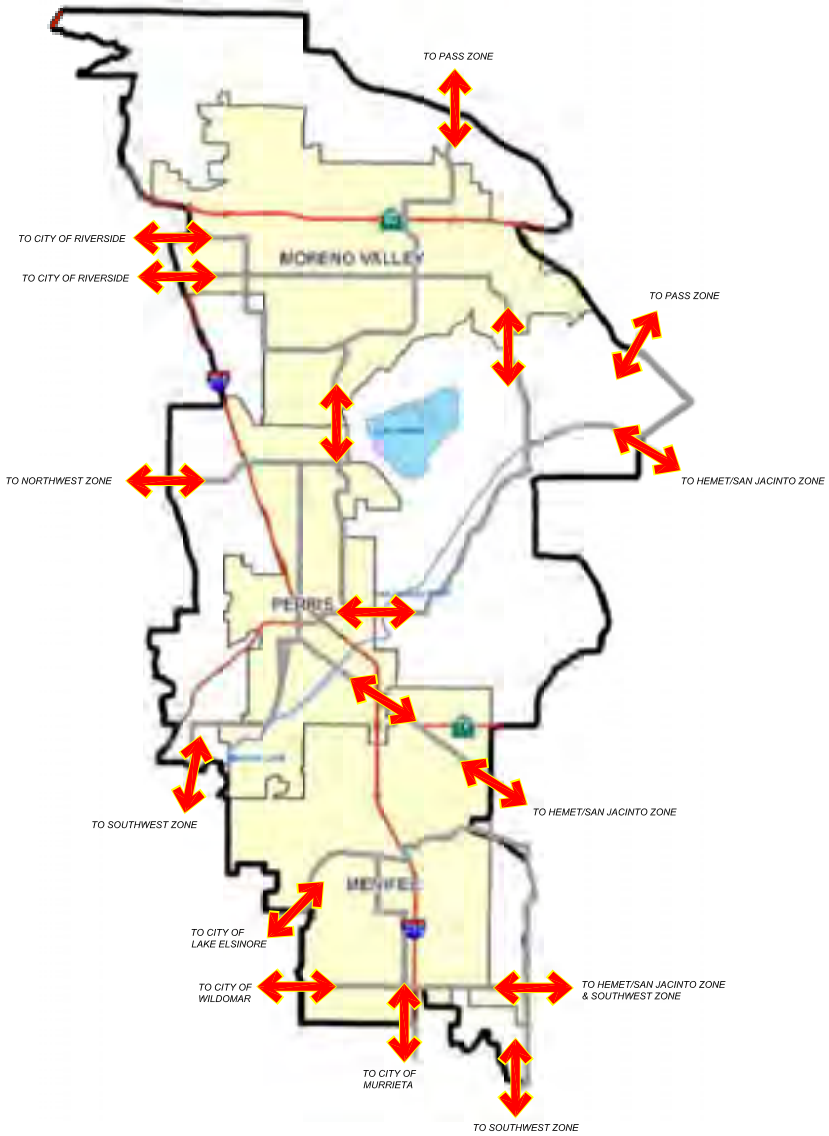
Task 6 Non-Motorized System\Connection Maps\
Exhibit 2.2.1 A Northwest Network Connectivity.dwg

EXHIBIT 2.2.1 B

CENTRAL ZONE - NETWORK CONNECTIVITY BETWEEN JURISDICTIONS



LEGEND:

- = CONNECTION BETWEEN CITY/COUNTY JURISDICTIONS
- = BACKBONE TRAIL
- = ZONE BOUNDARY
- = FREEWAY/HIGHWAY

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Task 6 Non-Motorized System\Connection Maps\
Exhibit 2.2.1 B Central Network Connectivity.dwg

EXHBIT 2.2.1 C

SOUTHWEST ZONE - NETWORK CONNECTIVITY BETWEEN JURISDICTIONS

LEGEND:

- = CONNECTION BETWEEN CITY/COUNTY JURISDICTIONS
- = BACKBONE TRAIL
- = ZONE BOUNDARY
- = FREEWAY/HIGHWAY

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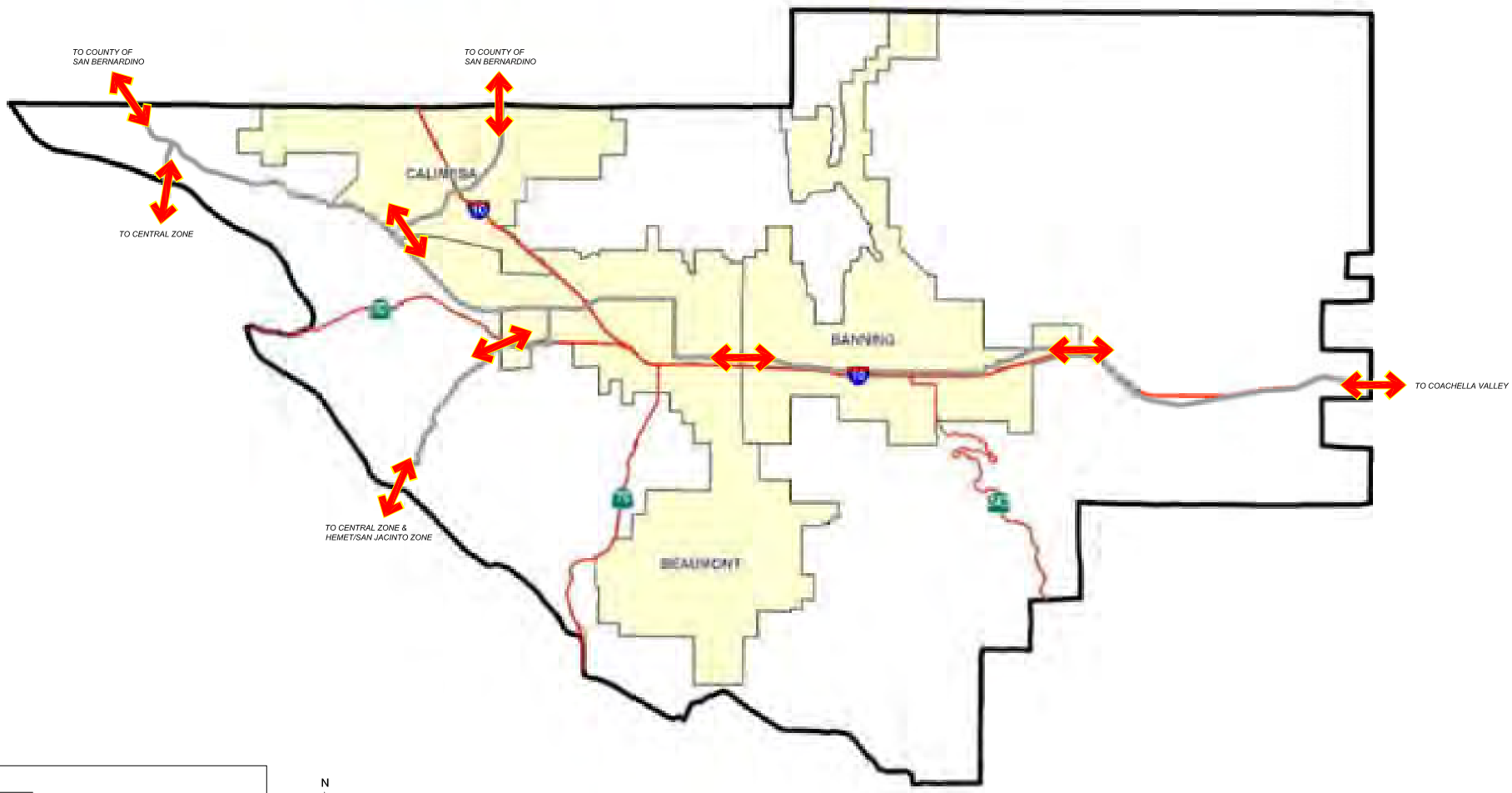
Task 6 Non-Motorized System\Connection Maps\
Exhibit 2.2.1 C Southwest Network Connectivity.dwg

EXHIBIT 2.2.1 D

PASS ZONE - NETWORK CONNECTIVITY BETWEEN JURISDICTIONS



LEGEND:

- = CONNECTION BETWEEN CITY/COUNTY JURISDICTIONS
- = BACKBONE TRAIL
- = ZONE BOUNDARY
- = FREEWAY/HIGHWAY

N
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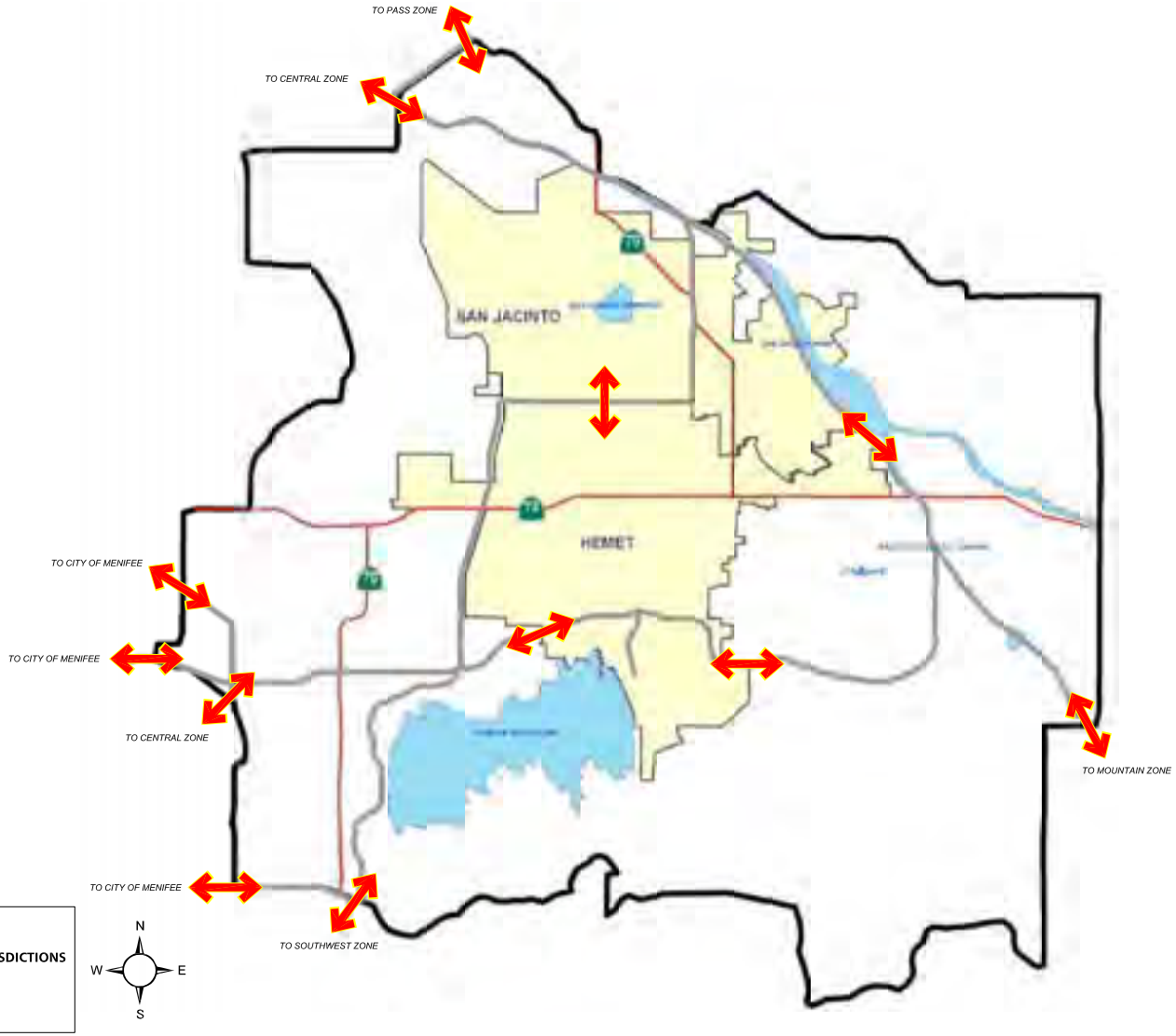
Task 6 Non-Motorized System\Connection Maps\
Exhibit 2.2.1 D Pass Network Connectivity.dwg

EXHIBIT 2.2.1 E

HEMET/SAN JACINTO ZONE - NETWORK CONNECTIVITY BETWEEN JURISDICTIONS



LEGEND:

- = CONNECTION BETWEEN CITY/COUNTY JURISDICTIONS
- = BACKBONE TRAIL
- = ZONE BOUNDARY
- = FREEWAY/HIGHWAY

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Task 6 Non-Motorized System\Connection Maps\
Exhibit 2.2.1 E Hemet San Jacinto Network Connectivity.dwg

5.1 Route 1: Santa Ana River Trail

Zone

Northwest

Segments

4. Extends from Green River Golf Course

SR-71/Prado Dam crossing

Corona Airport/Santa Ana River flood zone

River Road bridge crossing to north side of Santa Ana River to Hamner

Includes alignment alternative without north side (shown as 1A on the NMTP Network Exhibit)

Profile

Suitable for Class I gap closure between Orange County and San Bernardino County

Approximately 28 miles serving Corona, Norco, Riverside, and unincorporated area

Located in N

Access to several established open space and park land uses

Unimproved area will have flood control and environmental issues to address

Status

Eastern portion is "complete" with 12.5 miles of existing Class I bikeway beginning at Hidden Valley Reserve. Balance of route is mostly unimproved with minor segments on dirt paths or existing streets.

ROM Construction Cost Estimate

$16.7 million to $17.2 million

Issues

Flood control and open space areas, Prado Dam, and freeway undercrossings

Strategies for Implementation

Use environmental and design work prepared as part of ongoing regional project

Key Connections

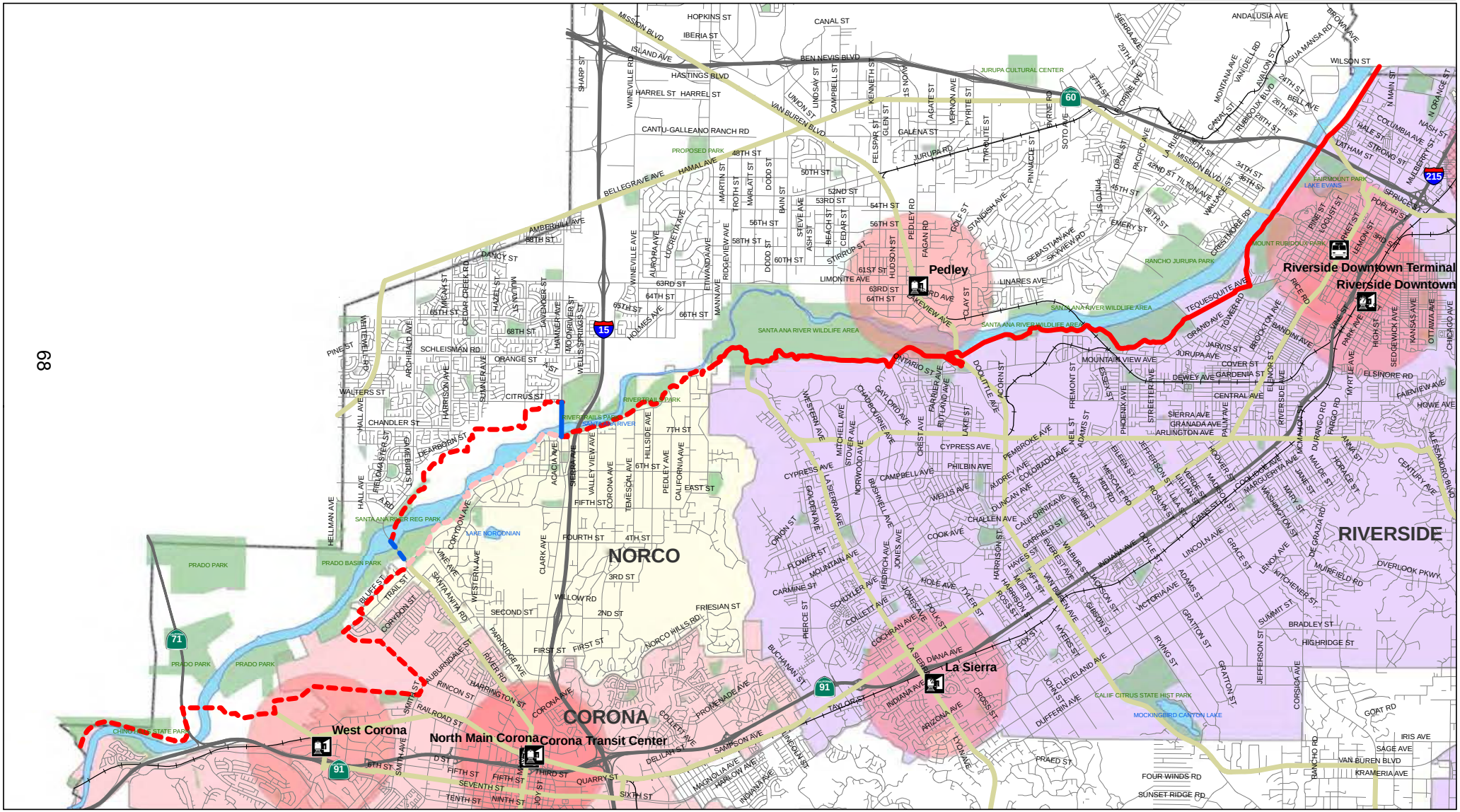
Connects Routes 2, 3, 4, 5, 7, and 24

West Corona Metrolink Station

Pedley Metrolink Station (one mile via Route 4)

Downtown Riverside transit station (one mile via Mission or University)

CORRIDOR 1 - SANTA ANA RIVER TRAIL
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



Urban Crossroads, Inc. June 2010 U:\UcJobs_06600-07000\07000\07007\Task 6 Non-Motorized System\Classification Maps\Corridor1.pdf

5.2 Route 2: Cucamonga Creek-Mission

Zone

Northwest

Segments

Cucamonga Creek

Bellegrave Channel

Bellgrave

Mission

Profile

Suitable for Class I/II route

Approximately 15.2 miles serving the communities of Eastvale, Jurupa, Pedley, and Rubidoux in unincorporated Riverside County

Suitable for Class I/II route

Status

Existing streets with segments on existing storm channels and one-half mile unimproved portion of Bellegrave

ROM Construction Cost Estimate

$2.1 million

Issues

Access to flood control facilities

Strategies for Implementation

Consider share use of maintenance roads along storm channels

Key Connections

Connects Routes 1 and 4

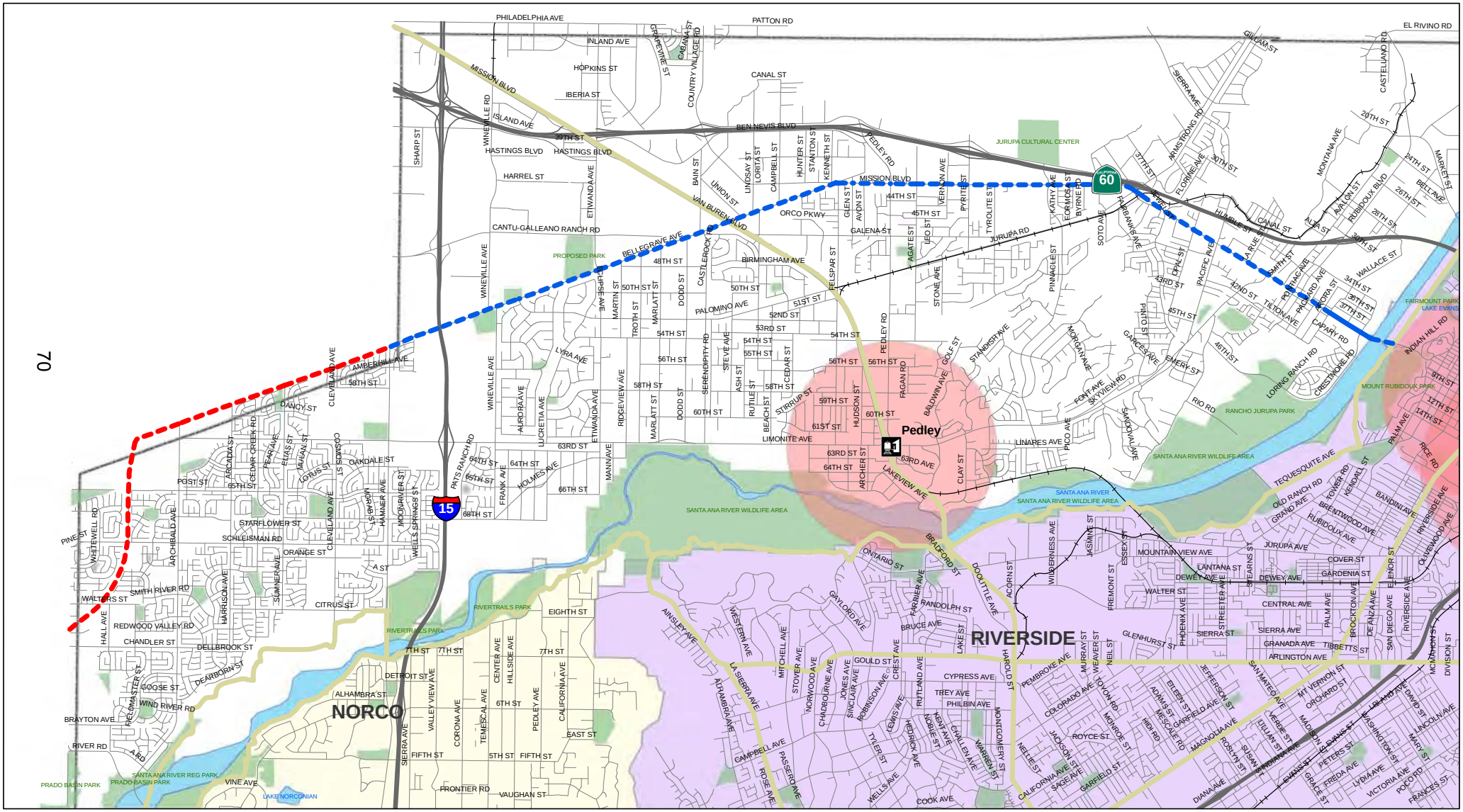
Pedley Metrolink Station (2.6 miles via Route 4)

CORRIDOR 2 - CUCAMONGA - CREEK - MISSION
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.3 Route 3: SR-91 Corridor - Magnolia

Zone

Northwest

Segments

BNSF/Metrolink (Auto Center to Radio)

I-15 to Van Buren along river

Van Buren to Mission along river

Mission to SB County line storm channel

Includes alternative alignment on Sixth Street (shown as 3A on the NMTP Network Exhibit)

Profile

Suitable for Class I/II route

Portions follow active rail line

Approximately 20.8 miles serving the cities of Corona and Riverside

Potential NEV route

Status

Majority of route is on existing streets

ROM Construction Cost Estimate

$795,000 – $2.3 million

Issues

Rail ROW access and safety

Strategies for Implementation

Consider Railroad Street or 6th Street as alternative to rail alignment

Key Connections

Connects Routes 1, 4, 5, 7, 8, and 9

West Corona Metrolink

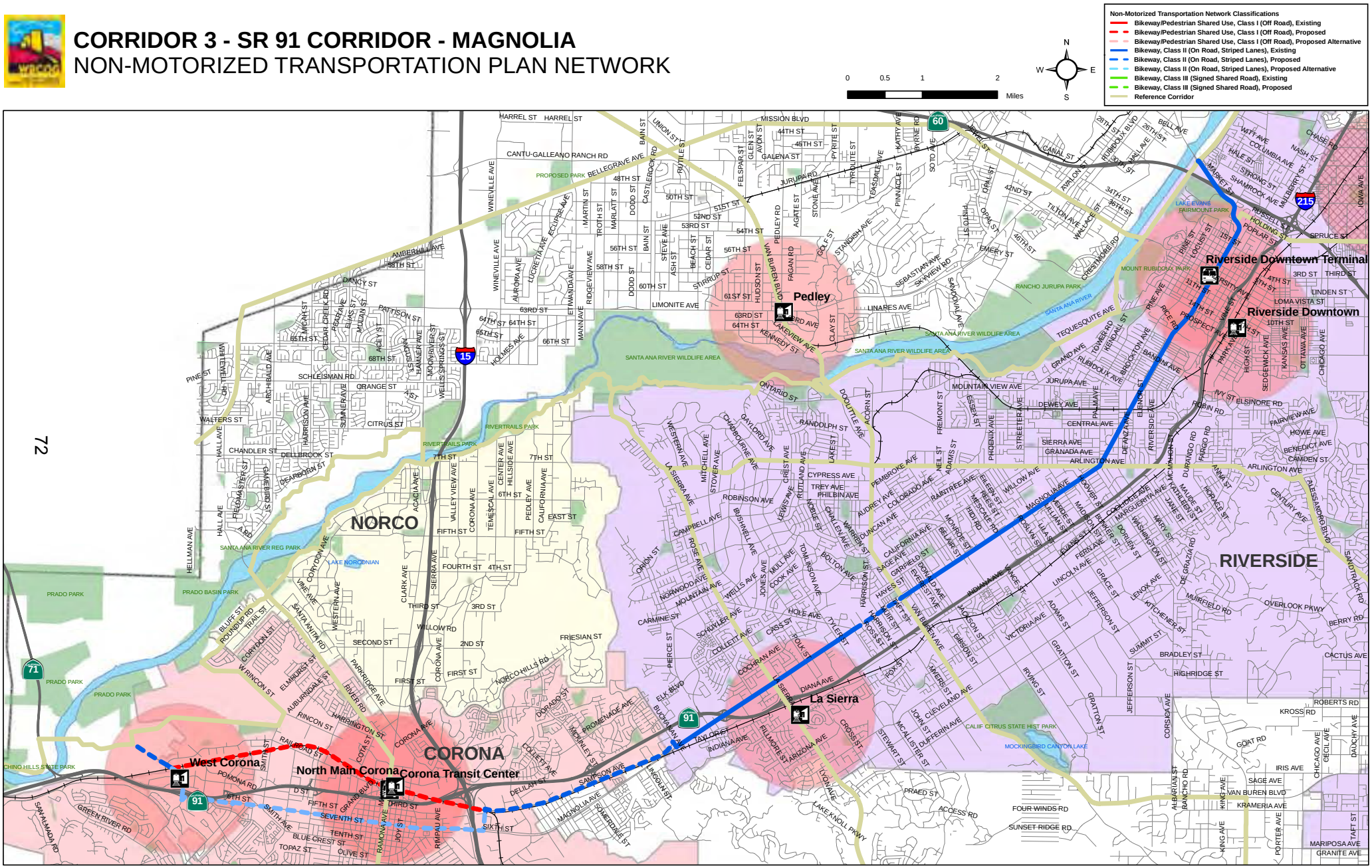
North Main Transportation Center (Bus, Metrolink)

La Sierra Metrolink Station (one-half mile via Route 7)

Downtown Riverside bus depot

Downtown Riverside Metrolink Station (3/4 miles on 14th or University)

CORRIDOR 3 - SR 91 CORRIDOR - MAGNOLIA
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



Urban Crossroads, Inc. June 2010 U:\UcJobs_06600-07000\07000\07007\Task 6 Non-Motorized System\Classification Maps\Corridor3.pdf

5.4 Route 4: Van Buren – Washington

Zone

Northwest

Segments

Mission Blvd to SR-60
Van Buren to Washington
Washington/Harley John to Cajalco

Profile

Suitable for Class I/II route
Portions parallel active rail line
Approximately 20.3 miles serving Riverside and unincorporated area of Jurupa and Lake Mathews
Southern third of route is in hilly area
Potential NEV route

Status

Route is on existing streets with an alternative along an active rail line

ROM Construction Cost Estimate

$1.6 million

Issues

Rail ROW access and safety

Strategies for Implementation

Study initially looked at potential alignment along rail ROW; can be explored further.

Key Connections

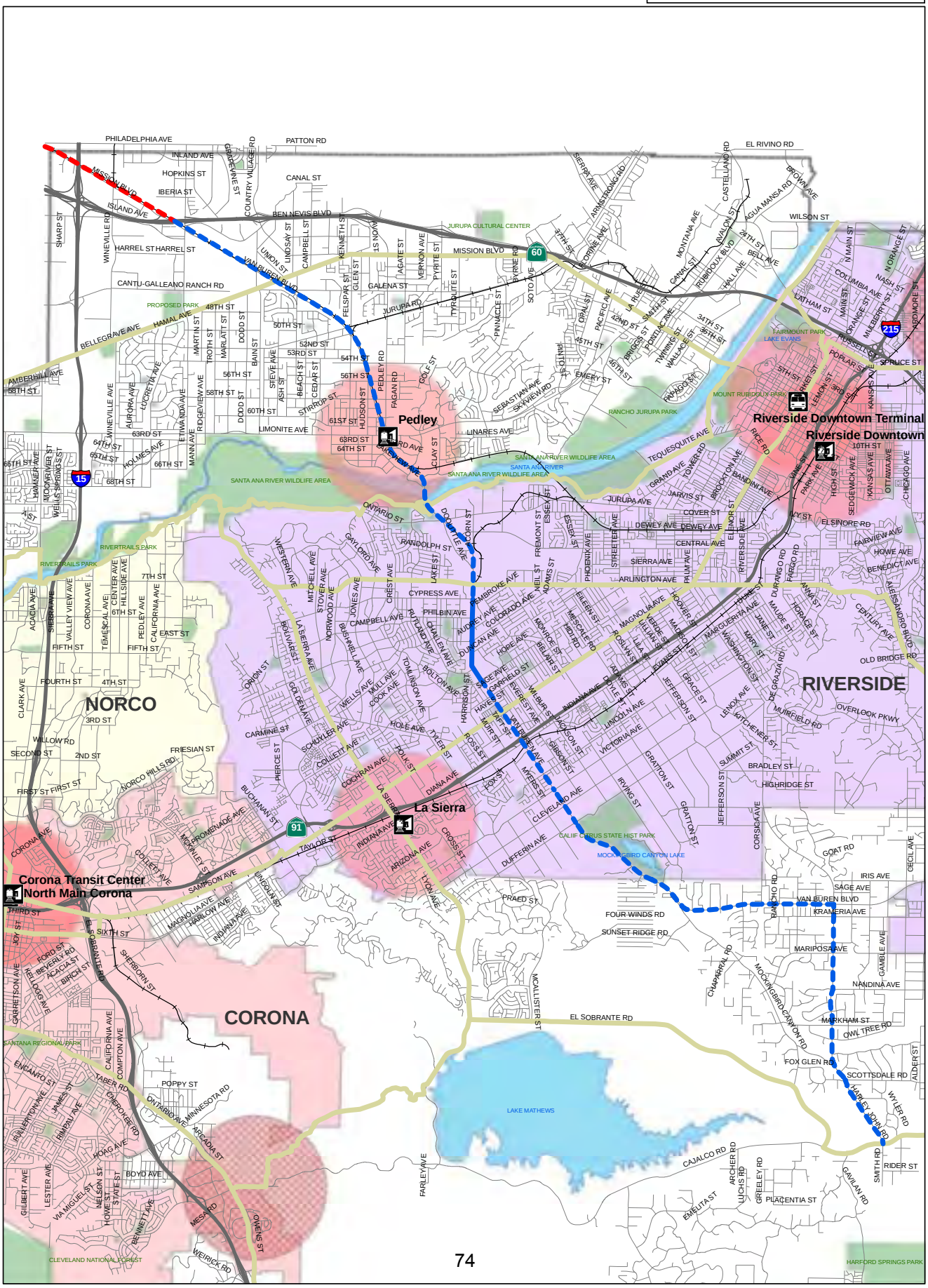
Connects Routes 1, 2, 3, 6, and 8
Pedley Metrolink Station
La Sierra Metrolink (via Routes 3 and 7)

CORRIDOR 4 - VAN BUREN - MOCKINGBIRD
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2
Miles

N
W E
S

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.5 Route 5: I-15 Corridor – Temescal Canyon

Zone

Northwest

Segments

River Road

Main Street

Ontario/Temescal Canyon

Profile

Suitable for Class II/III route

Approximately 20.3 miles serving cites of Corona and Norco and unincorporated area of El Cerrito and Temescal Valley

Potential NEW route

Status

Route is on existing streets

ROM Construction Cost Estimate

$1.2 million

Issues

River Road bridge width

Truck traffic on Temescal Canyon Road

Strategies for Implementation

Consider Class I potential along Temescal Wash

Key Connections

Connects Routes 1, 3, 6, 16, and 17

Downtown Corona Transportation Center (Bus, Metrolink)

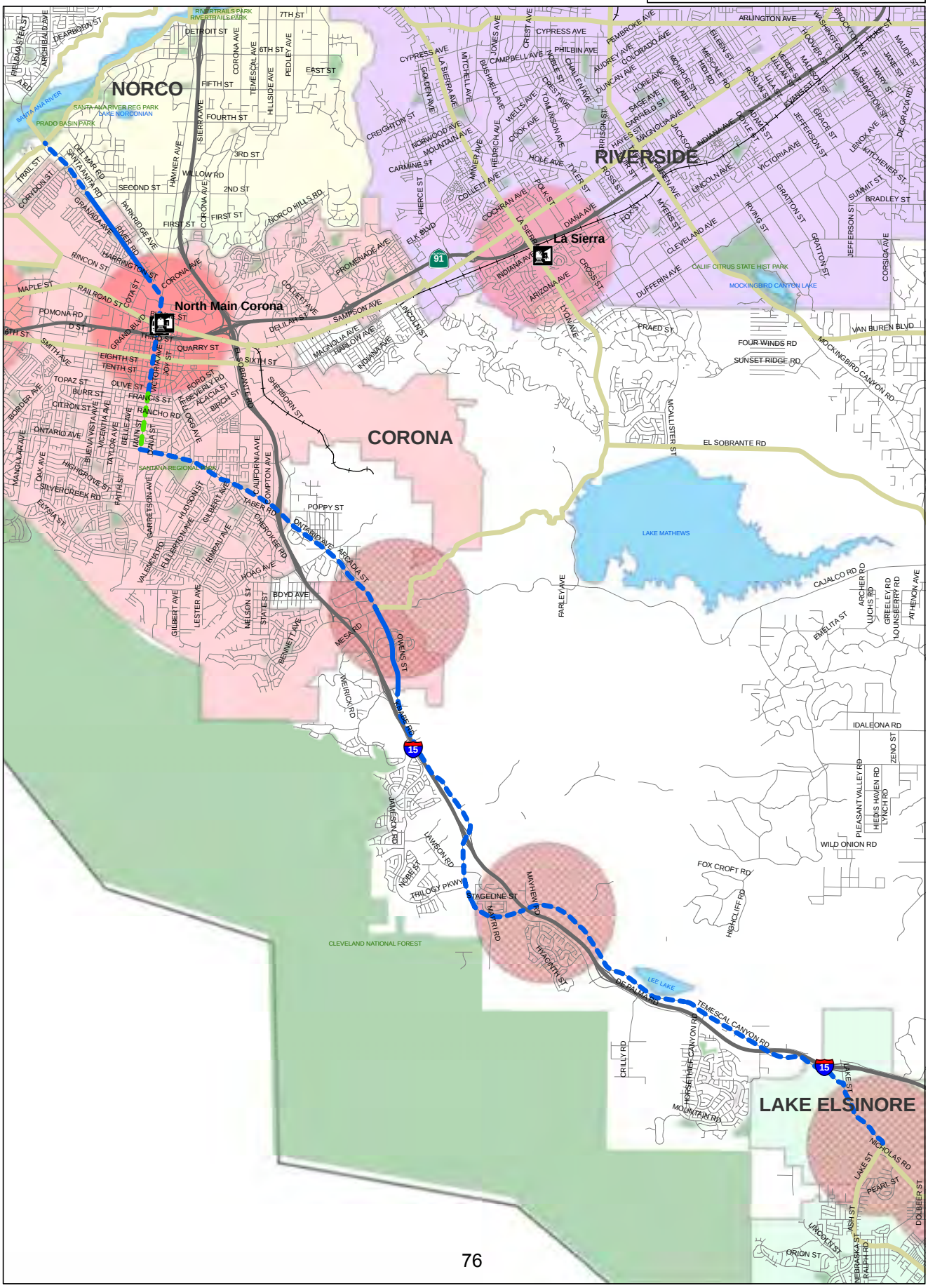
Future transit linkage at Cajalco, Temescal Valley, and Lake Street

CORRIDOR 5
I 15 CORRIDOR - TEMESCAL CANYON
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.6 Route 6: El Sobrante - Lake Perris

Zones

Northwest and Central

Segments

- Eagle Valley
- La Sierra/El Sobrante
- Cajalco/Ramona Expressway

Profile

- Suitable for Class I/II/III route
- Approximately 21.9 miles serving cites of Corona and Perris and unincorporated area of Eagle Valley/Lake Mathews, Mead Valley, and Woodcrest
- Cajalco is a high-speed arterial

Status

25 percent of route (western portion) is unimproved in mountainous area with 600-foot elevation change over five miles. Balance of route is on existing streets with higher average speeds.

ROM Construction Cost Estimate

$12.2 million

Issues

- Eagle Valley environmental and development approvals
- Vehicle speeds / safety on Cajalco
- Initial draft assumed Rider Street rather than Cajalco but was moved due to environmental and development challenges

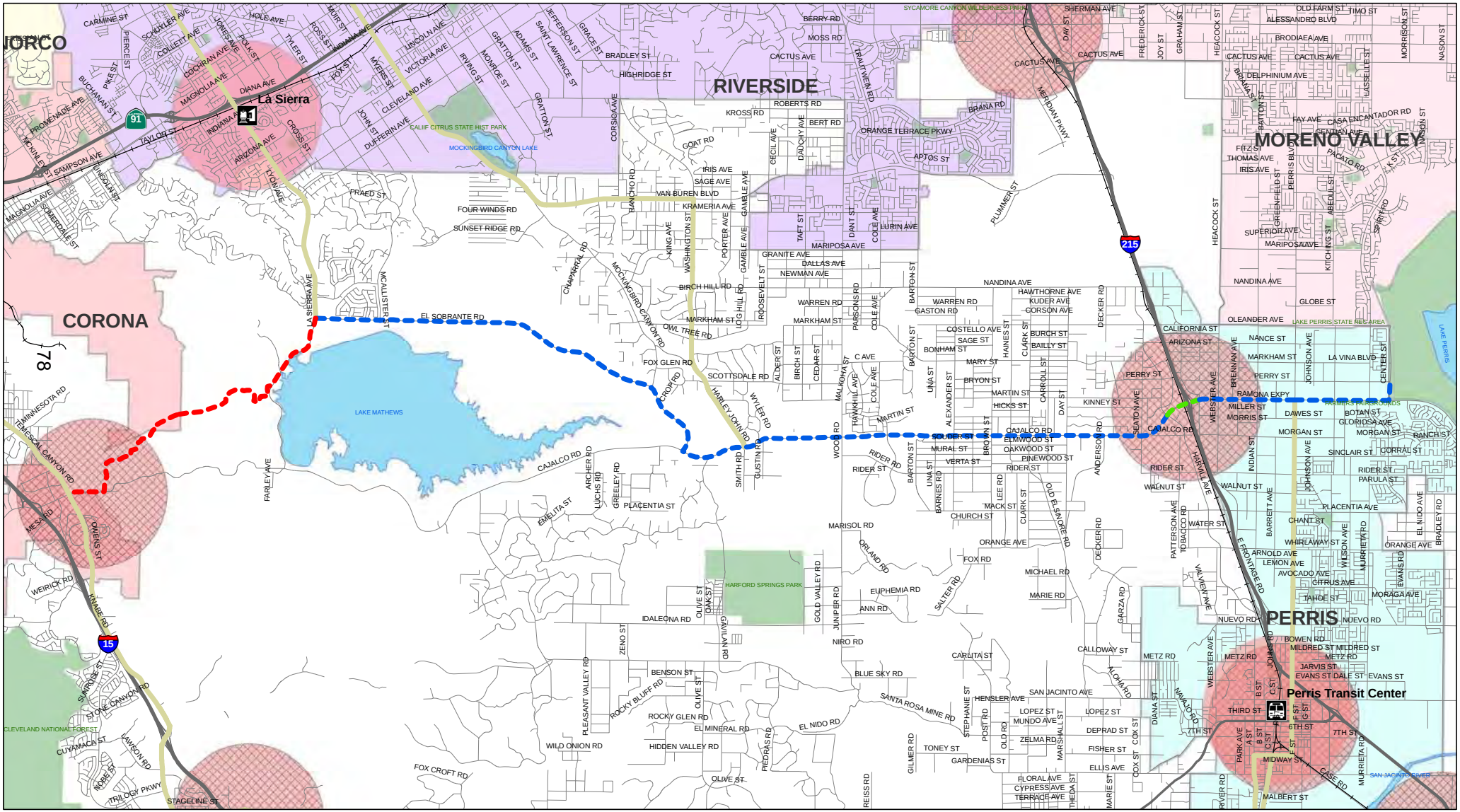
Strategies for Implementation

- Consider Old Elsinore Road with connection into Perris south of Motte Rimrock Reserve near Nuevo or north via Wood to Nandina/Harley Knox.

Key Connections

- Connects Routes 4, 5, 7, 17, and 25
- Potential transit linkage at Cajalco, I-215/Ramona Expressway

CORRIDOR 6 - EL SOBRANTE - LAKE PERRIS
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



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5.7 Route 7: Hidden Valley – La Sierra

Zone

Northwest

Segments

- Arlington
- La Sierra

Profile

- Suitable for Class I/II route
- Approximately 8.5 miles serving Riverside
- Potential NEV route

Status

Route is on existing streets with north connection to existing Class I trail

ROM Construction Cost Estimate

$450,000

Issues

- La Sierra recently widened south of Victoria with minimal available ROW

Strategies for Implementation

- TBD

Key Connections

- Connects Routes 1, 3, 6, and 8
- La Sierra Metrolink Station

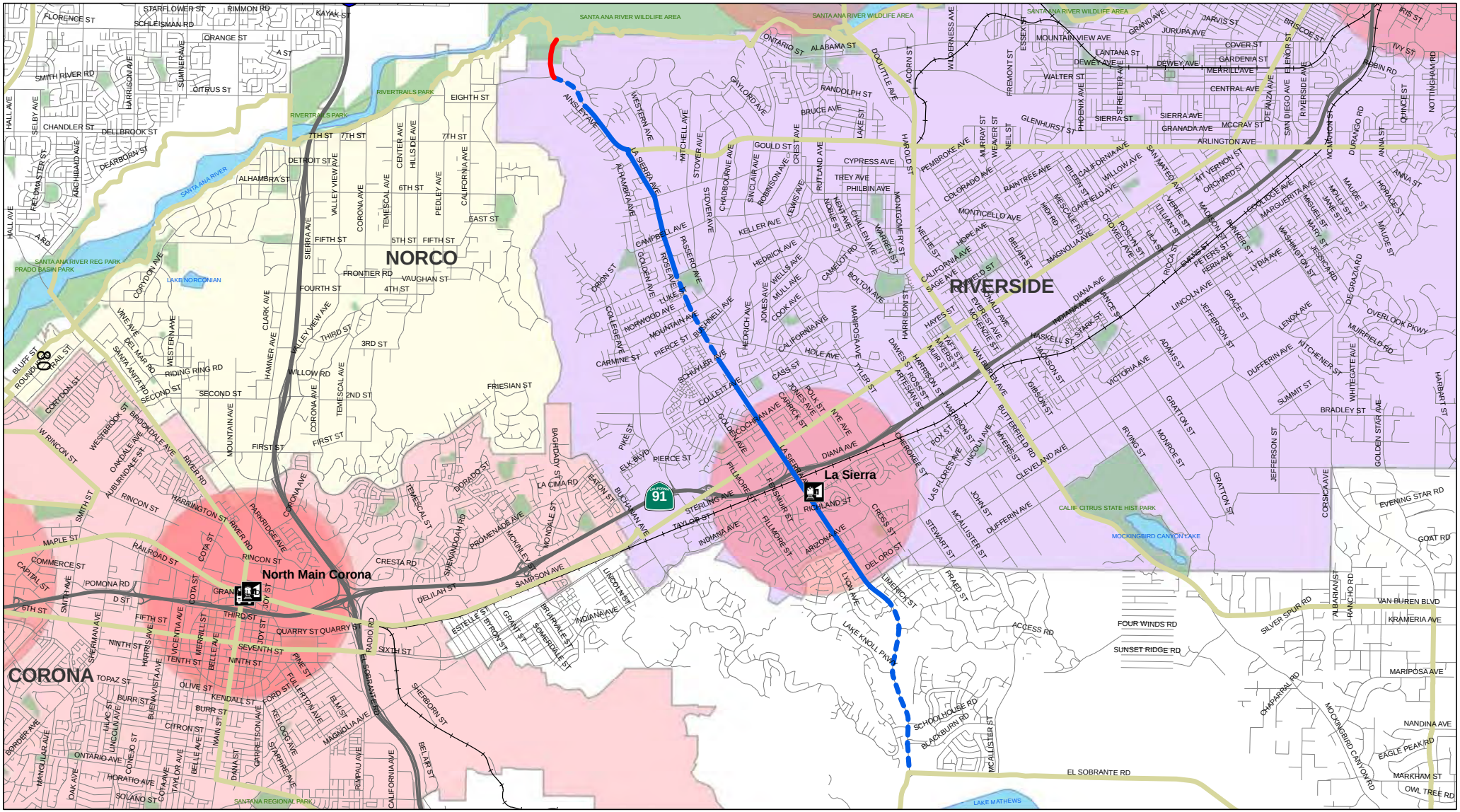
CORRIDOR 7 - HIDDEN VALLEY - LA SIERRA
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor


NORCO
RIVERSIDE
La Sierra
North Main Corona
CORONA
SANTA ANA RIVER WILDLIFE AREA
RIVERTRAILS PARK
SANTA ANA RIVER REG PARK
PRADO BASIN PARK
LAKE NORCONIAN
CALIF CITRUS STATE HIST PARK
MOCKINGBIRD CANYON LAKE
SANTANA REGIONAL PARK
LAKE MATHEWS
AINSLEY AVE
LA SIERRA AVE
LA SIERRA
RICHLAND ST
DIANA AVE
PIERCE ST
STERLING AVE
TAYLOR ST
INDIANA AVE
ARIZONA AVE
DEL ORO ST
LIMERICK ST
LYON AVE
LAKE KNOLL PKWY
SCHOOLHOUSE RD
BLACKBURN RD
EL SOBRANTE RD
FOUR WINDS RD
SUNSET RIDGE RD
ACCESS RD
SILVER SPUR RD
VAN BUREN BLVD
KRAMERIA AVE
MARIPOSA AVE
NANDINA AVE
EAGLE PEAK RD
MARKHAM ST
OWL TREE RD
EVENING STAR RD
GOAT RD
CHAPARRAL RD
MOCKINGBIRD CANYON RD
ALBARIAN ST
RANCHO RD
CORSICA AVE
JEFFERSON ST
GRATTON ST
MONROE ST
IRVING ST
ADAMS ST
VICTORIA AVE
DUFFERIN AVE
CLEVELAND AVE
McALLISTER ST
STEWART ST
PRAED ST
JOHN ST
LAS FLORES AVE
LINCOLN AVE
BUTTERFIELD RD
MYERS ST
GIBSON ST
CHEROKEE ST
ARTESIAN ST
ROSS ST
DAWES ST
HARRISON ST
HAYES ST
MUIR ST
TAFT ST
VAN BUREN AVE
MASKELL ST
STARK ST
JACKSON ST
CROSS ST
DEL ORO ST
ELK BLVD
PIKE ST
BUCHANAN AVE
EATON ST
BAGHDADY ST
LA CIMA RD
CRESTA RD
SHENANDOAH RD
PROMENADE AVE
MONDALE ST
MOKIHLER ST
SAMPSON AVE
DELILAH ST
ESTELLE ST
BYRON ST
GRANT ST
BRUARLES ST
SOMERDALE ST
LINCOLN ST
RADIO RD
EL SOBRANTE RD
SIERRA ST
BELAIR ST
CALIFORNIA AVE
RUMPAU AVE
MAGNOLIA AVE
FULLERTON AVE
KELLOGG AVE
GARRETSON AVE
STARFIRE AVE
FORD ST
KENDALL ST
OLIVE ST
BURR ST
CITRON ST
TOPAZ ST
SIXTH ST
SEVENTH ST
NINTH ST
TENTH ST
QUARRY ST
THIRD ST
FIFTH ST
D ST
POMONA RD
GRAND AVE
COTA ST
JOY ST
RAILROAD ST
COMMERCE ST
CAPITAL ST
MAPLE ST
SMITH ST
RIVER RD
HARRINGTON ST
RINCON ST
W RINCON ST
PARKRIDGE AVE
CORONA AVE
MOUNTAIN AVE
FIRST ST
SECOND ST
SANTA ANITA RD
DEL MAR RD
RIDING RING RD
WESTBROOK ST
BROOKDALE AVE
OAKDALE AVE
AUBURNDALE ST
CORYDON ST
ROUND TOP RAIL ST
BLUFF ST
VINE AVE
WESTERN AVE
VALLEY VIEW AVE
HAMNER AVE
CLARK AVE
SIERRA AVE
WILLOW RD
FRIESIAN ST
TEMESCAL AVE
2ND ST
3RD ST
FOURTH ST
4TH ST
FIFTH ST
5TH ST
6TH ST
7TH ST
EIGHTH ST
FRONTIER RD
VAUGHAN ST
EAST ST
ALHAMBRA ST
DETROIT ST
DEARBORN ST
ARCHIBALD AVE
KELLY STER ST
CHANDLER ST
DELLBROOK ST
SELBY AVE
HALL AVE
A ST
ORANGE ST
SMITH RIVER RD
CITRUS ST
SUMNER AVE
HARRISON AVE
SCHLEISMAN RD
FLORENCE ST
STARFLOWER ST
RIMMON RD
KAYAK ST
CENTER AVE
HILLSIDE AVE
PEDLEY AVE
CALIFORNIA AVE
ALABAMA ST
ONTARIO ST
GAYLORD AVE
WESTERN AVE
MITCHELL AVE
STOVER AVE
CHADBOURNE AVE
SINCLAIR AVE
ROBINSON AVE
LEWIS AVE
GOULD ST
CRESTA AVE
RUTLAND AVE
BRUCE AVE
RANDOLPH ST
LAKE ST
DOOLITTLE AVE
ACORN ST
HAROLD ST
CYPRESS AVE
TREY AVE
PHILBIN AVE
MONTGOMERY ST
WARREN ST
CHALLEN AVE
NOBLE ST
KENT AVE
CAMELOT RD
BOLTON AVE
KELLER AVE
HEDRICK AVE
WELLS AVE
MULL AVE
COOK AVE
JONES AVE
HEDRICH AVE
CALIFORNIA AVE
HOLE AVE
CASS ST
POLK ST
NYE AVE
CARRICK ST
JONES AVE
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TYLER ST
HARRISON ST
ORION ST
CAMPBELL AVE
GOLDEN AVE
ROSEWOOD AVE
LUKE ST
PASSERO AVE
NORWOOD AVE
MOUNTAIN AVE
PUSHNELL AVE
PIERCE ST
SCHUYLER AVE
COLLETT AVE
CARMINE ST
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CARRICK ST
JONES AVE
MANIPOSA AVE
TYLER ST
HARRISON ST
DAWES ST
ROSS ST
ARTESIAN ST
CHEROKEE ST
BUTTERFIELD RD
MYERS ST
GIBSON ST
LINCOLN AVE
LAS FLORES AVE
JOHN ST
McALLISTER ST
STEWART ST
PRAED ST
DUFFERIN AVE
CLEVELAND AVE
VICTORIA AVE
ADAMS ST
IRVING ST
MONROE ST
GRATTON ST
JEFFERSON ST
CORSICA AVE
ALBARIAN ST
RANCHO RD
EVENING STAR RD
GOAT RD
CHAPARRAL RD
MOCKINGBIRD CANYON RD
SILVER SPUR RD
VAN BUREN BLVD
KRAMERIA AVE
MARIPOSA AVE
NANDINA AVE
EAGLE PEAK RD
MARKHAM ST
OWL TREE RD
EL SOBRANTE RD
ACCESS RD
FOUR WINDS RD
SUNSET RIDGE RD
SCHOOLHOUSE RD
BLACKBURN RD
McALLISTER ST
LAKE KNOLL PKWY
LYON AVE
LIMERICK ST
DEL ORO ST
CROSS ST
INDIANA AVE
STERLING AVE
TAYLOR ST
PIERCE ST
DIANA AVE
RICHLAND ST
LA SIERRA
ARIZONA AVE
FILLMORE ST
FISHHUR ST
LA SIERRA AVE
GOLDCHAIN AVE
COLLETT AVE
SCHUYLER AVE
CARMINE ST
COLLEGE AVE
GOLDEN AVE
NORWOOD AVE
MOUNTAIN AVE
PUSHNELL AVE
PIERCE ST
LUKE ST
PASSERO AVE
ROSEWOOD AVE
CAMPBELL AVE
ORION ST
GOLDEN AVE
ALHAMBRA AVE
WESTERN AVE
AINSLEY AVE
ONTARIO ST
ALABAMA ST
GAYLORD AVE
STOVER AVE
MITCHELL AVE
CHADBOURNE AVE
SINCLAIR AVE
ROBINSON AVE
LEWIS AVE
GOULD ST
CRESTA AVE
RUTLAND AVE
BRUCE AVE
RANDOLPH ST
LAKE ST
DOOLITTLE AVE
ACORN ST
HAROLD ST
CYPRESS AVE
TREY AVE
PHILBIN AVE
MONTGOMERY ST
WARREN ST
CHALLEN AVE
NOBLE ST
KENT AVE
CAMELOT RD
BOLTON AVE
KELLER AVE
HEDRICK AVE
WELLS AVE
MULL AVE
COOK AVE
JONES AVE
HEDRICH

5.8 Route 8: Arlington - Alessandro

Zone

Northwest

Segments

- Arlington
- Alessandro

Profile

- Suitable for Class I/II route
- Approximately 20 miles serving Riverside and Moreno Valley
- Western portion: high traffic, low speed
- Eastern portion: low traffic high speed
- Potential NEV route

Status

Route is on existing streets

ROM Construction Cost Estimate

$191,000

Issues

- Tight ROW at SR-91 undercrossing

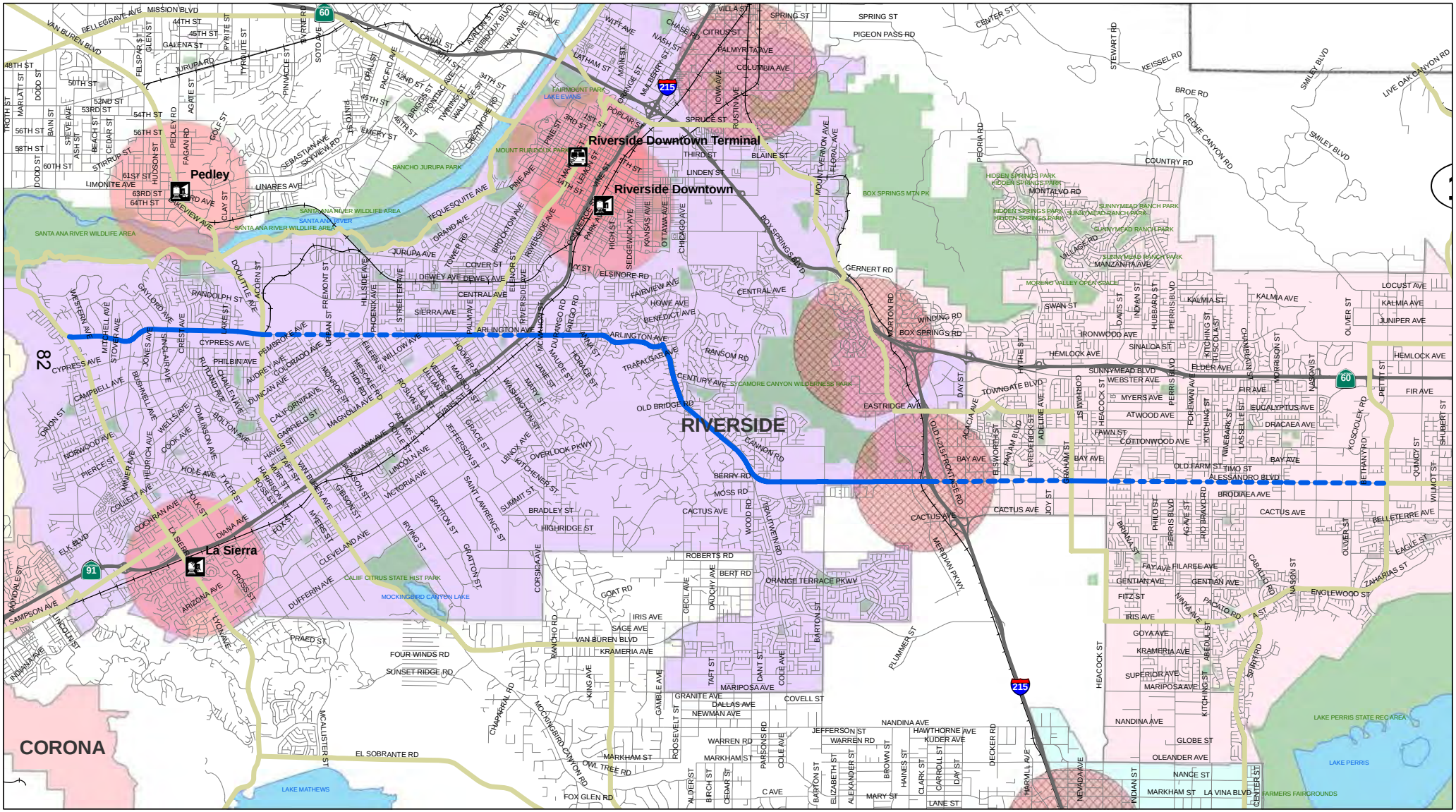
Strategies for Implementation

- TBD

Key Connections

- Connects Routes 3, 4, 7, 9, and 11
- Future transit linkage at Alessandro/I-215

CORRIDOR 8 - ARLINGTON - ALESSANDRO
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



Urban Crossroads, Inc. June 2010 U:\UcJobs_06600-07000\07000\07007\Task 6 Non-Motorized System\Classification Maps\Corridor8.pdf

5.9 Route 9: Fairmount - Iris

Zones

Northwest and Central

Segments

- Spruce (Santa Ana River to Watkins)
- Watkins/RR (Spruce to SR-60)
- Sycamore Canyon
- Eastridge/Eucalyptus
- Aqueduct/Perris Valley Storm Channel

Profile

- Suitable for Class II route
- Approximately 15.5 miles serving cities of Moreno Valley, Perris, and the March JPA
- Uses East Branch California Aqueduct and Perris Valley Storm Channel for significant portions of route
- Potential NEV route

Status

Route is on existing streets

ROM Construction Cost Estimate

$306,000

Issues

- TBD

Strategies for Implementation

- TBD

Key Connections

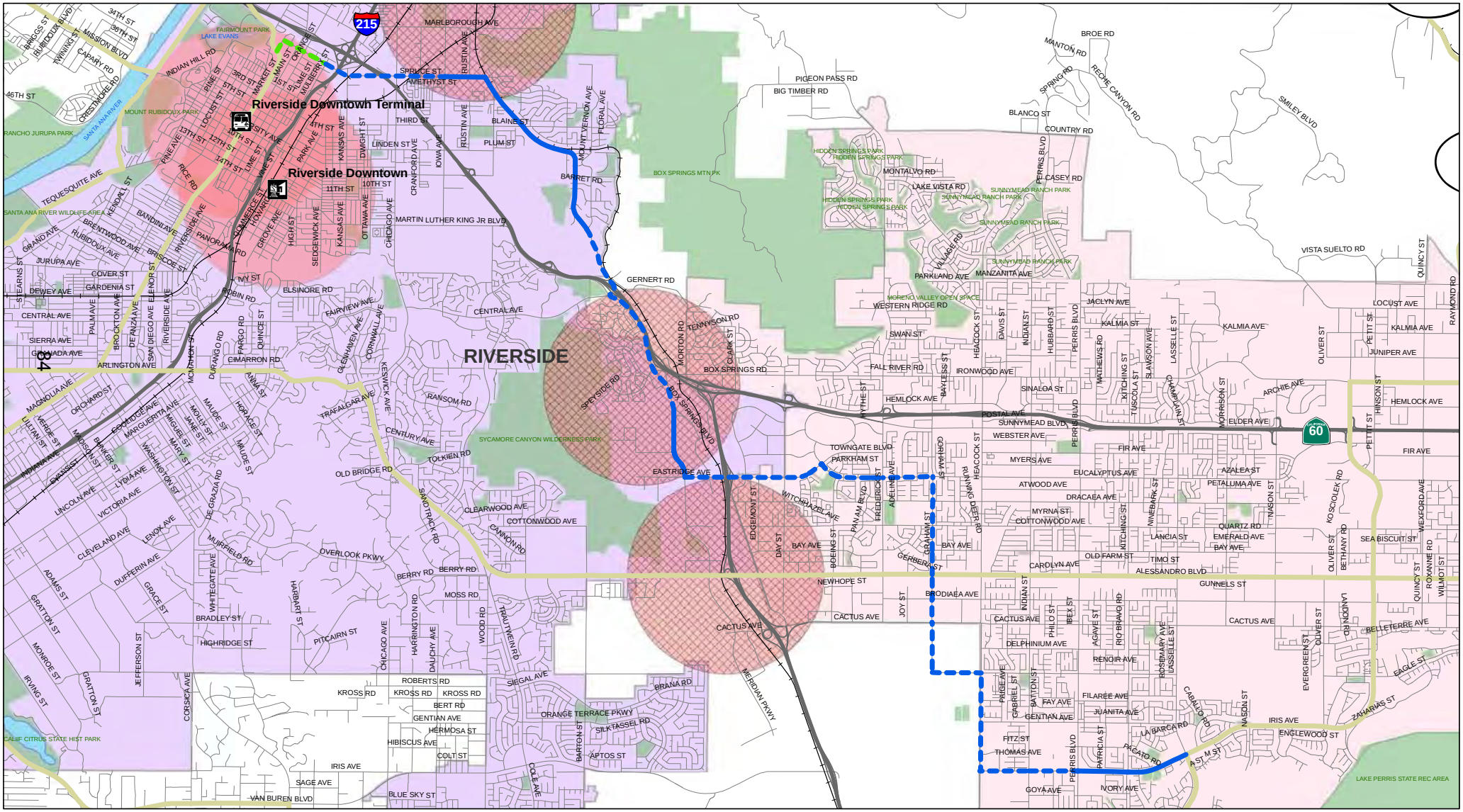
- Connects Routes 3, 8, 11, and 25
- Future transit linkage at potential Perris Valley Metrolink stations
- Downtown Perris Multi-Modal Transportation Center (Bus, Metrolink)

CORRIDOR 9 - FAIRMONT - IRIS
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor

0 0.5 1 2 Miles

N W E S



5.10 Route 10: San Jacinto River – Bautista Creek

Zones

Central and San Jacinto-Hemet

Segments

- Redlands
- San Jacinto Avenue
- San Jacinto River
- Bautista Creek

Profile

- Suitable for Class II route
- Approximately 28.5 miles serving cities of Perris, Moreno Valley, San Jacinto, and Hemet and unincorporated Riverside County (Lakeview / Nuevo)
- Substantial portion is along San Jacinto River (southern edge of existing flood plain)
- Potential NEV route

Status

Predominantly unimproved

ROM Construction Cost Estimate

$26 million

Issues

- Channel access
- San Jacinto River Plan compliance

Strategies for Implementation

- Identify alternatives for storm channel routing

Key Connections

- Connects Routes 12, 14, 17, 22, and 25
- Downtown Perris Multi-Modal Transportation Center (Bus, Metrolink)

CORRIDOR 10 - SAN JACINTO RIVER - BAUTISTA CREEK

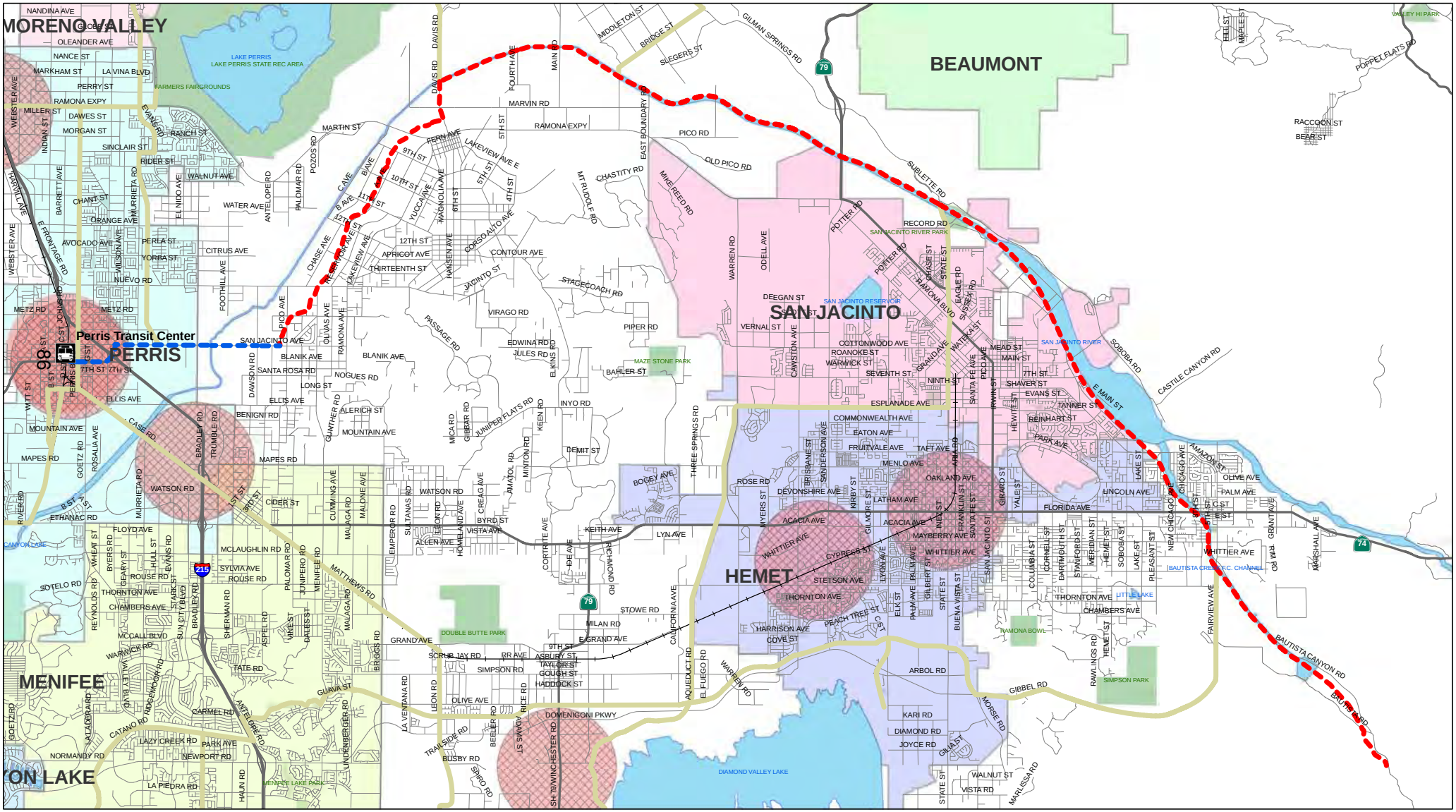
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.11 Route 11: Iris - Redlands

Zones

Central and Pass

Segments

- Redlands
- Ironwood
- Moreno Beach
- Iris

Profile

- Suitable for Class II route
- Approximately 12.1 miles serving Moreno Valley and unincorporated Riverside County
- Potential NEV route

Status

Existing streets

ROM Construction Cost Estimate

$ 1 million

Issues

- Redlands interchange
- Grade change between San Timoteo and SR-60

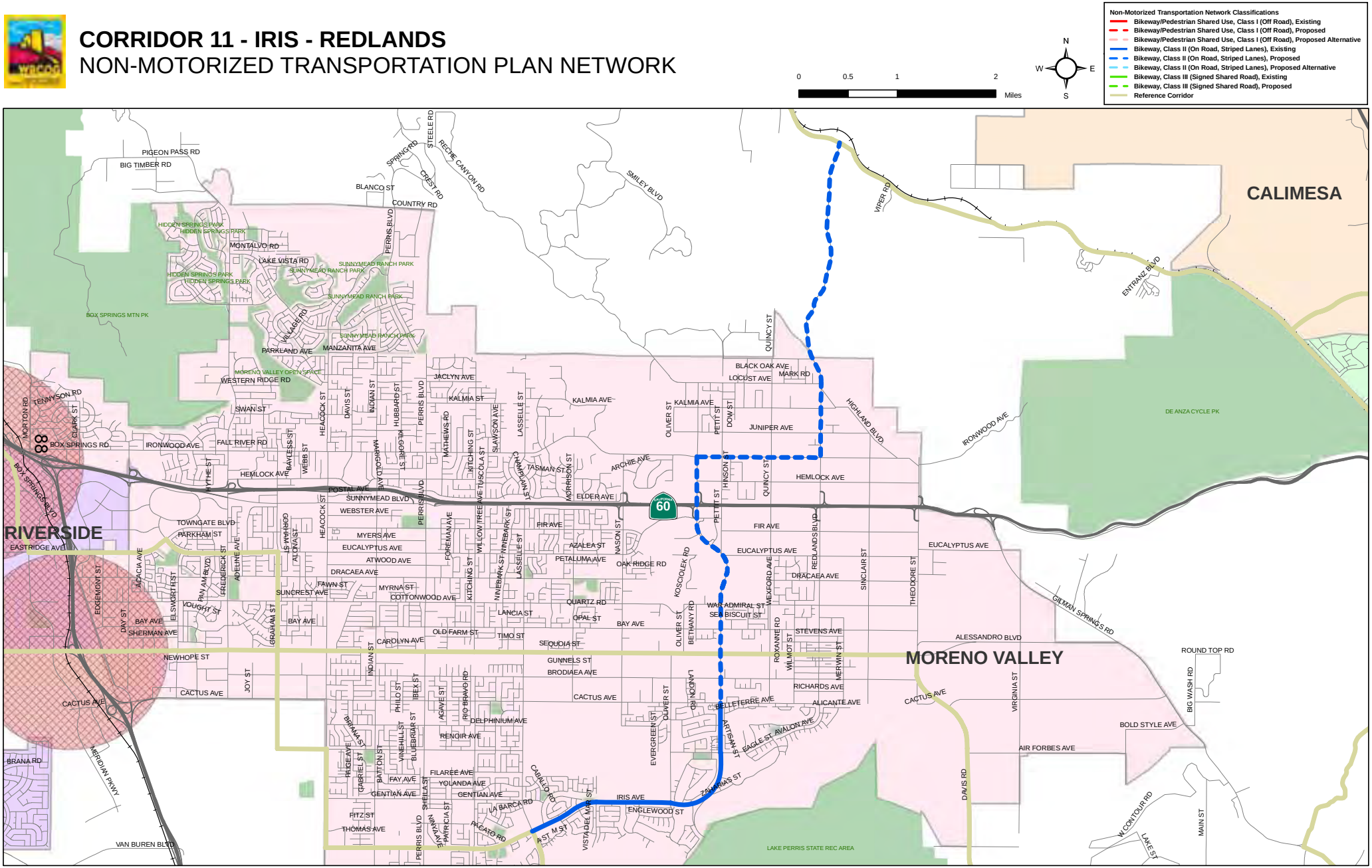
Strategies for Implementation

- TBD

Key Connections

- Connects Routes 8, 9, 12, 13, and 25

CORRIDOR 11 - IRIS - REDLANDS
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



5.12 Route 12: Alessandro - Davis

Zones

Central and San Jacinto-Hemet

Segments

- Alessandro
- Gilman Springs

Profile

- Suitable for Class I/II route
- Approximately 7 miles serving Moreno Valley and unincorporated Riverside County

Status

Existing streets with short unimproved section

ROM Construction Cost Estimate

$5.3 million

Issues

- Portions of existing streets to be widened in the future

Strategies for Implementation

- TBD

Key Connections

- Connects Routes 8, 10, 11, and 27

CORRIDOR 12- ALESSANDRO - DAVIS

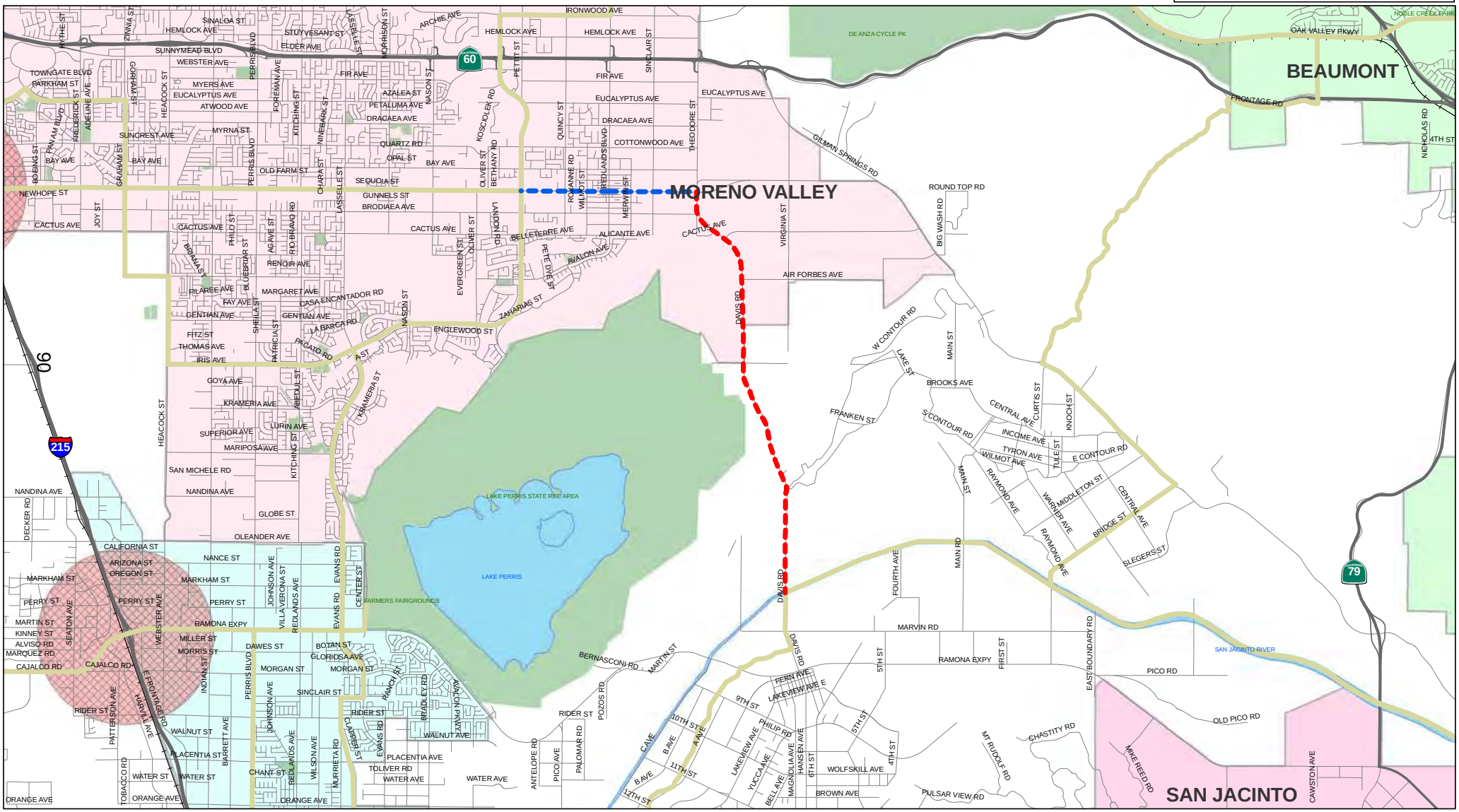
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.13 Route 13: San Timoteo – Interstate 10 Pass Area

Zone

Pass

Segments

- San Timoteo
- Elm/7th/California
- 6th/Ramsey
- Main/Railroad

Profile

- Suitable for Class I/II route
- Approximately 31.3 miles serving cities of Beaumont, Banning, and Calimesa and unincorporated Riverside County
- Rural setting on west end, residential and business district in central segments, and undeveloped/mining on east end
- Connects to CVAG network
- Potential NEV route

Status

Existing streets with unimproved portion near weigh station

ROM Construction Cost Estimate

$3.9 million

Issues

- Potential conflicts at 6th Street/California
- Travel speeds on San Timoteo

Strategies for Implementation

- Consider following planned I-10 bypass

Key Connections

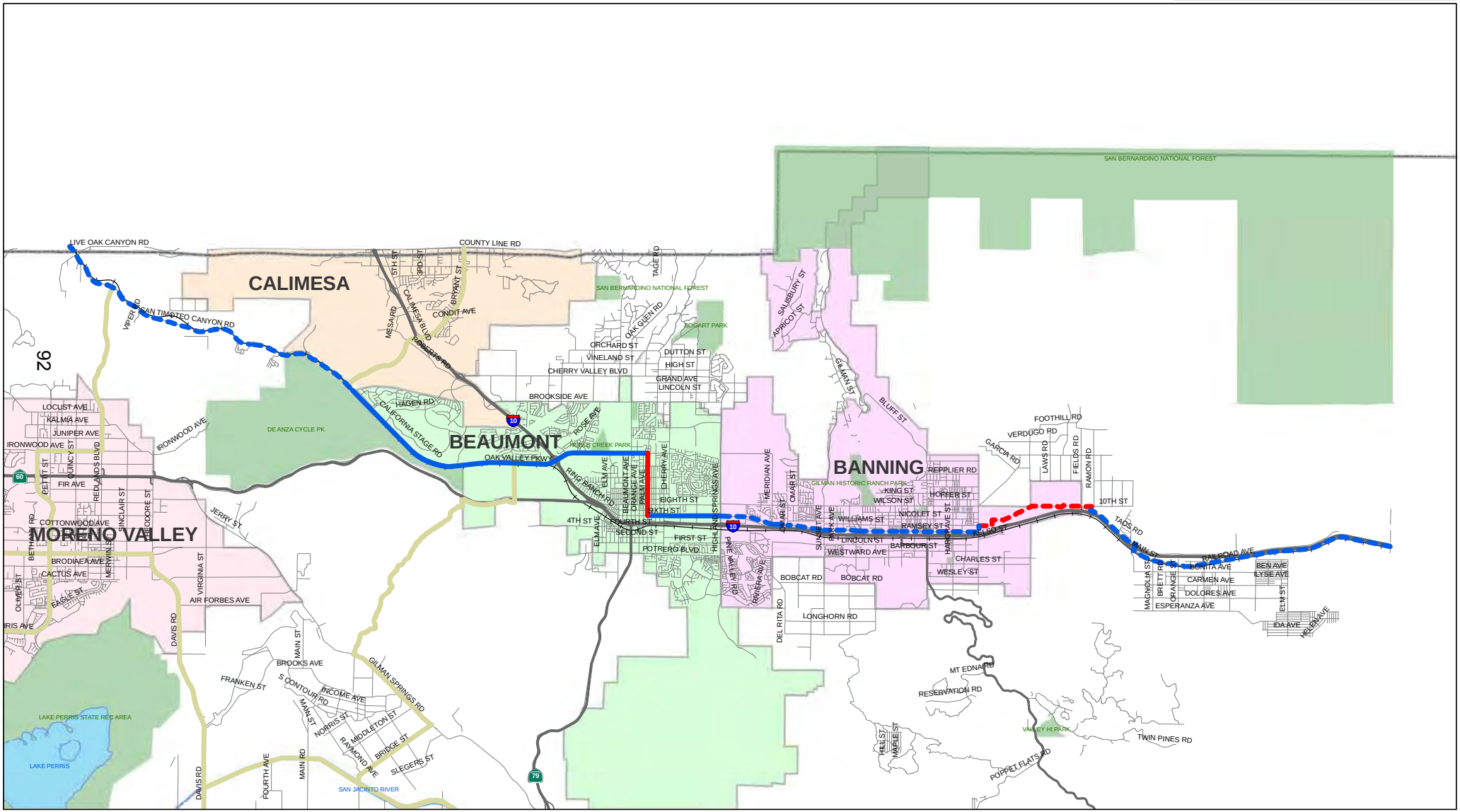
- Connects Routes 11, 26, 27, and CVAG network

CORRIDOR 13 - SAN TIMOTEO - I 10 PASS AREA
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 1.25 2.5 5 Miles

N W E S

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.14 Route 14: San Jacinto – Diamond Valley

Zone

San Jacinto-Hemet

Segments

- State
- Esplanade
- San Diego Canal

Profile

- Suitable for Class I/II route
- Approximately 11.5 miles serving cities of Hemet, and San Jacinto and unincorporated Riverside County

Status

Existing streets and maintenance road

ROM Construction Cost Estimate

$2.4 million

Issues

- Access to canal right of way
- Railroad crossing

Strategies for Implementation

- TBD

Key Connections

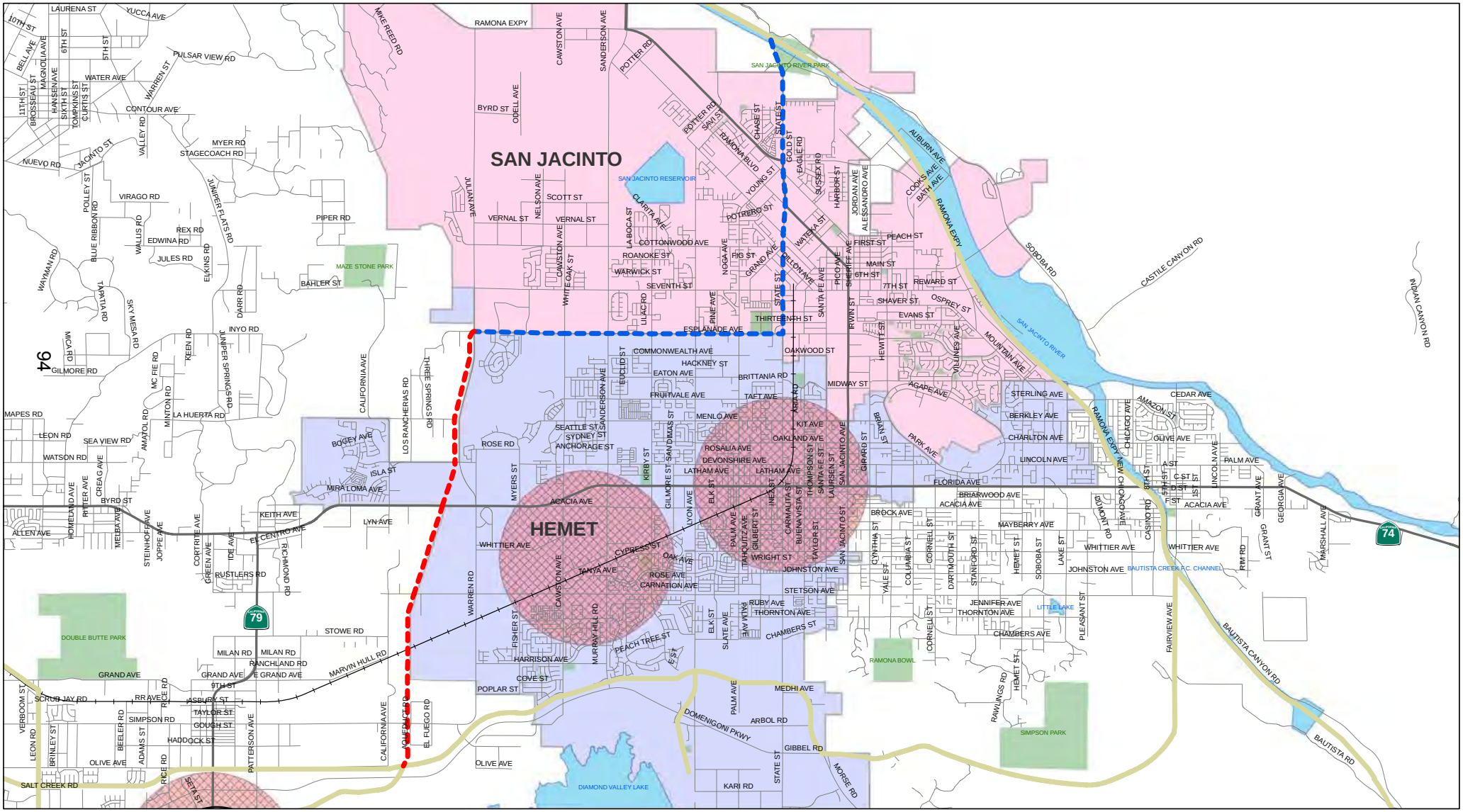
- Connects Routes 10, 15, and 18

CORRIDOR 14 - SAN JACINTO RIVER - DIAMOND VALLEY LAKE
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.15 Route 15: Salt Creek - Domenigoni

Zones

Southwest, Central, and San Jacinto-Hemet

Segments

- Lemon
- Lost Road
- Canyon Hills
- Murrieta
- Salt Creek
- Searl/Lyon

Profile

- Suitable for Class I/II route
- Approximately 23.7 miles serving cities of Lake Elsinore, Hemet, Menifee, and Wildomar and unincorporated Riverside County

Status

Significant portions are unimproved

ROM Construction Cost Estimate

$10.5 million

Issues

- Access to Salt Creek
- More than 700-foot elevation change on Gibbel, verify access and MSHCP status

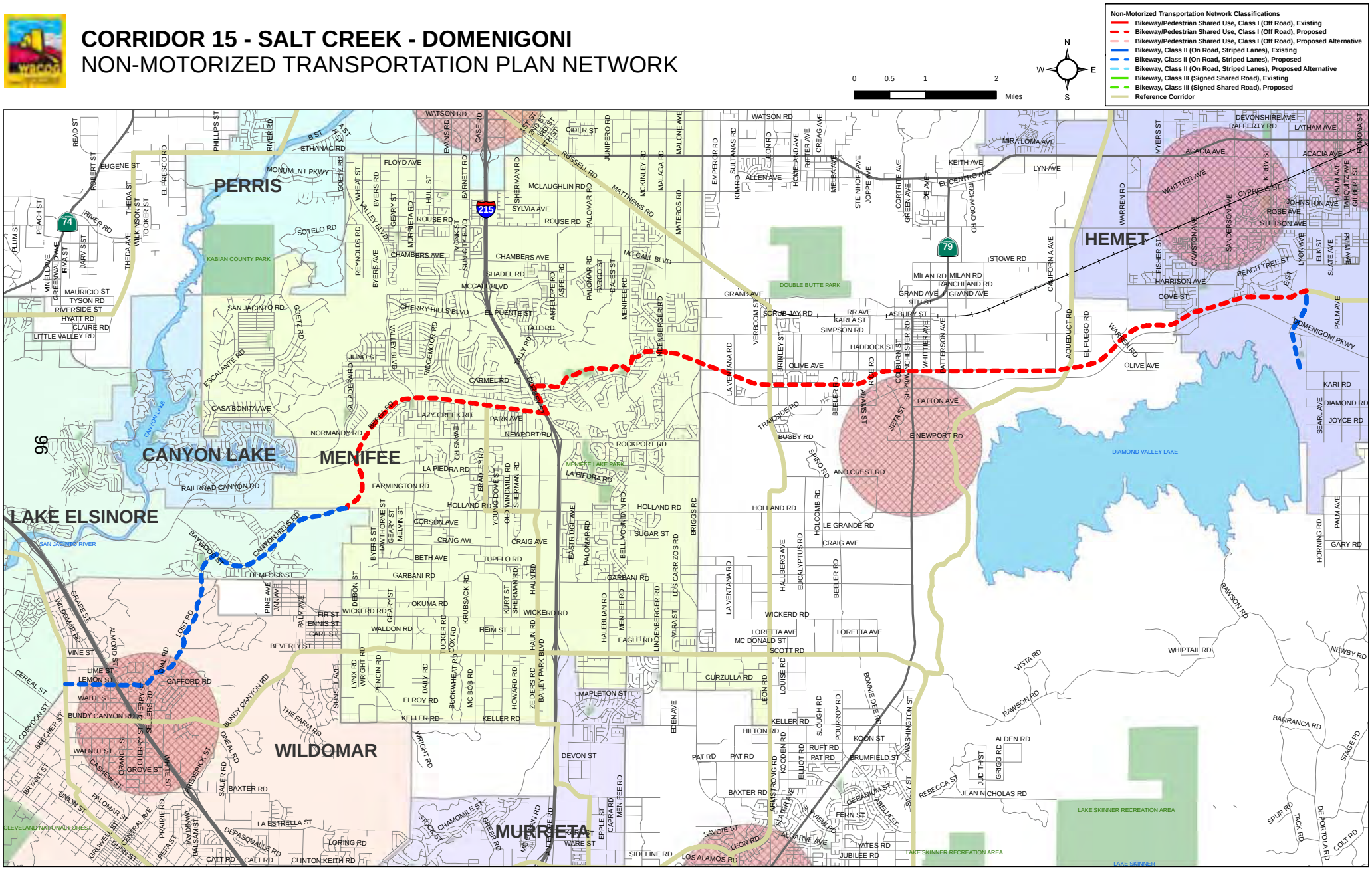
Strategies for Implementation

- Consider replacing Salt Creek segment with Newport Road alignment and Domenigoni Parkway

Key Connections

- Connects Routes 14, 16, 18, 22, 23, and 24
- Future transit linkage in Wildomar and Winchester (via Route 18)

CORRIDOR 15 - SALT CREEK - DOMENIGONI
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



5.16 Route 16: Lake Elsinore – Murrieta/Temecula Creek

Zone

Southwest

Segments

- Lake
- Lakeshore/Main
- Mission Trail
- Murrieta Creek/Temecula Creek

Profile

- Suitable for Class I/II route
- Approximately 31.1 miles serving cities of Lake Elsinore, Murrieta, Temecula, and Wildomar
- Potential NEV route

Status

Existing road with majority of length unimproved along Murrieta/Temecula Creek

ROM Construction Cost Estimate

$10.7 million

Issues

- Access to Murrieta Creek and Temecula Creek
- Temecula Creek undercrossing at I-15

Strategies for Implementation

- TBD

Key Connections

- Connects Routes 5, 15, 17, 18, 19, 20, 21, and 23
- Future transit linkage at Lake/Alberhill, Wildomar (via Route 19), and Murrieta/Temecula (via Routes 21 and 23)

CORRIDOR 16 - LAKE ELSINORE - MURRIETA & TEMECULA CREEKS

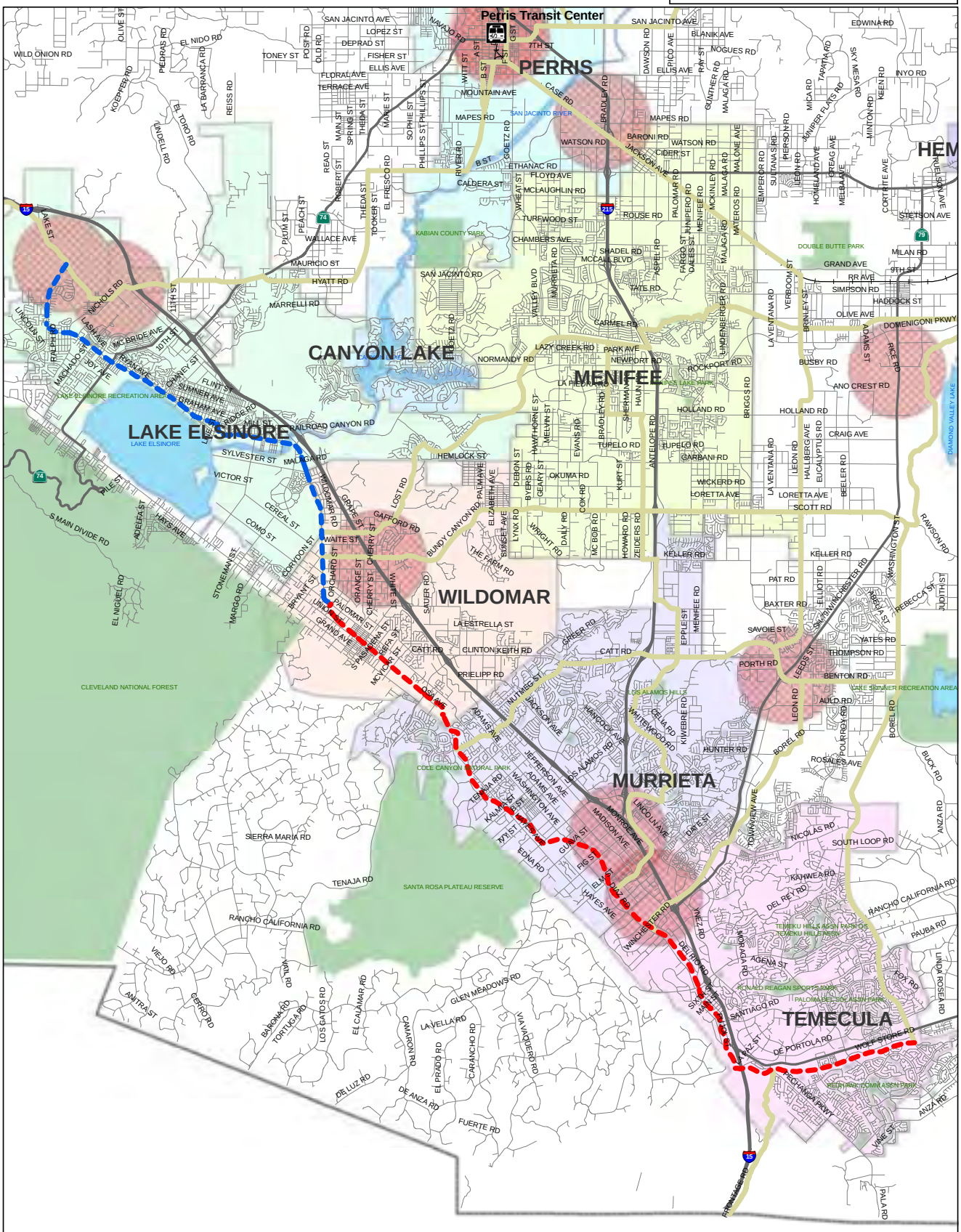
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.17 Route 17: Nichols - Perris Blvd.

Zones

Southwest and Central

Segments

- Nichols
- Riverside
- Theda
- Orange Empire Spur
- Perris

Profile

- Suitable for Class I/II route
- Approximately 18.1 to 18.4 miles serving cities of Lake Elsinore and Perris and unincorporated Riverside County
- Includes alternative to Orange Empire Spur ("A" Street), shown as 17A on the NMTP Network Exhibit

Status

Majority (60 percent) of route is unimproved with pavement limited to Nichols Road and Perris Blvd.

ROM Construction Cost Estimate

$370,000

Issues

- MSHCP concerns
- Crossing at State Route 74

Strategies for Implementation

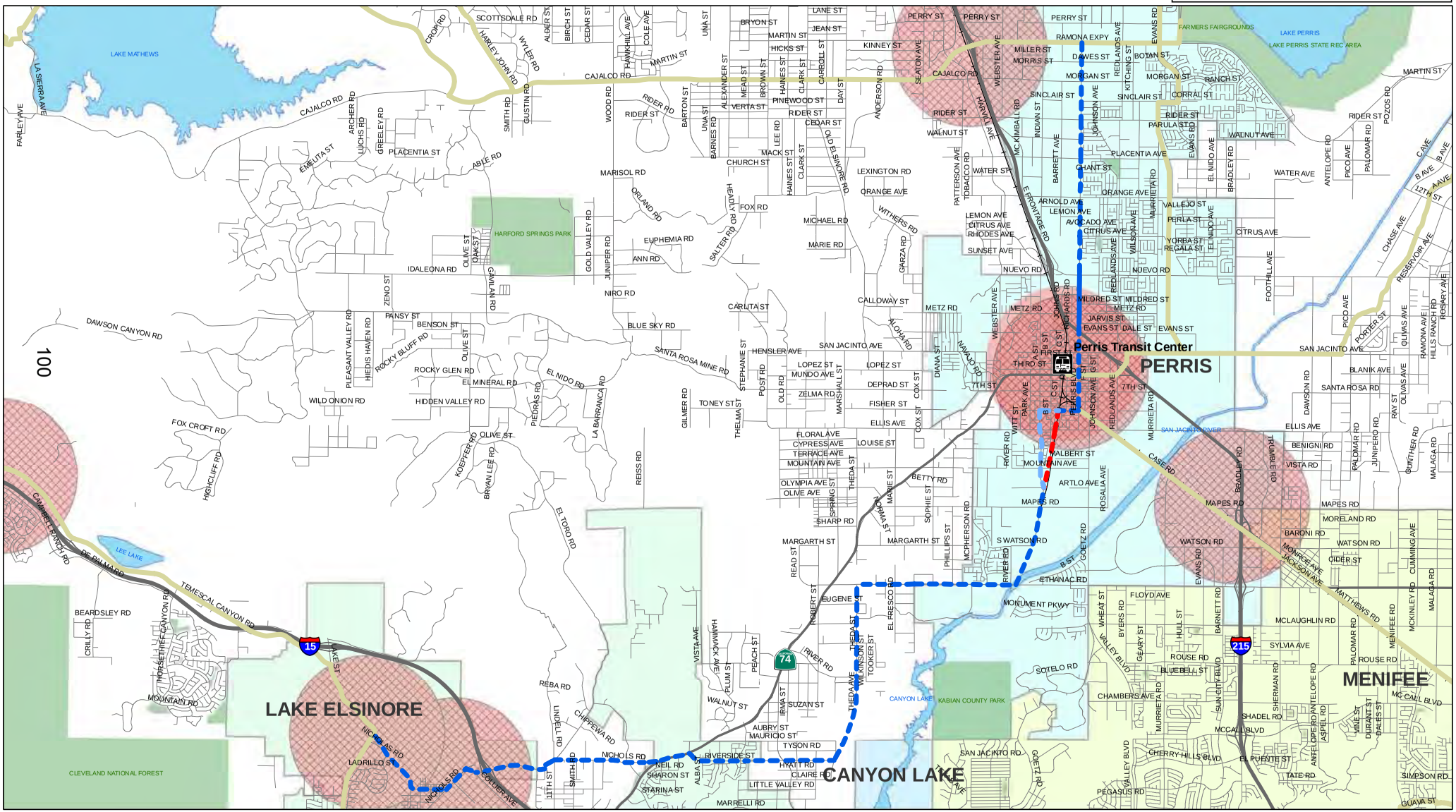
- TBD

Key Connections

- Connects Routes 5, 6, 10, 16, and 24
- Future transit linkage in Lake Elsinore (Nichols)
- Downtown Perris Multi-Modal Transportation Center (Bus, Metrolink)

CORRIDOR 17 - NICHOLS - PERRIS BLVD

NON-MOTORIZED TRANSPORTATION PLAN NETWORK



5.18 Route 18: San Diego Canal - Eastern Bypass

Zones

San Jacinto-Hemet and Southwest

Segments

- San Diego Canal
- Washington
- Anza

Profile

- Suitable for Class I/II route
- Approximately 17.5 miles serving the communities of Winchester, French Valley, and Citrus/Vineyard in unincorporated Riverside County
- Rural/estate setting in middle segment

Status

Route is predominantly unimproved (future roads and existing water conveyance facilities)

ROM Construction Cost Estimate

$5.5 million

Issues

- MSHCP concerns
- Access to state highway

Strategies for Implementation

- TBD

Key Connections

- Connects Routes 15, 16, 19, and 20
- Future transit linkage near Winchester/Domenigoni, Clinton Keith/Winchester Park and Ride (via Route 20)

CORRIDOR 18 - SAN DIEGO CANAL - EASTERN BYPASS

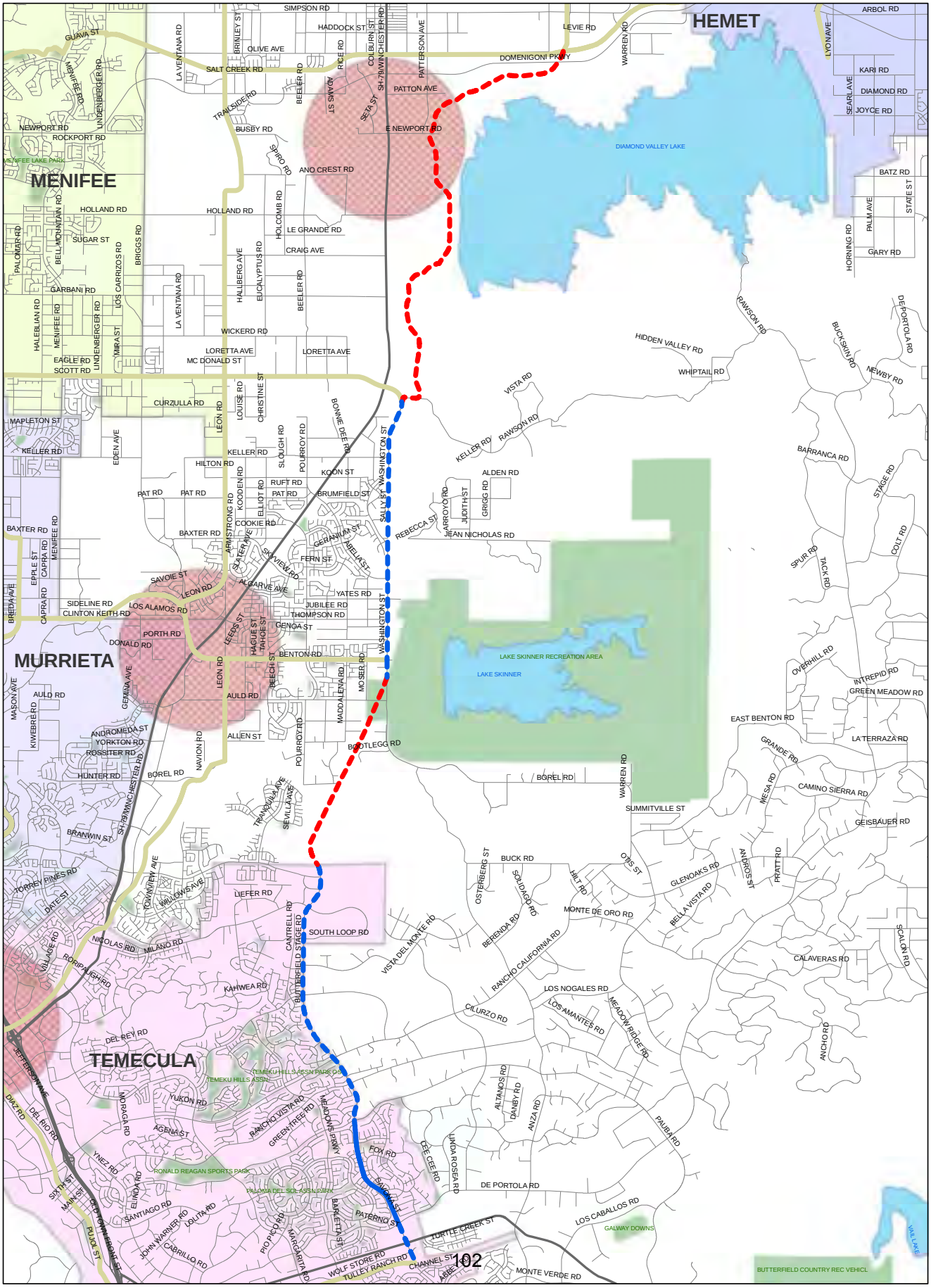
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.19 Route 19: Bundy Canyon - Scott

Zones

Southwest and Central

Segments

- Bundy Canyon
- Scott Road

Profile

- Suitable for Class II route
- Approximately 12.7 miles serving the cities of Menifee and Wildomar and unincorporated Riverside County
- Rural/estate setting in middle segment

Status

Existing streets predominantly below General Plan designation

ROM Construction Cost Estimate

$253,000

Issues

- Construction estimate assumes roads will be built to General Plan standard through separate effort

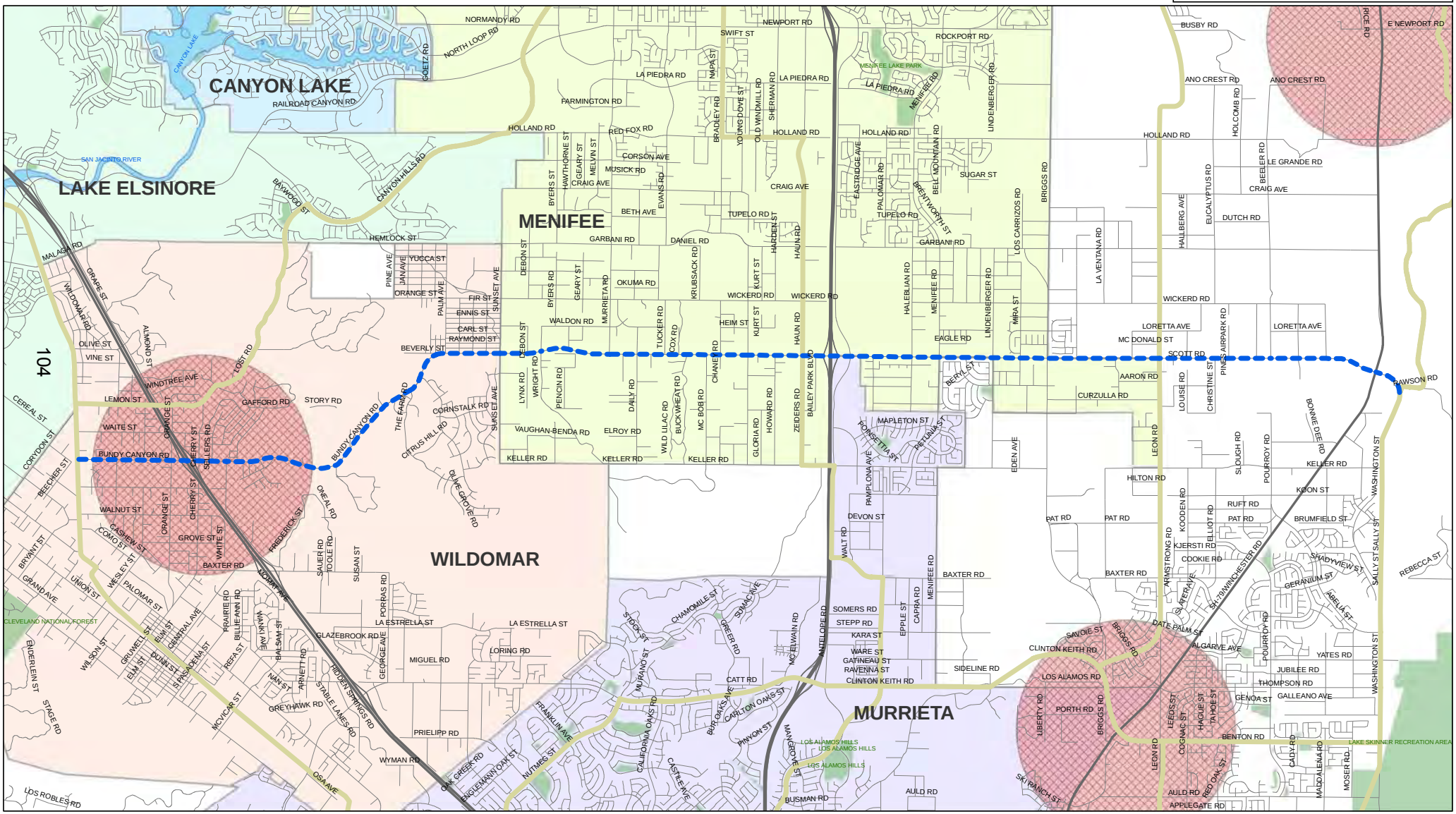
Strategies for Implementation

- Future widening to General Plan standards can facilitate new bike lanes

Key Connections

- Connects Routes 16, 18, 23, and 24
- Future transit linkage in Wildomar

CORRIDOR 19 - BUNDY - SCOTT
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



5.20 Route 20: Murrieta Creek – French Valley

Zone

Southwest

Segments

- Nutmeg
- Clinton Keith
- Benton

Profile

- Suitable for Class II route
- Approximately 9.9 miles serving Murrieta and the community of French Valley in unincorporated Riverside County
- Potential NEV route

Status

Existing road plus 2.5-mile extension of Clinton Keith

ROM Construction Cost Estimate

$139,000

Issues

- Requires construction of Clinton Keith in French Valley Area

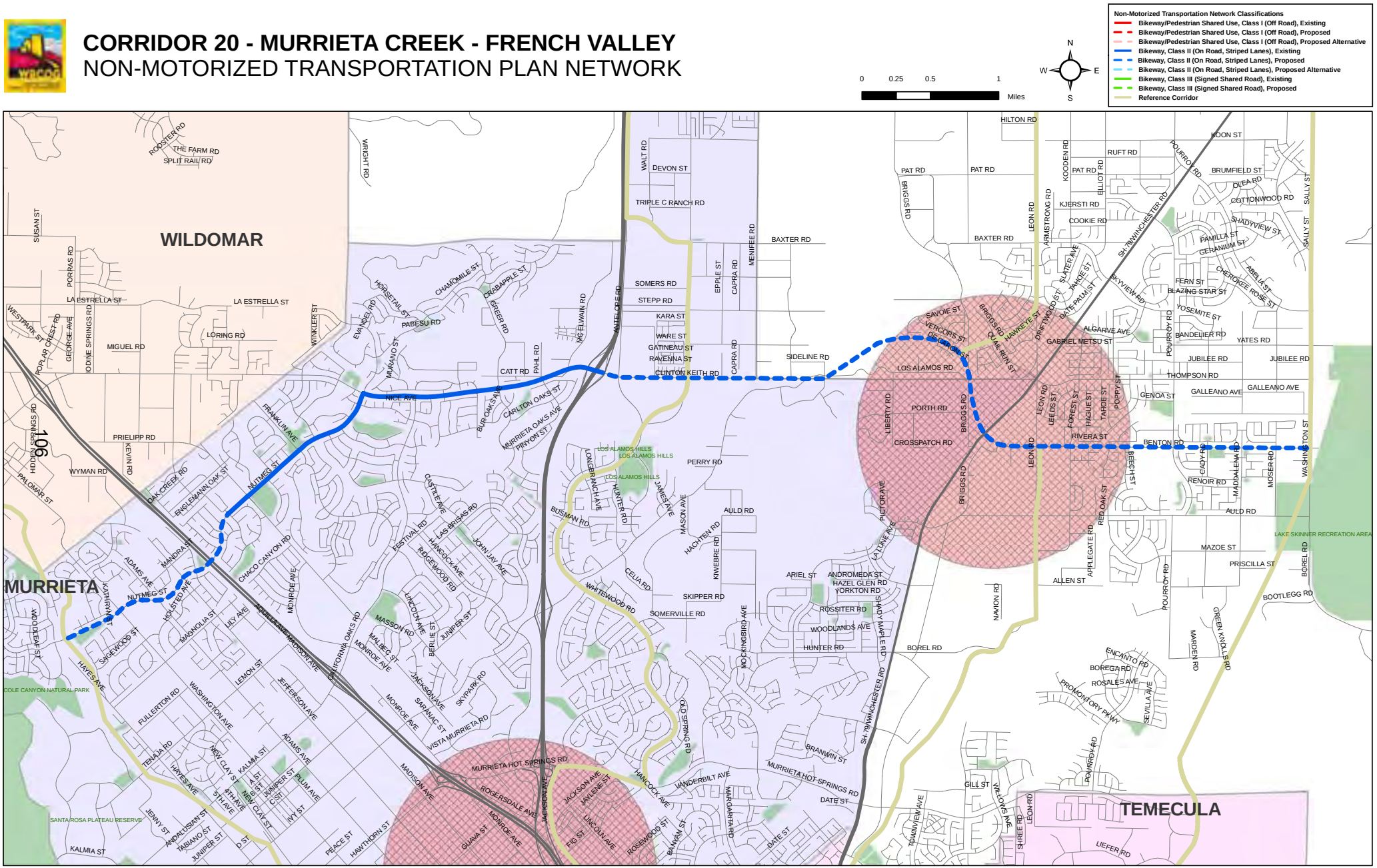
Strategies for Implementation

- Future extension of Clinton Keith to General Plan standards can facilitate new bike lanes

Key Connections

- Connects Routes 16, 18, 21, 23, and 24
- Future transit linkage at Clinton Keith/Winchester Park and Ride

CORRIDOR 20 - MURRIETA CREEK - FRENCH VALLEY
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



5.21 Route 21: Three Creeks

Zones

Southwest, Central, and San Jacinto-Hemet

Segments

- Leon
- Tucaloca Creek
- Santa Gertrudis Creek

Profile

- Suitable for Class I/II route and Multi-use trail
- Approximately 6.5 miles serving Temecula and the community of French Valley in unincorporated Riverside County

Status

Short segment on existing road with balance on trails, dirt roads, low volume rails, and Class I paths

ROM Construction Cost Estimate

$3.3 million

Issues

- Access to creeks

Strategies for Implementation

- TBD

Key Connections

- Connects Routes 16 and 20
- Future transit linkage in Temecula and at Clinton Keith/Winchester Park and Ride

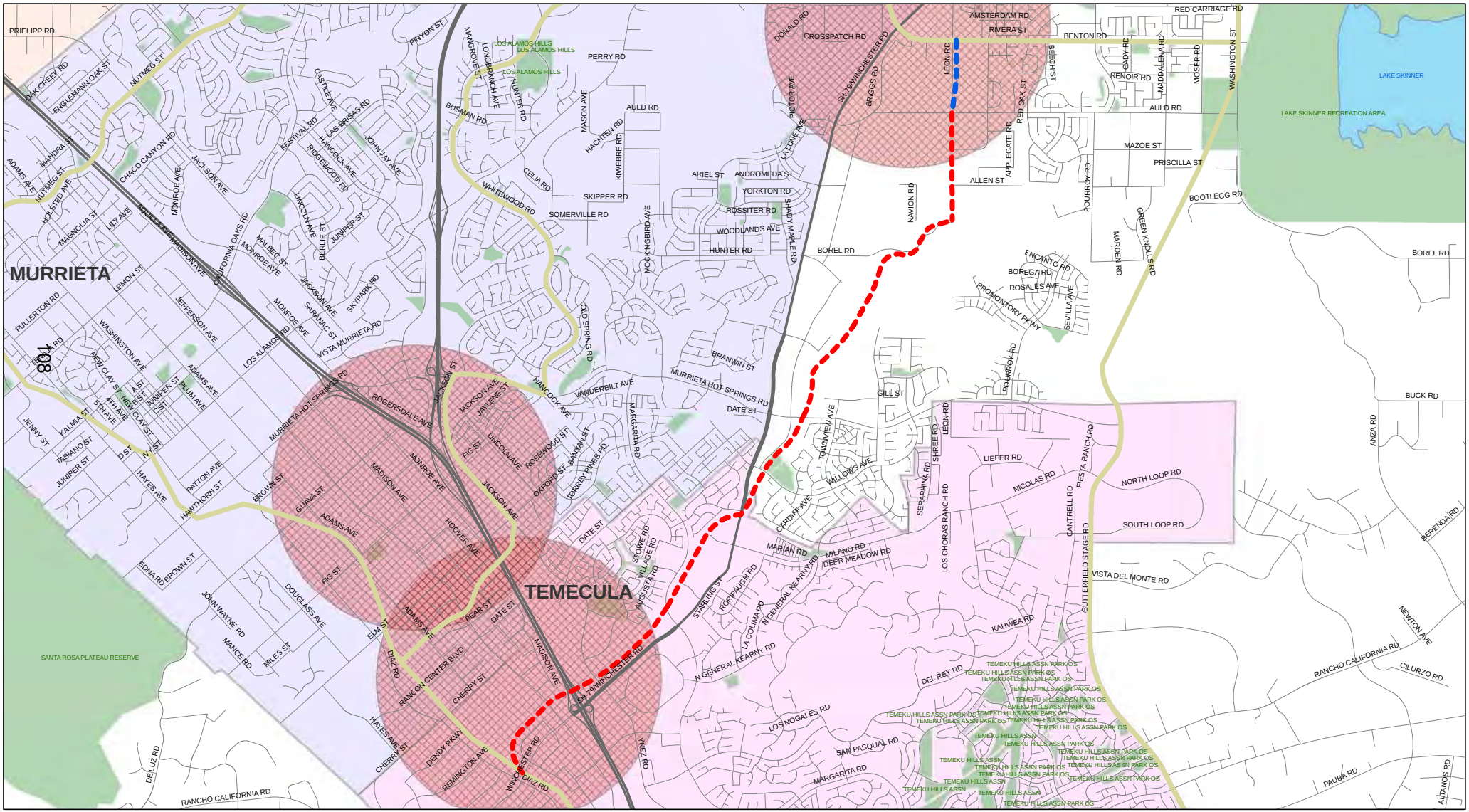
CORRIDOR 21 - THREE CREEKS
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.25 0.5 1 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.22 Route 22: Gibbel - Fairview

Zone

San Jacinto-Hemet

Segments

- Salt Creek
- Gibbel
- Fairview

Profile

- Suitable for Class I/II
- Approximately 7.8 miles serving Hemet and unincorporated Riverside County

Status

Significant portions along dirt roads/trails

ROM Construction Cost Estimate

$2.25 million

Issues

- Access to San Bernardino National Forest and related environmental constraints
- Includes significant portion of future Gibbel extension not included in cost

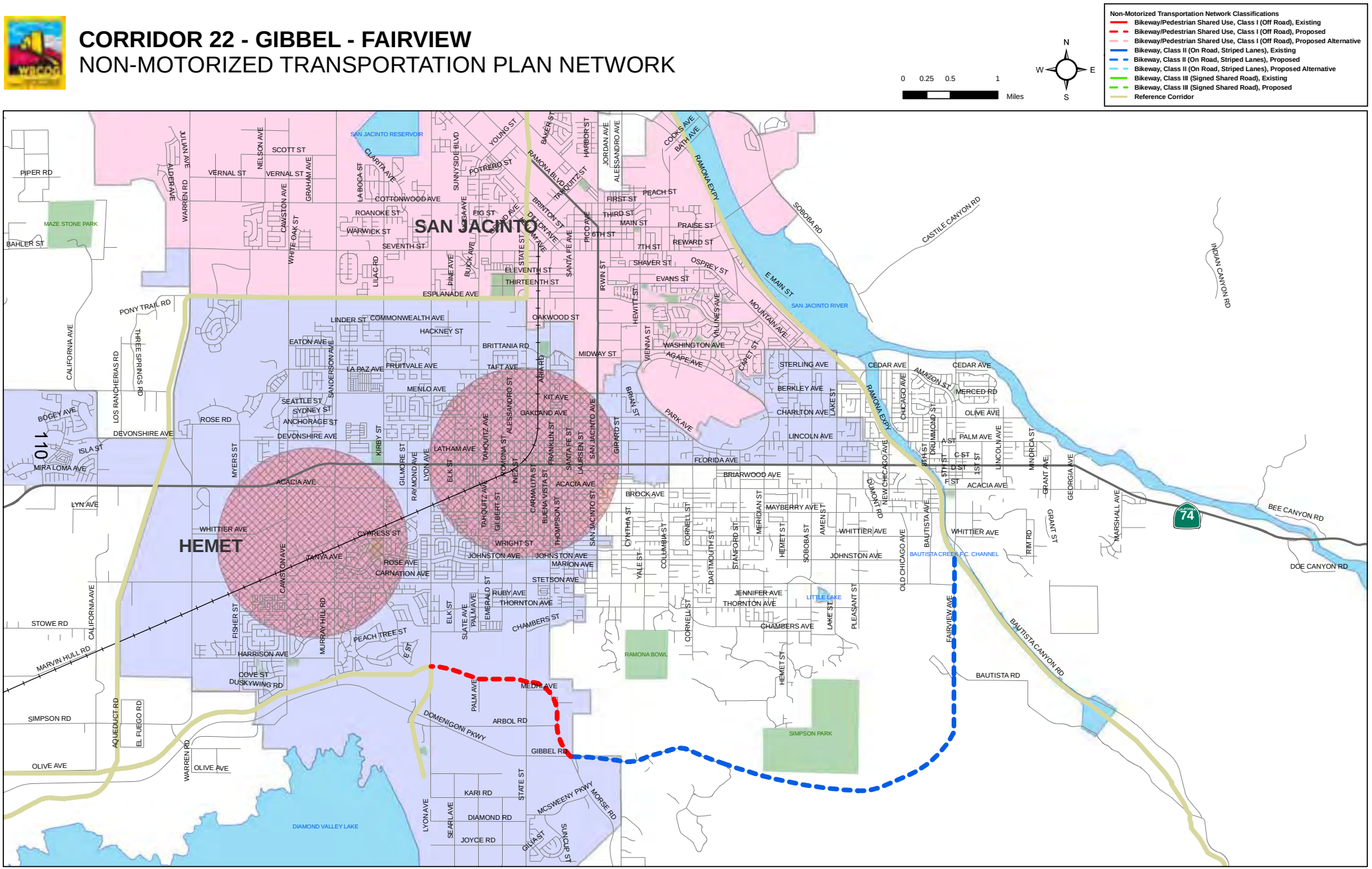
Strategies for Implementation

- TBD

Key Connections

- Connects Routes 10 and 15

CORRIDOR 22 - GIBBEL - FAIRVIEW
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



5.23 Route 23: 215 South Corridor

Zones

Southwest and Central

Segments

- Bradley/Haun/Zeiders
- Antelope
- Whitewood
- Alta Murrieta
- Jackson
- Warm Springs Creek

Profile

- Suitable for Class I/II route
- Approximately 14 miles serving the cities of Menifee and Murrieta
- Potential NEV route

Status

Existing streets with short unimproved segment along Warm Springs Creek

ROM Construction Cost Estimate

$281,000

Issues

- TBD

Strategies for Implementation

- TBD

Key Connections

- Connects Routes 15, 16, 19, and 20
- Future transit linkage in Wildomar

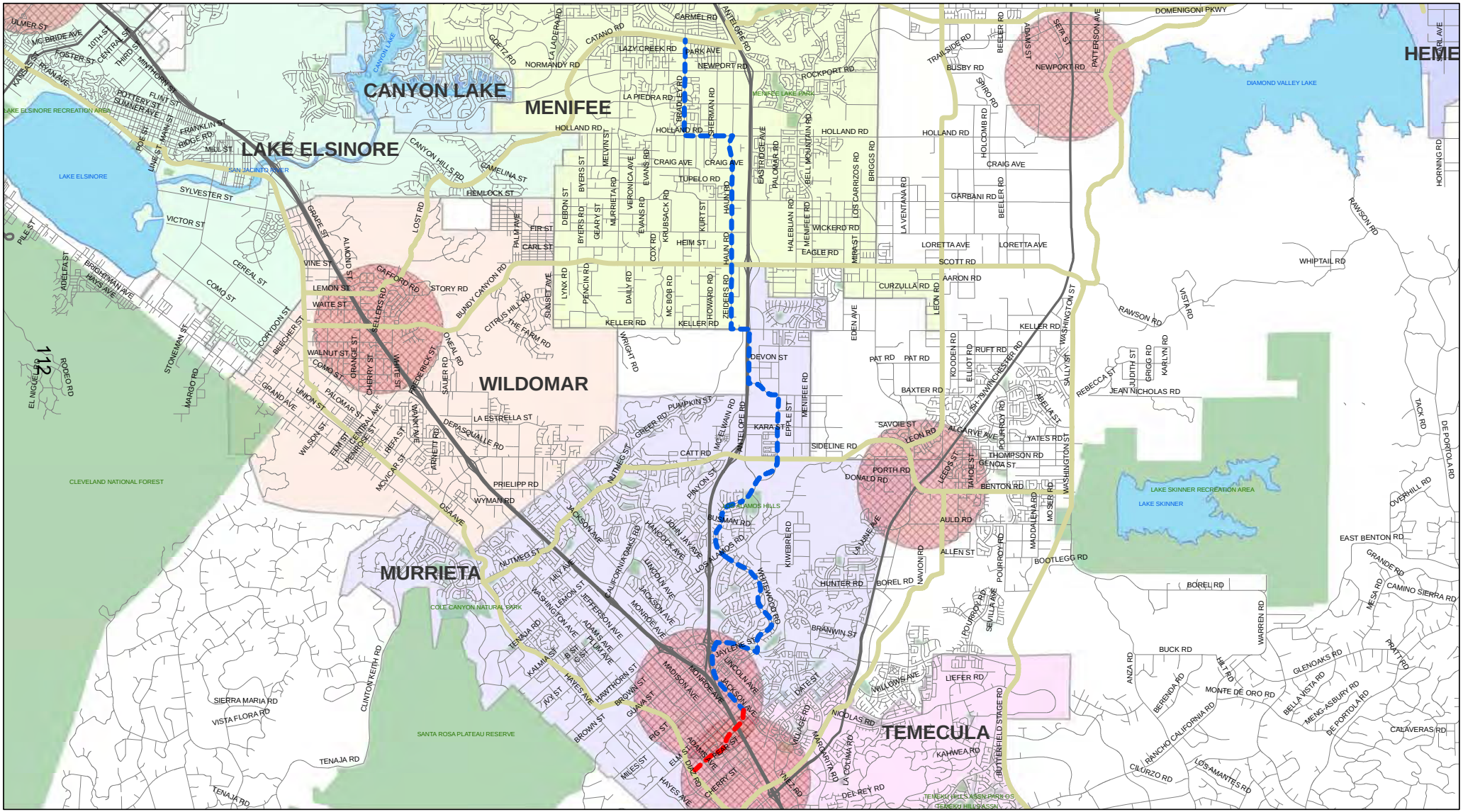
CORRIDOR 23 - I 215 SOUTH, MENIFEE - MURRIETA
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.24 Route 24: Case - Leon

Zone

Central

Segments

- Case
- Matthews
- Leon

Profile

- Suitable for Class II route
- Approximately 15.9 miles serving the cities of Perris and Menifee and unincorporated Riverside County
- Potential NEV route

Status

Existing and future streets

ROM Construction Cost Estimate

$316,000

Issues

- Assumes future roadway improvements through separate efforts
- Rail crossing at Case Road/I-215

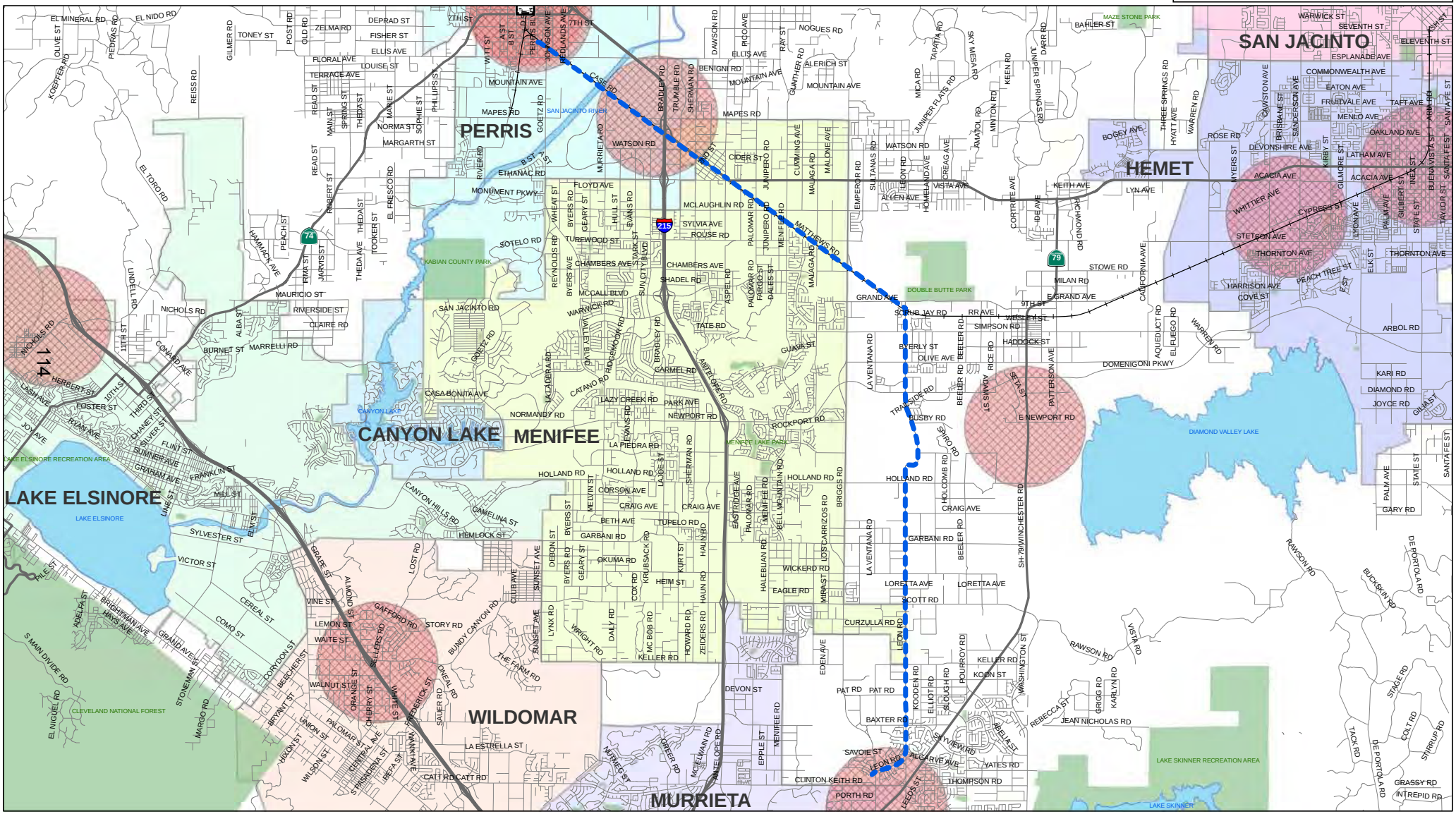
Strategies for Implementation

- TBD

Key Connections

- Connects Routes 15, 17, 19, and 20
- Future transit linkage in Downtown Perris Transit Center, South Perris Metrolink, and Clinton Keith Transit Center

CORRIDOR 24 - CASE - LEON
NON-MOTORIZED TRANSPORTATION PLAN NETWORK



5.25 Route 25: Lasselle – Perris Valley Channel

Zone

Central

Segments

- Lasselle
- Evans
- Perris Valley Channel

Profile

- Suitable for Class I/II route
- Approximately 7.9 miles serving the cities of Moreno Valley and Perris

Status

North segment on existing streets with south segment along storm channel

ROM Construction Cost Estimate

$2 million

Issues

- Access to Perris Valley Channel

Strategies for Implementation

- Consider Murrieta Road as Class II alternative to channel

Key Connections

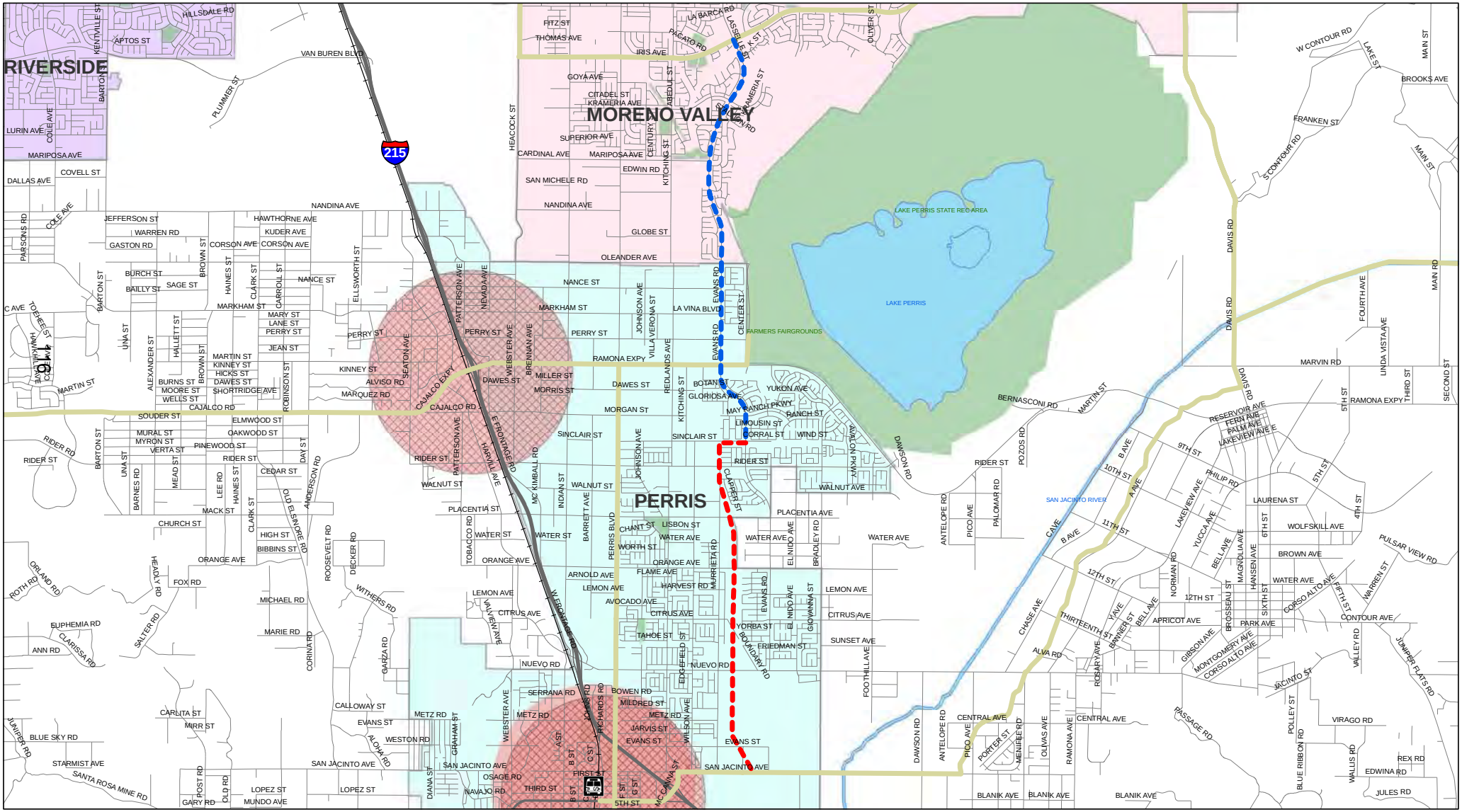
- Connects Routes 6, 9, 10, and 11
- Downtown Perris Transit Center (1.75 miles via Route 10)

CORRIDOR 25 - LASSELLE - PERRIS VALLEY CHANNEL
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor

0 0.5 1 2 Miles

N W E S



5.26 Route 26: Bryant - Singleton

Zone

Pass

Segments

- Bryant
- Singleton

Profile

- Suitable for Class II route
- Approximately 3.9 miles serving the City of Calimesa and unincorporated Riverside County

Status

Predominantly on future roadway extensions with some existing street segments

ROM Construction Cost Estimate

$78,000

Issues

- Assumes substantial street sections to be constructed through separate effort

Strategies for Implementation

- TBD

Key Connections

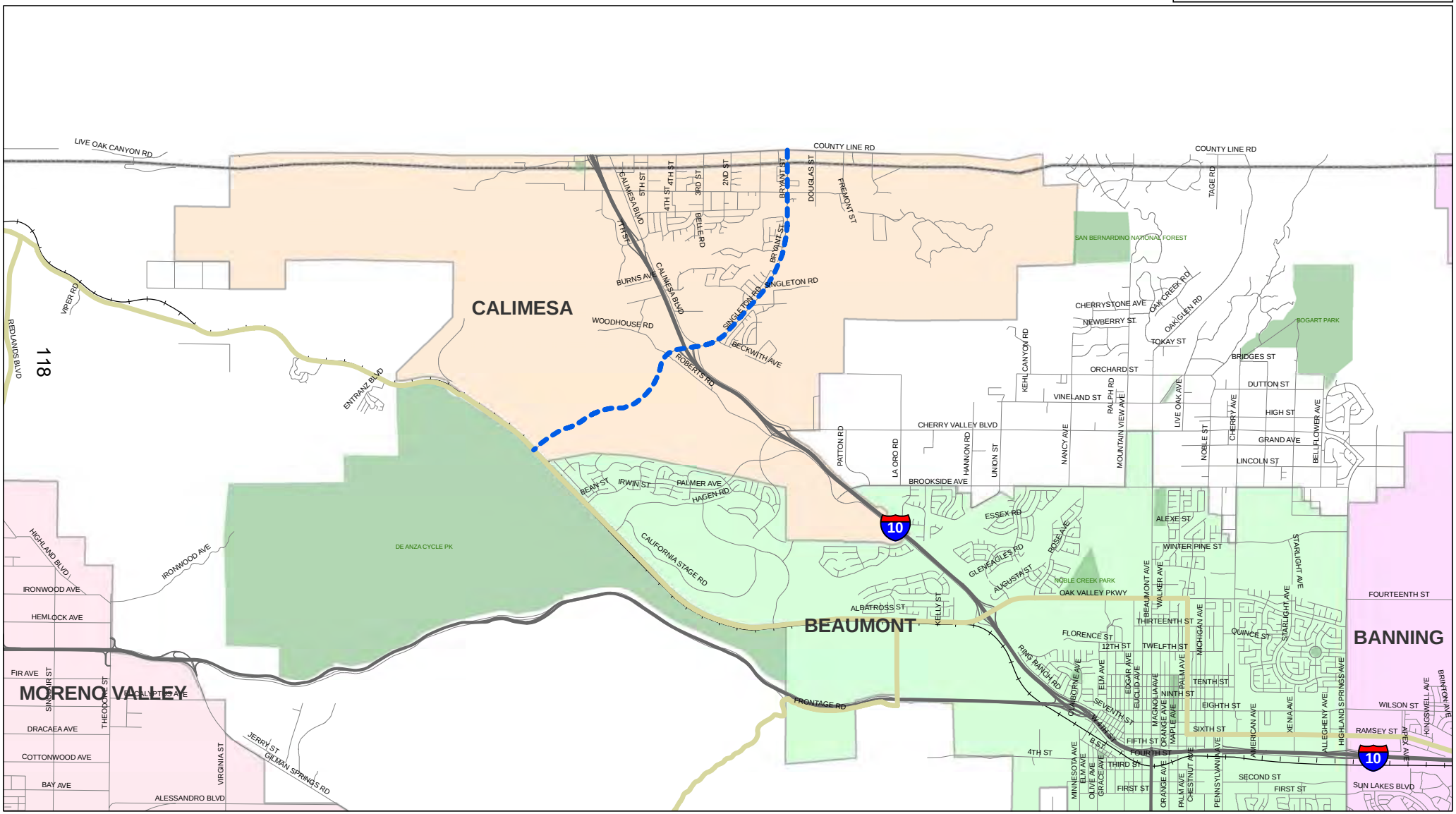
- Connects to Route 13

CORRIDOR 26 - BRYANT - SINGLETON EXTENSION
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.25 0.5 1 Miles

N W E S

Non-Motorized Transportation Network Classifications
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.27 Route 27: Oak Valley – San Jacinto River

Zones

Pass, Central, and San Jacinto-Hemet

Segments

- Potrero
- Jack Rabbit Trail
- Gilman Springs
- Bridge Street

Profile

- Suitable for Class I route
- Approximately 9.8 miles serving the City of Beaumont and unincorporated Riverside County

Status

Unimproved, proposed Class I route follows future roadway alignments

ROM Construction Cost Estimate

$14.75 million

Issues

- Environmental clearance and flood plain area

Strategies for Implementation

- TBD

Key Connections

- Connects Routes 10 and 13

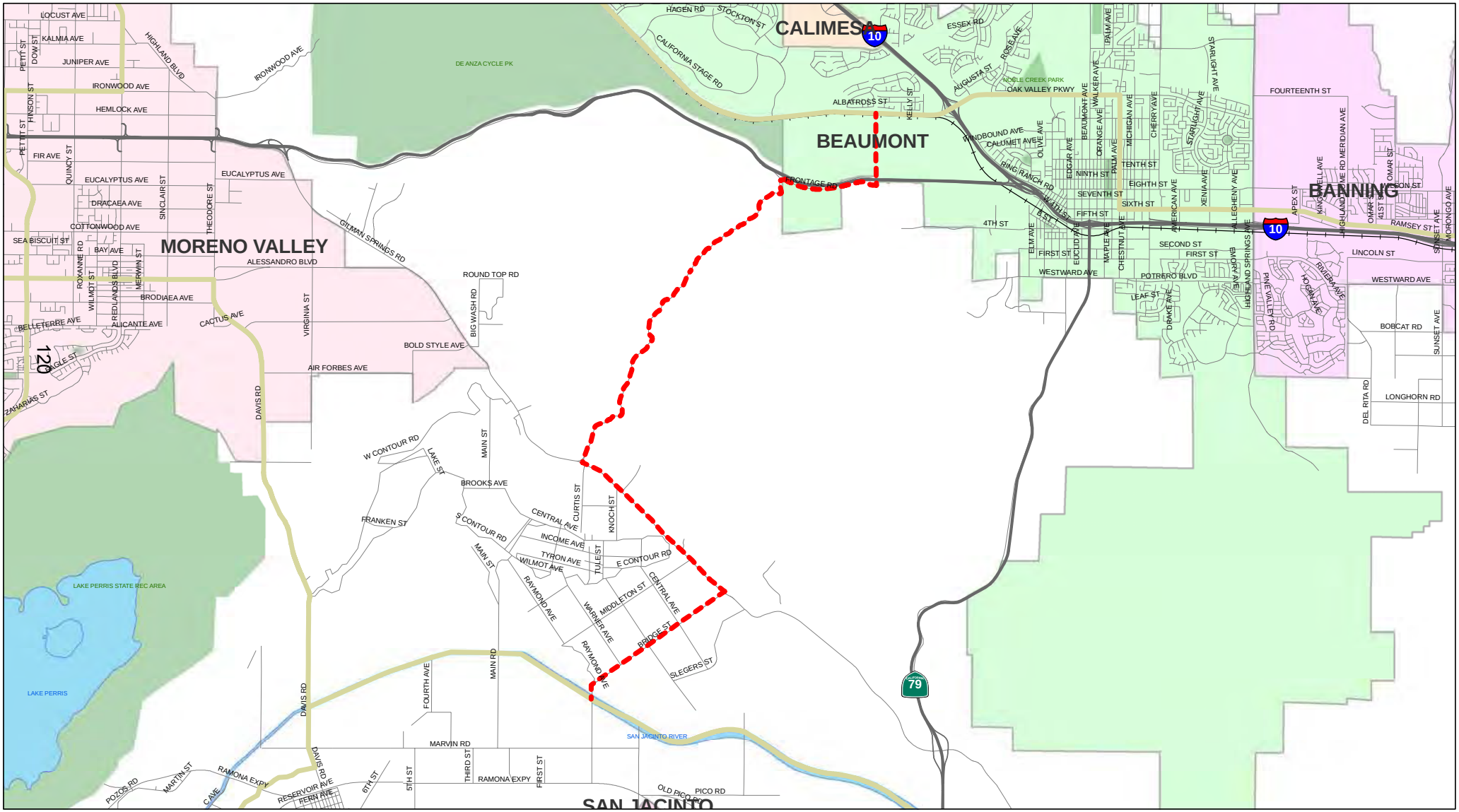
CORRIDOR 27 - OAK VALLEY - SAN JACINTO RIVER
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

0 0.5 1 2 Miles

N W E S

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor



5.28 Route 28: Rainbow Canyon – I-15 Frontage

Zone

Southwest

Segments

- Pechanga
- Rainbow Canyon Road

Profile

- Suitable for Class II route
- Approximately 3.3 miles serving the City of Temecula and unincorporated Riverside County

Status

Existing street

ROM Construction Cost Estimate

$292,000

Issues

- Steep grades

Strategies for Implementation

- Consider Old 395 Highway alignment at south end of route

Key Connections

- Connects to Route 16

CORRIDOR 28 - RAINBOW CANYON RD - I 15 FRONTAGE RD

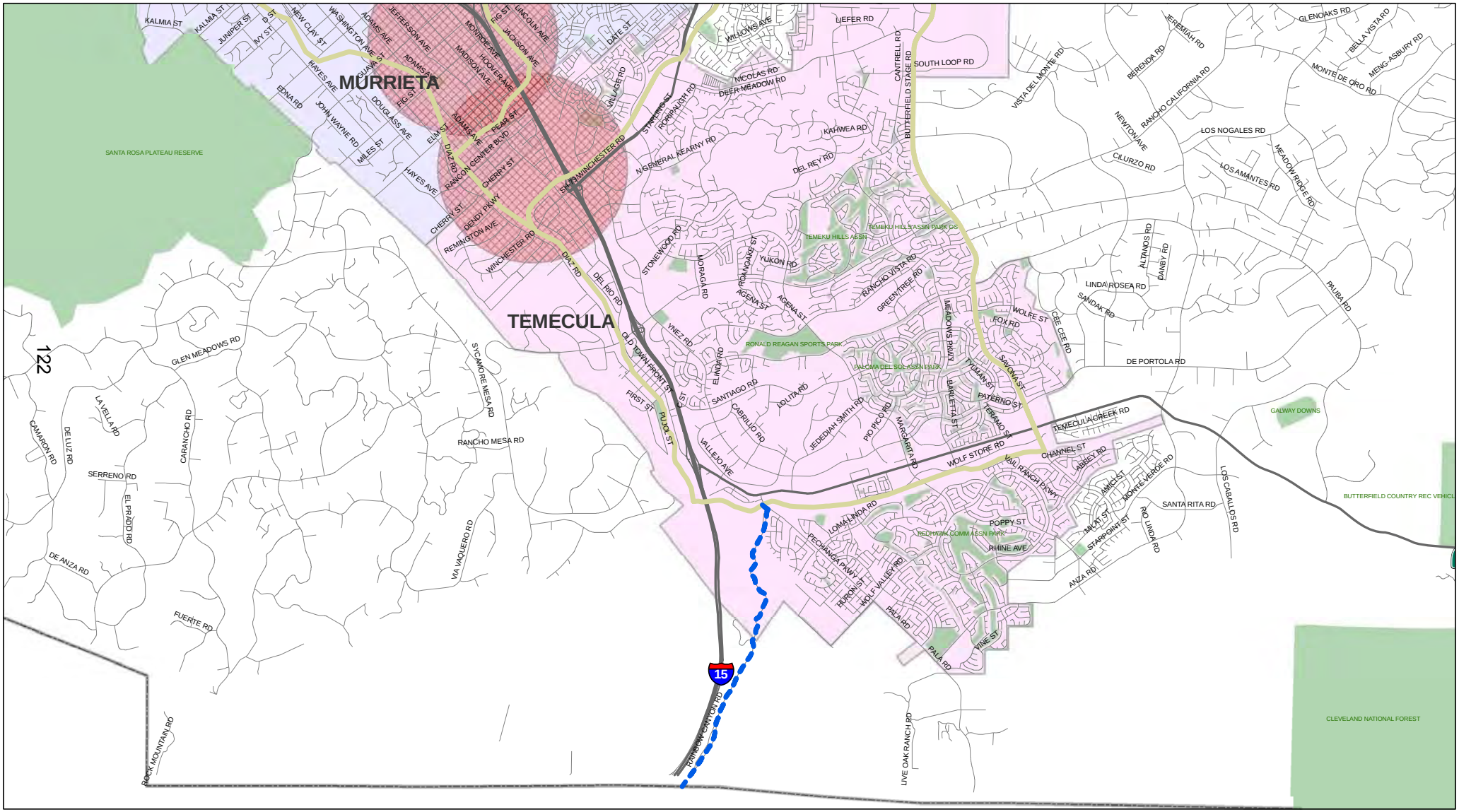
NON-MOTORIZED TRANSPORTATION PLAN NETWORK

Non-Motorized Transportation Network Classifications

- Bikeway/Pedestrian Shared Use, Class I (Off Road), Existing
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed
- Bikeway/Pedestrian Shared Use, Class I (Off Road), Proposed Alternative
- Bikeway, Class II (On Road, Striped Lanes), Existing
- Bikeway, Class II (On Road, Striped Lanes), Proposed
- Bikeway, Class II (On Road, Striped Lanes), Proposed Alternative
- Bikeway, Class III (Signed Shared Road), Existing
- Bikeway, Class III (Signed Shared Road), Proposed
- Reference Corridor

0 0.5 1 2 Miles

N W E S



SECTION 6.0 DESIGN GUIDELINES

Implementation of the subregional backbone network of routes will require construction of new facilities as well as improvements to existing bike and pedestrian routes, as noted in Section 9.0. The following design guidelines are intended to establish preferred or typical design standards for route classifications (Strategy D-4) and best practices related to street network configurations and the role of the built environment in encouraging pedestrian and bicycle use (Strategy D-5). It should be noted that alignments designated for bike use in this document, regardless of their classification (e.g., Class I, Class II, or Class III) are generally referred to as bikeways or bicycle routes.

Local jurisdictions are encouraged to incorporate these design guidelines within their General Plan Circulation Element, Trails Master Plan, or other relevant plans to provide consistency in the design and treatment of the routes as they pass through individual jurisdictions (Strategy D-3). In addition, these design guidelines are applicable to the planning and design of local routes and may be adopted accordingly.

The "DNA" of community form rests in both land use planning and street network planning. The mold for street networks in local jurisdictions is found in their road standards. The road standards spell out how many lanes will be built on each street type, how wide the lanes will be, whether bike lanes will be incorporated, and how pedestrians will use the streets. Given this, it is important that local road standards create a mold that will yield walkable, bikeable communities. In addition, street networks play a key role in bikeable and walkable neighborhoods. Typical suburban developments with 45 and 50 mph arterials isolate neighborhoods. Since they depend on a tributary-like hierarchy, a grid of walkable streets is missing. People have to travel long distances to enter or exit such neighborhoods and must find their way to the few streets that lead in and out. Schools, stores and workplaces are too far to walk to and wide, busy streets are inhospitable to walk along, bicycle along, or cross. Neighborhoods that have disconnected streets, cul-de-sacs, and walls force people to take longer, indirect routes that involve travel along high-speed arterial roads that are inhospitable to non-motorized users.

6.1 Bicycle Design Standards and Guidelines

The following bicycle planning principles are applicable to all types of bicycle facilities.

6.1.1 Bicycle Planning Principles

1. Bicyclists need streets and paths to ride on where they feel safe and secure, with a minimum of conflict with autos wherever possible.
2. Designated bikeways offer special enhancements for cyclists over other streets or roads.
3. Bikeway types are planned according to right-of-way, street width, traffic volumes, and other factors. Each is planned specifically for that street or right-of-way.
4. Since most bicycle trips are short, a complete network of bikeways has a grid of roughly a ½ mile.
5. There are different types of bicyclists and each has different preferences. The most experienced bicyclists prefer the most direct routes with favorable signal timing and will ride on busy streets. Mid-level bicyclists usually prefer to ride on bikeways or streets with moderate traffic. Beginners and children prefer to ride on the quietest streets or along dedicated paths.
6. Bicycle plans consider all levels of bicyclists.
7. Bicyclists need secure parking at their destinations. Short-term parkers need dispersed racks close to their destination. Long-term parkers, such as commuters, need a higher level of security and are often willing to trade some locational convenience for higher security in a central area.
8. Bicyclists need links to public transit that are as seamless as possible, and transit services need to accommodate bicycles.
9. Many commuter bicyclists need showers, clothing lockers, and a place to change clothes at work.
10. Bicycle education teaches safe riding habits that enable people to bicycle on most streets.
11. Bicycle routes (especially Class I) need to be patrolled by local law enforcement officials to ensure proper use and safety.

6.1.2 Bikeway Definitions

The following section summarizes key operating and design definitions.

Bicycle: The American Association of State Highway and Transportation Officials' (AASHTO) definition of a bicycle is "every vehicle propelled solely by human power which any person may ride, having two tandem wheels, except scooters and similar devices. The term 'bicycle' also includes three- and four-wheeled human-powered vehicles, but not tricycles for children" (1999).

Class I: Referred to as a bike path, shared-use path, or multi-purpose trail. Provides for bicycle travel on a paved right-of-way completely separated from any street or highway. Other users may also be found on this type of facility.

Class II: Referred to as a bike lane. Provides a striped lane for one-way bicycle travel on a street or highway.

Class III: Referred to as a bike route. Provides for shared use with pedestrian or motor vehicle traffic.

Multi-use trails and unpaved facilities: Primarily serve a recreation rather than transportation function. Will not be funded with federal transportation dollars and may not need to be designed to Caltrans standards.

The following guidelines present the recommended minimum design standards and other recommended ancillary support items for shared-use paths, bike lanes, and bike routes. Where possible, it may be desirable to exceed the minimum standards for widths, signage, lighting, and traffic signal detectors. These guidelines cover basic concepts. The Caltrans Highway Design Manual, Chapter 1000 (Caltrans Manual) and the AASHTO Guide for the Development of Bicycle Facilities contain more detail standards and guidance and should be followed.

6.1.3 Bicycle Facility Design Recommendations by Class Type

The following bicycle facility design recommendations have been tailored to the three class types discussed above. Exhibits 6A and 6B identify typical cross-sections for each of the bikeways.

Class I Bike Paths

1. All Class I bike paths should conform to the design guidelines set forth by Caltrans.
2. Class I bike paths should generally be designed as separated facilities away from parallel streets. They are commonly planned along rights-of-way such as waterways, utility corridors, railroads, and the like that offer continuous separated riding opportunities.

Exhibit 6A: Off-Road Two-Way Path Options

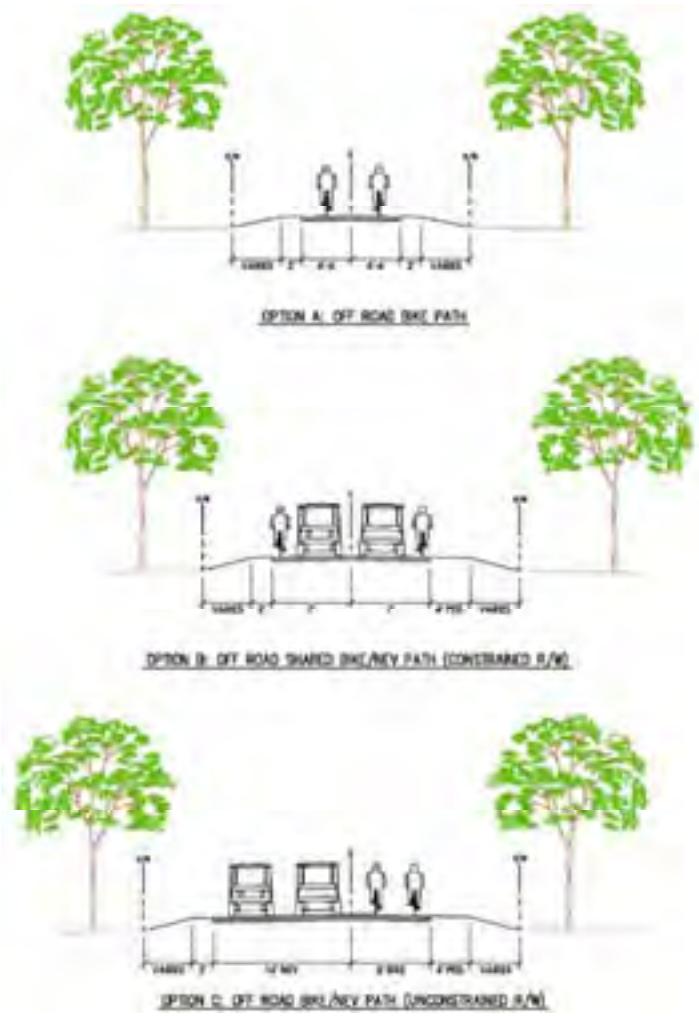
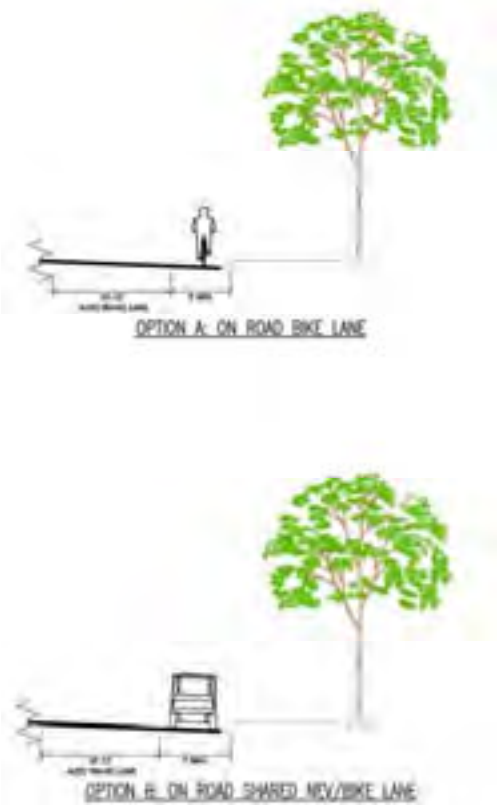


Exhibit 6B: On Road Directional Bike Lane Options



3. Both AASHTO and Caltrans recommend against using most sidewalks for bike paths. This is due to conflicts with driveways and intersections. Where sidewalks are used as bike paths, they should be placed in locations with few driveways and intersections, be properly separated from the roadway, and have carefully designed intersection crossings.
4. Class I bike paths should have a minimum of 8 feet of pavement, with at least 2 feet of unpaved shoulders for pedestrians/runners, or a separate treadway where feasible. See Exhibit 6A for typical off-road cross-sections.
5. Class I bike path crossings of roadways should be carefully engineered to accommodate safe and visible crossing for users. The design needs to consider the width of the roadway, whether it has a median, and the roadway's average daily and peak-hour traffic volumes. Crossings of low-volume streets may require simple stop signs. Crossings of streets with average daily traffic (ADT) of approximately 15,000 vehicles should be assessed for signalized crossing, flashing LED beacons, crossing islands, or other devices. Roundabouts can provide desirable treatment for a bike path intersecting with roadways where the bike path is not next to a parallel street.
6. Landscaping adjacent to Class 1 bike paths should generally consist of low-water-consuming native vegetation and should have the least amount of debris.

Figure 1A: Bike Path with Native Vegetation

7. Lighting should be provided where commuters will likely use the bike path in the late evening, of any type that will sufficiently illuminate the pathway.
8. Barriers at pathway entrances should be clearly marked with reflectors and be ADA accessible (minimum 5 feet clearance, see Figure 1).

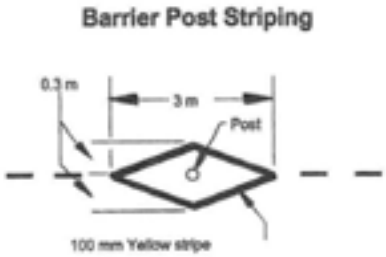


Figure 1B: Bike Path Barrier Post Treatment

9. Bike path construction should take into account vertical requirements and the impacts of maintenance and emergency vehicles on shoulders.

Class II Bike Lanes

The following guidelines should be used when designing Class II bikeway facilities. These guidelines are provided by the Caltrans Highway Design Manual Chapter 1000, AASHTO, the California Manual on Uniform Traffic Control Devices (MUTCD), and the Caltrans Traffic Manual. See Exhibit 6B for typical on-road cross-sections.

1. Class II bike lane facilities should conform to the minimum design standard of 5 feet in width measured from the curb, edge of pavement, or outside edge of parking lane. Where space is available, a width of 6 to 8 feet is preferred, especially on busy arterial streets, on grades, and adjacent to parallel parking.
2. Under certain circumstances, bike lanes may be 4 feet in width. Situations where this is permitted include the following.
    - Bike lanes located between through traffic lanes and right turn pockets at intersection approaches (see Figure 4).
    - Where there is no parking, the gutter pan is no more than 12 inches wide and the pavement is smooth and flush with the gutter pan.
    - Where there is no curb and the pavement is smooth to the edge of the right-of-way.
3. "Bike Lane" signage, as shown in Figure 2, shall be posted after every arterial intersection at intervals of a half-mile and where the bike lane changes direction. Directional signage may also accompany this sign to guide bicyclists along the route, as prescribed in the Caltrans Manual. If a bike lane exists where parking is prohibited, "no parking" signage may accompany bike lane signage.

Figure 2: Bike Lane Sign (Caltrans)

4. Bike lanes should be striped with a solid white stripe at least 4 inches wide and may be dashed up to 200 feet before the approach to an intersection. This design of a dashed bike lane allows for its dual use as a right-turn pocket for motor vehicles.
5. Stencils shall also be used within the lane on the pavement that reads "bike lane" and include a stencil of a bicycle with an arrow showing the direction of travel (see Figure 3).

Figure 3: Bike Lane Striping and Stencil

6. Bike lanes with two stripes are more visible than those with one and are preferred. The second stripe would differentiate the bike lane from the parking lane where appropriate.
7. Where space permits, intersection treatments should include bike lane pockets as shown in Figure 4.
8. Loop detectors that detect bicycles should be installed near the stop bar in the bike lane at all signalized intersections where bicycles are not reasonably accommodated. Signal timing and phasing should be set to accommodate bicycle acceleration speeds (see Figure 4.)

Figure 4: Bike Lane Treatment at Intersection (MUTCD, AASHTO)

Class III Bike Routes

Bike routes have been typically designated as simple signed routes along street corridors, usually local streets and collectors, and sometimes along arterials. With proper route signage, design, and maintenance, bike routes can be effective in guiding bicyclists along a route that is suited for bicycling but without enough roadway space to provide a dedicated Class II bike lane. Class III Bike Routes can be designed in a manner that encourages bicycle usage and provides convenience and safety. There are a variety of other improvements that can enhance the safety and attraction of streets for bicyclists, as shown in the example images below. Bike routes can become more useful when coupled with such techniques as: 1) route, directional, and distance signage: 2) wide curb lanes; 3) sharrow stencils; 4) regular maintenance schedules; 5) traffic signals timed and coordinated for cyclists: and 6) traffic calming measures.

The following design guidelines should be used with the implementation of new Class III Bike Route facilities:

1. Proper "Bike Route" signage, as shown in Figure 5, should be posted after every intersection along the route of the bikeway at regular intervals and where the bike route changes direction. This will inform bicyclists that the bikeway facility continues and will alert motorists to the presence of bicyclists along the route. Directional signage may accompany this sign as well to guide bicyclists along the route.

Figure 5: Class III Bike Route Sign

2. This Plan recommends using the sharrow stencil (Figure 6) as a way to enhance the visibility and safety of new Class III Bike Route facilities. The stencil should be placed outside of on-street vehicle parking to encourage cyclists to ride away from parked cars' open doors. Stencils should also be placed at one or two locations on every block.

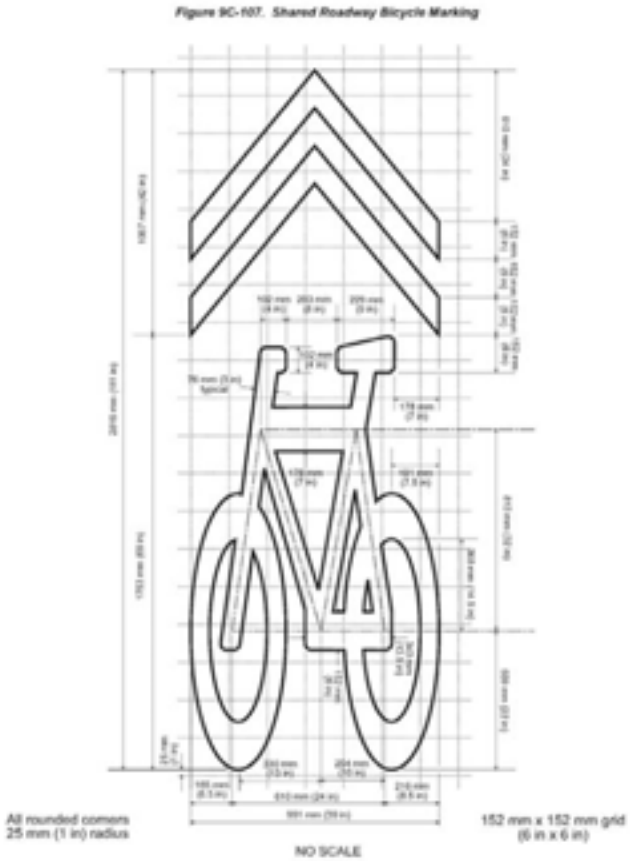


Figure 6: Sharrow Stencil

3. A numbered bike route network may be devised as a convenient way for bicyclists to navigate through the valley much the way the numbered highway system guides motorists efficiently through the roadway network. This could be used on all classes of bikeways. An example of a numbered bikeway sign is shown in Figure 7.

Figure 7: Numbered Bikeway Sign (MUTCD)

4. Destination signs add value to bike routes and assist cyclists to develop a mental map of the route system. Arrows pointing to “downtown,” “Metrolink Station,” or “Community College” should be a standard part of the bikeway network. Destination signs should be placed at the intersection of bikeways to notify cyclists where each bike route goes.

6.1.4 Signage and Markings

Bikeway signage should conform to the signage standards identified in the MUTCD (2003) and the Caltrans Traffic Manual. These documents give specific information on the type and location of signage for the primary bikeway system. A full list of applicable on-street bikeway signage from the MUTCD is shown in Table 1.

TABLE 6-1 RECOMMENDED BIKEWAY SIGNAGE AND MARKINGS

Signage	Location	Color	Caltrans Sign Numbers	MUTCD Sign Numbers
Bike Lane Ahead: Right Lane Bikes Only	At beginning of bike lanes	Black on white	N/A	R3-16 R3-17
Bicycle Crossing	For motorists at a bikeway crossing	Black on yellow	N/A	W11-15 with W11-15a
Bike Lane	At the far side of significant arterial intersections	Black on white	R81	D11-1
Stop Ahead	Where a stop sign is obscured	Black, red on yellow	W17	W3-1
Signal Ahead	Where signal is obscured	Black, red, green	YW41	W3-3
Pedestrian Crossing	Where a pedestrian walkway crosses a bikeway	Black on yellow	W54	W11A-2
Directional Signs	At intersections where access to major destinations is available	White on green	G7 G8	D1-1b(r/l) D1-1c
Right Lane Must Turn Right; Begin Right Turn Here, Yield to Bikes	Where a bike lane ends before an intersection	Black on white	R18	R3-7 R4-4

Local jurisdictions may want to add their own logo to give the bikeway signage a distinctive local flavor, as in the picture of signs below. A signage plan that distinguishes between local and regional (or combined) bike routes should be considered during implementation. Vancouver, British Columbia, marks street signs with bicycles if the streets are bicycle routes, as shown below.

Figure 8: Destination Sign

Figure 9: Vancouver Street Sign

It is important to provide information to cyclists where bike routes turn, or where bikeways intersect. This can be done with both signs and pavement markings, as shown below.

Figure 10: Bicycle Signage and Pavement Markings

6.1.5 Bike Boulevards

Bike boulevards are created where streets allow through traffic for bicyclists but divert motor vehicle traffic in order to keep these streets quiet, pleasant, and low-traffic-volume streets to cycle on. Diverters may consist of bridges, dead-end streets with passages for bicycles, curbed islands with gaps for bicyclists, or traffic signals that allow cyclists to pass through but require motor vehicles to turn right or left. In order to keep traffic volumes low, diverters are generally needed every ½ mile or mile. Bike boulevards also may have features to slow traffic, such as chicanes, mini-roundabouts or mini-circles. The mini-roundabouts have the added advantage of allowing cyclists to go through intersections without slowing down.

Figure 11: Emphasized Bikeways

Figure 12: Mini-Circle

Green Bicycle Lanes

Green bicycle lanes (Figure 13) are short lanes that are used where right-turn pockets direct motorists through a bicycle lane to turn right. The green lane makes it obvious to motorists that they are crossing the bicycle lane and makes them more likely to be cautious and to look for bicycles.

Figure 13: Green Bicycle Lanes

Green bicycle lanes can be used as continuous treatment as well, not only in conflict zones. However, neither treatment has been approved as part of the California Manual of Uniform Traffic Control Devices (CA MUTCD). Until they are approved, local jurisdictions would have to use them under a sanctioned experimental process.

Green Sharrow Lanes

The City of Long Beach is presently experimenting with green travel lanes (see Figure 14) with sharrows to strengthen the bikeway designation. The wide green stripe sends a strong signal to cyclists as to where they should ride and to motorists that bicyclists are legitimate users of the entire travel lane. Although no standards are established, multi-lane streets with narrow curb lanes are likely the most appropriate for this treatment. This treatment has not yet been approved as part of the California Manual of Uniform Traffic Control Devices (CA MUTCD). Until it is approved, local jurisidctions would have to use it under a sanctioned experimental process.

Figure 14: Green Sharrow Lanes

6.1.6 Bicycle Parking

Bicycle parking is not standardized in any state or municipal code. However, there are preferable types of secure bicycle accommodations available. Bicycle parking is a critical component of the network and facilitates bicycle travel, especially for commuting and utilitarian purposes. The provision of bicycle parking at every destination ensures that bicyclists have a place to safely secure their mode of travel. Elements of proper bicycle parking accommodation are outlined below.

1. Bike racks provide short-term parking. Bicycle racks should offer adequate support for the bicycles and should be easy to lock to. Figures 15 and 16 display a common inverted-U design that does this. Figure 17 depicts a multi-bicycle rack that works well. Figure 18 shows an innovative concept in which the bike rack itself looks like a bicycle.

Figures 15 and 16: Inverted-U Bicycle Rack

Figure 17: Multi-Bicycle Parking Rack

Figure 18: Bicycle-Shaped Bike Rack

2. Long-term parking should be provided for those needing all day storage or enhanced safety. Bicycle lockers offer good long-term storage, as shown in Figure 19, located in West Hollywood, California. Attendant and automated parking also serve long-term uses, as shown in Figure 20, which is located in Spain.

Figure 19: Bicycle Lockers

Figure 20: Automated Bicycle Parking

3. Bicycle parking should be clearly identified by signage, such as in Figure 21. Signage should also identify the location of racks and lockers at the entrance to shopping centers, buildings, and other establishments where parking may not be provided in an obvious location, such as near a front door.

Figure 21: Bicycle Parking Sign (Caltrans)

4. Bicycle parking should be located close to the front door of buildings and retail establishments in order to provide for the convenience, visibility, and safety to those who park their bicycles.
5. Bicycle lockers should have informational signage, placards, or stickers placed on or immediately adjacent to them identifying the procedure for how to use a locker. At a minimum this information should include:
   - Contact information to obtain a locker at city hall or other administrating establishment
   - Cost (if any) for locker use
   - Terms of use
   - Emergency contact information
6. Bicycle lockers should be labeled explicitly and should not be used for other types of storage.
7. Bicycle racks and storage lockers should be bolted tightly to the ground in a manner that prevents their tampering.
8. Bike corrals are created when a local jurisdiction replaces on-street auto-parking spaces with rows of bicycle racks. They should be used where bicycle parking is in high demand.

6.1.7 Drainage Grates

Care must be taken to ensure that drainage grates are bicycle-safe. If not, a bicycle wheel may fall into the slots of the grate, causing the cyclist to tumble. Replacing existing grates or welding thin metal straps across the grate perpendicular to the direction of travel is required to make them bicycle safe. These should be checked periodically to ensure that the straps remain in place. Grates with bars perpendicular to the roadway must not be placed at curb cuts, because wheelchairs could also get caught in the slots. Figure 22 shows the appropriate types of drainage grates that should be used.

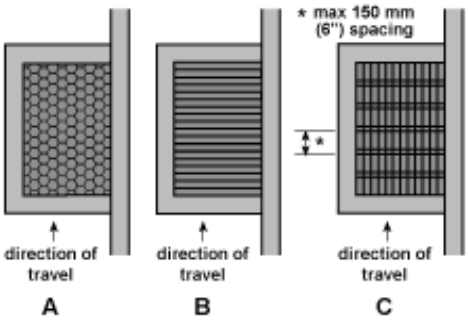


Figure 22: Proper Drainage Grate Design

6.1.8 Loop Detectors

Loop detectors at signalized intersections should be designed to detect when a bicycle rides or stops over them. Loop detectors at the signalized intersections of minor streets (minor arterials or collectors) should have priority when retrofitting existing detectors where the minor approaches do not call a green phase during every signal cycle. However, in the long run, all signalized intersections should provide loops or other devices to detect cyclists in order to provide for enhanced, seamless travel. The State of California passed a new law that became effective in 2009 requiring local jurisdictions to add bicycle-sensitive loop detectors to all new signals and those that are replaced. The general specifications are that a detection area of 6 feet by 6 feet be created behind the limit line, and that bicyclists be given enough time to travel through the intersection, with the clearance speed calculated at 14.7 feet per second plus 6 seconds for start-up. Painting the loop detectors and adding a bicycle stencil can help to notify cyclists where they need to be to trip the detectors.

6.2 Pedestrian Design Standards and Guidelines

The following section presents pedestrian design standards and guidelines.

6.2.1 Pedestrian Planning Principles

Walkability depends much on the design and configuration of the built environment. Some features attract and encourage walking, while others discourage walking. The closer together that buildings and activities are arranged, and where the environment is safe, pleasant, and interesting, the more people will walk. As Western Riverside County grows, opportunities will arise to enhance the pedestrian friendliness of our communities. The following planning principles can serve as a guide to increase the walkability of our neighborhoods.

1. Compact, clustered developments locate a greater number of destinations within walking distance than linear development.

Figure 23A: Clustered Grid

Figure 23B: Linear Development

2. High storefront density in retail districts makes walking interesting and attracts pedestrians.

Figure 24: Street with High Storefront Density

3. Zero lot line zoning allows buildings to abut one another, keeping the distance between them convenient for walkers.

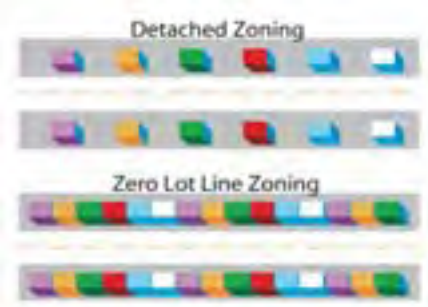


Figure 25: Zero lot line zoning

4. Clear as opposed to opaque windows on building fronts enhance the feeling of permeability and make for interesting window shopping.
5. Ground floor retail and other interesting uses on the ground floor of buildings also attract window shoppers and make for interesting and pleasant walking environments, as opposed to large blank walls.

Figure 26: Building with Ground Floor Retail

Figure 27: Building with Blank Wall

6. Mixed land uses make it convenient to walk between land uses—from home to work, from home to the store, from work to restaurants and other services.

Figure 28: Building with Retail, Office, and Housing

7. Convenient transit access encourages a mode of travel that stimulates walking at both ends of the trip.

Figure 29: Commercial Area with Bus Lane

8. Compact parking structures reduce the distance between destinations compared to large surface parking lots.

Figure 30: Building with Compact Parking Structure Wrapped with Retail

Figure 31: Large Surface Parking Lot

9. Sidewalks adjacent to business and storefronts make access more convenient than those with parking separating sidewalks from entrances. This is safer for pedestrians as well. Sidewalks next to businesses attract window shoppers and make for interesting and pleasant walking environments.

Figure 32: Stores Adjacent to Sidewalk

Figure 33: Store with Parking in Front

10. Short blocks bring more destinations within walking distance than long blocks.

Figure 34: Destinations Reached on Long Blocks

Figure 35: Destinations Reached on Short Blocks

11. Architecture that blends well with its surroundings brings visual and functional interest and attracts pedestrians.

Figure 36: Building with Attractive Architecture

12. Pedestrian-friendly street standards produce narrower streets that slow traffic and are easier to cross. They also make for more compact neighborhoods than wide streets.

Figure 37: Commercial Street with Narrow Lanes

Figure 38: Commercial Street with Wide Lanes

13. Walls around new development take life off streets and prevent people from walking in and out. Walled development has become necessary with high-speed arterial streets feeding large housing tracts. As street standards are revised, the walls become unnecessary and allow neighborhoods to integrate with each other.

Figure 39: Walled-in Housing Development

14. Cul-de-sacs separate streets and neighborhoods, making walking either inconvenient or impossible. Streets should connect. Where cul-de-sacs are built they should be linked to allow pedestrians and bicycles to pass through.

Figure 40: Cul-de-Sac Trip

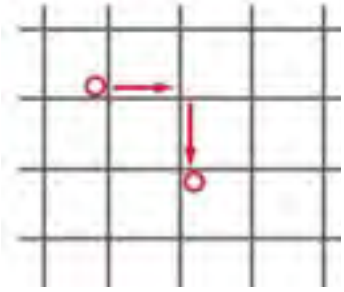


Figure 41: Grid Trip

15. Ahwahnee Principle: Streets, pedestrian paths and bike paths should contribute to a system of fully-connected and interesting routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting and by discouraging high-speed traffic.

6.2.2 Pedestrian-Friendly Policies

1. Pedestrians should be able to walk safely to all destinations that motor vehicles access.
2. Pedestrian access should be made safe and convenient.
3. All urban streets and thoroughfares, except limited-access highways, should have sidewalks, street lighting, and safely designed intersections for pedestrians and people with disabilities.
4. Rural highways, except limited-access highways and those where terrain prohibits, should have wide shoulders for pedestrians.
5. Areas with potential for high pedestrian activity should have a variety of streetscape features to make the pedestrian experience interesting. The design and operation of pedestrian-oriented areas should carefully integrate the needs of people arriving by foot, as well as motor vehicles, transit, and bicycle. Public events such as farmers' markets, arts and craft shows, and festivals enliven the streets and create public space. Streetscape features in pedestrian activity centers need to be tailored for each location. They can include such features as:
    - Bus shelters
    - Trees and landscaping
    - Benches and street furniture
    - Colored or textured pavers (smooth in the Pedestrian Through Zone)
    - Attractive street lights
    - Attractive trash and recycling receptacles
    - Attractive, consolidated news racks
    - Clocks
    - Public art
    - Banners and flags
    - Fountains
    - Information kiosks
    - District-wide logo/signage program

Figure 42: Pedestrian-friendly atmosphere

6.2.3 Pedestrian Crossings

Safe pedestrian crossings are critical components of the pedestrian network. Although the California Vehicle Code states that a crosswalk implicitly exists on every leg at every intersection, it is important to recognize that visibility and safety are important factors that determine where people will attempt to cross a street. The following guidelines are recommended for pedestrian crossings, including both signalized and unsignalized crosswalks.

Pedestrian Crossing Guidelines

1. Crosswalks should be a minimum of 6 feet in width, and at least 10 feet in business districts. Wider crosswalks should be considered in areas of high pedestrian volumes.
2. Appropriate pedestrian crossing signage should be displayed in advance of and adjacent to all marked unsignalized crosswalks in order to enhance pedestrians' visibility to motorists.

3. Unsignalized pedestrian crosswalks should be adequately lighted, have clear sight distances, and be free from obstructions such as foliage and poles.
4. Unsignalized crosswalks should be well marked with high-visibility paint.
5. Mid-block crosswalks should be designated in areas with relatively high pedestrian activity and crossing patterns, and where the distance to the nearest marked crosswalk is greater than 200 feet.
6. At signalized intersections, efforts should be made to install marked crosswalks at every leg of the intersection where feasible given traffic and other considerations.
7. Pedestrian signals should be timed to accommodate slower pedestrians. This should take into consideration people with slower walking speeds, such as seniors and persons with disabilities, in areas where this is appropriate. This may be also be achieved by using Pedestrian Friendly User Intelligent (PUFFIN) signals that detect pedestrians in the crosswalk and extend the walk time to allow then to finish crossing.
8. In pedestrian-oriented retail districts the "walk" signals should be automatically timed with the traffic signal and no push buttons should be needed.
9. All crossings should meet all Americans with Disabilities Act (ADA) standards and guidelines.
10. ADA-compliant curb ramps should be provided at all corners. Where physically feasible, every corner should have two perpendicular ramps.
11. Where feasible, pedestrian crossing islands should be considered where pedestrians are required to cross a wide multi-lane street, especially at uncontrolled locations.
12. Consideration should be given to reducing the turning radius of corners at intersections in order to minimize the crossing distance of pedestrians and to slow traffic, especially across busy multi-lane arterials. The presence of buses, trucks, and other large vehicles should be considered in designing the turning radii.
13. Curb extensions should be considered at intersection corners as a way to minimize the crossing distance of pedestrians and to increase visibility.

Intersection Toolbox for Safe Crossings

A growing number of communities are using a variety of techniques to improve pedestrian safety and access at intersections. Many of these are listed below. Local jurisdictions can select from this list and apply the appropriate tool at each given location.

1. Accessible pedestrian signal: A pedestrian signal that provides accessible information to pedestrians who are visually impaired using audible or transmittable tones or speech messages. These signals may also include vibrating surfaces to provide accessibility to those who have visual or hearing impairments. These should be provided at all signalized intersections, with those having significant pedestrian activity retrofitted first.

Figure 43: Accessible pedestrian signal

2. Advanced limit line/advanced stop bar: Placing the stop limit line for vehicle traffic at a traffic signal behind the crosswalk for the added safety of crossing pedestrians. Advanced limit lines should be placed in front of stop controlled intersections, usually about 4 to 6 feet in front of the crosswalk

Figure 44: Advanced limit line

3. Advanced yield line*:* Placing the yield line (shark's teeth) for vehicle traffic in advance of a crosswalk at uncontrolled locations. Advanced yield lines should be placed 20 to 50 feet in advance of crosswalks.

Figure 45: Advanced yield line

4. Bulbout/curb extension: A segment of sidewalk, landscaping, or curb that is extended into the street, usually associated with crosswalks, in order to shorten the crossing distance for pedestrians and improve visibility. It can also have the effect of slowing traffic, especially turning vehicles. Curb extensions should be provided at any intersection with significant pedestrian traffic that is along a street with parallel parking. If there is no parallel parking, the street can be narrowed at the pedestrian crossing with a curb extension that is tapered to prevent oncoming traffic from hitting it.

Figure 46: Bulbout/curb extension

5. Countdown signal: A walk signal that provides a countdown to the next solid "don't walk" signal phase in order to provide pedestrians with information on how much time they have to cross. These should be placed at every signalized intersection with pedestrian heads.

Figure 47: Countdown signal

6. Curb ramp: A ramp and landing that allows for a smooth transition between sidewalk and street via a moderate slope. This feature at intersections allows persons using wheelchairs to cross the street. They should have tactile devices that provide both texture and color cues for sight-impaired people to know where the street begins. The ADA requires wheelchair access at every street corner. Double, perpendicular curb ramps should be used in lieu of single, diagonal ramps except on streets with low traffic volumes. Double curb ramps make the trip across the street shorter and more direct than diagonal ramps.

Figure 48: Curb ramp

Figure 49: Types of curb ramps

7. HAWK signals*:* Provide a stop phase so that pedestrians can safely cross. HAWK signals are activated only when pedestrians need to cross. HAWK signals are most appropriate where a significant number of pedestrians need to cross and the location does not meet signal warrants. HAWK signals are an approved device in the MUTCD, but not yet in the CA MUTCD.

Figure 50: HAWK signals

8. High-visibility crosswalk: Well-marked crosswalk, usually the "zebra" type. These should be provided at any intersection where a significant number of pedestrians cross. They are most important at uncontrolled crossings of multi-lane streets.

Figure 51: High-visibility crosswalk

9. Mid-block crossing: A crosswalk designed at a mid-point between intersections. These are most suited where there is a long distance (greater than 400 feet) between crosswalks on retail streets and in front of schools.

Figure 52: Mid-block crossing

10. Pedestrian crossing island: An area in the center of the street that is raised and provides a refuge for pedestrians crossing a busy street. They can be used at any street crossing, but are most important at uncontrolled crossings of multi-lane streets.

Figure 53: Pedestrian crossing island

11. PUFFIN crossing: Pedestrian user-friendly intelligent crossings detect pedestrians and hold the signal red for motor vehicles until the pedestrian has crossed. They are most appropriate at locations where a significant number of senior citizens or disabled people cross.

12. Raised crosswalk: A crosswalk that has been raised in order to slow motor vehicles and to enhance the visibility of crossing pedestrians. They are most appropriate in front of schools and in busy retail districts.

Figure 54: Raised crosswalk

13. Rapid-flash LED beacons*:* High-visibility beacons that activate when pedestrians cross. They are most suitable at uncontrolled crossings that don't warrant signals, but need more than basic crossing devices. These are approved for experimental use by the national MUTCD.

Figure 55: Rapid-flash LED beacons

14. Scramble intersection: Provides a separate, all-direction red phase in the traffic signal to allow pedestrians to cross linearly and diagonally. They are most appropriate in retail districts with heavy volumes of both pedestrians and motor vehicles.

Figure 56: Diagonal intersection

Figure 57: Signage for diagonal intersection

15. Signs: Alert motorists to the presence of crosswalks and pedestrians. Center signs can help slow traffic. These are placed according to the CA MUTCD.

Figure 58: Pedestrian crossing signage

Figure 59: Pedestrian crossing signage

16. Speed feedback signs*:* Alert motorists when they are going over the speed limit. They are most appropriate where motor vehicles commonly speed and there are pedestrians or bicyclists.

Figure 60: Speed feedback signage

Intersection Toolbox by Street Type

It is important to use the correct device in making pedestrian crossings safe. The following provides some general guidance. Engineering judgment is necessary at each location.

1. Common treatments at crossings of two-lane streets
    - Marked crosswalks
    - Signs
    - Perpendicular curb ramps
    - Tactile warning devices
    - Advanced yield bars (at uncontrolled crossings)
    - Advanced stop bars (at stop-controlled crossings)
2. Common treatments at uncontrolled crossings of three-lane streets
    - High-visibility crosswalks
    - Signs
    - Perpendicular curb ramps
    - Tactile warning devices
    - Advanced yield bars
    - Crossing islands
    - Bulb-outs
3. Common treatments at uncontrolled crossings of four and five-lane streets with ADTs < 25,000 to 30,000 and speed limits 35 mph or less
    - Crossing islands (preferred device)
    - High-visibility crosswalks
    - Signs
    - Perpendicular curb ramps
    - Tactile warning devices
    - Advanced yield bars
    - Bulb-outs
    - Rapid-flash LED beacons
    - Use multiple devices
4. Common treatments at crossings of four-plus-lane streets with ADTs >25,000 to 30,000, or with lower ADTs and speed limits over 35 mph
    - Signals (preferred device)
    - Advanced stop bars
    - High-visibility crosswalks
    - Countdown and accessible pedestrian signals
    - Bulb-outs
    - Crossing islands

6.2.4 Sidewalk Design

Pedestrian design guidelines should vary according to the type of street involved. Streets may be classified by type based on the uses they serve and the level of pedestrian activity expected there. The following street typologies describe the primary function and uses that typically occur on the street and therefore influence the preferred design for pedestrians. Local jurisdictions can integrate the following street typologies and design guidelines within Circulation Elements and Standard Plans.

Street Typologies

1. Pedestrian-oriented retail streets: pedestrian-oriented retail streets are those where the greatest numbers of pedestrians are encouraged and expected. Ideally, they will have the widest sidewalks, the widest crosswalks, the brightest street lighting, and the most furnishings and other features that will enhance the pedestrian environment. Retail, restaurant, and entertainment areas are most often located along these streets.

Figure 61: Pedestrian-oriented retail street

2. General commercial and civic streets: General Commercial and Civic Streets are arterial streets with retail, office, civic, and recreational uses. Transit service runs along them and pedestrians often require buffers from traffic.
3. Multi-family residential streets: Multi-family residential streets often have greater volumes of pedestrians than single-family residential streets. In some cases they are served by transit service. Streets that have transit service require good pedestrian links to bus stops.
4. Single-family residential streets: Single-family residential streets require basic pedestrian amenities, such as sidewalks. These streets are typically quieter than others and generally do not carry transit vehicles or high volumes of traffic, although pedestrians require a pleasant walking environment in order to access transit on the nearest arterial roadway.

Figure 62: Multi-family residential street

Sidewalk Design Guidelines

Sidewalks along city and county streets are the most important part of pedestrian mobility. Sidewalks provide pedestrian access to virtually every activity and critical connections between modes of travel, including the automobile, transit, and bicycles. General provisions for sidewalks include standard width, provisions for street furniture and other obstructions, and guidelines for ADA compliance. Sidewalks can be segmented into four zones that designers should provide for: the frontage zone, the through pedestrian zone, the furnishings zone and the curb zone. The following describes these sidewalk zones and recommends specific guidelines that apply to each. Local jurisdictions may decide to develop their own similar guidelines.

1. Frontage Zone: The frontage zone is the area between the building façade and the sidewalk. It can include landscaping (permanent or temporary) as well as awnings, news racks, benches, outdoor café seating, and other furnishings typically found in the furnishings zone. In residential neighborhoods, landscaping typically occupies the frontage zone. The recommended minimum frontage zone width is:

- 30 inches in pedestrian-oriented retail streets; 8 feet where outdoor café seating is desired
- 18 inches along general commercial and civic streets, multi-family residential streets, and single-family residential streets

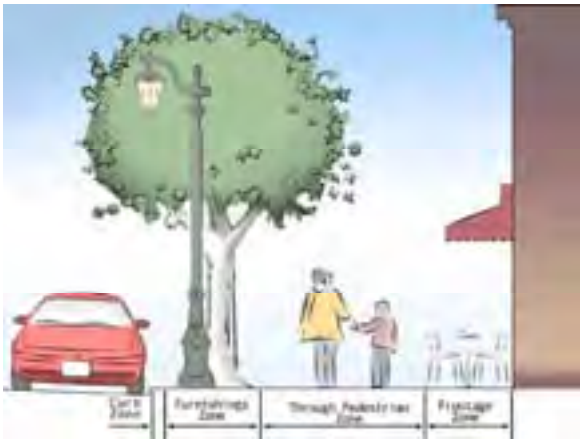


Figure 63: Sidewalk zones

2. Through pedestrian zone: The through pedestrian zone is dedicated to walking and should be kept clear of all fixtures and obstructions. The clearance provided in the through pedestrian zone should generally be straight for convenience of all pedestrians, but especially for the sight-impaired. This zone is located between the frontage zone and the furnishings zone. The recommended minimum through pedestrian zone width is:
    - feet in pedestrian-oriented retail streets; wider where heavy pedestrian traffic is expected
    - 6 feet along general commercial and civic streets
    - 4 feet, preferably 5 feet, along multi-family residential streets
    - 4 feet, preferably 5 feet, along single-family residential streets

Figure 64: Through pedestrian zone

3. Furnishings zone: The furnishings zone lies between the through pedestrian zone and the curb zone. All fixtures, such as street trees, utility poles and boxes, lamp posts, signage, bike racks, news racks, benches, waste receptacles, drinking fountains, and other street furniture should be contained in the furnishings zone to keep the through pedestrian zone free for walking. In residential neighborhoods, a planting strip often occupies the furnishings zone. The recommended minimum furnishings zone width is 4 feet and 8 feet at bus stops.
4. Curb zone: The curb zone provides a buffer between the sidewalk and the street. It defines the pedestrian area from the street. It may simply consist of the width of the curb or may contain extra space for the unloading of passengers or freight. The recommended minimum curb zone width is:
    - 18 inches where pedestrian or freight loading is expected and may conflict with obstacles in the furnishings zone
    - 6 inches along segments of all other streets

The total recommended minimum sidewalk width for different districts are:

- 15 feet in pedestrian-oriented retail streets; wider where heavy pedestrian traffic or pedestrian loading is expected; more at bus stops
- 12 feet along general commercial and civic streets; more at bus stops
- 11 feet along multi-family residential streets; may include planting strip; more at bus stops
- 10 feet, preferably 15 feet along single-family residential streets; may include planting strip

Other Sidewalk Guidelines

1. All sidewalks should adhere to the latest ADA standards and guidelines.
2. Driveway aprons should be confined to the furnishings and curb zones.
3. Landscaped buffers or fences should separate sidewalks from parking or off-street passenger loading areas.
4. Sidewalk surfaces should be stable, firm, smooth, and slip resistant.
5. Pedestrian and driver sight distances should be maintained near driveways.
6. Regulations regarding fencing and foliage near the intersection of sidewalks and driveways should be developed to ensure proper sight distance between vehicles and pedestrians when vehicles enter or exit a driveway across a sidewalk.

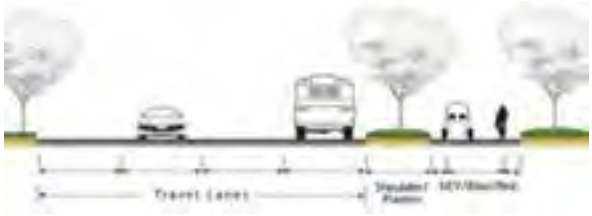
6.3 NEV Design Standards and Guidelines

NEVs may operate on roads with posted speed limits of 35 mph or less without special lanes or signage. Special use lanes are required for roads with posted speed limits of 40 mph or greater.

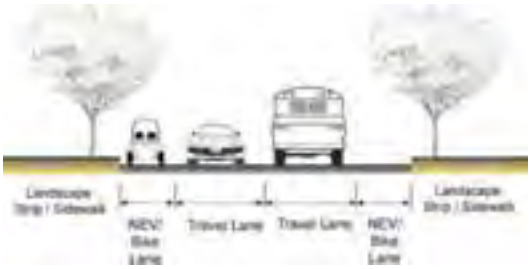
Where appropriate, NEVs may be operated on shared NEV/bike lanes as Class II lanes. Shared NEV/bike lanes typically use an enhanced total width of 7 feet compared to the traditional 5 feet provided for bikes only. The additional width accommodates an NEV's wheel base while providing room for passing.

6.3.1 NEV Definitions

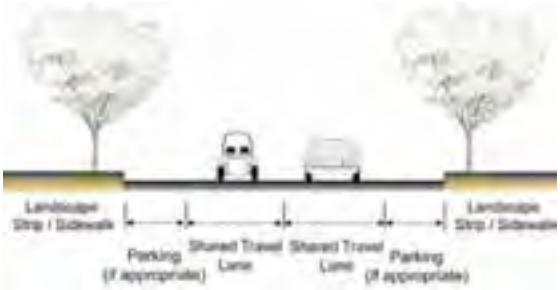
The following section summarizes key operating and design definitions.



Class I: Completely separate pathway; adjacent to major roadways. NEVs can share a path with bicycles and pedestrians. See Exhibit 6-x for path options.



Class II: Collector streets and minor arterials where speeds are typically greater than 35 mph. NEVs share lane with bicycles. As with bicycles, on-street parking should be reconsidered for safe NEV operations.

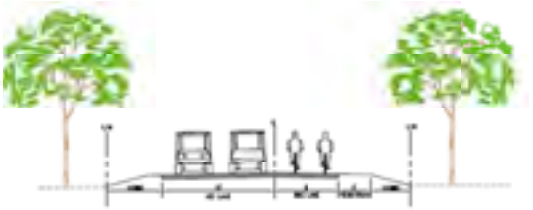


Class III: Shared travel lane. NEVs operate as traditional vehicles on residential and low volume roads and low-speed commercial streets with posted speed limits of up to 35 mph.

Similarly, off-road NEV paths may be shared with bikes and pedestrians provided that additional width is provided to accommodate safe operations. Paved surface are normally used for these multi-use paths.

Planning for Class I paths that permits NEV operations should consider the setting, range of uses and available rights-of-way. Where right of way is limited, a 14 foot paves section with soft shoulder can accommodate two-way travel of NEVs and bicycles as well as pedestrian activity.

With unconstrained right of way where multi-modal activity is expected to be high, a 10-14 foot section for NEVs and a distinct 5 foot section for bicycles might be considered. In this example, an adjacent pedestrian trail is suggested.



6.3.2 Signage and Striping Sample Options

Although the NMTP focuses upon bicycle and pedestrian facilities, the potential environmental and mobility benefits offered by NEVs suggest that leveraging the proposed network, where appropriate, to permit the operations of low speed vehicles would increase system usage. Use of visible, intuitive signage where NEVs are "sharing the road" is important for NEV operators and those using other travel modes.

NEV operations and signage are governed by enabling legislation and the adoption of a NEV Plan. Although many of the potential regional routes identified in the NMTP could accommodate NEVs with careful planning, the NMTP does not function as an NEV Plan. The signage and striping plans shown below are for reference only. For more information about NEVs, regulatory requirements and the planning process, please refer to the WRCOG 4-City NEV Plan which covers Corona, Norco, Riverside and Moreno Valley.

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SECTION 7.0 FUNDING OPPORTUNITIES AND EXPENDITURES

A variety of potential funding sources—including local, state, regional, and federal funding programs—may be used to construct the proposed bicycle and pedestrian improvements in this Plan. These could also fund bicycle and pedestrian projects in Western Riverside County that are not in this Plan. Most of the federal and state programs are competitive and involve completing extensive applications with clear documentation of the project need, costs, and benefits. Local funding for projects can come from sources within jurisdictions that only fund projects in that jurisdiction. A detailed program-by-program explanation of available funding and the latest relevant information follows.

Table 7-1 Summary of Funding Opportunities

Funding Source	Commuter	Recreation	Infrastructure	Non-Infrastructure	COG Eligible
Federal					
SAFETEA-LU	X	X	X		X
Recreational Trail Fund		X	X		
Safe Routes to School (SRTS)	X		X	X	X
Land and Water Conservation Fund		X	X		
Community Development Block Grants	X	X	X		
State					
TDA Article 3	X	X	X		
Bicycle Transportation Account (BTA)	X		X		
Safe Routes to School (SR2S)	X		X	X	X
Office of Traffic and Safety (OTS)	X			X	X
EEMP	X	X	X		X
AB 2766	X		X	X	X
Per Capita Grant		X	X		
RZH Grant Program		X	X		
Prop 84 – Statewide Park Program		X	X		X
Prop 84 – Urban Greening	X	X	X		
Caltrans Disabled Rights Court Settlement	X		X		*
Local					
Measure A	X		X		
Transportation Uniform Mitigation Fee (TUMF)			X		X
Redevelopment Agency	X	X	X	X	
Resurfacing and Repaving	X		X		
New Construction	X	X	X		
Impact Fees and Developer Mitigation	X	X	X	X	

Benefit Assessment Districts	X	X	X		
Property Taxes and Bonds	X	X	X		
User Fees	X	X	X	X	
Business Improvement Districts	X	X	X	X	
Parking Meter Revenues	X	X	X	X	
Adopt-a-Path Program	X	X	X		X
General Funds	X	X	X	X	

* Guidelines not available yet.

7.1 Federal Funding Programs

7.1.1 SAFETEA-LU, Riverside County Transportation Commission Administered Funds

The Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) sets the framework for spending federal transportation revenue. SAFETEA-LU expired with the federal fiscal year in 2009, although Congress has extended its provisions until a new bill can be passed. Congress will adopt successor legislation with new funding programs and guidelines. Many of the programs described in this section may remain once there is a new transportation bill.

Federal funding through SAFETEA-LU will likely provide some of the outside funding for Western Riverside County projects. SAFETEA-LU currently contains three major programs that fund bikeway and/or trail projects: Surface Transportation Program, Transportation Enhancement Activities (TEA), and Congestion Mitigation and Air Quality Improvement (CMAQ). Other programs include the National Recreational Trails Fund, Section 402 (Safety), Scenic Byways, and Federal Lands Highway.

SAFETEA-LU funding is administered through the California Department of Transportation (Caltrans) and the Riverside County Transportation Commission (RCTC). RCTC manages a Call for Projects periodically as sufficient federal funds become available. The Call for Projects solicits proposals from local jurisdictions, including councils of government (COGs), to apply for funding for their projects. In the past, RCTC has used both TEA and CMAQ funds for bicycle and/or pedestrian projects. A match by local jurisdictions may be required for receipt of funds or may enhance the chances of a project receiving funds. These federal funds may not be used to match other federal funds.

More information can be found at http://www.rctc.org/federalandstatefunding.asp.

7.1.2 SAFETEA-LU, Recreational Trails Fund

The Recreational Trails Fund (RTF) is also a SAFETEA-LU program that is subject to the same reauthorization process. The California State Parks Department administers the funds. RTF annually funds recreational trails, including bicycle and pedestrian paths. Cities, counties, districts, state agencies, federal agencies, and non-profit organizations may apply, but not COGs. A 12 percent match is required. Federal, state, local and private funds may be used to match the grant.

More information can be found at http://www.parks.ca.gov/?Page_id=24324.

7.1.3 Safe Routes to School

As of 2006, a federal Safe Routes to School (SRTS) program offers grants to local agencies and others for facilities and programs. Non-traditional agencies may apply, such as school districts, COGs, health departments, non-profit organizations, education departments, hospitals. Federally recognized Native American tribes may apply but must partner with a city, county, metropolitan planning organization, or regional transportation planning organization

that serves as the responsible agency. Bikeways, sidewalks, intersection improvements, traffic calming, and other projects that enhance bicycle and pedestrian safety to elementary and middle schools are eligible. Safety education, enforcement, and promotional programs are also eligible.

Caltrans administers this grant and releases the funds in multi-year cycles through its district offices. Approximately $46 million was spent statewide in 2008 SRTS-funded projects. The funds are distributed to each Caltrans district according to school enrollment. Local jurisdictions, school districts, and other agencies compete for these funds. This program will have to be reauthorized with the upcoming federal transportation bill.

More information can be found at http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm.

7.1.4 Land and Water Conservation Fund

States receive individual allocations of LWCF grant funds based on a national formula, with state population being the most influential factor. States initiate a statewide competition for the amount available annually. Applications are received by the state up to its specified deadline date. They are scored and ranked according to the project selection criteria so that only the top-ranked projects (up to the total amount available that year) are chosen for funding. Chosen applications are forwarded to the National Park Service for formal approval and obligation of federal grant monies. COGs are not eligible to receive LWCF funds. Bike paths and recreational trails are eligible uses of this money. A one-for-one match is required. Federal funds cannot be used as a match, except Community Development Block Grants (CDBG). The California State Parks Department administers the funds.

More information can be found at http://www.parks.ca.gov/?Page_id=21360.

7.1.5 Community Development Block Grants

The CDBG entitlement program allocates annual grants to larger cities and urban counties to develop viable communities by providing decent housing, a suitable living environment, and opportunities to expand economic opportunities, principally for low- and moderate-income persons. Every year the local governments receive federal money for a wide variety of community improvements in the form of CBDG funds. Bicycle, pedestrian and neighborhood electric vehicle (NEV) facilities are eligible uses of these funds. CBDG funds only pay for projects in areas of economic need. COGs are not eligible to receive CBDG funds. No match is required.

More information can be found at http://www.hud.gov/offices/cpd/communitydevelopment/programs/.

7.1.6 Economic Stimulus Funds

Starting in 2009 the federal government has given significant funds to local governments for a wide array of projects, many of which are transportation related. Bikeways, trails, NEV facilities, and pedestrian improvements have been eligible. Some of these have been funded by Transportation Investment Generating Economic Recovery (TIGER) grants. Projects that have completed environmental review and design, deemed to be “shovel ready”, have been favored. These have been short-term programs with expiration dates. While none of these funding programs may be available as of passage of this Plan, jurisdictions that advance projects to a shovel-ready stage position themselves to win any future grants, should they be offered again.

More information can be found at www.recovery.gov and http://www.dot.gov/documents/finaltigergrantinfo.pdf.

7.2 State Funding Programs

7.2.1 Transportation Development Act Article 3 (SB 821)

TDA Article 3 funds—also known as the Local Transportation Fund (LTF)—are used by cities in Riverside County to plan and construct bicycle and pedestrian facilities. Every year RCTC issues a Call for Projects for local jurisdictions to apply and compete for the money. COGs may not apply for these funds. No match is required. An evaluation committee scores the applications and assesses use, safety, transportation alternative, missing link, matching funds, population equity, and physical access.

Applications with the highest scores receive funds. In 2009 over $1 million in Article 3 funds were distributed by RCTC. TDA Article 3 funds may be used for the following activities related to planning and constructing bicycle and pedestrian facilities:

Engineering expenses leading to construction.

Right-of-way acquisition.

Construction and reconstruction.

Retrofitting existing bicycle facilities to comply with the Americans with Disabilities Act (ADA).

Route improvements, such as signal controls for cyclists, bicycle loop detectors, rubberized rail crossings, and bicycle-friendly drainage grates.

Purchase and installation of bicycle facilities, such as improved intersections, secure bicycle parking, benches, drinking fountains, changing rooms, rest rooms, and showers adjacent to bicycle trails, employment centers, park-and-ride lots, and/or transit terminals accessible to the general public.

More information can be found at http://www.rctc.org/federalandstatefunding.asp.

7.2.2 Bicycle Transportation Account

The state Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the BTA emphasizes projects that benefit bicycling for commuting purposes. Agencies may apply for these funds through the Caltrans Office of Bicycle Facilities. Applicant cities and counties need an approved bicycle plan for their jurisdiction that conforms to Streets and Highways Code 891.2 to qualify and compete for funding on a project-by-project basis. Cities and counties (not COGs) may apply for these funds. A local match of 10 percent is required for all awarded funds. There are no restrictions on where the match comes from. Every year $7.2 million is allocated for bicycle projects statewide. The NMTP establishes a regional network from which local plans can build local-serving bicycle and pedestrian routes. Once a jurisdiction has an approved bicycle plan that meets the requirements of the Street and Highways Code 891.2, they may apply for the Caltrans grant.

More information about BTA grants can be found at http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm.

7.2.3 Safe Routes to School

The Safe Routes to School (SR2S) program is separate from the federal SRTS program. It uses allocated funds from the Hazard Elimination Safety (HES) program of SAFETEA-LU. This program, initiated in 2000, is meant to improve school commute routes by improving safety to bicycle and pedestrian travel through bikeways, sidewalks, intersection improvements, traffic calming, and ongoing programs. This program funds improvements for elementary, middle, and high schools. A local match of 10 percent is required for this competitive program. There are no restrictions on where the match comes from. This program allocates over $20 million annually or $40 to $50 million in two-year cycles. Each year the state legislature decides whether to allocate funds to the program. Caltrans administers SR2S funds through its district offices.

More information can be found at http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm.

7.2.4 Office of Traffic Safety

The California Office of Traffic Safety (OTS) seeks to reduce motor vehicle fatalities and injuries through a national highway safety program. Priority areas include police traffic services, alcohol and other drugs, occupant protection, pedestrian and bicycle safety, emergency medical services, traffic records, roadway safety, and community-based organizations. The OTS provides grants for one to two years. The California Vehicle Code (Sections 2908 and 2909) authorizes the apportionment of federal highway safety funds to the OTS program. Bicycle and pedestrian safety programs are eligible programs for OTS start-up funds. City and county agencies are eligible to apply, as well as COGs. No match is required, but contributions of other funds may make projects more competitive.

More information can be found at http://www.ots.ca.gov/Grants/Apply/Proposals_2011.asp.

7.2.5 Environmental Enhancement and Mitigation Program (EEMP)

EEMP funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities, including streets, mass transit guideways, park-n-ride facilities, transit stations, tree planting to mitigate the effects of vehicular emissions, off-road trails, commuter bikeways, pedestrian improvements, NEV facilities, and the acquisition or development of roadside recreational facilities. City, county, COGs, state agencies, and non-profit organizations may apply. No match is required, although additional point will be given for matching funds. The State Resources Agency administers the funds.

More information can be found at http://www.resources.ca.gov/eem/.

7.2.6 AB 2766

AB 2766 Clean Air Funds are generated by a surcharge on automobile registration. The South Coast Air Quality Management District allocates 40 percent of these funds to cities according to their proportion of the district's population for projects that improve air quality. The projects are up to the discretion of the city and may be used for bicycle projects that could encourage people to bicycle in lieu of driving. The other 60 percent is allocated through a competitive grant program that has specific guidelines for projects that improve air quality. The guidelines vary and funds are occasionally eligible for a variety of bicycle, NEV, and pedestrian projects. The Mobile Source Review Committee administers the discretionary funds.

More information can be found at http://www.aqmd.gov/localgovt/AB2766.htm.

7.2.7 Per Capita Grant Program

The Per Capita Grant Program is intended to maintain a high quality of life for California's growing population by providing a continuing investment in parks and recreational facilities. Specifically, it is for the acquisition and development of neighborhood, community, and regional parks and recreation lands and facilities in urban and rural areas.

Eligible projects include acquisition, development, improvement, rehabilitation, restoration, enhancement, and the development of interpretive facilities for local parks and recreational lands and facilities. Per Capita Grant funds can only be used for capital outlay. They may be used for bike paths and trails. This grant is given to local governments based on their population. Some cities have used up their full allocation, while others have not. Regional parks and open space districts also receive these funds. COGs are not eligible to receive Per Capita Grant funds. The California State Parks Department administers these funds.

More information can be found at http://www.parks.ca.gov/?page_id=22333.

7.2.8 Roberti-Z'Berg-Harris Grant Program, Proposition 40

Funds for this grant program are to be allocated for projects pursuant to the Roberti-Z'berg-Harris (RZH) Urban Open Space and Recreational Grant Program and are to be used for:

- High priority projects that satisfy the most urgent park and recreation needs, with emphasis on unmet needs in the most heavily populated and most economically disadvantaged areas within each jurisdiction.
- Projects for which funding supplements—rather than supplants—local expenditures for park and recreation facilities and does not diminish a local jurisdiction's efforts to provide park and recreation services.
- Block grants allocated on the basis of population and location in urbanized areas.
- Need-basis grants to be awarded competitively to eligible entities in urbanized and non-urbanized areas.

Eligible projects include:

- Acquisition of park and recreation lands and facilities
- Development/rehabilitation of park and recreation lands and facilities
- Special major maintenance of park and recreation lands and facilities
- Innovative recreation programs

Bike paths and recreational trails are eligible uses of this money. Cities, counties, and recreation and parks districts may apply for these funds, but not COGs. No match is required. The California State Parks Department administers the funds.

More information can be found at http://www.parks.ca.gov/default.asp?page_id=22329.

7.2.9 Proposition 84: Statewide Park Program

The Statewide Park Act awards grants on a competitive basis to the most critically underserved communities across California for the creation of new parks and new recreational facilities. Altogether, $368 million will be given in two funding cycles. The first funding cycle in 2009 awarded $184 million. Grants range from $100,000 to $5 million. No match is required. Bikeways and trails can be funded with this program. They do not have to be in a park.

The creation of new parks in neighborhoods where none currently exist are given priority. These new parks will meet the recreational, cultural, social, educational, and environmental needs of families, youth, senior citizens, and other population groups.

Cities, counties, districts with a park and recreation director, COGs, joint power authorities, or nonprofit organizations are eligible to apply for these funds. The California State Parks Department administers the Statewide Park Program funds.

More information can be found at http://www.parks.ca.gov/?Page_id=26025.

7.2.10 Proposition 84: Urban Greening Project Grants

In 2006 California voters passed Proposition 84 to expand recreational facilities and to fund environmental quality projects. Of this, $70 million was set aside to fund urban greening projects that reduce energy consumption, conserve water, improve air and water quality, reduce global warming gases. This money will be dispersed in three funding cycles. The first cycle ended in April 2010. Cities, counties, and nonprofit organizations (but not COGs) are eligible to apply for these funds. No matching funds are required, but they are encouraged. Bike paths and recreational trails are eligible uses of this money. The State of California Strategic Growth Council administers this program.

More information can be found at urbangreening@resources.ca.gov.

7.2.11 Caltrans Disabled Rights Court Settlement

Caltrans has reached an agreement to settle a class action suit brought by Californians for Disability Rights and California Council for the Blind. The court decision was finalized in April 2010. The agreement calls for Caltrans to spend $1.1 billion over the next 30 years on removing barriers to disabled pedestrians along state highways and at Caltrans park-and-ride facilities. Caltrans will administer the funds. The funds will be dispersed annually in the following amounts:

- $25 million for the first five years
- $35 million for the next 10 years
- $40 million for the following 10 years
- $45 million for the last five years

More information can be found athttp://www.dot.ca.gov/hq/paffairs/news/pressrel/09pr28.htm.

7.3 Local Funding

7.3.1 Measure A

In 1998 voters approved Measure A, Riverside County's half-cent sales tax for transportation. Funds are allocated to three districts—Western Riverside County, the Coachella Valley, and Palo Verde—in proportion to revenues generated in each district. In 2002, Riverside County voters extended Measure A through 2039 to continue funding transportation improvements.

Approximately $970 million of Measure A funds are distributed to cities and the county, with 75 percent of the funds allocated according to population, and the other 25% by the revenues collected from each jurisdiction. The local jurisdictions may spend the funds on improvements to local streets and roads as they see fit. Bicycle, pedestrian, and NEV projects on local streets and roads are eligible uses of those funds.

An estimated $300 million of Measure A will be spent on improvements to highways and arterial streets on the Regional Arterial System. This pre-determined list of roads is listed in the Measure A ordinance. Bicycle and pedestrian improvements along these roads are not specifically called out in Measure A, but may be funded as part of the improvements to these thoroughfares.

More information can be found at http://www.rctc.org/measurea.asp.

7.3.2 Transportation Uniform Mitigation Fee

In conjunction with Measure A, an innovative Transportation Uniform Mitigation Fee or TUMF was created. Under the TUMF, developers of residential, industrial, and commercial property pay a development fee to fund transportation projects that will be required as a result of the growth the projects create. The TUMF program lists specific roads that are part of the regional arterial system. TUMF funds improvements along these arterials. The TUMF program does not have a specific category set aside for non-motorized transportation projects, although TUMF funds may pay for limited bicycle, pedestrian, and NEV improvements as part of other improvements to the regional arterial system. WRCOG administer the TUMF funds.

More information can be found at http://www.rctc.org/tumf.asp.

7.3.3 Redevelopment Agency Funds

Redevelopment agency funds are tax increments derived from taxes on property within redevelopment areas. They must be spent on improvements in the designated redevelopment area based on adopted redevelopment

plans. Local jurisdictions should ensure that planned bicycle, pedestrian, and NEV projects are incorporated within all applicable redevelopment plans for individual redevelopment agency project areas. The local redevelopment agencies determine what to spend their funds on.

7.3.4 Resurfacing and Repaving

Local jurisdictions should take advantage of opportunities to add bicycle lanes, NEV lanes, and other markings upon resurfacing and repaving of streets. While other lanes are restriped, the bike facilities can be painted as well. This requires close coordination with the Planning or Community Services Department and Public Works so that low cost bicycle upgrades are not left out of street maintenance projects.

7.3.5 New Construction

Future road widening and construction projects are one means of providing bike and NEV lanes. To ensure that roadway construction projects provide bike lanes where needed, it is important that an effective review process is in place to ensure that new roads meet the standards and guidelines presented in this master plan. Developers may also be required to dedicate land toward the widening of roadways in order to provide for enhanced bicycle mobility.

7.3.6 Impact Fees and Developer Mitigation

Impact fees may be assessed on new development to pay for transportation projects, typically tied to vehicle trip generation rates and traffic impacts generated by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- or off-site bikeway improvements that will encourage residents to bicycle rather than drive. In-lieu parking fees may also be used to contribute to the construction of new or improved bicycle parking facilities. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit. Local jurisdictions have the option to create their own impact fee and mitigation requirements.

7.3.7 Benefit Assessment Districts

Bike paths, bicycle and NEV lanes, bicycle parking, and related facilities can be funded as part of a local benefit assessment district. However, defining the boundaries of the benefit district may be difficult since the bikeways will have citywide or regionwide benefit. Sidewalks, trails, intersection crossings, and other pedestrian improvements can also be funded through benefit assessments.

7.3.8 Property Taxes and Bonds

Cities and counties can sell bonds to pay for bikeways, pedestrian facilities, NEV lanes, and paths, as well as any amenities related to these facilities. A supermajority of two-thirds of voters in that jurisdiction must vote to levy property taxes to repay the bonds.

7.3.9 User Fees

Bicycle lockers and automated bicycle parking could be paid for with a user fee. Not knowing how much revenue the fee would generate, this funding source would require a backup source.

7.3.10 Business Improvement Districts

Bicycle improvements can often be included as part of larger efforts of business improvement and retail district beautification. Similar to benefit assessments, business improvement districts collect levies on businesses in order to fund area-wide improvements that benefit businesses and improve access for customers. These districts may include provisions for bicycle improvements such as bicycle parking or shower and clothing locker amenities, sidewalk improvements, pedestrian crossing enhancements, or NEV facilities.

7.3.11 Parking Meter Revenues

Cities can fund various improvements through parking meter revenues. The ordinance that governs the use of the revenues would specify eligible uses. Cities have the option to pass ordinances that specify bicycle, pedestrian, and NEV facilities as eligible expenditures.

7.3.12 Adopt-a-Path Program

Maintenance of bike paths, NEV paths, and recreational trails could be paid for from private funds in exchange for some recognition, like signs along the path saying "Maintained by (name)." In order for this to consistently work, a special account could be set up that donors would pay into.

7.3.13 General Funds

Cities and counties may spend general funds as they see fit. Any bicycle, pedestrian, or NEV project could be funded through general funds and match them with other funds.

Guidelines not available yet.

7.4 Case Studies

Funding for bicycle, trail and pedestrian projects has become common. Local jurisdictions use the funding sources listed throughout this section to pay for their projects. The following case studies are examples of projects that have been funded in Riverside County.

1. In fiscal years 2006/2007 and 2007/2008 the Riverside County Department of Public Health was awarded $491,580 from the Federal Safe Routes to School grant to carry out safety education and encouragement Safe Routes to School programs in the Alvord and Riverside Unified School Districts in Riverside.
2. In fiscal years 2009/2010 and 2010/2011 the Riverside County Department of Public Health was awarded $491,580 from the Federal Safe Routes to School grant to carry out safety education and encouragement Safe Routes to School programs in the cities of Palm Springs, Desert Hot Springs and Coachella.
3. In fiscal years 2009/2010 and 2010/2011 the City of Desert Hot Springs was awarded $497,140 from the State Bicycle Transportation Account for bike lanes on Two Bunch Palms Road, Ocotillo Road and West Drive, along with pedestrian improvements such as crosswalks, bulb-outs, sidewalks, crossing islands and signs at 10 locations near four schools.
4. In fiscal year 2009/2010 the City of Riverside was awarded $104,597 from the State Bicycle Transportation Account to construct a Class II bikeway on Jefferson Street.
5. In fiscal year 2009/2010 the City of Cathedral City was awarded $405,000 from the State Bicycle Transportation Account to design and construct a Class I bike path along the Whitewater River.
6. In fiscal year 2008/2009 the City of Moreno Valley was awarded grants of $72,000 and $63,000 from the State Bicycle Transportation Account to put bike lanes on Alessandro Boulevard, Frederick Street and Bay Avenue. The grant also paid for upgrading traffic signals.
7. In 2009 the City of Palm Desert was awarded $3.135 million from Congestion Mitigation and Air Quality Improvement funds to construct the Mid-Valley Bike Path along the railroad right-of-way parallel to Interstate 10.
8. The City of La Quinta puts in new bike lanes along with streets improved with new development. They pay for bike lanes on existing streets from General Funds.
9. The City of Indian Wells pays for all of its bikeways from General Funds.

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SECTION 8.0 BENEFITS OF REGIONAL NON-MOTORIZED TRANSPORTATION PLAN IMPLEMENTATION

This section of the report presents information related to the benefits of the proposed regional non-motorized transportation system improvements. Existing non-motorized transportation trip-making data is presented first, followed by a discussion of the future estimates of non-motorized travel derived from the subregional travel demand model.

8.1 Existing Non-motorized Travel Characteristics

A goal of the WRCOG Non-Motorized Transportation Plan is to increase non-motorized mode share for all daily trips, including home-to-work trips, by the year 2035. It is therefore useful to understand the quantities and proportions of trip-making that occur using non-motorized modes of transportation under existing conditions.

Statistics regarding existing non-motorized transportation travel are available from the Southern California Association of Governments (SCAG) Regional Transportation Model report 2003 Model Validation and Summary (SCAG, 2008). Table 8-1 summarizes the relative share of trips made by non-motorized transport for various trip purposes. The non-motorized transport mode share for most trips is around 10%. Home-based School trips is the notable exception, with a non-motorized share of over 34%. For the other purposes, the proportion of non-motorized trips ranges from a low of around 8% for home-based-work trips to a high of just over 12% for home-based college / university trips. The non-motorized mode share for Home-based Shopping and Home-based Other trips is around 11%, while the non-motorized mode share for non-Home-based trips (Work-based Other and Other-based Other trips) is slightly above 9%. Overall approximately 12% of all trips are made using non-motorized transportation on a daily basis.

Table 8-1 2001 Travel Demand Survey Non-Motorized Transport Usage Summary

Trip Purpose	Home-Based-Work	Home-Based-Shopping	Home-Based-School	Home-Based-College/ University	Home-Based-Other	Work-Based-Other	Other-Based-Other	TOTAL
% Non-Motorized	8.27%	11.28%	34.52%	12.27%	11.26%	9.28%	9.50%	12.13%

The results of the 2003 mode choice validation are also available and represent the most current detailed available published information regarding mode choice (the RivTAM 2008 model documentation report presents generalized percentages in the form of pie charts and states that the RivTAM 2008 model strongly replicates the SCAG 2003 mode choice results). The 2003 mode choice model data includes a breakdown by county, which is useful information for this project. Table 8-2 summarizes the 2003 mode choice results for Home-based Work trips. The Non-motorized mode of transport captures between 4.12% (Ventura County) and 5.50% (Imperial County) of the Home-based Work trips. Riverside County non-motorized transport accounts for 4.46% of Home-based Work trips.

Table 8-2 2003 Home-Based Work Trips Non-Motorized Mode Summary by County

County	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	TOTAL
Total Person Trips	85,537	6,373,271	2,136,243	**1,012,238**	1,082,147	559,912	11,249,349
Non-Motorized Trips	4,708	298,382	89,925	**45,130**	45,135	23,073	506,352
% Non-Motorized	5.50%	4.68%	4.21%	**4.46%**	4.17%	4.12%	4.50%

Table 8-3 presents a summary of the Home-based Non-Work 2003 mode choice results. The non-motorized mode share for Riverside County is 14.91%, while the Home-based Non-Work mode share for the various counties in the SCAG region ranges from 14.91% (Riverside County) to 16.14% (Orange County). Riverside County experiences the lowest non-motorized trip mode share for Home-based Non-Work trips.

Table 8-3 2003 Home-Based Non-Work Trips Non-Motorized Mode Summary by County

County	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	TOTAL
Total Person Trips	254,430	16,854,127	5,012,646	**3,022,069**	3,225,586	1,365,002	29,733,860
Non-Motorized Trips	39,260	2,671,241	809,061	**450,727**	490,886	217,383	4,678,559
% Non-Motorized	15.43%	15.85%	16.14%	**14.91%**	15.22%	15.93%	15.73%

Table 8-4 summarizes the 2003 mode choice results for Non-Home-based trips. The Non-motorized mode of transport captures between 6.65% (San Bernardino County) and 15.45% (Imperial County) of the Non-Home-based trips. Riverside County non-motorized transport accounts for 9.12% of the Non-Home-based trips. The overall non-motorized transport mode share statistics are shown on Table 8-5. Overall, non-motorized transportation captures between 10.92% (San Bernardino County) and 13.55% (Imperial County) of the total regional trips for 2003 conditions. Riverside County non-motorized transport accounts for 11.43% of all daily person trips.

Table 8-4 2003 Non-Home-Based Trips Non-Motorized Mode Summary by County

County	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	TOTAL
Total Person Trips	110,998	9,834,957	3,374,279	**1,497,380**	1,538,297	750,077	17,105,988
Non-Motorized Trips	17,148	985,004	296,802	**136,601**	102,239	76,991	1,614,785
% Non-Motorized	15.45%	10.02%	8.80%	**9.12%**	6.65%	10.26%	9.44%

Table 8-5 2003 Overall Non-Motorized Mode Summary by County

County	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	TOTAL
Total Person Trips	450,965	33,062,356	10,523,168	**5,531,687**	5,846,030	2,674,991	58,089,196
Non-Motorized Trips	61,116	3,954,628	1,195,788	**632,458**	638,259	317,447	6,799,696
% Non-Motorized	13.55%	11.96%	11.36%	**11.43%**	10.92%	11.87%	11.71%

The existing conditions mode choice data suggests that Riverside County is generally an "average" performer in terms of non-motorized transport mode share. The exception is Home-based Non-Work trips, where Riverside County non-motorized transportation captures a lower percentage of trips in comparison to data for other counties in the SCAG region.

8.2 FUTURE NON-MOTORIZED TRAVEL CHARACTERISTICS

Future non-motorized travel demand estimates have been developed using the subregional Riverside Transportation Analysis Model (RivTAM) tool. A brief overview of the RivTAM travel demand forecasting process and key input (population) driving travel demand is provided, followed by a more detailed discussion of the mode choice component of the model. The mode choice component determines the share of non-motorized transport compared to other (motorized) modes of travel. Therefore, an

understanding of this component of the model is useful in understanding how the resulting non-motorized travel data is used in this analysis.

8.2.1 RivTAM overview and Western Riverside County Population Statistics

The Riverside County Transportation Analysis Model (RivTAM) has been used to determine the demand for non-motorized (pedestrian and bicycle) travel in western Riverside County. The RivTAM tool includes the following steps / processes:

5. Socio-economic data (SED) based trip generation
6. Trip distribution
7. Mode choice (split)
8. Time of day factoring
9. Traffic assignment

The SED that drives the RivTAM trip generation, trip distribution, and mode choice processes includes a number of variables. Data is required regarding population, number of households, household income (stratified into 3 generalized levels), vehicle ownership, and employment (disaggregated into a total of 12 different categories) for existing (2008) and future (2035) conditions. Population data has been extracted and summarized as the most easily understood variable defining anticipated growth in travel demand within western Riverside County.

The population data has been extracted from the RivTAM for each city in western Riverside County, and is included on Table 8-6. It should be noted that RivTAM Traffic Analysis Zone (TAZ) boundaries do not coincide with City boundaries in all cases, so the statistics are not exact. The most populous area for existing and future conditions is the composite unincorporated western Riverside County. Cities with more than 100,000 residents in 2008 include Corona, Moreno Valley, Riverside, and Temecula. For each of these four most populous cities under existing conditions, population growth through 2035 varies from approximately 15% (Corona) to 42% (Moreno Valley). Additionally, several other cities are projected to have more than 100,000 residents by 2035, including: Hemet, Menifee, Murrieta, and San Jacinto. San Jacinto is projected to experience the highest percentage growth, with population more than tripling from 35,030 under 2008 conditions to 105,228 for 2035 conditions.

Table 8-6 RivTAM Population Forecasts

Jurisdiction	2008	2035	Growth	% Growth
Banning	28,319	65,348	37,029	130.76%
Beaumont	25,376	75,191	49,815	196.31%
Calimesa	7,531	20,342	12,811	170.11%
Canyon Lake	9,729	10,186	457	4.70%
Corona	154,848	179,442	24,594	15.88%
Hemet	78,098	150,489	72,391	92.69%
Lake Elsinore	50,635	94,359	43,724	86.35%
Menifee	68,177	101,911	33,734	49.48%
Moreno Valley	176,881	251,232	74,351	42.03%
Murrieta	99,024	131,920	32,896	33.22%
Norco	26,302	33,809	7,507	28.54%
Perris	49,173	84,681	35,508	72.21%
Riverside	292,770	406,434	113,664	38.82%
San Jacinto	35,030	105,228	70,198	200.39%
Temecula	108,480	135,273	26,793	24.70%
Wildomar	30,207	48,387	18,180	60.18%
Unincorporated Western Riverside County	341,963	657,291	315,328	92.21%
Total Western Riverside County	**1,582,543**	**2,551,523**	**968,980**	**61.23%**

The total population for western Riverside County in the 2008 model is approximately 1.6 million residents. In 2035, the total western Riverside County population is expected to grow by nearly one million residents (to almost 2.6 million people). For comparison, the population statistics for the entire Riverside County included in the Riverside County Transportation Analysis Model (RivTAM) Model Development & Validation Report and Users Guide (Iteris, 2009) include 2.2 million residents for 2010 conditions and 3.6 million residents for 2035 conditions.

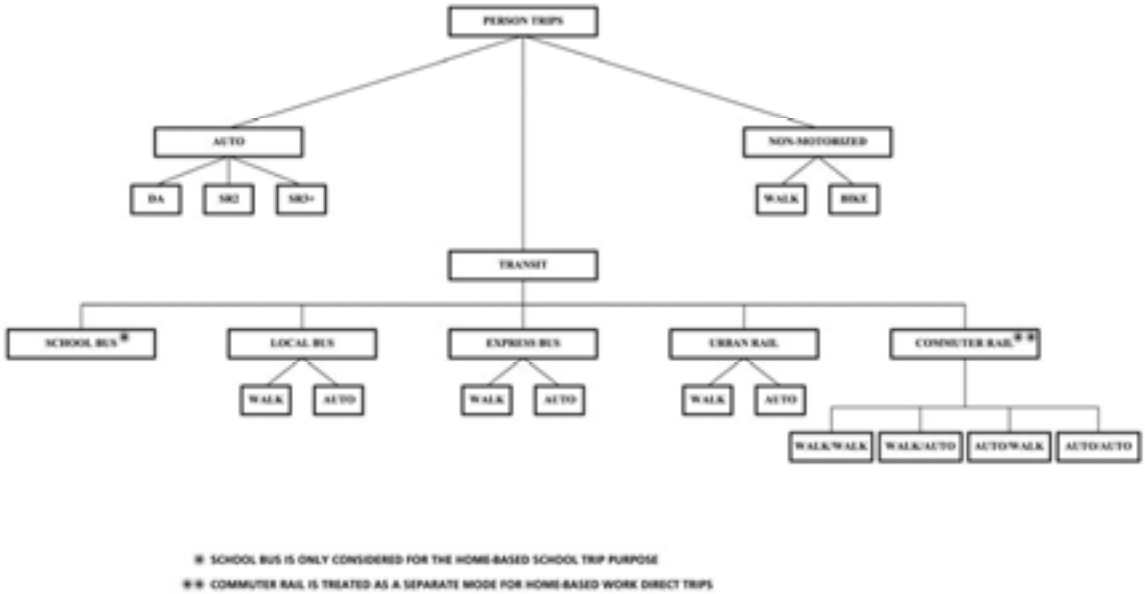
8.2.2 RivTAM Mode Choice Procedures

The RivTAM mode choice process is identical to the SCAG regional model mode choice process, with additional TAZ detail that provides a more accurate and detailed basis for determining the travel distances and times between the various human activity locations (homes, offices, shopping centers, etc.) in Riverside County. The level of detail outside Riverside County is consistent with the level of detail in the SCAG regional model.

The purpose of the mode choice step in the travel demand process is to model the decision regarding what mode of transport to utilize in making a trip from one place to another. The mode choice decision-making process related to "how to travel" is highly complex and in reality is closely tied to the decision regarding "where to travel" (trip distribution). The travel demand forecasting that takes place currently for the most part separates these decisions, with trip distribution being estimated first, followed by the mode choice modeling process.

The overall mode choice process is based on a generalized structure that is commonly referred to as a "nested logit" model. The generalized overall structure is shown on Exhibit 8.A. In this structure, the various modes of transport are generally grouped (nested) into automobile, transit, and non-motorized modes of transport. In essence each of these generalized modes of transport "compete" with one another on an overall basis. Once trips for the overall group or nest have been determined, the number of trips using the various sub-modes within the nest (for instance, automobile trips are further subdivided into drive alone, two person carpools, and 3+ person carpools).

Exhibit 8.A Generalized Mode Choice Model Nesting Structure (Home-based Work District Trips)



Reflecting the complexity of the mode choice decision-making process, there are a large number of input variables used to characterize both the traveler and the transportation system. Variables that affect the person or household include factors such as household income and the number of vehicles per person available within the household. There are also a number of factors that are utilized to characterize the

transportation system. Examples include travel time (which is further subdivided into in-vehicle time, out of vehicle time, wait time, transfer time, and walk access time), travel cost, and variable used to reflect whether a trip is being made during peak or off-peak travel periods and if a trip is being made to a central business district (CBD).

In addition to the input data, the nested logit model utilizes a series of constants that are mode specific and are applied to the input variable values to calculate the overall desirability or "utility" of each mode. The mode share or mode split for each mode is then calculated via an exponential function that calculates the share for each mode based upon the exponential value of the utility for the mode of interest divided by the sum of the exponential values of the utilities for all modes of transport being evaluated.

With this overall understanding of the mode choice process in mind, the specific characteristics of the RivTAM/SCAG Regional Model mode choice process and parameters (particularly those related to the non-motorized modes of transport) have been examined. Both the parameters contained in the SCAG 2003 model validation report and the RivTAM input data files have been reviewed. Interestingly, the reported parameters do not appear identical to the actual model input data. For purposes of this report, the parameters extracted directly from the RivTAM tool are summarized and evaluated in the remainder of this section.

The non-motorized modes of transport explicitly evaluated in the model include bicycle and walk modes. There are various sub-modes (for instance, walk or bike access to transit) that are not considered in this analysis. Thus, the results reported herein are inherently conservative (low) in terms of the actual demand for walking and biking. Review of the model parameters indicate that both the bicycle and walk modes of transport analysis are based on the input variable of trip distance. The trip distance has been determined based on the highway network and reflects the distance from TAZ centroid to TAZ centroid. In addition to the distance variable, a constant coefficient is also used in the mode choice model.

Based on review of the input parameters, the following observations and conclusions have been reached:

1. The constant coefficient favors walking as opposed to bicycling. For a short trip (where the distance variable component is small), this suggests that a higher proportion of trips would be made by walking, rather than by bicycling. This is intuitively reasonable.
2. The coefficient for distance is identical or very similar for most trip purposes. In two cases (Home-based College / University and Other-based Other trip purposes), the coefficient actually favors walking over bicycling for longer distances. The reason for this apparent anomaly, particularly for Other-based Other trips, may be related to the fact that the traveler does not have a bicycle available since they are not at home and probably did not utilize a bicycle in the first place.
3. Based on the previous observations, it was determined that it is most appropriate to focus on both non-motorized modes of transport (walking and biking) for shorter distance (intracity) trips. The analysis of longer (intercity) trips is oriented towards the bicycle as the most probable means of transport that will benefit from the proposed non-motorized transportation system.

8.2.3 Interjurisdictional Bicycle Demand

The output from the mode split step of the RivTAM for 2035 conditions has been extracted by jurisdiction. Of particular interest for this project is the 2035 interjurisdictional bicycle trip demand (person trips served by bike), which is included in Table 8-7. Urban Crossroads, Inc. has combined this demand data with the supply side information from the proposed Non-Motorized Transportation Plan (NMTP). Table 8-7 also documents possible NMTP routes and/or route combinations for travel between jurisdictions.

Table 8-7 2035 Interjurisdictional Bicycle Daily Trip Summary (All Purposes)

Jurisdiction (one end)	Jurisdiction (other end)	Bike Trips	NMTP Route Combinations
Unincorporated Western Riverside County	Outside Western Riverside County	2,703	1, 2, 4, 13, 27
Riverside	Outside Western Riverside County	2,588	1, 2, 4
Riverside	Unincorporated Western Riverside County	2,308	2, 4, 7, 8-12, 9-8-12
Corona	Outside Western Riverside County	1,517	1, 2, 4
Moreno Valley	Riverside	1,001	8, 9
Moreno Valley	Outside Western Riverside County	941	11-13
Moreno Valley	Unincorporated Western Riverside County	917	11, 12, 25-6
Hemet	Unincorporated Western Riverside County	904	10, 15, 22, 14-10
Corona	Unincorporated Western Riverside County	901	1, 5, 6, 3-7
Murrieta	Temecula	832	16, 20-18
Hemet	San Jacinto	755	10, 14
Corona	Riverside	725	1, 3, 6-7
Perris	Unincorporated Western Riverside County	714	6,10, 17
Temecula	Unincorporated Western Riverside County	565	18, 21
San Jacinto	Unincorporated Western Riverside County	527	10, 14
Lake Elsinore	Unincorporated Western Riverside County	468	5, 17
Banning	Beaumont	440	13
Corona	Norco	429	1, 5
Menifee	Unincorporated Western Riverside County	415	15, 19, 23, 24, 24-17
Norco	Outside Western Riverside County	380	1, 2, 4
Beaumont	Unincorporated Western Riverside County	370	13, 27
Murrieta	Unincorporated Western Riverside County	348	21, 20, 16-5
Moreno Valley	Perris	346	25, 12-10
Murrieta	Wildomar	317	16
Norco	Unincorporated Western Riverside County	303	1, 5
Beaumont	Outside Western Riverside County	271	13, 13-26
Lake Elsinore	Wildomar	263	16

Jurisdiction (one end)	Jurisdiction (other end)	Bike Trips	NMTP Route Combinations
Banning	Unincorporated Western Riverside County	249	13, 13-27
Menifee	Perris	248	24
Banning	Outside Western Riverside County	232	13, 13-26
Calimesa	Outside Western Riverside County	229	13, 26
Lake Elsinore	Outside Western Riverside County	207	5-1
Temecula	Outside Western Riverside County	199	16-28
Perris	Outside Western Riverside County	198	25-11-13, 6-5-3-1
Hemet	Outside Western Riverside County	193	10-14-27-13, 14-27-13
Menifee	Murrieta	173	23, 19-24, 15-24, 24
Menifee	Outside Western Riverside County	155	23-16-28
Murrieta	Outside Western Riverside County	150	16-28
Lake Elsinore	Menifee	134	17-24, 16-15
Perris	Riverside	134	6-4, 6-7, 25-9, 25-8
Norco	Riverside	131	1, 5-3
Wildomar	Unincorporated Western Riverside County	130	15, 19, 16-5
San Jacinto	Outside Western Riverside County	121	10-27-13
Menifee	Temecula	113	19-24-20-21, 15-24-20-21, 23-16, 24-20-21, 19-18, 24-19-18, 15-19-18
Hemet	Menifee	105	15, 15-24
Lake Elsinore	Murrieta	105	16, 16-19-23
Menifee	Wildomar	99	15, 19
Temecula	Wildomar	95	16, 18-19
Wildomar	Outside Western Riverside County	84	16-28
Menifee	Riverside	82	24-17-6-4, 24-17-6-25-9, 24-17-6-25-9-8
Lake Elsinore	Riverside	80	5-6-7
Beaumont	Calimesa	78	13
Beaumont	Moreno Valley	77	27-10-12, 13-11
Lake Elsinore	Temecula	77	16
Menifee	Moreno Valley	72	24-17-10-25, 24-17-6-25, 24-17-10-12
Canyon Lake	Lake Elsinore	67	15, 17
Canyon Lake	Menifee	67	15

Jurisdiction (one end)	Jurisdiction (other end)	Bike Trips	NMTP Route Combinations
Lake Elsinore	Perris	62	17
Hemet	Moreno Valley	54	10-12, 14-10-12
Calimesa	Unincorporated Western Riverside County	53	13, 13-27
Moreno Valley	San Jacinto	53	12-10
Hemet	Temecula	53	15-18, 15-18-20-21
Corona	Moreno Valley	50	3-8, 3-7-6-25, 6-25
Corona	Lake Elsinore	49	5
Lake Elsinore	Moreno Valley	43	17-6-25
Hemet	Perris	42	15-24, 10, 14-10
Beaumont	San Jacinto	41	27-10, 27-10-14
Beaumont	Hemet	41	27-10, 27-10-14
Beaumont	Riverside	40	27-10-12-8, 13-11-8, 27-10-12-8-9, 13-11-8-9
Hemet	Murrieta	39	15-18-20, 15-18-19-24-20, 15-18-19-23
Hemet	Riverside	37	10-12-8, 10-12-8-9, 14-10-12-8, 14-10-12-8-9
Banning	Moreno Valley	35	13-27-10-12, 13-11
Calimesa	Moreno Valley	33	13-11
Riverside	San Jacinto	33	8-12-10, 9-8-12-10
Murrieta	Riverside	33	16-5-6-7, 23-24-17-6-4, 23-24-17-6-25-9-8, 23-24-17-6-25-9
Canyon Lake	Unincorporated Western Riverside County	32	15, 17
Menifee	San Jacinto	30	24-15-14, 15-14, 24-17-10
Perris	San Jacinto	30	10
Murrieta	Perris	29	20-24, 23-15-24, 16-15-24
Moreno Valley	Murrieta	28	25-10-17-24, 12-10-17-24, 25-6-17-24
Hemet	Lake Elsinore	27	15
Calimesa	Riverside	26	13-11-8, 13-11-8-9
Banning	Hemet	26	13-27-10, 13-27-10-14
Banning	Riverside	26	13-27-10-12-8, 13-11-8, 13-27-10-12-8-9, 13-11-8-9
San Jacinto	Temecula	26	14-18, 14-18-20-21
Perris	Temecula	26	24-20-21, 24-19-18
Riverside	Temecula	25	7-6-5-16, 9-25-6-17-24-19-18, 8-9-25-6-17-24-19-18
Riverside	Wildomar	24	7-6-5-16, 9-25-6-17-24-15, 8-9-25-6-17-24-15

Jurisdiction (one end)	Jurisdiction (other end)	Bike Trips	NMTP Route Combinations
Moreno Valley	Temecula	24	25-6-17-24-19-18, 25-6-17-24-20-21, 25-10-17-24-19-18, 25-10-17-24-20-21
Banning	Calimesa	23	13
Banning	San Jacinto	23	13-27-10, 13-27-10-14
Perris	Wildomar	18	24-15, 17-16
Murrieta	San Jacinto	18	20-18-14, 23-15-14
Corona	Perris	18	3-7-6, 6
Hemet	Wildomar	17	15, 15-18-19
Corona	Menifee	16	5-17-24, 5-15, 5-19
Canyon Lake	Wildomar	15	15
Canyon Lake	Perris	14	17
Lake Elsinore	San Jacinto	10	15-14, 17-10
Total		**27,673**	

The cities and unincorporated county areas near the edge of the County are expected to experience bicycle interaction across county boundaries. Cities that are located near one-another have a larger portion of person trips served by bicycle. The largest of these interactions include four city pairs: Moreno Valley to Riverside, Murrieta to Temecula, Hemet to San Jacinto, and Corona to Riverside. In each of these cases, the expected demand is served by at least two distinct NMTP routes or route combinations. Overall, 27,673 daily interjurisdictional trips to, from, and between western Riverside County jurisdictions will be made using bicycles.

The interjurisdictional bicycle trip data has also been summarized by trip purpose, and is included in Appendix A. The RivTAM performs trip generation calculations for several purposes, which have been grouped into similar categories for ease of reference. The various home-based work trips (direct and strategic for various income levels, along with intermediate stops) have been combined into an overall home-based work summary, which is shown in Appendix A. Each of the four city pairs that has a large portion of total person trips served by bicycle (listed in the previous paragraph) also has over 200 bike trips for the home-based work purpose.

Home-based other trips (shown Appendix A) include the home-based other RivTAM category, along with home-based serving-passenger, home-based social-recreational, home-based school and home-based college and university. For the same four key city pairs identified previously, home-based other bicycle trips range from 348 to 483 daily trips.

Of the remaining categories (Home-based shopping trips, Other-based other trips, and Work-based other trips), the bicycle mode will capture 3,519 daily interjurisdictional Home-based shopping person trips with 1,039 daily interjurisdictional non-home based trips via bicycle.

8.2.4 Intrajurisdictional Non-Motorized Travel Demand

For purposes of this analysis, we have focused on the interjuridsictional travel benefits. Many of the Non-Motorized Transportation Plan routes have been designated to provide linkage from one jurisdiction to another. Individual cities are expected to provide their own trail system in addition to the NMTP routes. In addition, trips that are very short (e.g. one mile) are on the local network.

For trips contained within a single jurisdiction, the demand for both bicycle and pedestrian trips has been extracted from the RivTAM. Table 8-8 contains the summary for all purposes. For person trips contained entirely within jurisdictions, the bicycle travel activity amounts to 44,632 daily trips. An individual intrajurisdictional analysis for each trip purpose is included in Appendix B.

Table 8-8 2035 Intrajurisdictional Non-Motorized Daily Bike and Pedestrian Trip Summary (All Purposes)

Jurisdiction	Ped	Bike	Total
Banning	16,457	1,149	114,181
Beaumont	19,288	1,249	125,396
Calimesa	2,155	153	14,898
Canyon Lake	604	32	4,513
Corona	52,783	3,701	371,342
Hemet	57,472	4,429	380,716
Lake Elsinore	18,900	1,174	133,230
Menifee	16,241	1,052	114,590
Moreno Valley	76,709	5,194	538,860
Murrieta	29,308	1,839	198,101
Norco	5,372	391	32,530
Perris	20,043	1,258	128,617
Riverside	145,892	10,817	1,080,701
San Jacinto	18,730	1,265	138,292
Temecula	57,445	4,268	398,755
Wildomar	7,109	447	46,928
Unincorporated	99,623	6,214	760,601
WRCOG Total	**644,131**	**44,632**	**4,582,251**

8.2.5 Vehicle Miles Traveled

An approximation for the average VMT per trip has been defined on Table 8-9, for each interjurisdictional pair listed in Table 8-7. The average trip length is based on potential routes in the NMTP and the estimated high intensity area distances (e.g. city center, etc.) for each City. The average city to city distance (9 miles) has been applied to trips involving unincorporated Riverside County, while the distance to locations outside western Riverside has been estimated to be one-third again as much (12 miles).

Table 8-9 2035 Interjurisdictional Daily Bicycle VMT Calculations (All Purposes)

Jurisdiction (one end)	Jurisdiction (other end)	Person Trip Demand	VMT/ Trip	Daily VMT
Unincorporated Western Riverside County	Outside Western Riverside County	2,703	12	32,432
Riverside	Outside Western Riverside County	2,588	12	31,050
Riverside	Unincorporated Western Riverside County	2,308	9	20,772
Corona	Outside Western Riverside County	1,517	12	18,204
Moreno Valley	Riverside	1,001	8	8,008
Moreno Valley	Outside Western Riverside County	941	12	11,292
Moreno Valley	Unincorporated Western Riverside County	917	9	8,253
Hemet	Unincorporated Western Riverside County	904	9	8,133
Corona	Unincorporated Western Riverside County	901	9	8,109
Murrieta	Temecula	832	4	3,328
Hemet	San Jacinto	755	3	2,264
Corona	Riverside	725	7	5,075
Perris	Unincorporated Western Riverside County	714	9	6,426
Temecula	Unincorporated Western Riverside County	565	9	5,085
San Jacinto	Unincorporated Western Riverside County	527	9	4,743
Lake Elsinore	Unincorporated Western Riverside County	468	9	4,212
Banning	Beaumont	440	6	2,640
Corona	Norco	429	4	1,716
Menifee	Unincorporated Western Riverside County	415	9	3,735
Norco	Outside Western Riverside County	380	12	4,560
Beaumont	Unincorporated Western Riverside County	370	9	3,330
Murrieta	Unincorporated Western Riverside County	348	9	3,132
Moreno Valley	Perris	346	9	3,114
Murrieta	Wildomar	317	4	1,268
Norco	Unincorporated Western Riverside County	303	9	2,727
Beaumont	Outside Western Riverside County	271	12	3,252
Lake Elsinore	Wildomar	263	4	1,052

Jurisdiction (one end)	Jurisdiction (other end)	Person Trip Demand	VMT/ Trip	Daily VMT
Banning	Unincorporated Western Riverside County	249	9	2,241
Menifee	Perris	248	9	2,232
Banning	Outside Western Riverside County	232	12	2,784
Calimesa	Outside Western Riverside County	229	12	2,748
Lake Elsinore	Outside Western Riverside County	207	16	3,312
Temecula	Outside Western Riverside County	199	12	2,388
Perris	Outside Western Riverside County	198	16	3,168
Hemet	Outside Western Riverside County	193	16	3,088
Menifee	Murrieta	173	7	1,211
Menifee	Outside Western Riverside County	155	16	2,480
Murrieta	Outside Western Riverside County	150	12	1,800
Lake Elsinore	Menifee	134	10	1,340
Perris	Riverside	134	16	2,144
Norco	Riverside	131	7	917
Wildomar	Unincorporated Western Riverside County	130	9	1,170
San Jacinto	Outside Western Riverside County	121	16	1,936
Menifee	Temecula	113	12	1,356
Hemet	Menifee	105	12	1,260
Lake Elsinore	Murrieta	105	12	1,260
Menifee	Wildomar	99	7	693
Temecula	Wildomar	95	8	760
Wildomar	Outside Western Riverside County	84	12	1,008
Menifee	Riverside	82	23	1,886
Lake Elsinore	Riverside	80	19	1,520
Beaumont	Calimesa	78	4	312
Beaumont	Moreno Valley	77	11	847
Lake Elsinore	Temecula	77	15	1,155
Menifee	Moreno Valley	72	16	1,152
Canyon Lake	Lake Elsinore	67	7	469
Canyon Lake	Menifee	67	4	268
Lake Elsinore	Perris	62	12	744
Hemet	Moreno Valley	54	16	864
Calimesa	Unincorporated Western Riverside County	53	9	477
Moreno Valley	San Jacinto	53	15	795
Hemet	Temecula	53	19	1,007
Corona	Moreno Valley	50	18	900
Corona	Lake Elsinore	49	20	980
Lake Elsinore	Moreno Valley	43	18	774
Hemet	Perris	42	15	630
Beaumont	San Jacinto	41	14	574

Jurisdiction (one end)	Jurisdiction (other end)	Person Trip Demand	VMT/ Trip	Daily VMT
Beaumont	Hemet	41	16	656
Beaumont	Riverside	40	23	920
Hemet	Murrieta	39	16	624
Hemet	Riverside	37	30	1,110
Banning	Moreno Valley	35	16	560
Calimesa	Moreno Valley	33	10	330
Riverside	San Jacinto	33	29	957
Murrieta	Riverside	33	30	990
Canyon Lake	Unincorporated Western Riverside County	32	9	288
Menifee	San Jacinto	30	14	420
Perris	San Jacinto	30	14	420
Murrieta	Perris	29	13	377
Moreno Valley	Murrieta	28	22	616
Hemet	Lake Elsinore	27	21	567
Calimesa	Riverside	26	18	468
Banning	Hemet	26	20	520
Banning	Riverside	26	27	702
San Jacinto	Temecula	26	22	572
Perris	Temecula	26	18	468
Riverside	Temecula	25	32	800
Riverside	Wildomar	24	21	504
Moreno Valley	Temecula	24	28	672
Banning	Calimesa	23	12	276
Banning	San Jacinto	23	11	253
Perris	Wildomar	18	11	198
Murrieta	San Jacinto	18	17	306
Corona	Perris	18	23	414
Hemet	Wildomar	17	20	340
Corona	Menifee	16	29	464
Canyon Lake	Wildomar	15	4	60
Canyon Lake	Perris	14	8	112
Lake Elsinore	San Jacinto	10	24	240
Total		**27,673**	**10.15**	**280,767**

The intrajurisdictional trip demand has been calculated and is shown on Table 8-10. Pedestrian and bicycle average vmt per trip (for each jurisdiction) are shown, along with the total daily vmt for pedestrian and bicycle trips.

Table 8-10 2035 Intrajurisdictional Non-Motorized Trip Summary (All Purposes)

Jurisdiction	Non-Motorized		Pedestrian		Bicycle	
	Ped	Bike	VMT/Trip	VMT	VMT/Trip	VMT
Banning	16,457	1,149	0.6	9,874	3	3,447
Beaumont	19,288	1,249	0.6	11,573	3	3,747
Calimesa	2,155	153	0.6	1,293	3	459
Canyon Lake	604	32	0.3	181	1.5	48
Corona	52,783	3,701	0.8	42,226	4	14,804
Hemet	57,472	4,429	0.6	34,483	3	13,287
Lake Elsinore	18,900	1,174	0.8	15,120	4	4,696
Menifee	16,241	1,052	0.6	9,745	3	3,156
Moreno Valley	76,709	5,194	0.8	61,367	4	20,776
Murrieta	29,308	1,839	0.8	23,446	4	7,356
Norco	5,372	391	0.6	3,223	3	1,173
Perris	20,043	1,258	0.8	16,034	4	5,032
Riverside	145,892	10,817	0.8	116,714	4	43,268
San Jacinto	18,730	1,265	0.6	11,238	3	3,795
Temecula	57,445	4,268	0.6	34,467	3	12,804
Wildomar	7,109	447	0.6	4,265	3	1,341
Unincorporated	99,623	6,214	0.8	79,698	4	24,856
WRCOG Total	**644,131**	**44,632**		474,949		164,045

The estimated 2035 daily non-motorized VMT (and auto conversion values) are summarized on Table 8-11. Average overall trip lengths for pedestrians are 0.74 miles. For bicycle trips, the average trip length is 6.15 (round trip is 12.3) miles. On average, approximately 73% of bicycle trips replace vehicle trips for adults / college students and 53% for school children based on survey results from 10 California cities conducted by Alta between 1990 and 1999 (L.A. Countywide Policy Document survey, 1995, and National Bicycling & Walking Study, FHWA, 1995). For this analysis, across all trip purposes we've used 67%. The savings in automobile VMT for the NMTP is 374,924.

Benefits of non-motorized networks also go beyond potential reductions in auto VMT. As noted in the SCAG Non-Motorized Transportation Report (2008), building an environment where people can walk or bicycle is key to creating a livable community where people are able to live, work, visit, and play. The promotion of non-motorized transportation encourages healthy lifestyles. Increases in the utilization of bicycle and walking transportation may help communities work towards preserving both natural and economic resources.

Table 8-11 NMTP-Related Daily VMT With Auto Conversion

	Bicycle			Pedestrian			Auto VMT Conversion
	Trips	VMT	Avg. Trip Length	Trips	VMT[1]	Avg. Trip Length	
Interjurisdictional	27,673	280,767	10.15	N/A	N/A	N/A	187,132
Intrajurisdictional	44,632	164,045	3.68	32,207	23,747	0.74	187,792
Total	72,305	444,812	6.15	32,207	23,747	0.74	374,924

[1] Includes 5% of intrajurisdictional pedestrian trips using the NMTP network

8.2.6 Air Quality Benefits

According to the South Coast Air Quality Management District (SCAQMD), the monitoring agency for the region's air quality, the region does not currently meet the federal or State eight-hour average ozone standards nor does it meet the stringent State particulate matter (PM10) standards. In the region, passenger vehicles are the largest source of air pollution and greenhouse gas emissions. The implementation of the NMTP will facilitate making bicycle travel a safe and functional option for everyday trips to work, school, and shops in the region, thus reducing VMT and related emissions which can help the region improve air quality and also reduce greenhouse gas emissions.

As previously discussed, if the NMTP were not constructed, non-motorized demand would instead travel by automobile and would result in an additional 374,924 VMT per typical weekday. Consequently, quantification of air quality and greenhouse gas emissions benefits from implementation of the NMTP is provided on Table 8.12. Reducing VMT from passenger vehicles is one strategy that can effectively reduce greenhouse gas emissions. Thus, implementation of the NMTP will reduce VMT and can help SCAG reduce greenhouse gas emissions and comply with Senate Bill 375 and Assembly Bill 32.

These emissions benefits were calculated by use of the following equation: Emissions = VMT x EF. Where VMT = vehicle miles traveled and EF = emissions factor. The emission factors were obtained from the California Air Resources Board's (CARB's) Emission FACtors (EMFAC) 2007 (v2.3) BURDEN model.

In order to calculate on-road mobile source emissions, the EMFAC 2007 BURDEN emissions inventory model was run for the Riverside County region for the analysis year of 2035 consistent with the NMTP buildout. The emission factors were derived by dividing the total daily county-wide emissions by total daily vehicle miles traveled (from the model) to obtain emission factors in pounds per mile traveled, the emission factors are also based on a weighted average for passenger vehicles (<8,500 pounds). This methodology is consistent with SCAQMD's On-Road Mobile Emissions Factors weighted average for passenger vehicles for the South Coast Air Basin (http://www.aqmd.gov/ceqa/hdbk.html).

Upon completion of the regional bicycle network by the year 2035, the resulting reduction in VMT as previously discussed will be 374,924 VMT per typical weekday. Table 8.12 provides a summary of emissions that will be reduced with implementation of the NMTP. As shown, implementation of the NMTP would result in an estimated decrease of 0.49 metric tons/weekday of carbon monoxide (CO), 0.03 metric tons/weekday of oxides of nitrogen (NOx), 0.05 metric tons/weekday of reactive organic gases (ROGs), 0.002 metric tons/weekday of oxides of sulfur (SOx), 0.02 metric tons/weekday of particulate matter 10 microns or less (PM10), 0.01 metric tons/weekday of particulate matter 2.5 microns or less (PM2.5), 188.95 metric tons/weekday of carbon dioxide (CO2), 0.005 metric tons/weekday of methane (CH4), and 0.003 metric tons/weekday of nitrous oxide (N2O).

In order to estimate annual emissions reductions, the emissions reduced per weekday as shown in Table 8.12 were multiplied by 250 weekdays per year (5 weekdays per week and 50 weeks per year of activity). Therefore implementation of the NMTP would result in an estimated decrease of 122.23 metric tons/year of CO, 7.60 metric tons/year of NOx, 12.52 metric tons/year of ROGs, 0.49 metric tons/year of SOx, 4.30 metric tons/year of PM10, 2.89 metric tons/year of PM2.5, 47,237.38 metric tons/year of CO2, 1.16 metric tons/year of CH4, and 0.74 metric tons/year of N2O.

Table 8-12 Bicycle and Air Quality Greenhouse Gas Emissions Projections

Estimated Future Vehicle Miles Traveled Reduction		
Future Reduction in VMT per Typical Weekday with NMTP	374,924	
Future Weekday Air Quality Benefits		**Emissions Factor[1]**
Reduced CO (metric tons/weekday)	0.49	(0.002875 lbs/mile)
Reduced NOx (metric tons/weekday)	0.03	(0.000179 lbs/mile)
Reduced ROG (metric tons/weekday)	0.05	(0.000295 lbs/mile)
Reduced SOx (metric tons/weekday)	0.002	(0.000012 lbs/mile)
Reduced PM10 (metric tons/weekday)	0.02	(0.000101 lbs/mile)
Reduced PM2.5 (metric tons/weekday)	0.01	(0.000068 lbs/mile)
Reduced CO2 (metric tons/weekday)	188.95	(1.111058 lbs/mile)
Reduced CH4 (metric tons/weekday)	0.005	(0.000027 lbs/mile)
Reduced N2O (metric tons/weekday)	0.003	(0.000017 lbs/mile)
Future Annual Weekday Air Quality Benefits[2]		**Emissions Factor[1]**
Reduced CO (metric tons/year)	122.23	(0.002875 lbs/mile)
Reduced NOx (metric tons/year)	7.60	(0.000179 lbs/mile)
Reduced ROG (metric tons/year)	12.52	(0.000295 lbs/mile)
Reduced SOx (metric tons/year)	0.49	(0.000012 lbs/mile)
Reduced PM10 (metric tons/year)	4.30	(0.000101 lbs/mile)
Reduced PM2.5 (metric tons/year)	2.89	(0.000068 lbs/mile)
Reduced CO2 (metric tons/year)	47,237.38	(1.111058 lbs/mile)
Reduced CH4 (metric tons/year)	1.16	(0.000027 lbs/mile)
Reduced N2O (metric tons/year)	0.74	(0.000017 lbs/mile)

[1]Emissions rates from: EMFAC 2007 (v2.3) Burden Emissions Inventory Model, Riverside County, Year 2035 & California Climate Action Registry General Reporting Protocol, Version 3.1 for N2O emissions only

[2]Annual weekday calculated based on 5 weekdays per week and 50 weeks per year of activity: 5 x 50 = 250 weekdays per year

SECTION 9.0 ACTION PROGRAM

9.1 Implementation Approach

Section 4.0 presents the overarching goals and strategies related to the purpose and long-term implementation of this Non-Motorized Transportation Plan. The responsibility and time frame for carrying out the strategies are the focus of Table 9-1 below. The following is essentially a plan of action so that the NMTP takes root in the route planning of each jurisdiction and benefits from a collective and sustained effort to get the routes funded and implemented. A key to the action plan is the continuation of the NMTP Working Group. This group was formed at the outset of this project and is comprised of representatives of each jurisdiction, other affected agencies, and bicycle group representatives. The Working Group is the right forum to take the lead on many of the implementation strategies. Note that strategies pertaining to the content and focus of the NMTP are not part of this Action Matrix on next steps.

Table 9-1 Five-Year Action Matrix (2010–2015)

Strategy	Responsibility			Time Frame	Comments
	WRCOG	NMTP Working Group	Local Jurisdictions		
C-1. Coordinate with local jurisdictions to encourage consistency between the Non-Motorized Transportation Plan and local General Plans. Use existing WRCOG committees as a means to review and comment on issues of mutual concern.	X	X	X	Ongoing	WRCOG to coordinate with local jurisdictions when updating general plans. WRCOG to schedule quarterly meetings of the NMTP Working Group to address implementation.
C-3. Regularly monitor implementation of route segments, connections, and improvements, and update maps accordingly.	X	X	X	Quarterly	Local jurisdictions to provide route improvement updates to WRCOG through Working Group meetings.
C-4. Provide updated route maps reflecting construction of facilities and improvements to local jurisdictions in GIS on an annual basis.	X		X	Annually	WRCOG to maintain GIS database and update annually as route improvements are made. A user-friendly map of existing and planned routes should be prepared and maintained by WRCOG.

Strategy	Responsibility			Time Frame	Comments
	WRCOG	NMTP Working Group	Local Jurisdictions		
C-5. Coordinate with the Riverside County Transportation Commission (RCTC), Riverside Transit Agency (RTA) and Southern California Association of Governments (SCAG) to ensure that WRCOG's Non-Motorized Transportation Plan is integrated with the Regional Transportation Plan and consistent with sub-regional initiatives.	X			Annually	WRCOG to provide updates on NMTP annually to agencies.
C-7. Work cooperatively with bicycle organizations, transportation agencies, local jurisdictions, large employers and activity centers to publicize the sub regional system; sponsor annual bicycling events such as Bike to Work Week, adult safety courses, and similar events in conjunction with other regional efforts and programs.	X	X		Ongoing	Working Group to assess promotional opportunities and work with WRCOG to promote the system.
C-9. Coordinate with local jurisdictions to establish an Adopt-a-Bikeway program that will supplement funding of improvements and ongoing operation and maintenance costs.	X	X	X	Establish program in 2 years; WRCOG to administer	Working Group to establish program framework, get local jurisdiction buy-in; WRCOG to administer.
D-3. Encourage jurisdictions to adopt the design classifications to ensure that final improvements are as seamless as possible between jurisdictions.		X	X	Ongoing	Working Group to lead effort to get design classifications and guidelines adopted by local jurisdictions. In addition, Working Group should encourage new land use policies and codes for new development that fosters a walkable and bikeable community form.
D-4. Establish preferred or "typical" design standards for route classifications, and include standards for adequate bicycle parking/storage, sidewalk design, use and maintenance of materials for both on-road and off-road facilities, optional street crossing standards, and other standards related to pedestrian and bicycle safety.		X	X	Ongoing	Working Group to lead effort to have consistent design standards adopted by local jurisdictions. The NMTP provides a baseline to be used.
F-2. Prioritize improvements for near term implementation through a five-year	X	X	X	Establish SIP	Working Group to develop SIP using ROM cost tables and

Strategy	Responsibility			Time Frame	Comments
	WRCOG	NMTP Working Group	Local Jurisdictions		
Strategic Implementation Plan (SIP) to be updated periodically by participating agencies. Priority rankings should mirror Bicycle Trust Account (BTA) and RCTC's SB821 program guidelines to improve competitive standing.				in two years	corridor segment prioritization (Section 8.2) as a foundation.
F-3. Encourage local jurisdictions to include bicycle and pedestrian improvements in their Capital Improvement Plans (CIP), including expenses for maintenance and operations as appropriate.			X	Annually review	
F-4. Educate local jurisdictions about all bicycle and pedestrian funding sources and provide application assistance if needed.	X	X		Annually	The NMTP provides a comprehensive listing of potential funding sources/strategies. WRCOG to revisit with Working Group annually.
F-5. Encourage and facilitate multi-jurisdictional funding applications.	X	X		When appropriate	Working Group to identify funding opportunities and prepare applications.
F-6. Advocate regional priority consideration for Non-Motorized Backbone Network improvement applications for competitive programs.	X			As needed	WRCOG to be advocate of the NMTP to state and federal agencies, and SCAG.
F-7. Encourage local jurisdictions to use their Measure A Local Streets and Road funds for bicycle and pedestrian improvements along the Regional Backbone Network within their jurisdictions.		X	X	Ongoing	Working Group to promote
F-8. Coordinate funding of planned bicycle and pedestrian improvements to the Measure A Regional Arterial System whenever other improvements are made to roads on the system with Measure A funds.	X			Ongoing	WRCOG to take lead.
F-9. Coordinate funding of planned bicycle and pedestrian improvements to the Transportation Uniform Mitigation Fee (TUMF) Regional Arterial System	X		X	Ongoing	WRCOG to coordinate with local jurisdictions

Strategy	Responsibility			Time Frame	Comments
	WRCOG	NMTP Working Group	Local Jurisdictions		
whenever other improvements are made to roads on the system with TUMF funds.					
F-10. Encourage local jurisdictions to require land developers to include the bicycle and pedestrian improvements that are on the Regional Backbone Network when they widen or construct roads as part of their development projects. F-11. Encourage local jurisdictions to require land developers to include the bicycle and pedestrian improvements **that link** to the Regional Backbone Network when they widen or construct roads and paths as part of their development projects.			X	Ongoing	Requires adoption of routes by local jurisdictions.
F-12. Coordinate with RCTC and Metrolink to evaluate and complete, when feasible, the Regional Backbone Network projects within new or existing rail rights-of-way.	X	X		Assess feasibility	WRCOG and Working Group (with participation by RCTC) to conduct an evaluation of the feasibility and safety of using active rail rights-of-way.
F-13. Coordinate with the County of Riverside Regional Park and Open Space District to acquire state and federal funds to complete bicycle and pedestrian paths that are on the Regional Backbone Network.		X	X	Ongoing	Working Group to coordinate with the County on funding applications.
F-14. Coordinate with transportation departments of local jurisdictions and Caltrans to phase planned bicycle and pedestrian roadway projects on the Regional Backbone Network.	X	X	X	quarterly	Requires identifying opportunities early on. Working Group to monitor improvement projects quarterly.
F-15. Encourage bicycle manufacturers to support or sponsor bicycle routes along the Regional Backbone Network.	X	X		ongoing	Working Group to connect with bicycle manufacturers and explore sponsorships
G-9. Create a branding program for the sub regional system that distinguishes it from local-serving routes and includes special signage and general promotion.	X	X		Within 2 years	WRCOG to lead effort to brand and promote the regional network.

9.2 Corridor Segment Orientation

The Western Riverside Council of Governments has identified 28 bikeways to provide a regional backbone system in Western Riverside County. These projects can be phased in based on the prioritization criteria described below. These criteria are derived from an assessment of likely demand for new bicycle infrastructure as well as where some bicycle facilities currently exist.

The projects are not bound by the priorities set here. This categorization simply serves as a guide. If an opportunity arises where bicycle improvements can be made, the WRCOG and/or individual cities should reprioritize projects. For example, when new development goes in where a bikeway is planned, the developer should put in the new facility, even if it is low-priority. Similarly, when new roads are built or existing roads are widened, bike lanes should be striped at that time. When existing streets are resurfaced that have sufficient width, bike lanes can be striped at that time as well.

Described below are the prioritization criteria used to identify which projects were best suited to be completed in the short, medium, and long term. These criteria were used collectively to evaluate the projects, and they are not listed in order of importance.

Universities and Schools: University campuses and other schools often draw a significant numbers of bicyclists. They are prioritized here.

Employment Centers: Employment centers attract traffic of all types. Improving connectivity to and infrastructure near job centers may encourage employees to choose bicycling as an alternative to driving.

Transit Centers: Connection to transportation centers is a high priority of the plan. Integration of the bicycle and transit networks offers several advantages that each mode alone cannot provide; it allows bicyclists to travel greater distances and makes transit accessible to those who live too far away from a transit stop to walk.

Bicyclist Safety: It is critically important for WRCOG to ensure the safety of all residents who choose to bicycle. Projects that have the most potential to offer significant safety benefits will rank higher in priority.

Population Density: Bicycle use is most prevalent in dense neighborhoods. The projects are prioritized to serve the largest number of people.

Completion of the Bicycle Network: Communities that already have some bikeways, but not complete networks, will benefit by having regional bikeways connect with local facilities. These bikeways are prioritized higher.

Project Cost and Completion Time: Projects that have lower costs and shorter completion times are prioritized.

Geographical Balance: The plan should provide new infrastructure throughout the WRCOG region to ensure that all communities receive benefits. Projects that fill large gaps are designated higher priority.

Low-Income Areas: Low-income residents are more likely to use the bicycle network due to transportation costs, lower rates of auto-ownership, and transit-dependence. Thus, these areas may receive greater benefits from an improved network over other areas.

Recreational Interests: Recreational cycling paths and trails are a very important component of the plan. While transportation projects generally take priority over recreational cycling projects, particularly high-quality bikeways that are likely to attract significant recreational use are given some priority.

The following three tables prioritize projects based on existing roads and rights of way. The project segments that depend on new roadways will be completed when those roadways are constructed.

Table 9-2 Short-Term Projects (listed by corridor number)

Corridor Number	Name	Geographic Region	Type	Communities Served
1	Santa Ana River Trail	Northwest	Class I/II	Riverside, Norco, Corona, Unincorporated Northwest
3	SR 91 Corridor-Magnolia	Northwest	Class I/II	Riverside, Corona
4	Van Buren-Mockingbird	Northwest	Class I/II	Unincorporated Northwest, Riverside
5	I-15 Corridor-Temescal Canyon	Northwest, Southwest	Class II/III	Corona, Unincorporated Southwest, Unincorporated Northwest, Lake Elsinore, Norco
7	Hidden Valley-La Sierra	Northwest	Class I/II	Riverside, Unincorporated Northwest
9	Fairmont-Iris	Northwest, Central	Class II/III	Riverside, Moreno Valley
14	San Jacinto River-Diamond Valley Lake	Hemet/San Jacinto	Class I/II	San Jacinto, Hemet
15	Salt Creek-Domenigoni	Hemet/San Jacinto	Class I/II	Hemet, Unincorporated Hemet/San Jacinto, Menifee, Wildomar, Lake Elsinore
16	Lake Elsinore-Murrieta & Temecula Creeks	Southwest	Class I/II	Temecula, Murrieta, Wildomar, Lake Elsinore
17	Nichols-Perris Blvd	Southwest, Central	Class I/II	Perris, Lake Elsinore

Table 9-3 Medium-Term Projects (listed by corridor number)

Corridor Number	Name	Geographic Region	Type	Communities Served
6	El Sobrante-Lake Perris	Northwest, Central	Class I/II	Unincorporated Northwest, Perris, Unincorporated Central, Corona
8	Arlington-Alessandro	Northwest, Central	Class II	Riverside, Moreno Valley
10	San Jacinto River-Bautista Creek	Hemet/San Jacinto, Central	Class I/II	Unincorporated Hemet/San Jacinto, San Jacinto, Unincorporated Central, Perris, Hemet
11	Iris-Redlands	Central, Pass	Class II	Moreno Valley, Unincorporated Pass
13	San Timoteo-I 10 Pass Area	Pass	Class I/II	Banning, Beaumont, Calimesa, Unincorporated Pass
18	San Diego Canal-Eastern Bypass	Hemet/San Jacinto, Southwest	Class I/II	San Jacinto, Hemet, Temecula, Unincorporated Southwest, Unincorporated Hemet/San Jacinto
23	I 15 South, Menifee-Murrieta	Southwest	Class I/II	Murrieta, Menifee
24	Case-Leon	Central	Class II	Unincorporated Central, Menifee, Perris, Unincorporated Southwest
25	Lasselle-Perris Valley Channel	Central	Class I/II	Moreno Valley, Perris

Table 9-4 Long-Term Projects (listed by corridor number)

Corridor Number	Name	Geographic Region	Type	Communities Served
2	Cucamonga-Creek-Mission	Northwest	Class I/II	Unincorporated Northwest
12	Alessandro Davis	Central	Class I/II	Moreno Valley, Unincorporated Central
19	Bundy-Scott	Southwest, Central	Class II	Wildomar, Menifee
20	Murrieta Creek-French Valley	Southwest	Class II	Murrieta
21	Three Creeks	Southwest	Class I/II	Temecula, Unincorporated Southwest
22	Gibbel-Fairview	Hemet/San Jacinto	Class I/II	Unincorporated Hemet/San Jacinto, Hemet
26	Bryant-Singleton Extension	Pass	Class II	Calimesa
27	Oak Valley-San Jacinto River	Pass	Class I	Unincorporated Pass, Unincorporated Central, Beaumont
28	Rainbow Canyon Rd-I 15 Frontage Rd	Southwest	Class II	Temecula

9.3 Safety Considerations

The planned bicycle, pedestrian and NEV facilities comprise "engineering" strategies that create physical change so that people have better routes and convenient ways to travel. This is the first of the "5Es" that are used to create communities that fully accommodate these transportation modes. The other Es are Education, Encouragement, Enforcement, and Evaluation.

The programmatic Es are best carried out in an organized fashion. Safe Routes to Schools programs present excellent opportunities to use all these strategies. Work site programs and other community-wide efforts can reach broader audiences. The following provides an overview of the programmatic Es.

9.3.1 Education

Local jurisdictions and schools can bring in programs to teach bicycle safety to children, adults, and motorists who encounter bicyclists and pedestrians. The curriculum for cyclists should focus on teaching safe riding behavior, such as how to ride in traffic, how to make left turns, where to ride in the lane, and so forth. Pedestrian safety should teach basics such as how to cross a street, where to cross, when to cross, etc. A specific curriculum geared for each audience, along with a handbook or other literature, is recommended.

1. Children: All children in public schools should go through a bicycle and pedestrian safety program before they graduate. This should start at a young age.
2. Adults: A bicycle safety education component should also be available to adults at employment sites, and on selected weekends for the general public.
3. Motorists: The safety curriculum should educate motorists about how to interact with bicyclists and pedestrians.
4. Other groups: Safety education should be taught to others who come into contact with bicyclists and pedestrians, such as ARTS bus drivers and local police.
5. City and County staff: Bicycle and pedestrian safety education can be incorporated into existing training and orientations.
6. Bike shops: These can sponsor fairs and clinics to teach safe cycling.

The Riverside County Department of Public Health has developed bicycle and pedestrian safety education programs. Other organizations such as Safe Moves, the League of American Bicyclists, and the Safe Kids Coalition offer safety education with established curricula.

9.3.2 Encouragement

Local jurisdictions, schools, and businesses can carry out promotional efforts to encourage people to walk and bicycle. The message often promotes the health and environmental benefits. The following represent typical encouragement programs.

1. Bike maps showing existing bikeways along with their types. Bike maps can offer other information such as where cyclists can find schools, colleges, bike shops, parks, and other destinations important to cyclists. A growing number of local jurisdictions have developed map applications for mobile telephones with similar information.
2. Walking route maps. Some cities, such as Riverside, have created walking routes for people to use for recreation as well as for utilitarian purposes. These designated routes take walkers along scenic routes and routes through parks to schools, stores, etc.
3. Bike and walk events: Local jurisdictions, schools, and business organizations can organize events to encourage bicycle riding and walking. Events such as Bike-to-Work-Week, International Walk-to-School Day, Walk and Wheel Wednesdays, and more offer an opportunity for people to get out walking or cycling with others in the hope that they will enjoy it and want to do it more often. Some cities are organizing "cyclovias," where streets are closed to cars for bicycles and pedestrians.
4. Walking School Buses and Bicycle Trains: Parents can help students walk or cycle to school by walking with them or bicycling with them. Walking School Buses and Bicycle Trains are often led by one or more parents who stop to "pick up" students along the way. They make the trip safer from both a traffic and personal safety perspective.
5. System identification: Local jurisdictions can develop their own identifying logos and names that are shown on bikeways and bicycle parking signs. Directional signage (i.e., downtown, UC Riverside) placed at strategic locations will help first-time users in the area find their destinations.
6. Equipment: Some organizations and agencies provide free bicycle helmets and lights to students and low-income cyclists.
7. Employer incentives: Employers of 250 or more people are required to have ridesharing programs or to pay pollution offsets to the South Coast Air Quality Management District. Through these Transportation Demand Management programs, major employers encourage walking, bicycle commuting, and driving electric vehicles by their employees by coordinating promotional events and encouraging the provision of bicycle lockers, access to shower facilities, financial incentives, preferential parking, and more. Cities and the County can work with employers to offer incentives, such as prizes, financial incentives, or giving regular commuters new bicycles.

9.3.3 Enforcement

Traffic laws are generally meant to facilitate safe use of our transportation facilities by motorists, bicyclists, and pedestrians. As such, enforcement of those laws is especially critical for the most vulnerable users, who are bicyclists and pedestrians. Enforcement aims to correct unsafe behavior of motorists, cyclists and pedestrians. Such behavior often involves the following typical actions.

Motorists:

1. Speeding
2. Not yielding to traffic signs and signals
3. Not yielding to pedestrians
4. Driving too close to bicyclists
5. Texting while driving

6. Inattention
7. Parking in red zones

Bicyclists:

1. Riding in the wrong direction
2. Not wearing lights at night
3. Not wearing helmets
4. Swerving
5. Changing lanes without notice

Pedestrians:

1. Darting out into traffic
2. Not yielding right-of-way at mid-block crossings
3. Not waiting for signals
4. Crossing at locations with poor visibility
5. Not looking before crossing

Enforcement strategies work to change these behaviors. Enforcement begins with safety education to ensure that everyone is aware of laws and safe driving, cycling, and walking habits. Enforcement can be carried out by:

1. Police and sheriffs
2. Crossing guards
3. School monitors
4. Local residents

Some enforcement entails ticketing, but not all. The activities of crossing guards, school monitors, and school principals work to ensure safe behavior by directing traffic, posting notices, and sending announcements to students and parents. Local residents participate in programs such as borrowing radar speed equipment and reporting violators or having people drive at safe speeds as "pace cars." Cities and the County can put up speed feedback monitors and red light-running cameras.

Law enforcement uses the following techniques:

1. Teaching safety
2. Evaluating traffic situations
3. Providing police presence
4. Ticketing
5. Pedestrian "sting" operations to catch motorists not yielding to pedestrians
6. Answering traffic complaint hotlines
7. Keeping and sorting records of crashes

9.3.4 Evaluation

It is important to track the progress of the improvements and programs to see how much difference they are making. The following tools can be used to evaluate these:

1. In-class surveys for schools asking students about travel mode
2. Yearly fitness exams at schools
3. Employer surveys asking employees about travel mode
4. Bicycle and pedestrian counts
5. NEV registrations
6. US Census data

Each of these tools can be use annually or periodically to determine patterns. They should use common research methods to yield consistent results that can be compared fairly. In other words, conduct the evaluation at the same time of the year, using the same instruments or methods, etc. Tracking like this can provide important feedback that will help determine which efforts are most successful and worth continuing.

9.4 Maintenance Plan

It will be important to maintain all of the bicycle, pedestrian, and NEV facilities in Western Riverside County. The frequency of this maintenance will vary significantly depending on the usage, weather, landscaping, and other factors. The following presents some general guidelines.

1. On-road facilities such as bike lanes, NEV lanes, and crosswalks need regular sweeping and painting. They should be maintained along with the street.
2. Bike racks need painting every five to ten years. Those with rubberized coating need replacement approximately every 10 to 15 years. Bicycle lockers should last a long time, and maintenance should be done as needed.
3. The maintenance of sidewalks varies depending, to a large degree, on the adjacent trees. Landscaping with trees or ground cover without roots that will lift sidewalks can significantly reduce the need for maintenance. Well-built sidewalks can last 40 years or more. Sidewalks need regular sweeping to keep them clear of debris. Groundcover, such as grass, needs regular (weekly) trimming. Weeds need to be removed from sidewalk seams as they appear. The adjacent property owner should take care of sidewalk maintenance.

Maintenance for off-road paths presents more of a challenge than on-road facilities because the maintenance won't be done as an incidental part of other maintenance. Table 9-5 presents some general guidelines. The actual frequency can be determined as local agencies gain experience with these facilities.

Table 9-5 Off-Road Paths Maintenance Guidelines

Item	Estimated Frequency
Shoulder and grass mowing	As needed
Trash disposal	As needed
Pothole filling	As needed
Bollard replacement	As needed
Irrigate/water plants	Depends on plant material; best to select drought -tolerant
Graffiti removal	As needed
Fountain/restroom cleaning/repair	Weekly cleaning/Repair as needed
Pavement sweeping	As needed; depends on adjacent landscape
Weed control	As needed
Tree, shrub, & grass trimming/fertilization	6 months-1 year
Sign replacement/repair	5-7 years
Repaint lanes and pavement stencils – paint	2-4 years and at the time of pavement sealing/repaving
Repaint lanes and pavement stencils – thermoplastic	7-10 years and at the time of pavement sealing/repaving
Maintain irrigation lines/replace sprinklers	As needed
Lighting replacement/repair	As needed
Maintain furniture	As needed
Pavement sealing/repaving	7-10 years

9.5 Plan Relationship to State and Regional Programs

The WRCOG Non-Motorized Transportation Plan does not operate in a vacuum—state and regional programs have helped shape the Plan and it's goals and policies; in turn, the Plan's goals and policies work together to meet the intent of various programs. Five of these key programs are summarized below; following each summary is a discussion of the Non-motorized Transportation Plan's relationship to the program.

9.5.1 California Assembly Bill 1358 (2008): The Complete Streets Act

Summary of Legislation

AB 1358, the Complete Streets Act, will require cities and counties (starting in 2011), upon revision of the circulation element of their general plan, to identify how the jurisdiction will provide for the routine accommodation of **all** users of the roadway, including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation. Planning and implementing "complete streets" is one way cities and counties can meet this requirement.

A complete street is a transportation facility that is planned, designed, operated, and maintained to enable safe access for all roadway users; pedestrians, bicyclists, motorists, and transit riders of all ages and abilities must be able to safely move along and across a complete street. Complete streets help facilitate a variety of important community benefits. Some of these benefits are described below:

1. Complete streets provide safe travel choices and give people the option to avoid traffic jams while increasing the overall capacity of the transportation network.
2. Complete streets encourage healthy physical activity. Public health experts promote walking and bicycling to combat obesity, especially in children.
3. The greenhouse gas emission reduction goals set forth in AB 32 can be realized, in part, through the implementation of complete streets. If each resident of a community of 100,000 replaced one car trip with one bike trip once per month, it would cut carbon dioxide emission by 3,764 tons per year (compared to planting a tree, which would sequester approximately 50 pounds of carbon dioxide per year).
4. Planning for complete streets cuts costs. Integrating sidewalks, bike lanes, transit amenities, and safe crossings into the initial design of a project is more cost-effective than making retrofits later.
5. Complete streets can lead to economic revitalization by reducing transportation costs and travel time while increasing property values and job growth in communities.
6. Thoughtful design and accommodations for bicyclists and pedestrians reduces the incidence of crashes and improves safety for all transportation users.
7. Complete streets foster strong communities where all people feel safe and welcome on the roadways and where walking and bicycling are an essential part of improving public transportation and creating friendly, walkable neighborhoods.

The Complete Streets Act is supported by Caltrans Deputy Directive DD-64-R1. DD-64-R1 memorializes the importance of pedestrian and bicycle facilities to the state's transportation system and outlines responsibilities for Caltrans employees to ensure that travelers of all ages and abilities can move safety and efficiently along and across a network of complete streets throughout the state.

Relationship of the WRCOG Non-Motorized Transportation Plan to the Complete Streets Act

The WRCOG Non-Motorized Transportation Plan meets the goals and policies of the Complete Streets Act in several ways. First, the Plan fundamentally increases the range of transportation options for travel within and between western Riverside jurisdictions and neighboring counties by creating a backbone network of bicycle and pedestrian routes (Goal G-1). This on- and off-street network of routes improves safety for pedestrians and cyclists by providing dedicated facilities apart from motorists (Goal G-2). The Plan also addresses ancillary facilities that are necessary to make a complete street work: the Plan establishes preferred or "typical" design standards for route classifications and includes standards for

adequate bicycle parking/storage, sidewalk design, use, and maintenance of materials for both on-road and off-road facilities, optional street crossing standards, and other standards related to pedestrian and bicycle safety (Goal D-4). Lastly, the Plan specifically calls out the need to coordinate with local jurisdictions to encourage consistency throughout western Riverside County in addressing the Complete Streets Act in future updates to General Plan Circulation Element policies and standards (Goal C-8).

9.5.2 California Streets and Highways Code: California Bicycle Transportation Act

Summary of Legislation

The intent of the California Bicycle Transportation Act is to design and develop a transportation system that achieves the functional commuting needs of the employee, student, business person, and shopper, ensures the physical safety of the bicyclist and bicyclist's property; and accommodate bicyclists of all ages and skills.

The California Streets and Highways Code spells out required components of bicycle plans each jurisdiction must include to be eligible for Caltrans Bicycle Transportation Account (BTA) funds. Local governments seeking these funds must have their plan approved by the regional funding agency. Those components are:

1. Estimated number of existing bike commuters and estimated increase
2. Map and description of existing and proposed land use
3. Map and description of existing and proposed bicycle routes
4. Map and description of existing and proposed bicycle parking
5. Map and description of existing and proposed links to other transportation modes
6. Map and description of existing and proposed facilities for changing and storing clothes and equipment
7. Description of safety education programs, efforts by law enforcement, and effect on accident rates
8. Description of public input
9. Description of coordination with other local and regional transportation, air quality, and energy conservation plans
10. Description of projects and their priorities
11. Description of past expenditures and future financial needs

Relationship of the WRCOG Non-Motorized Transportation Plan to the California Bicycle Transportation Act

The WRCOG Non-Motorized Transportation Plan develops key routes that link communities, major destinations, transportation facilities, and other nodes of activity in an effort to meet the needs of the users outlined in the Bicycle Transportation Act: employees, students, business people, and shoppers (Goal G-3). The plan also focuses on the safety of bicyclists by providing design classifications and best practices related to street network configurations (Goals G-2, D-4, and D-5). The use of on- and off-street facilities provides a variety of route configurations that may accommodate bicyclists of all different ages and skills at different locations throughout the subregion (Goal D-2). As the local jurisdictions prepare their own bicycle plans, they will need to insert all of the above required components in order to be eligible for BTA funds.

9.5.3 California Assembly Bill 32 (2006): Global Warming Solutions Act

Summary of Legislation

AB 32, the Global Warming Solutions Act, establishes the first-in-the-world comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions in greenhouse gasses (GHG). AB 32 makes the California Air Resources Board (CARB) responsible for monitoring and reducing GHG emissions and continues the existing Climate Action Team to coordinate statewide efforts. This landmark legislation calls for a reduction of the state's greenhouse gas emissions to 1990 levels by

2020 and will require the state to cut emissions by 30 percent over projected levels. Reduction measures proposed to meet the 2020 target levels are to be adopted by the start of 2011.

Relationship of the WRCOG Non-Motorized Transportation Plan to the Global Warming Solutions Act

The WRCOG Non-Motorized Transportation Plan defines a subregional backbone network of pedestrian and bicycle routes that encourages western Riverside County residents to utilize modes of transportation other than the automobile (Goal G-1). The Plan provides direction for the backbone network to connect to local bicycle and pedestrian trails, public transit stops, and major employment and activity centers to facilitate access to these destinations without the use of an automobile. Increasing bicycling from 1 percent to 1.5 percent of all trips in the United States would save 462 million gallons of gasoline each year. The WRCOG Non-Motorized Transportation Plan will aid in reducing auto-generated greenhouse gas by facilitating alternative transportation networks, thereby helping to achieve the emission reduction targets set by AB 32 (Goal G-5). Additionally, in Chapter 8, this Plan includes an analysis of potential reductions in vehicle miles traveled and GHG emissions.

9.5.4 California Senate Bill 375 (2008)

Summary of Legislation

SB 375 requires the CARB to set regional targets for years 2020 and 2035 to reduce greenhouse gas emissions from passenger vehicles. The targets apply to regions in the state covered by the 18 metropolitan planning organizations (MPOs)—SCAG is the MPO that represents western Riverside County, SB 375 provides emissions-reducing goals regions can plan for, integrates disjointed planning activities, and provides incentives for local governments and developers to follow new, conscientiously planned growth patterns. Reducing the number of vehicle miles traveled (VMT) is one strategy MPOs can employ to achieve these targets.

As California's population continues to grow, SB 375 identifies the need to envision and plan communities that rely less on automobiles and more on alternative modes of transportation, especially for short-distance trips. The intent of SB 375 is to reduce VMT by reshaping the face of California's communities into more sustainable, walkable environments with alternative transportation options and increased quality of life. SB 375 provides incentives for creating attractive, walkable, sustainable communities and revitalized existing ones. It also encourages the development of more alternative transportation options, including well-planned and -maintained pedestrian and bicycle routes. Through these land use strategies, SB 375 plays an important role in achieving the greenhouse gas emission reduction targets set in AB 32.

Relationship of the WRCOG Non-Motorized Transportation Plan to SB 375

Passenger vehicles are the largest single source of greenhouse gas emissions in California—a reduction in VMT translates to a reduction in GHG emissions (the intent of SB 375). One way to reduce VMT is to create connections between destinations using alternative transportation modes. The WRCOG Non-Motorized Transportation Plan identifies connections that enable western Riverside County residents to more easily travel to local and regional destinations without the use of a car, thereby reducing VMT (Goals G-1, G-2, and G-5).

The WRCOG Non-Motorized Transportation Plan provides a framework for key routes and facilities that will ensure the following connections:

1. Between jurisdictions, including city-to-city connections, connections between western Riverside and the unincorporated Western Riverside County area, and connections between western Riverside County and adjacent counties (Goal P-1)
2. To major activity areas, including civic and county facilities, hospitals, libraries, major parks and recreation area, colleges and universities, malls and major retail centers and large employment centers (Goal P-2)
3. To existing and future planned transit facilities, including Metrolink stations, bus stops, major bus and/or Bus Rapid Transit stations, and future high speed rail (Goal P-3).

9.5.5 Southern California Association of Governments Regional Transportation Plan (2008)

Summary of SCAG's Regional Transportation Plan and Non-Motorized Transportation Report

The Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) is a 25-year plan that provides long-range regional strategies for new construction and improvements to the existing transportation system to enhance the movement of people and goods. The RTP addresses 12 topic areas: transportation finance, air quality conformity, integrated growth forecast and regional land use, highways and arterials, public transit, goods movement, aviation and airport ground access, high-speed regional transport, transportation safety and security, environmental justice, environmental mitigation, and, most important for this discussion, non-motorized transportation.

SCAG's Non-Motorized Transportation Report promotes development that is less dependent on automobiles, increases transit service and use, reduces congestion, and assists in reducing air pollution. Non-motorized transportation is supported by the RTP through the development of bicycle and pedestrian incentive policies, and changes in development patterns for both new and redeveloped communities. The goals of the non-motorized chapter of the RTP are:

1. Decrease injuries and fatalities to bicyclists and pedestrians
2. Increase accommodation and planning for bicycles and pedestrians
3. Increase bicycle and pedestrian use
4. Increase funding for non-motorized transportation plans and projects
5. Encourage development of local non-motorized plans
6. Produce a comprehensive regional non-motorized plan

In addition to improving non-motorized transportation options through the RTP and the development of the NMTP, SCAG also participates in the California Bicycle Advisory Committee and the Caltrans District 7 Bicycle Advisory Committee. SCAG has worked with local governments in reviewing their Bicycle Transportation Account applications, Safe Routes to School Applications, and partnered with or supported local agencies on projects that may have regional impacts. SCAG is also working with Caltrans, the Adventure Cycling Association, and the American Association of State Highway and Transportation Officials on the development of the Southern California portions of a National Bike Route System.

Relationship of the WRCOG Non-Motorized Transportation Plan to SCAG's RTP

The WRCOG Non-Motorized Transportation Plan supports the goals identified in the non-motorized report of SCAG's RTP in a variety of ways. The Plan seeks to improve safety for both bicyclists and pedestrians through specific design measures, including sidewalk design, use and maintenance of materials, and street crossing standards (Goals G-2, D-4, and D-5). The basic objective of the WRCOG Plan is to plan for and accommodate bicycles and pedestrians through a network of routes in western Riverside County; by developing this network and linking routes to major destinations, it can be anticipated that bicycle and pedestrian use will increase.

In addition to planning and designing the key non-motorized transportation routes, the Plan specifically addresses the need to increase funding for non-motorized transportation plans and facilities (Goal G-6). The Plan identifies the need to determine an annual funding goal for Regional Backbone Network projects every year in western Riverside County, through both local and subregional efforts (Goal G-8). Moreover, the Plan thoroughly addresses the funding and implementation of non-motorized transportation plans and projects (Goals F-1 through F-14).

The WRCOG Non-Motorized Transportation Plan looks beyond itself in order to create the most comprehensive and useful non-motorized transportation network possible; the Plan recommends coordinating with the Riverside County Transportation Commission, Riverside Transit Agency, and SCAG to ensure that the Plan is integrated with the RTP and consistent with subregional initiatives (Goal C-5). The Plan also advocates for coordination with local jurisdictions to encourage consistency between WRCOG's plan and local General Plans (Goal C-1). The WRCOG Non-Motorized Transportation Plan is a

subregional backbone network and over time will serve as a major piece of the puzzle as SCAG works to develop a comprehensive regional non-motorized plan throughout its entire jurisdiction.

Resources

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