ACKNOWLEDGMENTS

City Council
Micheal Goodland, Mayor
Brian Berkson, Mayor Pro Tem
Anthony Kelly, Jr.
Verne Lauritzen
Laura Roughton

Planning Commission
William Hofferber - Chairman
Aaron Pfannenstiel - Chairman Pro Tem
George Ruiz
Corey Moore
Matthew R. Burris

City of Jurupa Valley
Steve Loriso, City Engineer
Rob Olson, Transportation

KTUA
John Holloway, Principal
Diana Smith, GIS Technical Manager
Juan Alberto Bonilla, Senior Planner
Silvia Fang, GIS Analyst
# TABLE OF CONTENTS

## 01 INTRODUCTION
- Scope .................................................. 2
- Study Area ............................................. 2
- Objectives ............................................. 3
- Existing Plans Summary ............................. 3
- Understanding User Needs ......................... 3
- Bicycling and Walking Benefits .................... 4
- Safe Routes to School ................................ 6

## 02 STATE OF PRACTICE
- Bicycle and Pedestrian State of Practice .......... 10
- AASHTO Guide to Bikeway Facilities ............. 11
- NACTO Urban Bikeway and Urban Street Design Guides 11
- Applicable Legislation ............................... 13
- Federal Legislation ................................... 14

## 03 EXISTING CONDITIONS & ANALYSIS
- Existing Conditions ................................. 16
- Analysis ................................................ 34

## 04 RECOMMENDATIONS
- Recommendations Overview ...................... 40
- Bicycle and Pedestrian Treatments ............... 40
- Bicycle Recommendations ........................ 50
- Pedestrian Recommendations ..................... 56
- Other Recommendations (Programs) ............ 58
- Typical Costs ......................................... 65
LIST OF FIGURES

Figure 1-1: Study Area 2
Figure 3-1: Existing Facilities 16
Figure 3-2: Population Density 17
Figure 3-3: Employment 18
Figure 3-4: Median Income 19
Figure 3-5: Child Resident Density 20
Figure 3-6: Bicycle to Work Mode Share 21
Figure 3-7: Walk to Work Mode Share 22
Figure 3-8: Public Transit to Work Mode Share 23
Figure 3-9: No Vehicle Ownership 24
Figure 3-10: Average Daily Volume 25
Figure 3-11: Volume-to-Capacity Ratios 26
Figure 3-12: Level of Service 27
Figure 3-13: Population Growth 28
Figure 3-14: Key Improvements 29
Figure 3-15: Transit Use Levels 30
Figure 3-16: Activity Centers 31
Figure 3-17: Pedestrian Barriers 32
Figure 3-18: Trails 33
Figure 3-19: Level of Traffic Stress Results 34
Figure 3-20: Composite Collisions Map 37
Figure 3-21: Propensity Model Results 38
Figure 4-1: Bicycle Projects 51
Figure 4-2: Missing Walking Facilities Within 1/2-Mile School Zones 56
Figure 4-3: Missing Walking Facilities Along Mobility Corridors 57

LIST OF TABLES

Table 3-1: LTS Scoring Criteria 34
Table 3-2: Collisions by Year 35
Table 3-3: Collisions by Crash Severity 35
Table 3-4: Collisions by Time of Day 35
Table 3-5: Collisions by Roadway 36
Table 3-6: Bicyclist Collisions by Primary Collision Factor 36
Table 3-7: Pedestrian Collisions by Primary Collision Factor 36
Table 4-1: Bicycle Projects 52
INTRODUCTION
SCOPE
This Circulation Master Plan for Bicyclists and Pedestrians (CMPBP) was developed to provide Jurupa Valley with planning guidance for bicycling and walking improvements throughout the city. Plan preparation included document research, field visits, extensive GIS analysis, and advisory meetings with city staff.

STUDY AREA
Jurupa Valley lies in the northwestern corner of Riverside County, bordered by Eastvale, Norco, Riverside, Fontana, and Ontario. It was incorporated in 2011, the 28th city in Riverside County.
OBJECTIVES

This CMPBP will guide the development of active transportation infrastructure, programs, and policies for Jurupa Valley. The overall approach for this master plan is summarized as follows:

» Bicycling and walking are fundamental transportation planning components accommodated through on- and off-street bicycle facilities, pedestrian facilities, and multi-modal integration at transit centers and parking facilities.

» Bicyclist and pedestrian planning needs to be guided by a “user’s perspective” because their unique characteristics, needs, and priorities must be considered when making planning, programming or policy decisions.

» Planning for bicycling and walking should not be focused on any facility type so much as it should be focused on the safe and efficient bicyclist and pedestrian travel of all ages and abilities. This will generally require both the use of the existing transportation infrastructure and the construction of special facilities for bicyclists.

» The coexistence of bicyclists, pedestrians, and vehicle drivers on roadways requires all to be sensitive and recognize a common set of rules. Training, education, and enforcement for all users is as important as physical planning and design.

» Facility maintenance, monitoring, and performance assessment are critical for ensuring safe and efficient travel for bicyclists and walkers. Planning for them is an ongoing process.

» Land use and transportation planning should serve to help reduce automobile dependence. This study acknowledges and supports future land use and population projections with facility and program recommendations to continue to reduce auto reliance.

» This CMPBP recommends programs and routes designed to make Jurupa Valley a more bicycle and pedestrian friendly place and to encourage more residents to bicycle or walk rather than drive.

» Study analyses employed a Safe Routes to School emphasis.

EXISTING PLANS SUMMARY

This CMPBP finds support for its route and program recommendations in existing draft and adopted plans. The plans included in the research and summary most relevant to the Bicycle and Pedestrian Master Plan can be found in Appendix A:

Applicable Plans and Policies:

» City of Jurupa Valley: Draft 2016 General Plan
» County of Riverside: 2013 General Plan
» Southern California Association of Governments (SCAG): 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)
» Riverside Transportation Agency (RTA): First and Last Mile Mobility Plan
» City of Fontana: San Sevaine Trail Connection

UNDERSTANDING USER NEEDS

Where residents and visitors choose to go and how they move about Jurupa Valley will be influenced by the perceived completeness and safety of bicycle and pedestrian facilities. While walking is more likely to occur for shorter distance trips, improved connections with the overall regional bicycle network will become increasingly valuable as more people choose to cover longer distances and to commute by bicycle.

In an effort to re-position bicycling as a safe and common mode of transportation and increasing the number of people bicycling, attention needs to be shifted away from creating “cyclists” and toward making it easier for any person to choose bicycling for their everyday trips. Research shows a strong latent interest in bicycling among those who identify as “interested, but concerned.” These individuals do not identify themselves as “bicyclists,” but they do not necessarily need to do so to benefit from programs to encourage bicycling. While all segments of the population may be encouraged to ride, it is through the encouragement of this “interested, but concerned” segment of the population the greatest gains in mode share will be made. The field of bicycle planning is being redefined toward this end.
BICYCLING AND WALKING BENEFITS

Numerous environmental, health, and economic benefits are attributable to bicycling and walking, especially as substitutes for travel by motor vehicle. This section summarizes these benefits, some from research by the Pedestrian and Bicycle Information Center (PBIC).

ENVIRONMENTAL BENEFITS

Increased bicycling and walking reduces fossil fuel emissions. In California, 40 percent of carbon dioxide (CO₂) emissions are produced by the transportation sector. While CO₂ is not the most harmful greenhouse gas, it is the most abundant. Even after accounting for the global warming potentials of other greenhouse gases (comparing them in terms of CO₂), 95 to 99 percent of vehicle emissions are CO₂. The Environmental Protection Agency (EPA) found the average vehicle emits 0.95 pounds of CO₂ per mile. Therefore, almost a pound of CO₂ emissions could be avoided each day for each mile, each way of an individual’s commute that was switched from driving to an active transportation mode like bicycling or walking.

HEALTH BENEFITS

Despite dramatic strides in recent decades through regulations and technological improvements, vehicle emissions still pose a significant threat to human health. Vehicle generated air pollution contains harmful greenhouse gas emissions including carbon dioxide, carbon monoxide, methane, nitrous oxide, and volatile organic compounds. These pollutants and irritants can cause asthma, bronchitis, pneumonia, and decreased resistance to respiratory infections. Taking steps to reduce these emissions is particularly important in the United States, which leads the world in petroleum consumption. The conversion of driving to bicycling or walking offers a great opportunity to reduce emissions and improve public health.

In addition to the universal public health benefit, such as improved air quality, bicycling and walking has the potential to positively impact personal health. A significant percentage of Americans are overweight or obese and projections indicate 42 percent of the population will be obese by 2030. To combat this trend and prevent a variety of diseases and their associated societal costs, the Center for Disease Control (CDC) suggests a minimum of 30 minutes of moderate intensity physical activity five days per week. Not only does bicycling and brisk walking qualify as “moderate intensity activities,” they can also be seamlessly integrated into daily routine, especially if chosen for utilitarian purposes like commuting or running errands.

Other health benefits associated with moderate activity like bicycling or walking include improved strength and stamina through better heart and lung function. Regular exercise reduces the risk of high blood pressure, heart attacks, and strokes. In addition to heart disease, regular exercise can also help to prevent other health problems such as non-insulin dependent diabetes, osteoarthritis, and osteoporosis. Lastly, exercise has been shown to improve mental health by relieving depression, anxiety, and stress.

A four-mile walking trip keeps about 15 pounds of pollutants of the air we breathe.

Walkable neighborhoods have substantially lower rates of obesity, overweight and diabetes.
ECONOMIC BENEFITS

Bicycling infrastructure and programs have increasingly been shown to deliver economic benefit to both individuals and society at large. The benefits of bicycling may, in fact, outweigh its costs. Bicycling, and utilitarian bicycling in particular, offers obvious cost savings to individuals. Beyond the upfront cost of operating a vehicle are additional maintenance, insurance, and often parking expenses. According to the American Automobile Association, the annual cost of owning a car and driving 15,000 miles a year is now over $9,000.

Converting even a fraction of automobile trips to bicycling or walking trips can generate transportation-related savings, including reduced vehicle traffic congestion. Increased bicycling and walking also translates to health-related savings, for both individuals and taxpayers, in the form of less need for preventative care. More bicycling and walking has also been tied to increases in commercial and residential property values and retail sales. Shoppers who reach their destination by bicycle have been shown to make smaller purchases, but shop more often and to spend more money overall. Shoppers who arrive by bicycle or on foot, because of their more limited range, are also more likely to support local businesses, and require much less space for parking compared to those who arrive by motor vehicle.

Perhaps more compelling than reducing GHG emissions or combating the obesity epidemic is the benefits bicycling has to offer in terms of quality of life. Bicycling, and especially utilitarian bicycling, is increasingly seen as a fun, low-cost, healthy, and sustainable way of getting around.

SOCIAL JUSTICE

In addition to the extensive environmental, health, and economic benefits gained from enhanced active transportation infrastructure, there is also the potential to alleviate issues for disadvantaged populations that are disproportionately impacted by rising transportation costs. According to the Federal Highway Administration’s (FHWA) 2009 National Household Travel Survey, individuals living in poverty are more likely to lack access to a personal vehicle and also have the highest rates of bicycling and walking trips as compared to higher income groups. The survey also reported that poor, racial, and ethnic minorities and the elderly have much lower mobility rates than the general population. These trends highlight the importance of providing safe and comprehensive transportation options for community members who do not have regular access to a personal vehicle.

According to the American Automobile Association, the annual cost of owning a car and driving 15,000 miles a year is over $9,000.

Cost of Transportation

- **Bicycling**: $250
- **Public Transit**: $680
- **Motor Vehicle**: $1,810
- **Car**: $8,776

(Source: Transit for Livable Communities, Minnesota)
SAFE ROUTES TO SCHOOL

Associated with the environmental, obesity, and social justice issues already noted is the need for options to allow all children, including those with disabilities, to walk and bicycle to and from school safely. Many communities struggle with traffic congestion around schools, associated vehicle emissions, perceptions of personal safety, and development patterns that do not support walking and bicycling. At the same time, children engage in less physical activity than previous generations, which contributes to the obesity epidemic and decreased life expectancies. These issues are closely related, and Safe Routes to School (SRTS) can address them through coordinated action. SRTS use a combination of programs and projects to create, implement, and evaluate their actions. Due to their importance in overall mobility planning, SRTS improvements are often given significant weight in bicycle and pedestrian planning. Safe Routes to School infrastructure best practices is described below.

SCHOOL ZONE INFRASTRUCTURE AND BEYOND

SRTS addresses infrastructure needs at schools, as well as along routes to school. Children walk and bicycle to school from locations outside their immediate school zone and often from well beyond the school’s designated walk zone.

ACCESSIBILITY

The Federal Highway Administration (FHWA) defines Safe Routes to School’s purpose as a program “to enable and encourage children, including those with disabilities, to walk and bicycle to school.” An important aspect of enabling all children to walk and bicycle to school is providing accessible infrastructure. Guidelines for making schools sites and routes to school accessible for children with disabilities can be found in the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Public Rights-of-Way Accessibility Guidelines (PROWAG). The term “pedestrian” includes students using assistive devices like wheelchairs.

RELATIONSHIPS

School facilities’ relationship to walkways, bikeways, and roadway crossings can determine the level of comfort and safety a child walking or bicycling to school experiences. All elements are interconnected. The roadway is connected to the sidewalk, the sidewalk is connected to the building and these relationships are critical to the perception of safety and continuity. The most important point is not to place high volume, high speed vehicle routes between sidewalks and adjacent schools because such obstructions add significant conflict points to a child’s walking or bicycling route.

Another relationship to consider is the school’s location relative to its students’ homes. A child’s route to school should have a minimal number of busy roadway crossings and school attendance zone boundaries should be drawn with this principle in mind.

Effective improvements do not always require substantial funds. For example, signs and paint are relatively inexpensive and can make a significant difference. Such simple improvements can help to build momentum and community interest in making other more substantial improvements. The focus should initially be on easy-to-implement and low-cost solutions, while longer-term improvement needs are identified and the implementation process is begun. High visibility crosswalks, for example, are an effective, relatively low-cost, and easy-to-implement engineering treatment. It is important, however, to follow appropriate crosswalk placement guidelines.
Some engineering improvements will require substantial time and financial commitment. Projects such as new sidewalks and bridges, or the reconstruction of a roadway crossing, should be identified early and advanced through the various stages required to complete them. While these longer-term improvements are being developed, smaller projects, such as installing ADA-compliant curb ramps, can be implemented to build momentum and maintain community interest in creating safe routes to school.

**TREATMENTS TO MATCH PROBLEM TYPE**

As communities consider improvements to routes to school, care should be taken to identify problems or obstacles and to provide appropriate solutions to alleviate these specific concerns. Collectively, the following principles should be used to guide the decisions that local professionals and members of the school community make in SRTS programs:

» Create school walking and bicycling route maps using a variety of assessment tools and exercises.

» Identify and regulate the school zone.

» Provide and maintain bicycle and pedestrian facilities along the school route including sidewalks, on-street bicycle facilities, paths, curb ramps, and accessible pedestrian signals.

» Provide safe roadway crossings for bicyclists and pedestrians.

» Slow down vehicular traffic.

Within the school zone itself, the basic objectives should be to reduce student loading traffic congestion and removing bicycle and pedestrian/vehicle conflicts through clear and reasonable traffic controls, such as providing sufficient queuing through design and timing. Also, providing and publicizing safe routes to school improvements should help to convince more parents to feel comfortable letting their children walk and bicycle to school, reducing the problems most schools experience because of the proportion of students being driven to school by their parents.

Many opportunities are available for SRTS funding, particularly for improvements within a two mile radius of a school. See Chapter 5: Funding Sources for more information.
STATE OF PRACTICE
BICYCLE AND PEDESTRIAN STATE OF PRACTICE

Due to the long history of routine accommodation for pedestrians, such as sidewalks, crosswalks, dedicated signals, etc., there has been relatively little need for innovations in pedestrian facilities. Conversely, the historical lack of similar accommodation for bicyclists combined with increased interest in improvements has helped to generate innovative bicycle-related facility diversity and breadth.

Particularly in the last five years, the state of practice for bicycle facilities in the United States has undergone significant transformation. Much of this may be attributed to bicycling’s changing role in the overall transportation environment. Until recently widely viewed as an “alternative” mode, it is now considered a legitimate transportation mode that should be actively promoted to help achieve air quality targets and to provide a more equitable transportation system, among other goals.

While connectivity and convenience remain essential bicycle facility quality indicators, recent research strongly supports the increased acceptance and practice of daily bicycling will require “low-stress” bicycle facilities. Specifically, facility types, and design interventions intended to encourage ridership among the large “interested, but concerned” portion of the population tend to be those that provide separation from high volume and high speed vehicular traffic.

Other measures required to mainstream bicycling include convenient and secure bicycle parking and other end-of-trip facilities, as well as seamless bicycle-transit integration designed to address “first and last mile” connectivity.

Bicycle facility state of practice is in flux and new and innovative facility details are constantly being refined. The level of guidance regarding innovative facilities at the local, regional, State, and national levels varies. In the case of Californian cities, best practice guidance comes primarily from national organizations such as the American Association of State Highway and Transportation Officials (AASHTO) and the National Association of City Transportation Officials (NACTO), and through the efforts of other cities within California and elsewhere that have planned, implemented, and evaluated such facilities. Bikeway design guidance has traditionally come from the State, especially Caltrans’ California Manual on Uniform Traffic Control Devices (CA MUTCD), but this agency and manual offer little support for innovative facilities. Fortunately, California cities may apply for experimental designation from the FHWA for projects not in conformance with the CA MUTCD.

The following section provides a review of facility state of practice, drawing on the AASHTO and NACTO guides, as well as experiences from California cities and elsewhere. A subsequent section addresses Complete Streets state of practice at the local, regional, State, and national levels.
**AASHTO GUIDE TO BIKEWAY FACILITIES**

This memorandum expresses the Federal Highway Administration’s (FHWA) support for taking a flexible approach to bicycle and pedestrian facility design. AASHTO’s bicycle and pedestrian design guides are the primary national resources for planning, designing, and operating bicycle and pedestrian facilities. The NACTO Urban Bikeway Design Guide and the Institute of Transportation Engineers (ITE) Designing Urban Walkable Thoroughfares guide build upon the flexibilities provided in the AASHTO guides, which can help communities plan and design safe and convenient facilities for pedestrian and bicyclists. FHWA supports the use of these resources to further develop non-motorized transportation networks, particularly in urban areas.

**NACTO URBAN BIKEWAY AND URBAN STREET DESIGN GUIDES**

The NACTO guides represent the industry standard for innovative bicycle and streetscape facilities and treatments in the United States. In 2014, Caltrans followed AASHTO and officially endorsed the NACTO Urban Street Design Guide and Urban Bikeway Design Guide as valuable toolkits for designing and constructing safe, attractive local streets. At the time, Caltrans was only the third State Department of Transportation to officially endorse the Guides.

The NACTO Urban Street Design Guide is the more generalized of the two guides and organized into six sections. Each section is further subdivided, depending on topic. The NACTO Urban Bikeway Guide is also organized into six sections, but its information is bicycle-specific. For each section, it offers three levels of guidance: Required Features, Recommended Features, and Optional Features. The following paragraphs introduces the broad facility types included in the NACTO Urban Bikeway Design Guide.

**INTERSECTIONS**

Complaints about problematic intersections usually rank high in surveys about existing bicycling and walking conditions. Specific problems include the disappearance of facilities at intersections, ambiguous right-of-way, poor visibility, difficult turning movements, and inadequate signal timing. The NACTO guide chapter on intersection treatments offers solutions to increase bicyclists’ and walkers’ comfort by reducing conflicts between them and vehicle drivers by heightening visibility between all modes, and by denoting clear right-of-way. Specific designs may employ a combination of color, signage, medians, signal detection, and pavement markings. Site-specific design requires a thorough analysis of existing and anticipated modal split, as well as consideration of the bicycle or pedestrian facility type used. For example, the treatment of a cycle track or multi-use path at a roadway intersection will be very different than that of a low volume shared street.

** SIGNALS**

Signals and beacons facilitate bicyclist and pedestrian roadway crossings and are especially important at multi-lane intersections with vehicle turning motions. They make such crossings safer by clarifying when to enter an intersection, and by restricting turning movements when appropriate. Bicycle-specific signals are traditional three lens signal heads, with green, yellow, and red (bicycle symbol) stenciled lenses. They can be employed at standard signalized intersections and at hybrid beacon crossings. They may be enhanced with signage and pavement markings and activated through either push buttons or in-ground sensors. As with intersection treatments, signal design, and timing should address existing and anticipated use and should be appropriate given the facility type and overall roadway context.
SIGNING AND MARKING

Appropriate signing and marking should accompany any treatment or infrastructure intended for bicyclist or pedestrian use. Signage categories include wayfinding and route, regulatory, and warning. Wayfinding signage, for example, is particularly important for navigating on-street facilities that may meander or connect to other facilities within a network, especially routes and bicycle boulevards. An essential use of regulatory signage is to designate the presence of a bicycle lane, because such a lane, even if marked by roadway stencils, may be used for vehicle parking if regulatory signage prohibiting it is not provided. Warning signage is also important where bicycle facilities end, change or expose the bicyclist to potential hazards, such as freeway interchanges, rail crossings or rough pavement.

Bikeway markings are any device applied to the pavement surface to designate a specific right-of-way, direction, potential conflict area or route option. The choice of material and its application must be carefully considered for both safety and legibility for all roadway users. For durability and long-term visibility, markings must consider both vehicle driver and bicyclist movements in relation to the markings.

COMPLETE STREETS AND ROUTINE ACCOMMODATION

An adopted CMPBP provides a roadmap to support planning and implementing a bicycle and pedestrian network, can help to integrate bicycle and pedestrian planning into broader planning efforts and is required for State funding of bikeway projects. For many cities, however, a bicycle and pedestrian plan alone is not enough to ensure the implementation of the plan's goals and projects. A hurdle many cities face is that their various plans are not well integrated. Despite many cities' attempts to support a “Complete Streets approach,” entrenched and often contradictory policies can make implementation difficult. For instance, a bicycle and pedestrian master plan, an ADA transition plan, and a specific plan may address the same area, but ignore each other's recommendations. One plan may identify a certain project, but it may not be implementable due to prevailing policies and practices that prioritize vehicular flow and parking over other modes.

An adopted Complete Streets policy has the potential to address these shortcomings through the designation of some important corridors as Complete Streets, accommodating all roadway users, and other corridors as priority corridors for specific modes. A system that assigns priority for different modes to specific corridors, offset from one another, is referred to as a layered network.

Efforts to implement Complete Streets policy often highlight other significant obstacles, chief among them documents defining "significant impacts" to traffic, acceptable vehicular “Level of Service” thresholds, and parking requirements. Drafting a Complete Streets policy often means identifying roadblocks like these and ultimately mandating increased flexibility to allow for the creation of a more balanced transportation system. In the case of a bicycle and pedestrian master plan, the network identified could become the bicycle and pedestrian layers. Identification in such a plan, reiteration within a Complete Streets policy framework, and exemption from traditional traffic analyses can make implementation more likely and much more affordable.

Legislative support for Complete Streets can be found at the State level (AB-1358) and is being developed at the national level (HR-2468). As explained in further detail in the following section on applicable legislation, AB-1358 requires cities and counties to incorporate Complete Streets in their general plan updates and directs the State Office of Planning Research (OPR) to include Complete Streets principles in its update of guidelines for general plan circulation elements. Examples of best practices in Complete Streets policies from around the United States can be found at: https://smartgrowthamerica.org/resources/best-complete-streets-policies-of-2015/.
APPLICABLE LEGISLATION

Several relatively recent statutes support increased bicycling and walking in California. Much of the newest legislation addresses greenhouse gas (GHG) reduction and employs bicycling and walking as means to achieve reduction targets. Other legislation highlights their intrinsic worth and treats bicyclist and walker safety and convenient accommodation as matters of equity. The most relevant legislation concerning bicycle and pedestrian policy, planning, infrastructure, and programs are described in the following sections.

STATE LEGISLATION AND POLICIES

AB-32 Global Warming Solutions Act

AB-32 calls for the reduction of greenhouse gas emissions and codifies the 2020 emissions reduction goal. This act also directs the California Air Resources Board to develop specific early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit.

SB-375 Redesigning Communities to Reduce Greenhouse Gases

This bill seeks to reduce vehicle miles traveled through land use and planning incentives. Key provisions require the larger regional transportation planning agencies to develop more sophisticated transportation planning models, and to use them for the purpose of creating “preferred growth scenarios” in their regional plans that reduce greenhouse gas emissions. The bill also provides incentives for local governments to incorporate these preferred growth scenarios into the transportation elements of their general land use plans.

AB-1358 Complete Streets Act

AB-1358 requires the legislative body of a city or county, 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 drivers, pedestrians, bicyclists, individuals with disabilities, seniors, and public transit users. The bill also directs the OPR to amend guidelines for general plan circulation element development so that the building and operation of local transportation facilities safely and conveniently accommodate everyone, regardless of their travel mode.

AB-1581 Bicycle and Motorcycle Traffic Signal Actuation

This bill defines a traffic control device as a traffic-actuated signal that displays one or more of its indications in response to the presence of traffic detected by mechanical, visual, electrical or other means. Upon the first placement or replacement of a traffic-actuated signal, the signal would have to be installed and maintained, to the extent feasible and in conformance with professional engineering practices, so as to detect lawful bicycle or motorcycle traffic on the roadway. Caltrans has adopted standards for implementing the legislation.

AB-1371 Passing Distance/Three Feet for Safety Act

This statute, widely referred to as the “Three Foot Passing Law,” requires drivers to provide at least three feet of clearance when passing bicyclists. If traffic or roadway conditions prevent drivers from giving bicyclists three feet of clearance, they must “slow to a speed that is reasonable and prudent” and wait until they reach a point where passing can occur without endangering the bicyclist. Violations are punishable by a $35 base fine, but drivers who collide with bicyclists and injure them in violation of the law are subject to a $220 fine.

SB-743 CEQA Reform

Just as important as the aforementioned pieces of legislation that support increases in bicycling and walking infrastructure and accommodation is one that promises to remove a longstanding roadblock to them. That roadblock is vehicular Level of Service (LOS) and the legislation with the potential to remove it is SB-743.

For decades, vehicular congestion has been interpreted as an environmental impact and has often stymied on-street bicycle projects in particular. Projections of degraded Level of Service have, at a minimum, driven up project costs and, at a maximum, precluded projects altogether. SB-743 could completely remove LOS as a measure of vehicle traffic congestion that must be used to analyze environmental impacts under the California Environmental Quality Act (CEQA).

This is extremely important because adequately accommodating bicyclists, particularly in built-out environments, often requires reallocation of right-of-way and the potential for increased vehicular congestion. The reframing of Level of Service as a matter of driver inconvenience, rather than an environmental impact, allows planners to assess the true impacts of transportation projects, and will help support bicycling projects that improve mobility for all roadway users.
AB-1193 Bikeways

This act amends various code sections, all relating to bikeways in general, specifically by recognizing a fourth class of bicycle facility, cycle tracks. However, the following may be even more significant to future bikeway development:

Existing law requires Caltrans, in cooperation with county and city governments, to establish minimum safety design criteria for the planning and construction of bikeways, and requires the department to establish uniform specifications and symbols regarding bicycle travel and traffic related matters. Existing law also requires all city, county, regional, and other local agencies responsible for the development or operation of bikeways or roadways to utilize all of those minimum safety design criteria, uniform specifications, and symbols.

This bill revised these provisions to require Caltrans to establish minimum safety design criteria for each type of bikeway, and authorizes local agencies to utilize different minimum safety criteria if adopted by resolution at a public meeting.

Caltrans’ Deputy Directive 64-R1

Deputy Directive 64-R1 is a policy statement affecting Caltrans mobility planning and projects requiring the agency to:

“

...provide for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

”

The directive goes on to mention the environmental, health, and economic benefits of more Complete Streets.

CEQA for Bicycle and Pedestrian Plans

According to California Code of Regulations Section 15262 - Feasibility and Planning Studies, projects such as this CMPBP are exempt from CEQA analysis since they are planning and conceptual recommendations: “A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR or Negative Declaration, but does require consideration of environmental factors. This section does not apply to the adoption of a plan that will have a legally binding effect on later activities.” Authority: Public Resources Code Section 21083; Reference: Public Resources Code Sections 21102 and 21150.

As individual recommendations move forward toward more detailed design and implementation, the city will then need to determine if there are impacts for which environmental review may be necessary.

FEDERAL LEGISLATION

Safe Streets Act (S-2004/HR-2468)

This act encourages safer streets through policy adoption at the state and regional levels, mirroring an approach already being used in many local jurisdictions, regional agencies, and state governments. The bill calls upon all states and metropolitan planning organizations (MPOs) to adopt Safe Streets policies for federally funded construction and roadway improvement projects within two years. Federal legislation will ensure consistency and flexibility in road-building processes and standards at all levels of governance.
EXISTING CONDITIONS & ANALYSIS
EXISTING CONDITIONS

To develop the CMPBP, a thorough analysis of existing and future conditions was conducted. GIS analyses, field work, and meetings with city staff were conducted to gather data and input. GIS analyses involved processing datasets from several sources and combining them to reveal patterns and relationships. In addition to physical characteristics, data from the 2014 American Community Survey (ACS) were used to analyze demographics and commuting characteristics. Fieldwork was conducted on several occasions to catalog and measure existing conditions, and to collect geo-referenced photography.

EXISTING FACILITIES

Jurupa Valley’s existing walking and bicycling facilities are shown below in Figure 3-1. Sidewalks tend to occur in clusters within specific areas that developed relatively recently, while areas of earlier development generally do not have sidewalks. Many of these neighborhoods have a semi-rural character, where sidewalks may not be appropriate. There are existing Class II bicycle lanes on several streets, clustered at the eastern and western ends of the City. Jurupa Valley shares with the City of Riverside to the south a Class IV protected bikeway (cycle track) on the east side of the Van Buren Boulevard bridge crossing the Santa Ana River channel. An extensive portion of the Santa Ana River Trail (Class I multi-use path) is shown on the figure, but it is not within Jurupa Valley city limits and is relatively inaccessible on the south side of the river.
POPULATION AND EMPLOYMENT

Jurupa Valley’s 2015 population was 98,231. According to the 2015 American Community Survey, roughly 68 percent identifies as Hispanic or Latino. The median age is 31 and the male to female ratio is 100.8 males per 100 females. The median household income is $58,000 and 15 percent of the population 16 years and over is unemployed.

Compared to neighboring cities in both Riverside and San Bernardino Counties, Jurupa Valley’s population density is relatively low at generally less than 10 residents per acre, with a few census tracts over 10 in limited areas. This reflects the city’s overall predominantly rural residential land use pattern compared to neighboring cities that have higher residential densities (see Figure 3-2).

FIGURE 3-2: POPULATION DENSITY
Even though employment density is heavily concentrated in the Mission Boulevard business district, most residents are employed outside the city. The job sources data indicate that employers are mostly located outside Jurupa Valley, primarily within the City in Riverside and adjoining industrial areas, indicating that commuting to work is common (see Figure 3-3).
INCOME

Median income was mapped to reveal potential patterns in relation to transportation choices. Typically, lower income communities rely more heavily on transportation modes other than driving themselves because residents often have less access to private vehicles. Income levels vary greatly throughout Jurupa Valley, with pockets of low income distributed relatively evenly. These patterns underscore the need for a well-connected transportation system incorporating multiple modes (see Figure 3-4).

FIGURE 3-4: MEDIAN INCOME
AGE STRATIFICATION

Resident age was mapped to reveal patterns in relation to potential project areas. High densities of children were observed throughout the city around schools, underscoring the need to develop facilities in these areas (see Figure 3-5).

FIGURE 3-5: CHILD RESIDENT DENSITY
BICYCLING MODE SHARE

Per the 2014 ACS, bicycling as a means of transportation to work is extremely low in Jurupa Valley. The few clusters that do exist range from one to seven percent and are centered around Jurupa Valley High School and the Mission Boulevard business district and appear to coincide with higher rates of population density and lower incomes (see Figure 3-6). It should be noted that the ACS asks for only the respondent’s primary travel mode, so if a person commutes by bicycle less than three days within a typical work week, it would not be counted as bicycle travel.

FIGURE 3-6: BICYCLE TO WORK MODE SHARE
WALKING MODE SHARE

Walking as a means of transportation to work is much more prevalent than bicycling and does not mirror the trends seen in bicycling. Walking mode shares as high as 10 percent are observed throughout the eastern part of the city. This distribution suggests a strong need for a well-connected, safe pedestrian network (see Figure 3-7).

FIGURE 3-7: WALK TO WORK MODE SHARE
PUBLIC TRANSIT MODE SHARE

Public transit to work is also well distributed, but showed maximums of between three and six percent in areas not prevalently served by personal vehicle access. This pattern reflects the placement of transit stops and centers typically located within areas with high transit mode share (see Figure 3-8).

FIGURE 3-8: PUBLIC TRANSIT TO WORK MODE SHARE
LACK OF VEHICLE ACCESS

Vehicle access appears to be an issue for residents throughout Jurupa Valley with areas having as high as 23 percent of the population having no personal vehicle access. Lack of vehicle ownership does not strictly follow income lines in this case, but instead is well distributed, again highlighting the need for a well-connected and distributed transportation system (see Figure 3-9).

**FIGURE 3-9: NO VEHICLE OWNERSHIP**
ROADWAY CONDITIONS

Key mobility conditions including Average Daily Volume, Volume-to-Capacity, and Level of Service were analyzed to identify opportunities and constraints throughout Jurupa Valley. Average Daily Volume (ADV), represents the total volume of vehicle traffic on roadways per year divided by 365 days. Data source was the 2017 Jurupa Valley General Plan Update.

Jurupa Valley’s highest traffic volume is concentrated on Van Buren Boulevard and the SR-60 access streets of Etiwanda Avenue and Country Village Road. Moderate activity is also present on Limonite Avenue, Armstrong Road, Mission Boulevard, and Rubidoux Boulevard (see Figure 3-10).

FIGURE 3-10: AVERAGE DAILY VOLUME
Volume-to-Capacity (V/C), or degree of saturation, represents the ability of a roadway to accommodate vehicular demand. As demand exceeds capacity (V/C ratio greater than 1.0), traffic flow becomes unstable and delays increase. Highly unsustainable V/C conditions occur on Van Buren Boulevard south of Bellegrave Avenue with moderately unsustainable conditions north of Bellegrave Avenue, as well as on portions of Limonite Avenue (see Figure 3-12).
Level of Service (LOS) is a qualitative measure that represents the quality of traffic based on performance measures such as speed and density using letters A-F. “A” represents free flowing traffic, while “F” represents frequent jamming and is indicative of a roadway with more demand than capacity. Once again, Van Buren Boulevard, and Limonite Avenue are flagged as having poor levels of service. Jurupa Road and Armstrong Road are also indicated to be approaching unstable flow conditions, while the remainder of the city’s streets are predicted to maintain stable flow conditions in the near term, according to the draft General Plan Mobility Element (see Figure 3-12).

As part of the draft General Plan, 2035 Roadway Level of Service estimates were generated to simulate future traffic given population increase and planned buildout. In the future scenario, average daily trips (ADTs) remain consistent along main arterials and LOS will be improved in several key areas: Van Buren Boulevard between Etiwanda Avenue and Bellegrave Avenue, and Limonite Avenue between Bain Street and Van Buren Boulevard. LOS decreases are also anticipated along other major roadways, but this is expected in a developing city.
Population growth data, and planned roadway projects were also analyzed to gauge future conditions. According to the US Census, between 2010 and 2015 population growth hovered around 0.77 percent across the United States, and 0.95 percent in California. Looking ahead, Jurupa Valley is projected to grow at a rate much faster than both the nationwide and statewide averages in several key areas. Areas with a projected growth rate above 1.25 percent include the residential blocks surrounding Troth Street Elementary School, the western residential portion of the Indian Hills Golf Course, the residential areas south of Mission Boulevard, and much of the northeast corner of Jurupa Valley. Areas with significantly higher growth rates (above 1.9 percent) include the residential area surrounding Limonite Meadows Park, and the residential area north of Mission Middle School/SR-60 (see Figure 3-13).
To assist with current capacity issues, Jurupa Valley is planning several key roadway projects, intersection improvements, and grade separation projects. In addition to addressing existing problems, these projects will help to alleviate negative impacts caused by future growth. Key projects include the conversion of two at-grade intersections to grade-separated intersections of Van Buren Boulevard at Bellegrave Avenue and at Jurupa Road. These segments currently experience the highest vehicle traffic volumes in Jurupa Valley, greatly exceeding their capacity, and have an LOS ratings indicative of more demand than capacity (see Figure 3-14).

Another key project in the planning phase is the development of a new roadway at the southernmost end of Etiwanda Avenue that would help re-route Riverside traffic off Limonite Avenue. This segment also experiences demand that greatly exceeds its capacity and has a poor LOS rating. A single lane addition is planned along Market Street, beginning at Rubidoux Boulevard and heading south into Riverside. Two additional lanes and a new intersection are planned along Cantu-Galleano Ranch Road and Bellegrave Avenue. The intent is to re-route traffic around Jurupa Valley High School, reconnecting it with adjacent residential neighborhoods to the south. Van Buren Boulevard is also slated to receive four additional lanes, creating an eight lane expressway through the city.

A variety of traffic signal installations and timing improvements are also slated, along with a range of phasing, striping, and lane reconfigurations of a variety of key roadways at critical intersections. Together, these projects are intended to help alleviate current traffic flow issues and improve Jurupa Valley’s overall road network LOS. Project specifics were obtained from city staff and also through the draft Mobility Element of the General Plan.
TRANSIT

Jurupa Valley is well-served by both Riverside Transit Authority (RTA) and Metrolink, with hourly service provided by four RTA bus lines, nearly 100 RTA bus stops, and occasional Metrolink Riverside Line service from the Pedley Station to Los Angeles’ Union Station. Bus boarding and alighting levels are fairly consistent across the city, indicating service is well distributed (see Figure 3-15).

FIGURE 3-15: TRANSIT USE LEVELS
ACTIVITY CENTERS

To be eligible for State funding, a city’s bicycle and pedestrian planning must address connections between specific activity center types. These activity centers are essential destinations, including the community’s major employers, office buildings, industrial sites, government sites, retail centers, hospitals, tourist attractions, schools, and parks (see Figure 3-16).

Jurupa Valley’s activity centers line the city’s major arterials and collectors, such as Limonite Avenue, Bellegrave Avenue, Van Buren Boulevard, Mission Boulevard, and Jurupa Road, which is typical of cities in western Riverside County. Additionally, most of the Jurupa Valley’s major employers are located in industrial zoned areas disjointed from the residential zones. In conjunction with the collisions and Level of Traffic Stress (LTS) analysis results, these activity patterns suggest that focus areas should be developed around the five major arterials/collectors: Limonite Avenue, Bellegrave Avenue, Van Buren Boulevard, Mission Boulevard, and Jurupa Road to help address existing issues while also serving the most potential users.
**MOBILITY BARRIERS**

Missing and incomplete sidewalks were identified to be an issue facing pedestrian mobility throughout Jurupa Valley. Nearly all elementary schools are adjacent to a roadway with missing or incomplete sidewalks, potentially hindering safe access by foot. Additionally, virtually all major crossings throughout are fed by roadways with partial or nonexistent sidewalks, making crossings less safe (see Figure 3-17).

**FIGURE 3-17: PEDESTRIAN BARRIERS**
TRAIL NETWORK

Trail data were obtained from the Jurupa Area Recreation and Park District (JARPD), and cross-referenced against the Riverside County 2015 General Plan Mobility Element trails map. (Figure 3-18 is the JARPD trails plan as portrayed on their website, clipped to the Jurupa Valley city limits.) In both plans, much of Jurupa Valley is set to be serviced by a combination of regional, community, and combination trails. Proposed bicycle and pedestrian facilities will be routed to maximize connections to existing trails, and in some cases, will be proposed coincident with future trails to expedite funding by providing additional justification for construction. The City of Jurupa Valley is updating its Trails Plan.

FIGURE 3-18: TRAILS
ANALYSIS

LEVEL OF TRAFFIC STRESS (LTS)

Using guidance from the Mineta Transportation Institute, major roadway segments were classified into four levels of traffic stress (LTS 1-LTS 4). LTS 1 represents a roadway suitable for most children to bicycle on unsupervised. LTS 4 represents a roadway suitable for “strong and fearless” bicyclists only. The basic criteria for classification are shown in Table 3-1.

Nearly all arterial and collector streets in Jurupa Valley fell into LTS 4 with several short segments of LTS 3 appearing in school zones. These results underscore the lack of a robust bicycling community and the need for adjustments to the road network to better support bicycling. Due to limited speed data availability, only arterial and collector streets were assessed. However, in practice, smaller streets are generally less stressful for bicyclists and, in most cases, residential streets are routinely categorized as LTS 1 (see Figure 3-19).

<table>
<thead>
<tr>
<th>Speed Limit</th>
<th>2-3 Lanes</th>
<th>4-5 Lanes</th>
<th>6+ Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25 mph</td>
<td>LTS 1 or 2*</td>
<td>LTS 3</td>
<td>LTS 4</td>
</tr>
<tr>
<td>30 mph</td>
<td>LTS 2 or 3*</td>
<td>LTS 4</td>
<td>LTS 4</td>
</tr>
<tr>
<td>35+ mph</td>
<td>LTS 4</td>
<td>LTS 4</td>
<td>LTS 4</td>
</tr>
</tbody>
</table>

*Use lower value for streets without marked centerlines or classified as residential and with fewer than 3 lanes; otherwise use higher value.

FIGURE 3-19: LEVEL OF TRAFFIC STRESS RESULTS
BICYCLE AND PEDESTRIAN COLLISIONS

Bicycle and pedestrian collision data were obtained from the Statewide Integrated Traffic Records System (SWITRS) collision data set managed by the California Highway Patrol (CHP). This dataset captures all reported bicycle-vehicle, pedestrian-vehicle, and bicycle-pedestrian collisions that resulted in injury or property damage in Jurupa Valley from 2010 through 2014. Collisions on off-street paths are not reported in the data. It is important to note that collisions involving bicyclists are known to be under-reported, and therefore bicycle collisions are likely under-represented (see Figure 3-20 for a composite of all collisions).

During this five year period, there were 53 bicycle-vehicle collisions and 94 pedestrian-vehicle collisions reported. Of the reported bicycle collisions, two were fatal. Of the reported pedestrian collisions, 11 were fatal. Over the five year period cited, bicycle collision counts were fairly consistent, with a low count occurring in the year 2011. Pedestrian collisions saw a decline in 2012 and 2013, followed by a sharp rise in 2014. The reason for these fluctuations is unknown.

Bicycle collisions by time of day were distributed throughout the afternoon with a peak between 3:00 and 6:00pm, coincident with traditional rush hour patterns. Pedestrian collision activity was dispersed throughout the day with a significant peak between 6:00 and 9:00pm. Collision hot spots during these time periods were analyzed in comparison to street light locations and no significant patterns were uncovered. The trends are likely caused by poor visibility and higher traffic volumes during these time periods. In terms of location, the most problematic street was Mission Boulevard, with 26 collisions in the five-year period studied. Van Buren Boulevard, Limonite Avenue, and Pedley Road followed with a range of 9-12 collisions. In both bicycle and pedestrian data sets, collisions were clustered around intersections.

The two overwhelming causes of reported bicycle-related incidents were “Violating Automobile Right of Way” and “Riding on the Wrong Side of Road,” with counts of 13 and 12 respectively. These incidents indicate improper behavior by bicyclists. A small percentage of reported bicycle collisions, roughly 17 percent, resulted in severe injuries or fatalities. The majority of collisions resulted in complaints of pain or other visible injuries. The primary causes of pedestrian collisions were “Pedestrian Violation” and “Violating Pedestrian Right of Way” at counts of 49 and 14, respectively, indicating pedestrians were more frequently found to be at fault. A larger percentage of reported pedestrian collisions, approximately 32 percent, resulted in severe injuries or fatalities, with the remainder reporting complaints of pain or other visible injuries.

The following tables summarize the collected collision data to help understand trends and locations, and to help make recommendations at high collision frequency street segments and intersections.

### Table 3-2: Collisions by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Pedestrian Collisions</th>
<th>Bicyclist Collisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>2011</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>2012</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>2013</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>2014</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>53</td>
</tr>
</tbody>
</table>

### Table 3-3: Collisions by Crash Severity

<table>
<thead>
<tr>
<th>Crash Severity</th>
<th>Pedestrian Collisions</th>
<th>Bicyclist Collisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Severe Injury</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Other Visible Injury</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>Injury - Complaint of Pain</td>
<td>30</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>53</td>
</tr>
</tbody>
</table>

### Table 3-4: Collisions by Time of Day

<table>
<thead>
<tr>
<th>Time</th>
<th>Pedestrian Collisions</th>
<th>Bicyclist Collisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>12am - 3am</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>3am - 6am</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>6am - 9am</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>9am - 12pm</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>12pm - 3pm</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>3pm - 6pm</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>6pm - 9pm</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>9pm - 12am</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
<td>53</td>
</tr>
</tbody>
</table>
### TABLE 3-5: COLLISIONS BY ROADWAY

<table>
<thead>
<tr>
<th>Primary Road</th>
<th>Pedestrian Collisions</th>
<th>Bicyclist Collisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission Blvd</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Van Buren Blvd</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Limonite Ave</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Pedley Rd</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Rubidoux Blvd</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>RT 60</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Valley Way</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Pacific Ave</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Jurupa Rd</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>45th St</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Agate St</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Etiwanda Ave</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>54th St</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Avalon St</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### TABLE 3-6: BICYCLIST COLLISIONS BY PRIMARY COLLISION FACTOR

<table>
<thead>
<tr>
<th>Bicyclist Collisions</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violating Automobile Right of Way</td>
<td>13</td>
</tr>
<tr>
<td>Riding on the Wrong Side of Road</td>
<td>12</td>
</tr>
<tr>
<td>Traffic Signals and Signs</td>
<td>10</td>
</tr>
<tr>
<td>Improper Turning</td>
<td>8</td>
</tr>
<tr>
<td>Driving or Bicycling Under the Influence of Alcohol or Drug</td>
<td>2</td>
</tr>
<tr>
<td>Other Hazardious Violation</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
</tr>
<tr>
<td>Other Than Driver (or Pedestrian)</td>
<td>1</td>
</tr>
<tr>
<td>Unsafe Lane Change</td>
<td>1</td>
</tr>
<tr>
<td>Unsafe Speed</td>
<td>1</td>
</tr>
<tr>
<td>Unsafe Starting or Backing</td>
<td>1</td>
</tr>
<tr>
<td>Other Improper Driving</td>
<td>0</td>
</tr>
<tr>
<td>Pedestrian Violation</td>
<td>0</td>
</tr>
<tr>
<td>Violating Pedestrian Right of Way</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
</tr>
</tbody>
</table>

### TABLE 3-7: PEDESTRIAN COLLISIONS BY PRIMARY COLLISION FACTOR

<table>
<thead>
<tr>
<th>Pedestrian Collisions</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Violation</td>
<td>49</td>
</tr>
<tr>
<td>Violating Pedestrian Right of Way</td>
<td>14</td>
</tr>
<tr>
<td>Unsafe Starting or Backing</td>
<td>7</td>
</tr>
<tr>
<td>Driving or Bicycling Under the Influence of Alcohol or Drug</td>
<td>4</td>
</tr>
<tr>
<td>Other Than Driver (or Pedestrian)</td>
<td>4</td>
</tr>
<tr>
<td>Unsafe Speed</td>
<td>4</td>
</tr>
<tr>
<td>Other Hazardous Violation</td>
<td>3</td>
</tr>
<tr>
<td>Improper Turning</td>
<td>2</td>
</tr>
<tr>
<td>Other Improper Driving</td>
<td>2</td>
</tr>
<tr>
<td>Traffic Signals and Signs</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
</tr>
<tr>
<td>Violating Automobile Right of Way</td>
<td>1</td>
</tr>
<tr>
<td>Riding on the Wrong Side of Road</td>
<td>0</td>
</tr>
<tr>
<td>Unsafe Lane Change</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>94</td>
</tr>
</tbody>
</table>
FIGURE 3-20: COMPOSITE COLLISIONS MAP

This map shows the distribution of composite collisions in the City of Jurupa Valley. The color intensity indicates the density of collisions, with darker colors representing higher densities.

Legend:
- **High Density**
- **Low Density**

Other symbols:
- **School**
- **Park**

Scale:
- 1 mile
BICYCLE AND PEDESTRIAN PROPENSITY

To help define study focus areas, a Geographic Information Systems (GIS) model was created to reveal relationships between the many factors analyzed. A Bicycle-Pedestrian Propensity Model (BPPM) was developed, considering all of the previously discussed analysis inputs, to establish where bicyclists and pedestrians are most likely to be, either currently or if improvements were to be made. The BPPM is comprised of three submodels: Attractor, Generator, and Barrier Models. These three sub-models are then combined to create the composite Bicycle-Pedestrian Propensity Model.

Attractors are essentially activity centers known to attract bicyclists and pedestrians. Examples are schools, transit stops, and shopping centers. Generators are developed from demographic data and address potential pedestrian and bicyclist volume based on how many people live and work within the study area. Examples of generators are population density, employment density, primary mode of transportation to work, and vehicle ownership. Barriers are features likely to discourage or detract people from bicycling or walking. These are generally physical limitations, such as areas with high numbers of bicycle-related collisions, high vehicle volumes and speeds, and missing sidewalks.

The resulting map (Figure 3-21) was employed to develop general recommendations described in the following chapter and to select priority projects.

FIGURE 3-21: PROPENSITY MODEL RESULTS

Propensity for Active Transportation

High Propensity

Low Propensity

[Map showing propensities for active transportation]
RECOMMENDATIONS OVERVIEW

The following recommendations reflect the analysis performed for this CMPBP described in the previous chapter, as well as applicable regional planning for similar active transportation facilities in municipalities adjoining Jurupa Valley.

The land use and demographic data analysis performed for this project culminated in active transportation propensity mapping intended to help support future planning decisions and to help define areas on which to focus potential future assessment. These analysis results and the collected background data from which they were derived will be provided to the city. In support of future active transportation planning decisions, this information can be updated as needed, as well as provide valuable background for grant funding applications.

BICYCLE AND PEDESTRIAN TREATMENTS

To facilitate future consideration for Caltrans-administered bikeway funding, the California Department of Transportation (Caltrans) standard for designating bikeway facility types is used and described in more detail below.

Pedestrian-specific facilities are also addressed in this master plan. To avoid confusion, paved pedestrian facilities are referred to as sidewalks or walkways and unpaved facilities are referred to as trails. Most trails support all use user types, though some may restrict certain uses.

Most dedicated bicycle facilities occur on streets, but there is some overlap in bicycle and pedestrian facility types, particularly off-street facilities like multi-use paths (Caltrans designated Class I). The following sections briefly describe widely used facility types.
CONVENTIONAL BICYCLE FACILITY TYPES

Caltrans officially recognizes three conventional bicycle facilities types implementable in California. Design, wayfinding, and pavement markings details can be found in the CA MUTCD and CA Highway Design Manual.

Multi-Use Paths (Class I)

Multi-use paths are generally listed under bikeway facilities because they are a Caltrans-specified route type, but their use is not restricted to bicyclists and they are available to all non-motorized users. They are physically separated from and are often installed well away from vehicular roadways. Caltrans’ preferred minimum width is 10 feet paved and two feet graded on each side. Specific horizontal and vertical clearances also apply. Class I multi-use paths allow all non-motorized uses, but wider cross section are recommended if multiple uses are to be accommodated or if higher volumes are expected. Class I multi-use paths may not support equestrian use due to paving, but specific situations vary, especially where parallel natural surface trails may be provided. Though one-way facilities are allowed, the vast majority of Class I pathways are two-way.

Bicycle Lanes (Class II)

Bicycle lanes are Caltrans-specified, one-way, on-street facilities placed between the outside vehicle travel lane and the roadway edge, or the parking lane where vehicle parking occurs. They are generally recommended where the desired bicycling route follows an existing street and where traffic speeds and volumes are low enough to permit an adjacent facility, but high enough to preclude a “shared” facility.

Class II bicycle lanes are designated by striping and signage with a minimum width of five feet from parking lane edge where vehicle parking occurs, and four feet from roadway edge or curb where parking does not occur. Where parking occurs, additional buffering is recommended between the bicycle lane and parking lane. Buffering from vehicle traffic is also recommended where width is available.
**Bicycle Routes (Class III)**

Bicycle routes are Caltrans-specified, on-street bicycle routes designated by directional signage, but may include shared lane markings (“Sharrows”) and/or “Bikes May Use Full Lane (“BMUFL”) signs. Class III bicycle routes are usually installed on roadways with low vehicle traffic volumes and speed limits of no more than 35 mph. These facilities are recommended only where vehicle speeds and volumes are low enough for bicyclists and drivers to truly “share the road.”

The roadway may be augmented with traffic calming and bicyclist priority measures to create a “bicycle boulevard” optimized for safe non-motorized travel. These are often installed parallel with high traffic volume, high speed roadways to provide bicyclists with an alternate “low stress” route convenient to destinations along the major roadway (See “Low Stress Bicycle Facility Types” below).

**Separated Bikeways (Class IV)**

Separated bikeways are the newest facility to receive official approval and Caltrans design guidance. These are exclusively bicycle facilities separated from vehicle lanes by vertical physical barriers. They are recommended where an on-street facility is needed, but where vehicle speeds and volumes are relatively high. In contrast with Class II bicycle lanes, separated bikeways are usually installed between the outside vehicle travel lane or parking lane and the roadway edge, generally adjacent to any walkways, but visually distinguishable from them. Separated bikeways can be one- or two-way facilities, but most are one-way due to the right-of-way issues inherent with roadway intersections.
ENHANCED BICYCLE FACILITY TYPES

While the conventional bicycle facility types can be found throughout the country, in California there has been a shift towards enhancing these facilities to make them more comfortable for users, and therefore more likely to be used. For example, Caltrans approved the installation of buffered bicycle lanes.

These enhancements are low cost, relatively easy to install, and provide additional awareness of bicyclists. In many instances, installation of these bicycle facility enhancements can be coordinated with street resurfacing projects. The use of green paint has also become a simple and effective way to communicate the expected presence of bicyclists.

**Buffered Bicycle Lanes**

Buffered bicycle lanes are additional space between the bicycle lane and the adjoining traffic lane, or parking lane, or both, to provide a more protected and comfortable space for bicyclists than a conventional bicycle lane. Buffered bicycle lanes are recommended anywhere roadway space allows. Many municipalities have successfully upgraded bicycle lanes by widening them to six feet measured from the gutter pan edge instead of the curb face. The additional width is generally repurposed from the vehicle travel lanes, proportionally narrowing them to provide for the wider bicycle lanes, while also providing a vehicle “traffic calming” effect. This additional buffer space along parallel parking also allows bicyclists to ride away from the “door zone.”

**Shared Lane Markings (“Sharrows”)**

Shared lane markings are commonly used where vehicle parking occurs adjacent to the travel lane. It is now common practice to center them within the typical vehicular travel route in the rightmost travel lane to ensure adequate separation between bicyclists and parked vehicles.

**Bike Boxes**

A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to wait ahead of queuing traffic in easy view of vehicle drivers during the red signal phase.
LOW STRESS BICYCLE FACILITY TYPES

In many cases, conventional bicycle facilities may not meet the safety perceptions of many in the bicycling community. There are a number of other non-conventional facilities that the city may find useful in specific situations. Low-stress streets and bicycle prioritized routes are an ever-evolving, ever-improving state of practice.

The facilities in this section have been implemented in other countries with great success and are quickly being implemented across the United States. Bicycle boulevards can be found throughout California since they are proven to improve bicycling safety and increase bicycle mode share. Details about these facilities and other treatments can be found in the NACTO Urban Bikeway Design Guide or AASHTO Guide of the Development of Bicycle Facilities.

Bicycle Boulevards

Bicycle boulevards provide a convenient, low-stress bicycling environment for people of all ages and abilities. They are typically installed on streets with low vehicular volumes and speeds. They are often routed to provide a more comfortable parallel alternative to higher volume, higher speed arterials. Bicycle boulevard treatments can include a combination of signs, pavement markings, traffic calming measures that discourage through trips by vehicle drivers and create safe, convenient bicycle crossings of busy arterial streets. Signage and wayfinding are important elements of bicycle boulevards to identify routes to both bicyclists and drivers, to provide destination and branding information, and to inform about changes in roadway conditions and likely street users.
**TRAFFIC CALMING**

Traffic calming involves changes in street alignment, potential barrier installation, and other physical measures to reduce traffic speeds and/or cut-through volumes. Traffic calming’s intent is to alter vehicle driver behavior to improve roadway safety and neighborhood livability. Other techniques may include operational measures such as targeted law enforcement and speed displays. The following examples identify traffic calming measures that may be applicable to Jurupa Valley in specific areas.

*Roundabout*

A roundabout is an example of a traffic calming measure typically employed along bicycle boulevards. They slow traffic on each approach and reduce right-of-way conflicts, yet tend not to divert vehicle traffic to other nearby streets. They are appropriate for low volume local residential streets with alternative access points.

*Signals and Warning Devices*

Pedestrian Hybrid Beacons (PHB) and Rectangular Rapid Flashing Beacons (RRFB) are special signals and warning devices used to warn and control traffic at unsignalized locations to assist pedestrians in crossing a street or highway at a marked crosswalk.

*Speed Tables/Raised Crosswalk*

Speed tables are flat-topped road humps, often constructed with textured materials on the flat section to highlight visibility to vehicle drivers. Speed tables and raised crosswalks reduce vehicle speeds and enhance pedestrian safety.
**Speed Displays**

Speed displays contribute to increased traffic safety. They measure approaching vehicle speed by radar and inform drivers using a LED display. They are particularly effective in reducing vehicular speeds traveling ten or more miles-per-hour over the speed limit.

**Chicanes**

Chicanes are a series of narrowing or curb extensions that alternate from one side of the street to the other forming S-shaped curves.

**On-Street Edge Friction**

A combination of vertical elements such as on-street parking, bicycle facilities, chicanes, site furnishings, street trees, and shrubs that reduce the apparent width of the street.
PEDESTRIAN FACILITIES

Walkways (Solid Surface, Non-motorized, Multi-use)
Walkways are routes separated from roadways, primarily for pedestrian use, such as sidewalks. Designation generally refers to paved surface routes that can vary in width and configuration. California law does not preclude bicycle use on sidewalks, but the law also gives municipalities leeway in determining where to restrict bicycle use by adult riders, such as in congested downtown areas.

Trail (Natural Surface, Non-motorized, Multi-use)
Trails are routes separated from roadways for pedestrian, bicyclist, equestrian, and other non-motorized uses. Designation generally refers to unpaved natural surface routes that can vary in width and configuration, depending upon expected types and numbers of users, local topography, and design intent. They are generally surfaced with locally occurring soil, but may be supplemented with decomposed granite (DG) or other appropriate and visually compatible materials as needed. Width may be determined on a case-by-case basis depending primarily on likely use levels. To serve a broader user base, many municipalities implement natural surface trails parallel with Class I multi-use paved pathways.
POTENTIAL PEDESTRIAN FACILITY ENHANCEMENTS

Enhancing the walking environment will increase safety and accessibility throughout Jurupa Valley. While some of intersections are signalized and crosswalks exists, there are some segments with long blocks without places to cross. Providing crossing treatments will help reduce unsafe mid-block crossings. The following examples identify crossing treatments that could be applied to Jurupa Valley.

**Pedestrian Refuge**

Refuge islands provide pedestrians and bicyclists a refuge area within intersection and mid-block crossings. Refuge islands provide a safe location to wait, if needed, before completing through their crossing.

**Mid-block Crossing**

Mid-block crossings provide convenient locations for pedestrians to cross urban thoroughfares in areas with infrequent intersection crossings or where the nearest intersection crossing creates substantial out-of-direction travel.

**Curb Extension**

Also called bulb-outs or neck-downs, curb extensions extend the line of the curb into the travel way, reducing the width of the street. Typically occurring at intersections and mid-block crossings, they reduce the pedestrian’s crossing distance, which also benefits vehicle drivers by reducing wait times.

**Pedestrian Scramble**

Pedestrian scrambles are intersections designed to accommodate all-way pedestrian crossing movements, including diagonally across the intersection. This is managed through signal phasing that simultaneously stops all vehicular traffic in all directions. This technique is most commonly applied to intersections with very high pedestrian volumes, such as within high density retail and entertainment districts.
PLACEMAKING
The inclusion of urban elements such as parklets and community gardens encourage walking and provide usable space for all residents. These elements can range in cost depending on the extent of design and materials. In many cities, these urban elements have helped transform urban villages and downtowns into viable destinations. Coordinating with local business and organizations already present in Jurupa Valley can provide collaborative design and funding efforts between the city, its businesses, and residents.

Parklets
Parklets are small outdoor seating areas in lieu of one or two existing on-street vehicle parking spots, temporarily or permanently reclaiming the space for pedestrians and improving the aesthetics and streetscape of the urban environment.

Community Gardens
Community gardens provide fresh produce, plants, and inherently assist in neighborhood improvement, sense of community, and connection to the environment. They are typically managed by local governments or non-profit associations.

Furnishings and Public Art
Transit shelters, lighting, bicycle racks, seating, and public art provide important amenities to improve functionality, design, and vitality of the urban environment. They announce that the street is a safe and comfortable place to be, and provide visual detail and interest.

“Owners reported a 20 percent increase in sales in the two weeks following a parklet installation.”
University City District, 2015
BICYCLE RECOMMENDATIONS

Following the review of available inputs and analysis results described in the previous chapter, potential bicycle routes were developed with the intent of creating a network to connect established activity centers throughout Jurupa Valley while, as much as possible, avoiding significant barriers. Table 4-1 and Figure 4-1 outline each of the proposed bikeways.

Much of Jurupa Valley is ripe for development since few bicycle facilities exist. Results from the Bicycle and Pedestrian Propensity Model described in the previous chapter weighed heavily in the delineation of potential routes. Alternatively, results from the Level of Traffic Stress Analysis confirmed initial assumptions that most suitable roadways in Jurupa Valley will require some level of traffic calming or low stress bikeway to accommodate bicyclists at a comfort level most prefer.

Recommended facilities are concentrated on major roadway types (arterial, major, secondary, and collector), and generally avoid local roadways which tend to create unnecessary out-of-direction travel. In cases where extremely stressful roads cannot be avoided, i.e. Van Buren Boulevard, separated facilities are recommended.

These route recommendations reflect the results of the significant GIS analysis described in Chapter 3, closely coincide with the General Plan Mobility Element recommended “Mobility Corridors”, and are based on staff recommendations. These proposed routes also provide a reasonable bicycle facility distribution level across Jurupa Valley.
FIGURE 4-1: BICYCLE PROJECTS

[Map showing bicycle projects with different colors indicating proposed projects and existing bikeways.]

- **Proposed Projects**:
  - Multi-use Path (Class I)
  - Bike Lane (Class II)
  - Bike Lane or Bike Route (Class II/III)
  - Bike Route (Class III)
  - Cycle Track (Class IV)

- **Existing Bikeways**:
  - Multi-use Path (Class I)
  - Bike Lane (Class II)
  - Bike Lane or Bike Route (Class II/III)
  - Cycle Track (Class IV)
  - School
  - Park

Legend:
- Multi-use Path (Class I) is marked in red.
- Bike Lane (Class II) is marked in blue.
- Bike Lane or Bike Route (Class II/III) is marked in green.
- Bike Route (Class III) is marked in purple.
- Cycle Track (Class IV) is marked in orange.

Scale: 1 mile
<table>
<thead>
<tr>
<th>Project ID</th>
<th>Street Name</th>
<th>Miles</th>
<th>Proposed Bicycle Facility</th>
<th>From Street</th>
<th>To Street</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Class I (Van Buren Blvd)</td>
<td>7.0</td>
<td>I</td>
<td>I-15</td>
<td>Southern City Limits</td>
<td>North to south connector along Van Buren Boulevard.</td>
</tr>
<tr>
<td>2</td>
<td>Class I/Soft-surface Trail</td>
<td>4.3</td>
<td>I</td>
<td>Northern City Limits</td>
<td>Southern City Limits</td>
<td>North to south connector along Bain Street.</td>
</tr>
<tr>
<td>3</td>
<td>(San Sevaire Trail)</td>
<td>2.1</td>
<td>Soft-surface Trail</td>
<td>Bellegrave Ave</td>
<td>Limonite Ave</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Wineville Rd</td>
<td>0.7</td>
<td>II</td>
<td>Cantu-Galleano Ranch Rd</td>
<td>Bellegrave Ave</td>
<td>Strike bicycle lanes - Parkcenter Dr to Limonite Ave is already striped.</td>
</tr>
<tr>
<td>3</td>
<td>Wineville Ave</td>
<td>1.3</td>
<td>II</td>
<td>Bellegrave Ave</td>
<td>68th St</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pats Ranch Rd</td>
<td>2.0</td>
<td>II</td>
<td>Bellegrave Ave</td>
<td>68th St</td>
<td>Strike bicycle lanes.</td>
</tr>
<tr>
<td>4</td>
<td>Morton Ave</td>
<td>0.1</td>
<td>III</td>
<td>Limonite Ave</td>
<td>63rd Ave</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>63rd Ave</td>
<td>0.7</td>
<td>III</td>
<td>Morton Ave</td>
<td>Clay St</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Linares Ave</td>
<td>1.4</td>
<td>III</td>
<td>Clay St</td>
<td>Moraga Ave</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Moraga Ave</td>
<td>0.3</td>
<td>III</td>
<td>Linares Ave</td>
<td>Avenue Juan Diaz</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Avenue Juan Diaz</td>
<td>0.1</td>
<td>III</td>
<td>Moraga Ave</td>
<td>Peralta Pl</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Peralta Pl</td>
<td>0.6</td>
<td>III</td>
<td>Avenue Juan Diaz</td>
<td>Riverview Dr</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pacific Ave</td>
<td>0.4</td>
<td>III</td>
<td>Canal St</td>
<td>Mission Blvd</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pacific Ave</td>
<td>0.9</td>
<td>II</td>
<td>Mission Blvd</td>
<td>Limonite Ave</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Class I (s/o Pacific Ave)</td>
<td>0.2</td>
<td>I</td>
<td>Limonite Ave</td>
<td>Riverview Dr</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>46th St</td>
<td>0.6</td>
<td>III</td>
<td>Riverview Dr</td>
<td>Existing Bicycle Lanes</td>
<td>Stripe bicycle lanes where right-of-way allows - sharrow signage along constrained segments. Develop Class I to close the gap between Pacific Ave and 46th St.</td>
</tr>
<tr>
<td>6</td>
<td>Crestmore Rd</td>
<td>0.6</td>
<td>III</td>
<td>Existing Bicycle Lanes</td>
<td>34th St</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Proposed Rd</td>
<td>0.6</td>
<td>III</td>
<td>34th St</td>
<td>Hall Ave</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Hall Ave</td>
<td>0.9</td>
<td>III</td>
<td>Wallace St</td>
<td>Market St</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Class I</td>
<td>4.4</td>
<td>I</td>
<td>Existing Santa Ana River Trail</td>
<td>General Dr</td>
<td>Develop low stress west to east route along river. Fill gaps in Class I with sharrons and signage.</td>
</tr>
<tr>
<td>7</td>
<td>Clay St</td>
<td>0.2</td>
<td>III</td>
<td>Van Buren Blvd</td>
<td>General Dr</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>General Dr</td>
<td>0.2</td>
<td>III</td>
<td>Clay St</td>
<td>Proposed Class I</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Class I</td>
<td>2.3</td>
<td>I</td>
<td>General Dr</td>
<td>Peralta Pl</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Riverview Dr</td>
<td>1.1</td>
<td>III</td>
<td>Peralta Pl</td>
<td>46th St</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Class I</td>
<td>3.1</td>
<td>I</td>
<td>Riverview Dr</td>
<td>Market St</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>San Sevaire Way</td>
<td>1.2</td>
<td>III</td>
<td>Etiwanda Ave</td>
<td>Mission Blvd</td>
<td>Sharrow signage.</td>
</tr>
<tr>
<td>8</td>
<td>Ben Nevis Blvd</td>
<td>1.6</td>
<td>III</td>
<td>Mission Blvd</td>
<td>Pedley Rd</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Kenneth St</td>
<td>0.5</td>
<td>III</td>
<td>Ben Nevis Blvd</td>
<td>Mission Blvd</td>
<td></td>
</tr>
<tr>
<td>Project ID</td>
<td>Street Name</td>
<td>Miles</td>
<td>Proposed Bicycle Facility</td>
<td>From Street</td>
<td>To Street</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
<td>-------</td>
<td>---------------------------</td>
<td>--------------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>Granite Hill Dr</td>
<td>4.4</td>
<td>III</td>
<td>Country Village Rd</td>
<td>Valley Way</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Pyrite St</td>
<td>0.4</td>
<td>III</td>
<td>Granite Hill Dr</td>
<td>Mission Blvd</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Etiwanda Ave</td>
<td>2.6</td>
<td>II</td>
<td>Bellegrave Ave</td>
<td>Existing Santa Ana River Trail</td>
<td>Stripe bicycle lanes.</td>
</tr>
<tr>
<td>11</td>
<td>Lucretia Ave</td>
<td>1.3</td>
<td>III</td>
<td>Etiwanda Ave</td>
<td>Limonite Ave</td>
<td>Stripe bicycle lanes where right-of-way allows - sharrows and signage along constrained segments.</td>
</tr>
<tr>
<td></td>
<td>Lucretia Ave</td>
<td>0.4</td>
<td>II</td>
<td>Limonite Ave</td>
<td>Holmes Ave</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lucretia Ave</td>
<td>0.4</td>
<td>III</td>
<td>Holmes Ave</td>
<td>68th St</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>58th St</td>
<td>2.7</td>
<td>III</td>
<td>Etiwanda Ave</td>
<td>Pedley Rd</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Hudson St</td>
<td>0.5</td>
<td>III</td>
<td>58th St</td>
<td>Limonite Ave</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Felspar St</td>
<td>1.0</td>
<td>II</td>
<td>Mission Blvd</td>
<td>Jurupa Rd</td>
<td>Stripe bicycle lanes to provide connection between Van Buren Elementary and Pedley Elementary.</td>
</tr>
<tr>
<td></td>
<td>J St</td>
<td>0.1</td>
<td>II</td>
<td>Jurupa Rd</td>
<td>51st St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>51st St</td>
<td>0.4</td>
<td>II</td>
<td>J St</td>
<td>Felspar St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Felspar St</td>
<td>1.3</td>
<td>II</td>
<td>Felspar St</td>
<td>Limonite Ave</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Jurupa Rd</td>
<td>1.0</td>
<td>III</td>
<td>Etiwanda Ave</td>
<td>Bain St</td>
<td>Stripe bicycle lanes where right-of-way allows - sharrows and signage along constrained segments.</td>
</tr>
<tr>
<td></td>
<td>Jurupa Rd</td>
<td>2.1</td>
<td>II</td>
<td>Bain St</td>
<td>Agate St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jurupa Rd</td>
<td>1.9</td>
<td>III</td>
<td>Agate St</td>
<td>Valley Way</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valley Way</td>
<td>0.5</td>
<td>II</td>
<td>Jurupa Rd</td>
<td>Hwy 60 On-ramp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valley Way</td>
<td>0.4</td>
<td>III</td>
<td>Hwy 60 On-ramp</td>
<td>34th St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soto Ave</td>
<td>0.2</td>
<td>III</td>
<td>Granite Hill Dr</td>
<td>Scenic Dr</td>
<td>Sharrows and signage connecting Sunnyslope Elementary and Nueva Vista High.</td>
</tr>
<tr>
<td></td>
<td>Scenic Dr</td>
<td>0.4</td>
<td>III</td>
<td>Soto Ave</td>
<td>36th St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36th St</td>
<td>0.3</td>
<td>III</td>
<td>Scenic Dr</td>
<td>Novak St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Novak St</td>
<td>0.3</td>
<td>III</td>
<td>36th St</td>
<td>34th St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34th St</td>
<td>0.5</td>
<td>III</td>
<td>Novak St</td>
<td>Florine Ave</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Florine Ave</td>
<td>0.1</td>
<td>III</td>
<td>34th St</td>
<td>33rd St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>33rd St</td>
<td>0.0</td>
<td>III</td>
<td>Florine Ave</td>
<td>Apple Ave</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apple Ave</td>
<td>0.2</td>
<td>III</td>
<td>33rd St</td>
<td>30th St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30th St</td>
<td>0.2</td>
<td>III</td>
<td>Apple Ave</td>
<td>Sierra Ave</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Mission Blvd</td>
<td>2.9</td>
<td>II/III TBD</td>
<td>Kenneth St</td>
<td>Valley Way</td>
<td>Stripe bicycle lanes if right-of-way allows - sharrows and signage along constrained segments. Cycle track along bridge into Riverside.</td>
</tr>
<tr>
<td></td>
<td>Mission Blvd</td>
<td>2.5</td>
<td>III</td>
<td>Valley Way</td>
<td>Crestmore Rd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mission Blvd</td>
<td>0.8</td>
<td>IV</td>
<td>Crestmore Rd</td>
<td>City of Riverside</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Bellegrave Ave</td>
<td>2.9</td>
<td>II</td>
<td>I-15</td>
<td>Kenneth St</td>
<td>Wineville Rd to Etiwanda Ave is already striped.</td>
</tr>
<tr>
<td>Project ID</td>
<td>Street Name</td>
<td>Miles</td>
<td>Proposed Bicycle Facility</td>
<td>From Street</td>
<td>To Street</td>
<td>Comments</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>-------</td>
<td>---------------------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>18</td>
<td>Canal St</td>
<td>0.8</td>
<td>III</td>
<td>Pacific Ave</td>
<td>Avalon St</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Avalon St</td>
<td>1.5</td>
<td>III</td>
<td>Canal St</td>
<td>20th St</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>La Rue St</td>
<td>0.4</td>
<td>III</td>
<td>Canal St</td>
<td>Mission Blvd</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td>20</td>
<td>26Th St</td>
<td>0.5</td>
<td>III</td>
<td>Avalon St</td>
<td>Hall Ave</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Golden West Ave</td>
<td>1.8</td>
<td>III</td>
<td>Mission Blvd</td>
<td>Avenue Juan Bautista</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Avenue Juan Bautista</td>
<td>0.1</td>
<td>III</td>
<td>Golden West Ave</td>
<td>Limonite Ave</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Rubidoux Blvd</td>
<td>1.0</td>
<td>III</td>
<td>Mission Blvd</td>
<td>46th St</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Camino Real</td>
<td>0.2</td>
<td>II</td>
<td>Granite Hill Dr</td>
<td>Mission Blvd</td>
<td>Stripe bicycle lanes where right-of-way allows - sharrows and signage along constrained segments.</td>
</tr>
<tr>
<td></td>
<td>Camino Real</td>
<td>2.7</td>
<td>III</td>
<td>Mission Blvd</td>
<td>Linares Ave</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>64th St</td>
<td>0.7</td>
<td>III</td>
<td>Downey St</td>
<td>Kelsey Pl</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td>Lakeview Ave</td>
<td>0.5</td>
<td>III</td>
<td>Kelsey Pl</td>
<td>Pedley Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>61st St</td>
<td>0.2</td>
<td>III</td>
<td>Downey St</td>
<td>Limonite Ave</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td>Downey St</td>
<td>0.1</td>
<td>III</td>
<td>61st St</td>
<td>Felspar St</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class I</td>
<td>0.4</td>
<td>I</td>
<td>Limonite Ave</td>
<td>Proposed Santa Ana River Trail</td>
<td>Sharrows and signage.</td>
<td></td>
</tr>
<tr>
<td>Galena St</td>
<td>0.5</td>
<td>III</td>
<td>Bain St</td>
<td>Rutile St</td>
<td>Sharrows and signage.</td>
<td></td>
</tr>
<tr>
<td>Rutile St</td>
<td>0.6</td>
<td>III</td>
<td>Galena St</td>
<td>Jurupra Rd</td>
<td>Stripe bicycle lanes.</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Holmes Ave</td>
<td>1.2</td>
<td>II</td>
<td>Etiwanda Ave</td>
<td>Wineville Ave</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rutile St</td>
<td>0.2</td>
<td>III</td>
<td>Bellegrave Ave</td>
<td>Galena St</td>
<td>Stripe bicycle lanes where right-of-way allows - sharrows and signage along constrained segments.</td>
</tr>
<tr>
<td>Galena St</td>
<td>0.7</td>
<td>III</td>
<td>Rutile St</td>
<td>Felspar St</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galena St</td>
<td>1.3</td>
<td>II</td>
<td>Felspar St</td>
<td>Pyrite St</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galena St</td>
<td>0.5</td>
<td>III</td>
<td>Pyrite St</td>
<td>Jurupa Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Marlatt St</td>
<td>0.1</td>
<td>II</td>
<td>Cantu-Galleano Ranch Rd</td>
<td>Bellegrave Ave</td>
<td>Stripe bicycle lanes where right-of-way allows - sharrows and signage along constrained segments.</td>
</tr>
<tr>
<td>Marlatt St</td>
<td>1.9</td>
<td>III</td>
<td>Bellegrave Ave</td>
<td>Limonite Ave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Cantu-Galleano Ranch Rd</td>
<td>0.9</td>
<td>II</td>
<td>Etiwanda Ave</td>
<td>Dodd St</td>
<td>Stripe bicycle lanes.</td>
</tr>
<tr>
<td>31</td>
<td>60th St</td>
<td>0.4</td>
<td>III</td>
<td>Marlatt St</td>
<td>Bain St</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td>32</td>
<td>66th St</td>
<td>0.5</td>
<td>III</td>
<td>Lucretia Ave</td>
<td>Etiwanda Ave</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td>33</td>
<td>Agate St</td>
<td>1.5</td>
<td>III</td>
<td>Mission Blvd</td>
<td>54th St</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td>54th St</td>
<td>0.2</td>
<td>III</td>
<td>Agate St</td>
<td>Pedley Rd</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 4-1: BICYCLE PROJECTS (CONT.)

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Street Name</th>
<th>Miles</th>
<th>Proposed Bicycle Facility</th>
<th>From Street</th>
<th>To Street</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Parkcenter Dr</td>
<td>0.4</td>
<td>III</td>
<td>Wineville Ave</td>
<td>Crown Dr</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Trail Canyon Dr</td>
<td>0.6</td>
<td>III</td>
<td>Crown Dr</td>
<td>Jurupa Rd</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Pedley Rd</td>
<td>0.8</td>
<td>II</td>
<td>Mission Blvd</td>
<td>Jurupa Rd</td>
<td>Stripe bicycle lanes.</td>
</tr>
<tr>
<td>36</td>
<td>Class I/Soft-surface Trail</td>
<td>1.7</td>
<td>I</td>
<td>Jurupa Rd</td>
<td>Limonite Ave</td>
<td>Facilities will run along Pedley on opposite shoulders.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Soft-surface Trail</td>
<td>Jurupa Rd</td>
<td>Limonite Ave</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Soft-surface Trail</td>
<td>0.1</td>
<td>Soft-surface Trail</td>
<td>Galena St</td>
<td>Rutile St</td>
<td>Connector trail over Van Buren Boulevard</td>
</tr>
<tr>
<td>38</td>
<td>Class I (20th St/Market St)</td>
<td>3.5</td>
<td>I</td>
<td>Sierra Ave</td>
<td>Proposed Santa Ana River Trail</td>
<td>Low stress connection to Riverside.</td>
</tr>
<tr>
<td></td>
<td>Market St</td>
<td>0.5</td>
<td>IV</td>
<td>Proposed Santa Ana River Trail</td>
<td>City of Riverside</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>68th St</td>
<td>1.1</td>
<td>II</td>
<td>Western City Limits</td>
<td>Lucretia Ave</td>
<td>Stripe bicycle lanes.</td>
</tr>
<tr>
<td>40</td>
<td>Class I (Limonite Ave)</td>
<td>1.0</td>
<td>I</td>
<td>Wineville Ave</td>
<td>Etiwanda Ave</td>
<td>Install Class I where right-of-way allows - sharrows and signage along constrained segments.</td>
</tr>
<tr>
<td></td>
<td>Limonite Ave</td>
<td>1.0</td>
<td>III</td>
<td>Etiwanda Ave</td>
<td>Bain St</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Class I (Limonite Ave)</td>
<td>1.0</td>
<td>I</td>
<td>Bain St</td>
<td>Downey St</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Class I (Xing Van Buren Ave)</td>
<td>0.8</td>
<td>I</td>
<td>63rd Ave</td>
<td>Existing Santa Ana River Trail</td>
<td>Install Class I connector.</td>
</tr>
<tr>
<td>42</td>
<td>Class I (Clay St)</td>
<td>0.2</td>
<td>I</td>
<td>63rd Ave/Linares Ave</td>
<td>General Dr</td>
<td>Install Class I connector.</td>
</tr>
<tr>
<td>43</td>
<td>42nd St</td>
<td>0.6</td>
<td>III</td>
<td>Pacific Ave</td>
<td>Briggs St</td>
<td>Sharrows and signage.</td>
</tr>
<tr>
<td></td>
<td>Tilton Ave</td>
<td>0.2</td>
<td>III</td>
<td>Briggs St</td>
<td>Rubidoux Blvd</td>
<td></td>
</tr>
</tbody>
</table>
PEDESTRIAN RECOMMENDATIONS

Providing safer routes to school is a basic goal of mobility planning and evaluating existing conditions around schools is commonly employed to define a city’s priority pedestrian improvements. This addresses the daily travel needs of children going to and from school and is intended to encourage more neighborhood walking and bicycling. Pedestrian focus areas were therefore identified using a GIS-based network analysis to generate 1/2 mile walk zones from each school in Jurupa Valley. Missing walking facilities within these zones were delineated and are shown in Figure 4-2. These walk zones should be the focus of future pedestrian improvements, with an emphasis on constructing missing walking facilities, repairing damaged facilities, removing trip hazards, constructing, and upgrading curb ramps, and establishing safe crossing treatments. Note that walking facilities may be paved or unpaved firm surfacing, as appropriate to the location, particularly in relation to overall neighborhood character.

FIGURE 4-2: MISSING WALKING FACILITIES WITHIN 1/2-MILE SCHOOL ZONES
Although school zones should be the priority when selecting projects, mobility planning should also keep the overall network in mind. Walking facilities along Mobility Corridors identified by the General Plan should follow school zones in priority. Missing walking facilities along these key connectors are highlighted in Figure 4-3.
OTHER RECOMMENDATIONS (PROGRAMS)

This section comprises a diverse menu of programs intended to support the future bicycle and pedestrian infrastructure recommended in this CMPBP. Due to a long history of routine accommodation for pedestrians (i.e. sidewalks, crosswalks, dedicated signals, etc.), programs targeting walking are relatively uncommon. Conversely, the historic lack of routine accommodation for bicyclists has fostered confusion about the role of bicycles in the overall transportation system and has necessitated an impressive diversity and breadth of bicycle-related programs. Despite a likely emphasis on projects and less on programming at this stage in the city’s development, programs, especially targeting bicyclists, remain an important element of successful active transportation planning. The following sections offer background on the changing “state of practice” in active transportation programming, namely the increased integration of programs and projects, culminating in a comprehensive menu of bicycle and pedestrian programs.

Evolving State of Practice in Bicycle Programs

There has been a shift away from the traditional, compartmentalized “Five Es” approach developed by the League of American Bicyclists (Engineering, Education, Encouragement, Enforcement, and Evaluation and Planning) and toward a fully integrated and complementary menu of initiatives. By offering a menu of initiatives, rather than a prescriptive list, active transportation programming can more accurately address the existing conditions and desired outcomes of a given context.

In addition to changes in the content and organization of active transportation programs, there has also been a shift in implementation strategies. Programs are increasingly targeted at specific project areas, in conjunction with the construction of bicycle and pedestrian facility projects. The implementation of a capital project represents a unique opportunity to promote a city’s active transportation system and bicycling and walking as attractive transportation options. Implementation of a variety of initiatives, leveraged as part of a Smart Trips program and delivered as a “bundle,” has been important to the success of Smart Trips programs in other cities. The bundled delivery of Smart Trips initiatives (a-e, described below) allows for the saturation of a target audience within a target neighborhood and has been instrumental in maximizing limited outreach dollars.

1. Bicycle Skills and Repairs Classes

The Inland Empire Biking Alliance (IEBA) offers bicycling education courses for experienced bicyclists wanting to become instructors, as well as courses for kids. This includes a Kid’s Bicycle Ambassador Program specifically targeting fifth through eighth graders, taught at area schools. This program could offer great value particularly in areas with a likely high latent demand for bicycling and in neighborhoods with high collision rates among school age children. The IEBA also partners with the County of Riverside Department of Public Health’s Injury Prevention Services for periodic bicycle skills and repair workshops targeting kids.

The programs recommended for Jurupa Valley are organized as a menu of initiatives, each listed under the broad categories of Education/Encouragement/Marketing, Education/Enforcement or Monitoring and Evaluation. These categories are merely intended to offer some level of organization to the many program initiatives, the majority of which fall into at least one category.

EDUCATION/ENCOURAGEMENT/MARKETING

1. Smart Trips Program Bundle

Smart Trips is a generic name for community-based transportation demand management (TDM) programs that provide tools and incentives to make bicycling (and often walking, ridesharing, and transit) the preferred mode for particular trips. Traditionally, TDM programs are implemented as employer-based programs targeting the commute trip. Smart Trips are intended to complement efforts aimed at commute behavior by targeting other household trips. Smart Trip programs have been shown to result in two to 14 percent reduction in drive-alone car trips and a significant increase in bicycling. Implementation of a variety of initiatives, leveraged as part of a Smart Trips program and delivered as a “bundle,” has been important to the success of Smart Trips programs in other cities. The bundled delivery of Smart Trips initiatives (a-e, described below) allows for the saturation of a target audience within a target neighborhood and has been instrumental in maximizing limited outreach dollars.

a. Bicycle Skills and Repairs Classes

The Inland Empire Biking Alliance (IEBA) offers bicycling education courses for experienced bicyclists wanting to become instructors, as well as courses for kids. This includes a Kid’s Bicycle Ambassador Program specifically targeting fifth through eighth graders, taught at area schools. This program could offer great value particularly in areas with a likely high latent demand for bicycling and in neighborhoods with high collision rates among school age children. The IEBA also partners with the County of Riverside Department of Public Health’s Injury Prevention Services for periodic bicycle skills and repair workshops targeting kids.
b. Bicycle Friendly Businesses and Districts

Jurupa Valley can promote the League of American Bicyclists’ (LAB) Bicycle Friendly Business program among local businesses to encourage bicycling by their employees and customers. Businesses then use their bicycle friendliness as part of marketing. Benefits to employees often include attractive and secure bicycle parking, locker rooms, showers, and reimbursement for trips made by bicycle, via the Bicycle Commuter Benefit Act. Under this Act, companies can reimburse employees on a tax-free basis for “reasonable expenses” incurred as a bicycle commuter. This can include the purchase of a bicycle and almost any type of accompanying equipment and accessories such as lights, racks, and clothing, up to the annual limit of $240, or however much a company chooses to offer. Benefits to customers include secure parking and discounts. Bicycle Friendly Business Districts combine the efforts of individual businesses to offer a more supportive and coherent bicycling environment. This initiative would entail the promotion of Bicycle Friendly Business and District designation among businesses within bikeway project areas and in conjunction project implementation. A goal of this initiative would be establishing a scalable model for implementation for future bikeway projects within Jurupa Valley. The Inland Empire Biking Alliance (IEBA) provides local support for this program.

c. Community Bicycle Programs

Community bicycle programs, also known as Bike Kitchens, are commonly formed as grass roots initiatives by community members within low income and underserved communities to provide bicycles, helmets, maintenance, and safety instruction to people as a means of expanding their transportation options and providing people better access to work and services. Jurupa Valley should support the creation of a Bike Kitchen within its boundaries and leverage its resources in coordination with the bicycle facilities prioritized in the master plan.

d. Institute Transportation Demand Management (TDM) Employer Incentive Programs

As a recently incorporated city, Jurupa Valley is understandably just beginning to consider how to improve transportation efficiency and is evaluating multiple methods. The draft General Plan Mobility Element section on Traffic Management Alternatives includes employer based strategies like providing secure workplace parking for bicycles, and shower and locker facilities under its suggested TDM provisions. The city should work with SCAG, the County, and local major employers to expand the reach and marketing of proposed programs. In addition to marketing to major employers, the city could deliver targeted marketing of available TDM benefits within Smart Trips target areas. The targeted marketing could be used to leverage participation in special challenges and competitions hosted by the city and SCAG, such as Bike to Work/School Challenges. The city should also work with SCAG to help develop how to provide appropriate TDM end-of-trip amenities for bicycling noted previously, particularly for employment centers served by bikeways of regional significance identified in County of Riverside planning.

e. Events - Bike Month

Have the Mayor proclaim May as Bike Month and participate in Bike to Work Week events. Host pit stops during Bike to Work Weeks and Days. To increase encouragement, host Bike to Work days more often, such as monthly. Promote Bike Month or monthly Bike to Work days heavily within Smart Trips target areas and among target populations.
2. Safe Routes to School

a. Develop a Safe Routes to School Program

Jurupa Valley has engaged in Safe Routes to Schools efforts (the city has pursued SRTS-related grants and projects at certain schools), it does not yet have a formal Safe Routes to School program. Developing such a program is important because it provides an objective and comprehensive approach to safety issues surrounding schools, city-wide. Wherever possible, SRTS efforts should be integrated into the larger planning processes as was done in this bicycle and pedestrian master plan.

Best practices in SRTS education programs combine traditional classroom lessons with experiential courses and clinics. Ideally, the future SRTS program in Jurupa Valley would partner with a Traffic Garden (see Section 3) to offer more comprehensive traffic safety education, teaching children the fundamental rules and responsibilities of all modes. Supplemental exercises in the mechanics of actually riding a bicycle could be provided as needed at the Bicycling Education Center.

Best practices in SRTS programs also include youth participation, since they are the experts about walking and bicycling conditions surrounding their schools. To help fund the SRTS Program, Jurupa Valley should seek further SRTS grants at the State and federal levels. This funding can be used for a variety of activities including site-specific evaluation and planning, infrastructure costs, and education programs. More information can be found at: http://www.saferoutesinfo.org.

b. Promote the Walking School Bus and Bicycle Train

These are volunteer-based programs in which children are chaperoned by adults as they walk or cycle to school. Parents often cite safety issues as one of the primary reasons they are reluctant to allow their children to walk or ride to school. Providing adult supervision may help reduce those worries for families who live within walking or bicycling distance to school. Jurupa Valley can start with one school as a pilot program and expand to other schools if there is demand. These programs and volunteer efforts require coordination and potential attention to other issues, such as safety training and liability. These efforts can coincide with other educational programs such as visits to the Traffic Garden and should be highlighted in conjunction with any project implementation in the area.

c. Participate in Walk and Bike to School Day

This one-day event in October is an international effort in more than 40 countries to celebrate the many benefits of safely walking and bicycling to school. Walking and rolling to school embodies the two main goals of First Lady Michelle Obama’s Let’s Move! Campaign: to increase kids’ physical activity and to empower parents to make these kinds of healthy choices. The National Center for Safe Routes to School, which serves as the clearinghouse for the federal Safe Routes to School program, coordinates online registration efforts and provides technical support and resources for Walk to School Day. For more information, go to www.walktoschool.org.

3. Bicycling Education Center

Create a Bicycling Education Center. Ideal location would be:

- Near compatible land uses, especially schools, parks, and other civic centers
- Along or near bicycle facilities recommended in this plan
- Accessible by bicycle-friendly transit

The proximity of a Bicycling Education Center to these uses represents a more integrated approach to bicycle programming, where facilities provide opportunities for education and where education enhances use of those facilities. This type of synergistic land use not only allows not only for real world educational opportunities, but also the promotion of the bicycle network and a better return on the City’s investments.

The Center would serve as a clearinghouse for bicycling educational materials, electronic and printed, and host a variety of courses. Course material would be bike-specific and, in the case of the Traffic Garden (described below), cover general mobility.

Bicycle-specific areas would include:

- Bicycle handling skills (balance, starting, maneuvering, stopping)
- Riding in traffic skills (riding predictably, signaling, merging, obeying applicable laws)
- Safety gear (helmets, lights, visible clothing)
- Other (basic bicycle maintenance, locking bicycles)

Facilitation of skills courses will require the training of licensed bicycling instructors. The training for League of American Bicyclists bicycling Instructors is done in groups as needed when the number of interested bicyclists reaches a minimum number.
The city, local bicycle club or the Active Transportation Advisory Committee should coordinate efforts to gather interest from the Sheriff’s, Engineering, and Planning Departments, local volunteers, advocates, and bicyclists. In the case of a Traffic Garden, detailed knowledge of laws related to all modes would be required. For this reason, the designated Sheriff’s Department Liaison (Initiative 8) may be the most suitable referee.

4. Maps and Signage

a. Assist Riverside County in Regional Bicycle Map Updates

To provide an accurate map, Riverside County relies on existing bicycle facility data provided by member jurisdictions. The city should maintain accurate GIS data for its bicycle network – existing and proposed – not just for the purpose of assisting Riverside County in maintaining its regional bicycle map, but also for its own complete roadways planning and grant seeking efforts. In addition to recording traditional facility type designation (i.e. Classes 1 to 4), Jurupa Valley may wish to record additional metadata related to preferred user experience. Preference for a particular route, based on its qualities, such as low traffic stress, flat terrain, hilly terrain, scenic, direct, etc., varies from person to person. Best practices indicate the use of these types of experiential information over planners’ classifications.

b. Partner with Google to Improve Google Maps Bicycle Directions

Consistent with the effort to make bicycling an easy choice for a broad range of people, bicycle maps should break out of the “cyclist silo” and become an integrated component of general mobility wayfinding. Google Maps is chief among general wayfinding applications, and includes the option of selecting bicycling for travel directions, but is limited in its utility. While driving and transit directions include a menu of options for preferred user experience (“avoid highways, avoid tolls, shortest travel time, fewest connections, etc”), those for bicycling include none. As suggested above, tailored bicycling directions, based on preferred user experience, offer the greatest value to the range of people who cycle. Jurupa Valley may choose to share data generated for this plan, such as facility types and expected level of traffic stress (LTS), or network connectivity with Google to improve their interface and promote bicycling. This pilot project could serve to catalyze a nation-wide upgrade of Google Maps.

c. Develop and Implement a Wayfinding System

Directional signage allows new bicyclists and tourists alike to find their way to their destination or nearby landmark via a recommended route. Wayfinding signage directs people and provides information about destinations, directions and/or distances. A highly legible and well-executed wayfinding system has the potential to increase comfort and safety, through even diverse and chaotic environments. Wayfinding systems can also achieve community objectives, such as the promotion of a local attractions and the resultant benefit of economic development. When applied on a regional level, wayfinding can link adjacent communities. In designing a wayfinding strategy or system, the following questions need to be considered:

» What user types are likely to use the wayfinding system?
» Where are these users going or want to go?
» What do the users or visitors want to see and hear?
» What is the primary goal: navigation, directional information, orientation, location information, or interpretation?
» Is a clear message being sent by the signage?
» Based on the expected user types, what are the safest or most logical paths or routes?

There is considerable variation in wayfinding signage legibility and utility. Wayfinding system development for Jurupa Valley should begin with a thorough examination of best practices and conclude with a clear set of guidelines related to actual signage design and design of the overall system. New specific plan areas should install wayfinding systems and these should be closely coordinated with any overall city system.

d. Install Advisory Signage along Popular Routes

Alert drivers to the presence of bicyclists, particularly on shared roadways where there is no dedicated bicycle facility. The message should serve to both advise drivers and legitimize the presence of bicyclists. Bicycling is an important component of the transportation system and should be respected by other modes of transportation. While the “Bikes May Use Full Lane” Sign (R4-11) is commonly accepted and generally conveys the intended message, current discourse suggests the use of stronger language (“Shared Road”) – and accompanying education – where appropriate. This phrasing is powerful because it is a statement of fact and implies legal consequence for violators, whereas “Bikes May Use Full Lane” and “Share the Road” sound more like pleading cautions. Regardless of the exact language used, this type of sign should accompany any Shared Lane Markings used. Ample education and marketing should be provided to explain all new signage.
5. **Professional Development**

Have City of Jurupa Valley transportation staff become members of the Association for Pedestrian and Bicycle Professionals (APBP). The mission of the APBP is to “grow the pedestrian and bicycle profession and its influence by facilitating the exchange of professional and technical knowledge, elevating practitioners’ skills and defining the field.” The following “Sample Educational Events” represent the diversity and depth of topics covered by this professional organization at recent regional meetings:

- “Woonerven” (Pronounced “wone-er-ven”) or “Shared Streets”
- Bicycle Share Systems
- Linear Parks/Neighborhood Greenways
- MPOs and Bicycle Programs
- Redefining Transportation Impacts
- Redefining Congestion Management

To learn more about the national organization, visit http://www.apbp.org.

6. **Marketing Campaigns – Building Awareness and General Appeal of Bicycling as a Safe and Common Transportation Mode**

Marketing is about more than advertising. Communication and promotion play important roles. People must be engaged through effective marketing to see bicycling as a desirable transportation mode choice, and to pay attention to safety. More engaged people will have a twofold effect: 1) it will lead to more people riding bicycles, and 2) it will lead to more aware bicyclists, drivers, and pedestrians, and more people who care about bicyclist safety.

Typical marketing campaigns, especially those initiated by government agencies, tend to be information-laden and uninspiring. Lessons from the field of marketing point to the proven effectiveness of positive messages. Positive messages will inspire people and get more of them to change their habits and ride more. The objective is not to get everybody to ride bicycles all of the time, but rather to target those most ready to change.

Messages should inspire people to move from “might” to “sometimes” and from “sometimes” to “often.” For example, a targeted message might be one directed at people who are solely recreational riders, who have never considered a short errand trip within their neighborhood, but would be open to the suggestion. Good marketing would make that suggestion and inspire people in that market segment to try bicycling in their neighborhood for short errand trips. Other messages might target the market of people ready to improve their riding techniques or even those who may never cycle, but who might be encouraged to treat bicyclists with more care and civility.

7. **Host a Ciclovía and Other Signature Events**

A Ciclovía (also ciclovia or cyclovia in English) is a Spanish word meaning “bicycle path,” and describes either a permanently designated bicycle route or a temporary event, when the roadway is closed to automobiles for use by people and non-motorized transportation. Ciclovia events are celebrations of livable streets and communities, encouraging citizens, and businesses to get out in the street and enjoy their city through active participation. While Bogotá, Colombia, is often credited with starting ciclovis, they have gained popularity in the US in the past five years.

While all Ciclovia events are alike in their creation of a people-oriented, car-free space, they are otherwise unique. Depending on the city, the event occurs once or twice a year or every Saturday or Sunday throughout the entire summer. Some cities re-use routes, while others, like Portland, Chicago, and San Diego, host events in different locations each. Routes are circuitous or linear. Most include parks or other open public spaces, as well as music, performance, games, and other activities, some of which is scripted and some of which occur organically. Ciclovias often have a theme of health, exercise, and active transportation, and include groups promoting free, healthy activities stationed along the route. Ciclovia routes can incorporate and highlight new bicycle and pedestrian facilities and preferred routes, encouraging their use and maximizing investment.

In addition to Ciclovias, the city can promote bicycling and walking through supporting more sport-oriented events. By joining forces with local and regional bicycle and pedestrian advocacy organizations, Jurupa Valley can maximize resources and participation.
EDUCATION/ENFORCEMENT

8. Educate All Law Enforcement Staff Regarding Bicycle and Pedestrian Issues and Concerns
If the ultimate aim is to promote bicycling as a legitimate form of transportation, all law enforcement officers should receive some form of bicycle training and should be offered LCI training, if possible. Appropriate training regarding pedestrian issues and solutions should be provided as well.

9. Designate a Law Enforcement Liaison Responsible for Bicycle and Pedestrian Issues and Concerns
This liaison would be the main contact for Jurupa Valley residents concerning bicycle and pedestrian related incidents. This liaison would perform the important function of communication between the law enforcement agency and bicyclists and pedestrians. The liaison would be in charge of the supplemental education of fellow officers regarding bicycle and pedestrian rules, etiquette, and behavior. The liaison could be the same person as the referee for the Traffic Garden and should be LCI certified, as well as ride a bicycle while on duty, as appropriate. Allocate funding for the training and support of this duty, as well as for necessary bicycle equipment.

10. Targeted Enforcement
Many law enforcement departments employ targeted enforcement to educate drivers, bicyclists, and pedestrians about applicable traffic laws and the need to share the road. These efforts are an effective way to expand mobility education. Targeted enforcement should be expanded to warn and educate drivers, bicyclists, and pedestrians about laws, rules of the road and safe procedures. This could be in the form of a brochure or tip card explaining each user’s rights and responsibilities. Targeted enforcement may help mitigate the following traffic safety problems:
   » Speeding in school zones
   » Illegal passing of school buses
   » Parking violations – bus zone, crosswalks, residential driveways, time zones
   » Risks to bicyclists during drop-off and pick-up times
   » Lack of safety patrol/crossing guard operations
   » Unsafe bicycling and pedestrian practices
   » Other school zone traffic law violations

11. Institute a Mobility Safety Program
When stopping adult drivers, bicyclists, and pedestrians for minor traffic violations, law enforcement officers can issue an Adult Mobility Citation in lieu of a regular Traffic Citation. Under this program, individuals are offered two choices: (1) they may contest or ignore the citation, in which case it is forwarded to the court and treated as a normal traffic citation or (2) they may attend the Mobility Safety Program to have the citation waived. A Mobility Safety Program should be designed to decrease traffic collisions and encourage safe behavior for all modes.

12. Distribute Lights to Bicyclists
If a law enforcement officer observes a bicyclist riding at night without the proper reflectors or lights, they can give the bicyclist a light, along with a note or friendly reminder about the light requirement and its importance. This provides a positive and educational interaction rather than a punitive one. This program could be funded through a safety-oriented community grant.

MONITORING AND EVALUATION

13. City Staff Active Transportation Coordinator Position
The creation of an Active Transportation Coordinator position would demonstrate Jurupa Valley’s commitment to bicycling, walking, and creating more ‘complete streets.’ For many smaller cities, this is a part-time position that can help coordinate between different city departments to ensure consistency and cooperation in planning projects. An Active Transportation Coordinator would manage programs and implement projects listed in the CMPBP. The coordinator would be responsible for updating the plan in a timely manner and maintaining a prioritized list of improvements, updating cost estimates, and identifying appropriate funding sources. This investment in staff is often returned since this position usually is responsible for securing State and federal grant funding for active transportation projects.

14. Active Transportation Advisory Committee
An Active Transportation Advisory Committee (ATAC) assists the city with plan projects, policies, and programs implementation. This group acts as a community liaison and addresses issues concerning local bicycling and walking. The ATAC allows city staff, volunteers, and advocates to continue efforts to improve bicycling and walking throughout the city. The ATAC can review the implementation and regularly evaluate CMPBP progress of improvements. City support for creating the committee, budgeting time and resources for staff and elected officials to attend and support these meetings is recommended. (The ATAC could report to the City’s existing Traffic Safety Committee and/or be represented on it.)
15. **Conduct Bicycle and Pedestrian Counts and Review Collision Data**

Conduct regular bicyclist and pedestrian counts throughout the city to determine baseline mode share and subsequent changes. Conducting counts would allow the city to collect information on where the most bicycling and walking occur. This assists in prioritizing and justifying projects when funding is solicited and received. Counts can also be used to study bicycling and walking trends throughout the city.

Counts should be conducted at the same locations and at the same times every year. Conducting counts during different seasons within the year may be beneficial to understanding the differences in bicycle and pedestrian traffic volumes based on weather. In addition, bicycle, and pedestrian counts should be collected as part of any existing traffic counts. Results should be regularly recorded for inclusion in the bicycle and pedestrian report card (See recommendation 17).

The Sheriff’s Department should continue to collect and track collision data. Regular reports of traffic collisions should be presented at the ATAC. Traffic collisions involving bicyclists and pedestrians should be reviewed and analyzed regularly to develop plans to reduce their frequency and severity. Any such plans should include Sheriff’s Department involvement and should be monitored to determine their effectiveness. Collision results should be recorded in the bicycle and pedestrian report card (See Recommendation 17).

16. **Establish Law Enforcement Referral Process**

Design a communication process that encourages students and parents to notify the school and law enforcement of the occurrence of a crash or near-miss during school commute trips involving auto, bus, pedestrian, or bicycle transportation. Include not only the Sheriff’s Department, but also the Traffic Safety Commission, the Planning Department, and SRTS stakeholders in this reporting system to help better use data generated. Enlist the help of law enforcement with a number of traffic safety duties:

- Enforcement of traffic and parking laws through citations and warnings.
- Targeted enforcement of problem areas – an intensive, focused effort during the first two weeks of school, as well as a strategy for the rest of the year.
- Participation in traffic safety programs: Traffic Garden, SRTS Task Force, etc.

Los Angeles has a successful program called the LA Bike map that lets bicyclists submit incidents, see them displayed instantly, and study the overall pattern, dynamically, in one place.

17. **Develop a Bicycle and Pedestrian Report Card**

Jurupa Valley could develop a bicycle and pedestrian report card, a checklist used to measure the success of CMPBP implementation, as well as efforts made, within the city. The report card could be used to identify the magnitude of accomplishments in the previous year and general trends. The report card could include, but not be limited to, keeping track of system completion, travel by bicycle or on foot (counts), and safety.

The city should use the report card to track trends, placing more value on relative than absolute gains (in system completion, mode share, and safety). For example, an upward trend in travel by bicycle or on foot would be viewed as a success, regardless of the specific increase in the number of bicyclists or walkers. Safety should be considered relative to the increase in bicyclists and walkers. Sometimes crash numbers rise simply because bicycling and walking increase, at least initially. Instead, measure crashes as a percentage of an estimated overall mode share count.

A major portion of the report card would be an evaluation of system completion. An upward trend would indicate that the city is progressing in its efforts to complete the bicycle and pedestrian network identified in this document. The report card could be developed to utilize information collected as part of annual and on-going evaluations, as discussed in the previous sections. The report card is not intended to be an additional task for city staff, but rather a means of documenting and publicizing the city’s efforts related to bicycle and pedestrian planning. If an ATAC is implemented, it can be a task of the committee to review the report cards and adjust future plans and goals accordingly.

In addition to quantifying accomplishments related to the bicycle and pedestrian plan, the city should strive to quantify their effort. Effort may be quantified as money spent, staff hours devoted or other in-kind contributions. The quantified effort should be submitted as a component of the bicycle and pedestrian report card.
18. Apply for Bicycle Friendly Community Designation

Bicycle Friendly Community/Neighborhood Designation is part of an official program offered by the League of American Bicyclists intended to provide communities with guidance on becoming more bicycle friendly and confer recognition for their achievements. Like the report card described above, applying for Bicycle Friendly Community/Neighborhood Designation provides a standard by which Jurupa Valley may measure its progress. From the LAB’s own website:

"The Bicycle Friendly Community (BFC) program provides a roadmap to improve conditions for bicycling and the guidance to make your distinct vision for a better, bikeable community a reality. A community recognized by the League as Bicycle Friendly welcomes bicyclists by providing safe accommodation for bicycling and encouraging people to bicycle for transportation and recreation."

TYPICAL COSTS

The following average costs per facility type were based on recent implementation projects in the southern California region and were used for planning level cost estimates with associated caveats and conditions.

CLASS I MULTI-USE PATHWAY COSTS

Class I pathways are separate facilities not associated with roadways, so planning level cost estimation requires an average per-mile cost to be applied based on specific localized conditions. This means that actual cost for a particular facility can vary widely and should therefore be determined as part of project implementation. Depending on a number of factors, Class I pathway costs in the last few years have ranged between $750,000 and $2,800,000 per mile. For general plan purposes, an average per-mile cost of $1,600,000 may be used.

CLASS II BICYCLE LANE COSTS

Class II bicycle lane costs can be affected by a range of potential conditions. At the low end, it is assumed that adequate space exists within the roadway to simply add bicycle lane striping and markings without modifying the roadway further, that the roadway is in good condition and does not require maintenance or rehabilitation as part of the striping project, and no modifications to intersection signal equipment are assumed.

The high end in terms of costs occurs where the curb-to-curb width is not sufficient to install bicycle lanes and the roadway would need to be widened by at least 10 feet to accommodate them. This could therefore include widened pavement sections, new curb, gutter, and sidewalk, as well as potential street light relocations. Intersections may also need to be modified to move signal equipment and install new curb returns. Proposed bicycle lanes may be assigned an average per-mile cost of $58,080.

CLASS III BICYCLE ROUTE COSTS

Because their implementation generally involves only signage and shared-use pavement markings ("Sharrows"), Class III bicycle routes are by far the lowest cost facility. Costs assume the signage and sharrows along the length of the route at intervals of 0.25 miles in each direction and at intersections, and that the roadway does not require rehabilitation or pre-construction maintenance. Class III bicycle routes can be assigned an average per-mile cost of $13,200.
Bicycle boulevards are essentially Class III route facilities with additional physical roadway modifications such as traffic calming measures or changes in intersection priority or access. Bicycle boulevard projects can therefore vary widely in cost, primarily due to the level of physical construction designed into them.

Because bicycle boulevards need to be evaluated in more detail on a case-by-case basis to determine the extent of desired modification, their costs can be considered equivalent to those of typical Class III facilities employing signage and pavement markings only, to be revised as needed in final design prior to implementation.

**CLASS IV CYCLE TRACKS/PROTECTED BICYCLE LANE COSTS**

Cycle tracks can vary in cost due to the various segment and intersection treatments associated with them. Segment protection can range from raised curbs to simple treatments such as striping with on-street parking or reflective bollards. If curbs are built, stormwater utilities would also need to be considered. At intersections, additional striping and paint, and in some cases dedicated bicycle signals, are needed. For planning costs, the assigned per-mile cost for cycle tracks is $520,000.

**WALKWAYS/SIDEWALKS**

Most walkways are typically constructed as concrete sidewalks as part of roadway projects. A basic average cost is $27 per square foot, or $355 per linear foot for a six foot sidewalk with curb. Significant per-unit savings are possible for large scale implementations versus small projects.

**Associated Infrastructure Improvements**

- Curb ramp: $6,500 each
- Continental (high visibility) crosswalk: $85 per linear foot, or $355 per crosswalk
- Raised curb extension: $55,840 per corner
- Pedestrian Hybrid Beacon: $144,000 per crossing
- Rectangular Rapid Flashing Beacon (RRFB): $45,000 per crossing
- Pedestrian signal actuator (in median refuge): $2,200 each
- Pedestrian scale lighting: $315 per linear foot
- Roadway lighting: $144 per linear foot

**TRAILS (NATURAL SURFACE)**

Natural surface trail costs are particularly difficult to define due to the wide variations possible in width, topography, grading, surfacing, and level of finish. Also, though they are significantly less costly than comparable paved facilities, they are eligible for fewer grants because they are generally not considered to address the necessary spectrum of transportation needs compared to paved, all-weather pathways, particularly in terms of disabled access. A recent project with multiple implementation situations averaged $14 per linear foot single track natural surface trail, but routes will have significantly higher costs proportional to finished width.