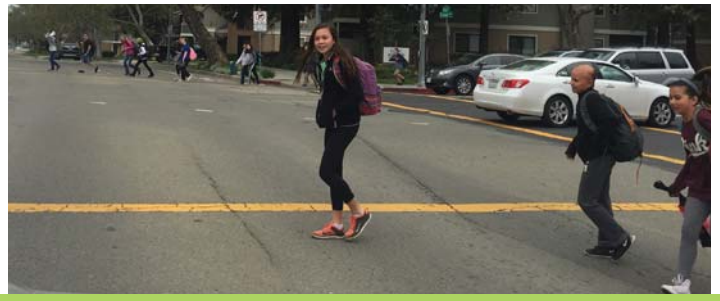

City of Pleasanton

Bicycle & Pedestrian Master Plan

April 2017

THE CITY OF PLEASANTON

Prepared by

FEHR & PEERS

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Glossary

The following are some of the terms and acronyms used in the City of Pleasanton Pedestrian & Bicycle Master Plan to describe existing and proposed biking and walking facilities and programs:

- **Active Transportation** – any form of human-powered transportation, such as walking, bicycling, and using a wheelchair.
- **Actuated Signals** – Traffic signals that detect the presence of automobiles, bicyclists, and/or pedestrians and then give them a green light or walk symbol.
- **Advanced Yield Markings** – "Sharks teeth" or triangular markings the location where vehicles should yield to pedestrians in a crosswalk.
- **ADA** – Americans with Disabilities Act, typically used to refer to accessible pedestrian facilities, such as curb ramps and pedestrian push buttons at signalized intersections.
- **ADT** – Average Daily Traffic, which is the average total number of vehicles that use a roadway throughout the day.
- **All Ages & Abilities Network** – An all ages and abilities network is one that meets the diverse needs of everyone who bikes, from the young to old and the less experienced to most experienced and everyone in between. In this Plan, the All Ages and Abilities Network is intended for implementation in 5-10 years to provide a safe, comfortable, and connected citywide bicycle network. The network primarily consists of paths, separated bikeways, and bicycle boulevards.
- **Arterial Roadways** – Roadways that typically serve a high volume of traffic, may be higher speed, and provide citywide and possibly regional access. Arterials are fed by local streets, including collectors and sometimes residential streets.
- **Bicycle Corral** – A group of bicycle racks that typically provide eight or more bicycle parking spaces. Corrals typically are located in the street, replacing one parking space.
- **Bike East Bay** – A local bicycle advocacy group in Alameda and Contra Costa County.
- **Bikeway** – A bikeway is a general term that refers to any type of bicycle infrastructure. Examples of bicycle infrastructure include bicycle lanes, shared-use paths, separated bikeways, bicycle routes, and bicycle boulevards.
- **Buffer** – Striped area between a travel lane and a bicycle lane and/or a bicycle lane and on-street parking. It typically has arrows ("chevrons") or diagonal hatching to denote the buffer. It is used to provide separation and additional comfort between bicyclists and/or moving vehicles or parked cars.
- **Bulb-Outs** – Extensions of the sidewalk environment at intersections, typically shadowing parking. They improve driver-pedestrian visibility at crossings and shorten crossing distances.
- **Caltrans** – The California state Department of Transportation.
- **Clearance Intervals** – The amount of time required for an automobile, bicycle, or pedestrian to safely move through or "clear" an intersection.
- **Conflict Zone** – Portions of bicycle lanes where drivers frequently merge across, such as the portion of a bicycle lane that right-turning automobiles merge into before the intersection.

Glossary

- **Controlled Crosswalk** – A controlled crosswalk has a form of traffic control that forces vehicles to stop before the crosswalk some of the time (traffic signal) or all of the time (stop sign). **Countdown Signal –** These signals give pedestrians "Walk" and "Don't Walk" signals with a second-by-second countdown for each phase. Also known as "pedestrian countdown signal."
- **Curb Extension – see "bulb outs."**
- **EBRPD** – East Bay Regional Parks District, which manages trails within the regional parks in Pleasanton.
- **Median Refuge** – a protected area denoted by raised curb, landscaping, and/or other materials where pedestrians can safely stop before completing their crossing of a roadway, typically located in the middle of the street.
- **Mode Shift** – Changing the mode split over time, often in reference to increasing the percentage of trips made by walking, biking, and/or transit.
- **Mode Split** – The percentage of travelers using a particular type of transportation, typically the percentage of trips made by bicycle, pedestrian, transit, and autos, respectively.
- **Multi-modal** – The consideration of all modes of transportation in the planning, design, and use of a roadway or transportation facility. Multi-modal typically refers to four primary modes of travel: bicycles, pedestrians, transit, and autos.
- **MUTCD** – Manual on Uniform Traffic Control Devices. California has its own MUTCD which governs how traffic control devices, specifically signing, striping, and signals are implemented and operated.
- **NACTO** – National Association of City Transportation Officials, which publishes two best practice resources guides: the Urban Bikeway Design Guide and the Urban Streets Design Guide.
- **Path Spur** – A short path segment that provides a secondary point of access to a trail or path.
- **Peak Hour** – The busiest hour(s) of the day for all modes, but typically used to refer to autos.
- **Pedestrian Hybrid Beacons (PHBs)** – A pedestrian-activated warning device typically on mast arms over mid-block pedestrian crossings. The beacon head has two red balls on top and a single yellow ball below and require traffic to come to a complete stop when pedestrians have a walk sign, and allow for traffic to proceed once the pedestrian has cleared the travel lane.
- **Policies** – The underlying principles that explain and justify how the city deals with walking and biking issues, typically established through adopted planning documents, directives form city officials, or similar means.
- **Projects** – Capital improvements or infrastructural improvements that, in the context of this Plan, benefit people who walk and bike.
- **Protected Intersection** - Protected intersections include design elements that give bicyclists a head start at intersections, improve sight lines between drivers and bicyclists, and reduce pedestrian exposures to automobiles. They also facilitate left-turns for bicyclists.
- **Public Right-Of-Way** – Areas controlled by the city, such as roadways inclusive of sidewalks.

- **RRFBs (Rectangular Rapid Flashing Beacons)** – A pedestrian-activated flashing beacon installed at crosswalks not otherwise controlled by a traffic signal or stop signs. Safety studies have shown they increase the number of drivers yielding to pedestrians where installed.
- **Safe Routes to School Program** – A range of infrastructural and non-infrastructural improvements and activities targeting schools, typically with an emphasis on elementary schools. Non-infrastructural programs refer to activities including walking schools buses, walk and roll to school day events, and assemblies to encourage and educate students on walking and rolling safely.
- **Separated Bikeway –** An exclusive bike facility that is located within or next to the roadway, but is made distinct from both the sidewalk and the general purpose roadway by markings, barriers or elevation differences.
- **Shared-Use Path** – A path for the exclusive use of bicyclists and pedestrians. Such paths typically require bicyclists and pedestrians to share the path space, but may have striping or signing that designate specific areas for exclusive use by bicyclists or pedestrians, respectively.
- **Sharrows** – "Shared Lane Markings" are stencils on the pavement showing a bicycle symbol and two directional arrows or "chevrons". They denote bicycle routes where bicyclists and autos share the travel lane. They also demonstrate where bicyclists should ride in the travel lane, which is typically in the middle of travel lane so that they "take the lane."
- **Signalized Intersections** – Where two roadways meet at a traffic signal.
- **Slip Lane** – A right-turn lane at an intersection that allows drivers to make a turn without actually entering the intersection and that is often not controlled by a traffic signal. Typically separated by a triangular "pork chop" island.
- **Support Programs** – The strategies, campaigns, and on-going efforts to address issues such as walking and biking education, enforcement, and encouragement. They may be run by the city or by another agency operating in Pleasanton. An example may include a safe routes to school program, which provides educational content such as assemblies, Walk and Roll to School Days, and similar events to encourage students to walk to school and to educate them on how to do safely.
- **Triple-Four Trail Crossings** – Similar to a ladder crosswalk with the middle of the crosswalk removed to make space for bicycle symbols with directional arrows. The intent is to highlight trail crossings and to indicate that bicyclists and pedestrians use the crossing.
- **Vision Network** – In this Plan, the Vision Network refers to all projects recommended in the Plan, even those that may take many years to build. These projects can be implemented as opportunities arise; however, there may be significant engineering and funding barriers to implementing these projects in the near-term.
- **Warrants (Stop Warrants or Signal Warrants)** – Based on standards set in the MUTCD, some traffic control devices, such as traffic signals, stop signs, and pedestrian hybrid beacons, require certain thresholds or "warrants" that must be met to justify the installation of the device. For example, one warrant for a

pedestrian signal requires meeting a threshold for the number of pedestrians passing through an intersection in the peak hour.

- **Wayfinding** –Guidance either on signs or striped on the ground to indicate locations and/or directions to destinations.
- **Zone 7** – Zone 7 Water Agency, which operated some canals and waterways in Pleasanton.

Executive Summary

The 2017 Pedestrian and Bicycle Master Plan (Plan) is an update to the 2010 Plan that contains goals, policies, and recommendations for developing and implementing a citywide pedestrian and bicycle network. Pleasanton has made tremendous progress in implementing the previous plan. Highlights include the extension of the Iron Horse Trail from Stoneridge Drive to the West Pleasanton/Dublin BART station, more than doubling the amount of Class I bicycle paths; achieving the Bronze-level recognition as a Bicycle Friendly Community; and increasing the amount of Class II bicycle lanes from 27 to 40 miles. However, much more work still needs to be done in order to provide a safe and comfortable network.

Community involvement was a key feature of the updated process. Through multiple workshops, residents expressed a strong desire for safety improvements. While Pleasanton ranks high for pedestrian and bicycle safety compared with similar cities in California, it ranks in the bottom 20% for bicycle collisions involving children under the age of 15. In response to this statistic, a key change from the 2010 Plan is a higher prioritization of safe routes to school and safety in general.

Overall, the goals for the non-motorized network remain consistent with the 2010 Plan and can be summarized in five general themes:

1. **Safety**: Improve safety for pedestrians and bicyclists, beginning with safe routes to schools.
2. **All Ages and Abilities**: Create a citywide network of trails, walkways, and bikeways that are safe and comfortable for people of all ages and abilities.
3. **Close the Gaps**: Promote alternatives to driving by enhancing walking and bicycling connections to transit hubs, schools and key destinations in Pleasanton.
4. **Clever Design**: Utilize best practices and innovative but tested pedestrian and bicycle design guidelines.
5. **Promotion**: Encourage and educate residents about bicycling and walking opportunities in Pleasanton, and monitor the progress against clear goals.

Unchanged from the 2010 Plan is a Vision Statement envisioning the city as a place with many safe and pleasant pedestrian and bicycle facilities, and a city that encourages bicycling and walking as healthful and enjoyable activities.

The City of Pleasanton General Plan sets forth a blueprint for a system of bikeways in Pleasanton. This Pedestrian and Bicycle Master Plan builds on the original blueprint with an evaluation of existing conditions and a prioritized list of improvements that include on- and off-street bicycle and pedestrian facilities. The Pedestrian and Bicycle Master Plan is the official policy document addressing the development of bicycle and pedestrian facilities for transportation and recreation purposes.

Additionally, this Plan incorporates items from a number of documents pertaining to walking and bicycling in Pleasanton, including the Community Trails Master Plan, the City of Pleasanton General Plan, the Downtown Specific Plan, the Downtown Parks and Trails System Master Plan, the Happy Valley Specific Plan, the Vineyard Avenue Corridor Specific Plan, and the Municipal Code. Finally, every effort was made to meet the requirements of the Alameda County Transportation Commission (Alameda CTC) Bicycle Master Plan Guidelines.

The goal of a connected network suitable for all ages and abilities is achievable and provides benefits to the entire community, not just those who walk or bicycle. Reduced traffic congestion for those who drive, increased business for local merchants, and overall improvement in quality of life will reinforce the many reasons people choose to live, work and play in Pleasanton. The main thoroughfares for vehicular traffic are also the main desire lines for pedestrian and bicycle traffic. That means Santa Rita Road, Hopyard Road and Foothill Road are the primary north-south routes, and Valley Avenue, Stoneridge Drive and West Las Positas Boulevard the east-west routes. However, these thoroughfares are not necessarily comfortable for all ages and abilities. The recent Iron Horse Trail extension to the north provides a great example of a low-stress alternative. The network should connect people in residential areas to local schools, parks and commercial areas as well as key destinations like the Downtown area, employers, and gateways to neighboring cities and regional parks. This Plan addresses this in the near-term with low-stress alternatives, improved wayfinding, and separated bikeways on existing roads; and in the long-term with focused studies on key corridors such as Foothill Road, Santa Rita Road, all highway overpasses, and the southern extension of the Iron Horse Trail. In many cases, the low-stress alternatives only require small projects to close the gaps.

This document is intended as a conceptual guide for City staff and members of the public. The projects are detailed in **Chapter 4 Opportunity Areas**, and a full list is included in **Appendix C**. **Figure E-1** presents the n□□□□□□□□ network for bicycling. Individual projects may differ from the Plan's recommendations, but the main project alignments and policy recommendations should be implemented to the greatest degree possible. Pleasanton can implement portions of this Plan through public and private development, City-led programs, development of new roadway and transit facilities,

and scheduled roadway maintenance. For instance, providing bicycle parking as part of the permit process for new and redevelopment projects can accomplish the goal of increasing support facilities for cyclists.

This Plan is consistent with Alameda CTC's Countywide Bicycle Plan and Pedestrian Plan, bicycle and pedestrians plans and maps from the cities of Dublin and Livermore, and the East Bay Regional Park District's Trails Master Plan. The Plan should be updated every five years to allow the city to compete for Alameda CTC funding.

Key actions and performance metrics contained in the Plan include the following:

Master Plan Implementation

- Assign a City employee as a bicycle and pedestrian coordinator at a minimum of 70% time to manage all non-motorized transportation projects and ongoing route maintenance programs
- Implement at least two Class IV separated bikeway pilot projects and at least five of the high priority projects detailed in this Plan by 2021
- Complete the low-stress "All Ages and Abilities" network by 2030 and complete the Vision Network by 2040
- Adopt a citywide, multi-modal Vision Zero policy and reduce the number of severe bicycle and pedestrian collisions by 50% by 2030
- Pursue all funding sources for alternative transportation, and update the Plan every five years
- Prioritize maintenance of bikeways, including paved trails and separated bikeways, and ensure adequate sweeping and pavement repair
- Improve the percentage of all walking and bicycling trips by 2030
- Improve the percentage of walking and bicycling to schools by 2030

Best Practices for Design

- Plan and design for low traffic stress facilities for bicyclists wherever feasible, with appropriate intersection treatments such as signal detection and accommodations for bicyclists making left turns.
- Routinely identify and integrate bicycle and pedestrian improvements into all standard maintenance, planning studies, roadway redesign, and auto-focused CIP projects.

Education, Encouragement, and Enforcement Programs

- Seek funding from Safe Routes to School grants.
- Continue to develop and promote existing education and encouragement programs, including but not limited to Bike to Work Day, Bike to School Day, bicycle safety courses and a citywide bicycle user map.
- Work toward recognition as a Silver-level Bicycle Friendly Community and Walk Friendly Community.

Encouraging a Multi-modal Transportation System

- Provide safe, comfortable, convenient, and continuous bicycle and pedestrian facilities within one mile of the BART and ACE stations, and within an eighth of a mile of Wheels bus stops.
- Work with the Pleasanton Unified School District and commercial businesses to provide and actively maintain sufficient, convenient, safe, and attractive bicycle racks at all public schools and businesses, and provide a citywide bicycle rack request program.

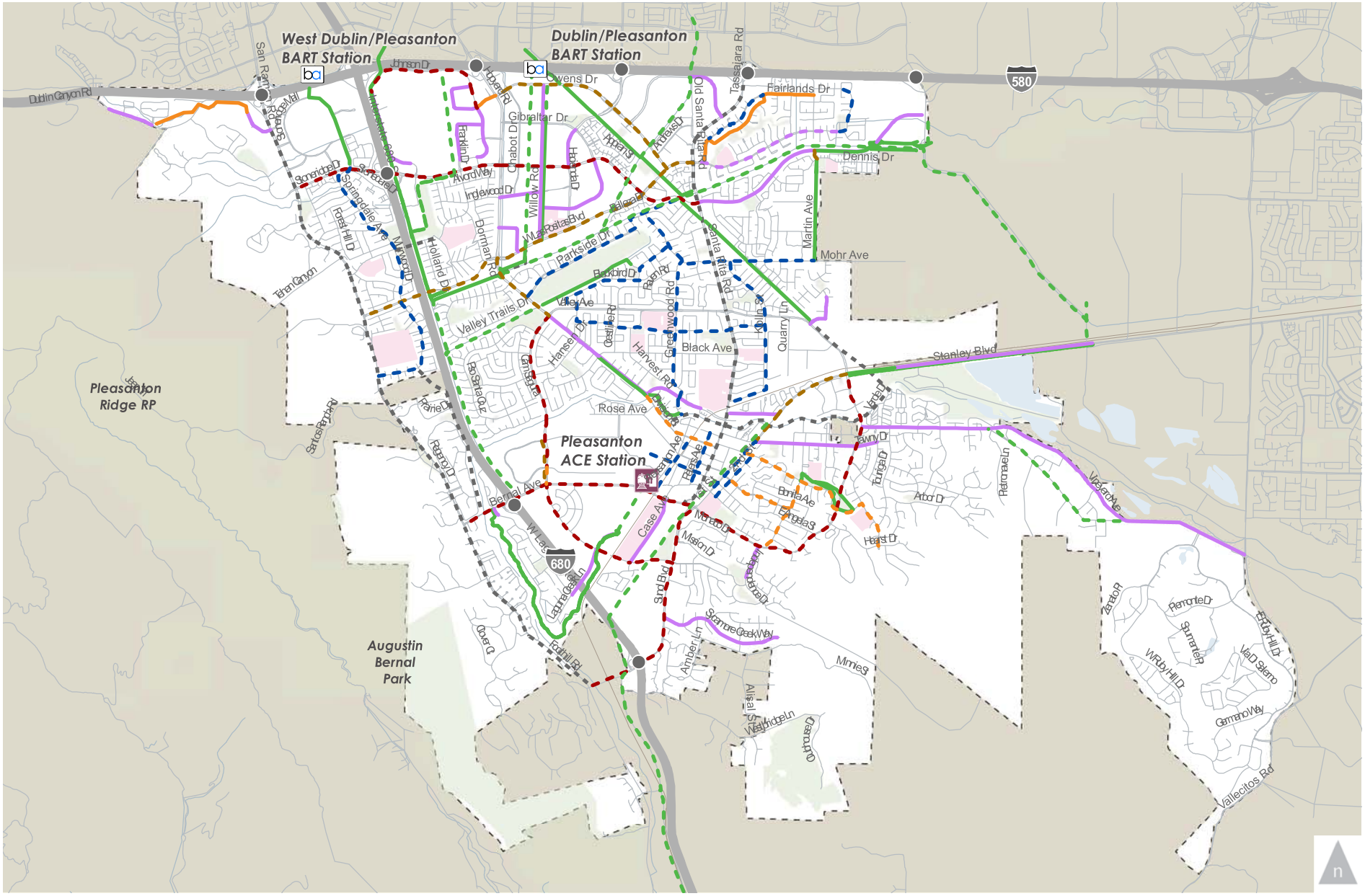
Improving Safety

- Monitor and record bicycle and pedestrian-related collisions. At areas with high injury collisions, develop improvement plans to lower crash rates.
- Adopt and implement a multi-modal safety assessment methodology for all city transportation studies.
- Work with Pleasanton Unified School District to implement the school's traffic-calming and shared-parking solutions in the Rides-to-School Program.

Vision Statement

The City of Pleasanton is a pleasant, thriving, healthy, sustainable community that strives to meet the needs of all of its citizens in an environmentally sensitive manner. Walking and bicycling for recreation, fitness or as a means of transportation requires safe and accessible infrastructure. The quality of the infrastructure for bicycling and walking contributes to the overall quality of life in the city by encouraging active living and reducing automobile traffic with its associated noise, pollution, congestion, and global environmental impact. The purpose of the Pleasanton Pedestrian and Bicycle Master Plan is to make the city as pedestrian and bicycle friendly as possible in order to encourage people of all ages, abilities and means to walk and/or bike.

This Plan creates a guide for achieving a comprehensive system of bicycle routes, pedestrian routes, trails, and related facilities that will result in a safe and convenient circulation system for pleasant, active travel. It addresses goals, policies, standards, funding strategies, education and intermodal linkages throughout Pleasanton. The plan provides prioritized lists of specific projects for implementation of a system with a fair balance among all modes of travel.



Existing Bicycle Network
- Bicyle Path (Class I)
- Bicycle Lane (Class II)
- Bicycle Route (Class III)
- Separated Bikeway (Class IV)

Near-Term Low-Stress Bicycle Projects
- Shared Use Path (Class I)
- Bicycle Lane (Class II)
- Buffered Bicycle Lane (Class II)
- Bicycle Route (Class III)
- Bicycle Boulevard (Class III)
- Separated Bikeway (Class IV)
- Feasibility Study

- Schools
- Parks
- City Boundary

Figure E-1

Near-Term All Ages and Abilities Network

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1. Why Plan for Active Transportation

1.1 Active Transportation Planning in Context

This is an exciting time nationally and locally for active transportation planning. There are new countermeasures and design standards ready for implementation, new funding sources available for and prioritizing these modes, and a greater understanding of why people walk and bicycle – and why they do not. Cities are embarking on a next generation of plans that are much bolder, and much more likely to be implemented rather than sit on the shelf collecting dust. In this context, Pleasanton is updating its *Pedestrian and Bicycle Master Plan* (PBMP) and focusing on key opportunities locally for walking and bicycling. This Plan sets forth a community-driven, forward-thinking vision for walking and bicycling in the city, with a focus on quality of life, safety, and access for all residents, employees and visitors.

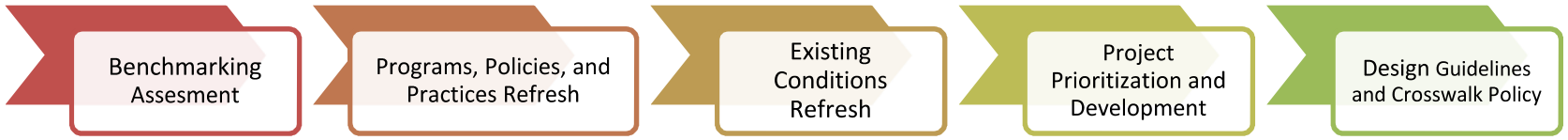
1.2 Pleasanton Today

Pleasanton is a sought-after community to live, work, and play. With excellent schools, thriving retail, the annual Alameda County Fair, and successful and accessible business parks, Pleasanton is both a bedroom community in the suburbs and a key destination on the I-580/680 corridors. Increasingly, walkability and bikability are seen as quality of life issues in Pleasanton, reflecting a desire to walk and bike to downtown, parks, community events, and schools. Like many communities, Pleasanton has a large share of "interested but concerned" bicyclists, those that own bikes and are eager to ride, but are concerned about high traffic levels and speeds, and difficult crossings. With a focus on health, community, and access for all ages and abilities the city embarked on a plan update to improve walking and bicycling conditions and opportunities.

1.3 Updating the Plan

The previous *Pleasanton Pedestrian and Bicycle Master Plan* was developed and adopted by the city in 2010 to provide a guide for city staff when developing transportation projects that are safe and convenient for all users, and provide the public with an understanding of how the city plans to grow, enhance, and maintain bicycling and walking facilities citywide. Approximately half of the high-priority projects have been built since the 2010 Plan. This includes a new segment of the Iron Horse Trail, an extension of the Arroyo Mocho Trail, and green and/or buffered bike lanes on multiple corridors. This refresh of the 2010 PBMP gives city staff and the public the tools to implement the new best practices of design for bicycle and pedestrian facilities in Pleasanton, and address changes that have occurred within the city since 2010, including the opening of an additional BART station. The PBMP address paths in the developed portions of the city. It is consistent with and complementary to the Community Trails Master Plan, which treats all paths and trails in the city.

The following diagram shows the project phases of the PBMP update, which began in September 2015. Each chapter of the Plan received a "refresh" to update statistics and ensure policies, programs, and practices continue to be relevant and to provide updates consistent with best practices. The key new elements of this Plan focus on a prioritized project list of the most important projects derived from the community outreach and data analysis efforts. Appendix A Design Guidelines features updated design guidelines that reference the latest best practices, many of which were invented or approved since the last Plan.



1.4 Community Involvement

With a focus on identifying and prioritizing projects that matter the most to the city – both in terms of need and community values – community involvement was a critical component of the Plan update. The city hosted three public workshops, one all-day walk audit, and six meetings with the Bicycle, Pedestrian, and Trails Commission (BPTAC) over the course of the PBMP update process to solicit input and feedback from the community.

Workshops and events were well attended even early in the process. Unfortunately, during the course of the Plan update, a bicycle-involved collision resulted in a fatality. This became a key organizing event for the community, and resulted in additional energy and commitments to bolder changes and a safety vision. This is reflected in the selection and prioritization of the projects included in the Plan.

Approximately 30 participants attended the first workshop to discuss existing needs and opportunities for bicycling.

1.4.1 Public Workshop #1 – Existing Conditions and Needs

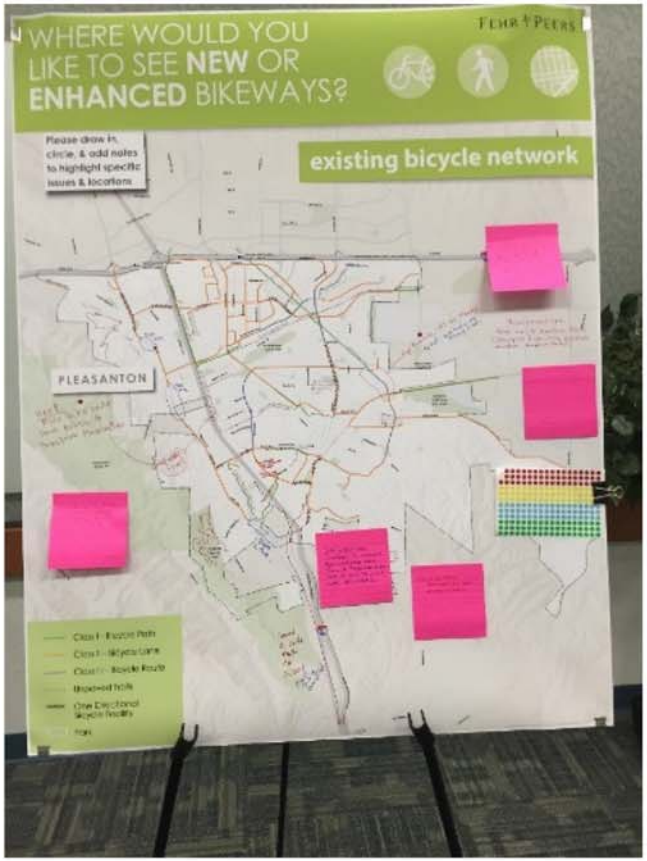
The first workshop, held on December 8, 2015 at the Pleasanton Library, focused on existing conditions for walking and bicycling in Pleasanton. Approximately 30 community members attended. The workshop consisted of a presentation of existing conditions and potential design features for pedestrian and bicycle facilities that could be implemented in Pleasanton. The workshop then moved into an open house format to invite public feedback on the PBMP goals and policies, safety hotspot locations, key destinations important to the community, and other existing issues related to walking and bicycling. Community goals for prioritization of walking and bicycling improvements focused on safety and demand. Workshop attendees identified the following areas as top priorities for walking:

- Connecting to trails, such as the Centennial Trail and Arroyo Del Valle Trail
- Connecting to parks, such as Del Prado Park

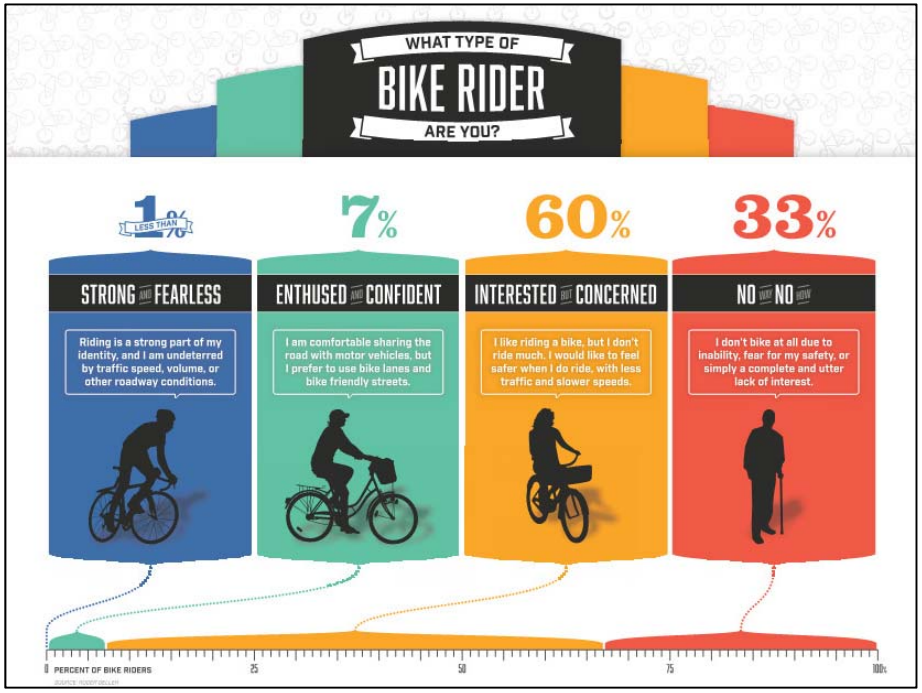
Workshop attendees identified the following areas as top priorities for bicycling:

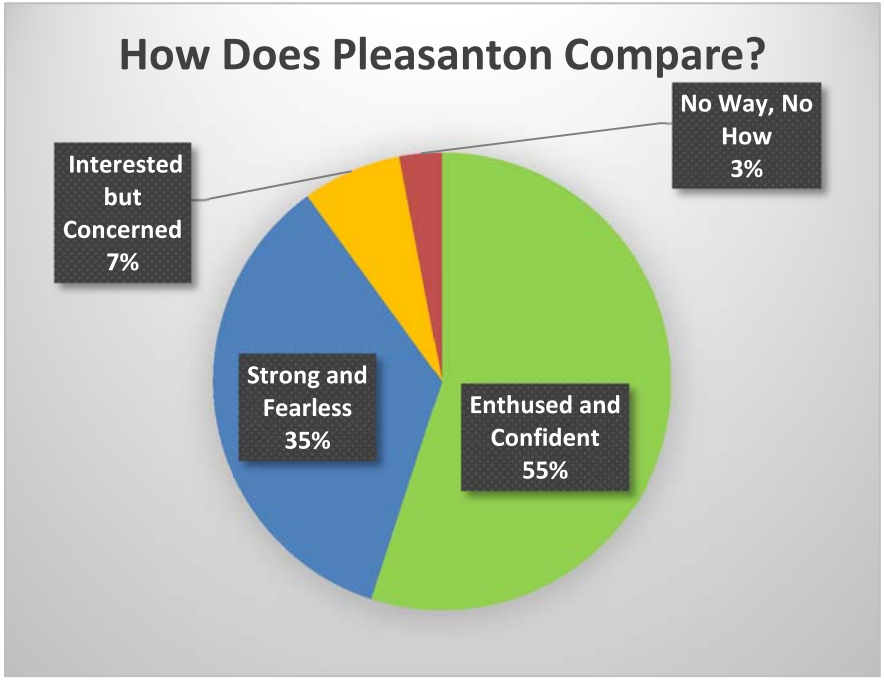
- Resolving challenging intersections/gaps, such as connecting the Iron Horse Trail in the south to Stanley Boulevard and even farther to Downtown
- Improving enforcement and maintenance of existing bicycle infrastructure, such as enforcement of parking prohibitions in bicycle lanes
- Making connections to neighboring jurisdictions in the Tri Valley, such as providing a high-quality, low-stress bicycle route between Dublin and Downtown Pleasanton
- Providing continuous bicycle facilities on popular bicycle routes, such as Foothill Road

Participants were also asked how they identify as a bicyclist, from among Four Types of Cyclists (a typology created by Roger Gellar for the City of Portland). The majority of workshop participants identified themselves as Enthused and Confident cyclists. This is in contrast to what the larger population of Pleasanton is likely to be, and illustrated the need to attract a broader range of community input through future outreach efforts. More information on the Four Types of Cyclists and how it relates to level of traffic stress and comfort for bicyclists is presented in **Section 3.3.3.6**.



Participants were invited to share general and site-specific comments on topics such as bicycle infrastructure, safety, policies, and support programs.





The Four Types of Cyclists and their typical breakdown across the population are shown above. The breakdown of how bicyclists attending the second workshop is also shown above.

1.4.2 Walk Audits

A combination of windshield tours and walk audits was held throughout Pleasanton on Friday, June 24, 2016. The walk audit participants included one member of city staff, Fehr & Peers staff, and community members from the Bicycle, Pedestrian, and Trails Committee (BPTC). Audits focused on areas of high bicycle and pedestrian demand in the city and included:

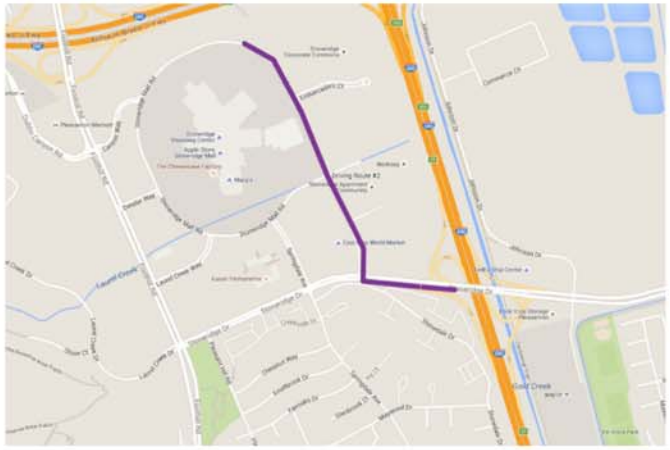
- Dublin/Pleasanton BART
- West Dublin/Pleasanton BART
- Downtown
- Access to the Arroyo Mocho Trail and Iron Horse Trail
- Parallel route to Santa Rita Road

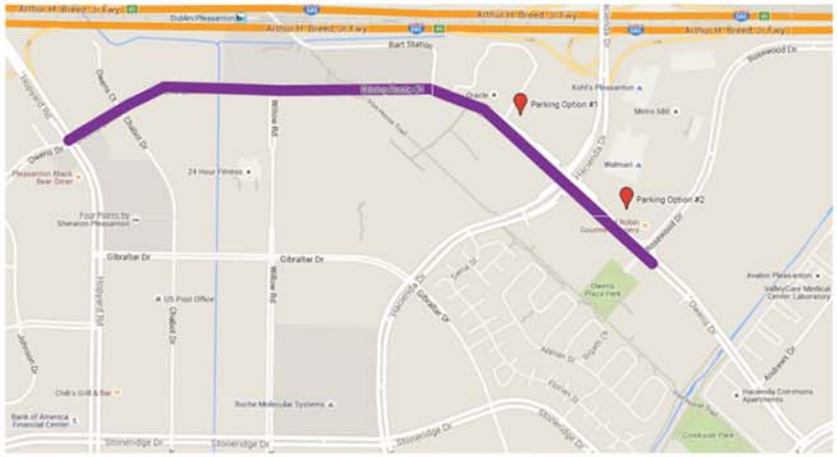
The discussion focused on improvements for safety and accessibility for bicyclists and pedestrians using potential treatments such as:

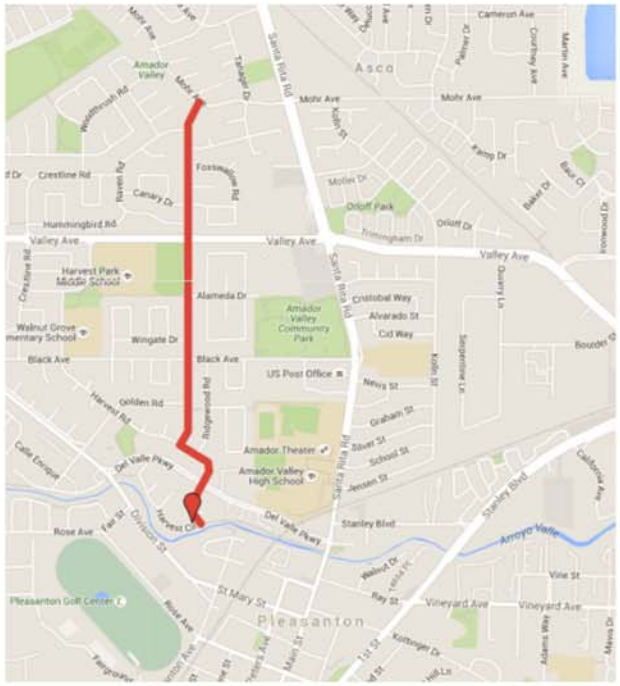
- Wider curb ramps at trail crossings
- Pedestrian Hybrid Beacons
- Parking protected cycle tracks
- Slip lane removal
- Curb extensions
- Bicycle Boulevards
- Median refuges
- Extended green clearance time

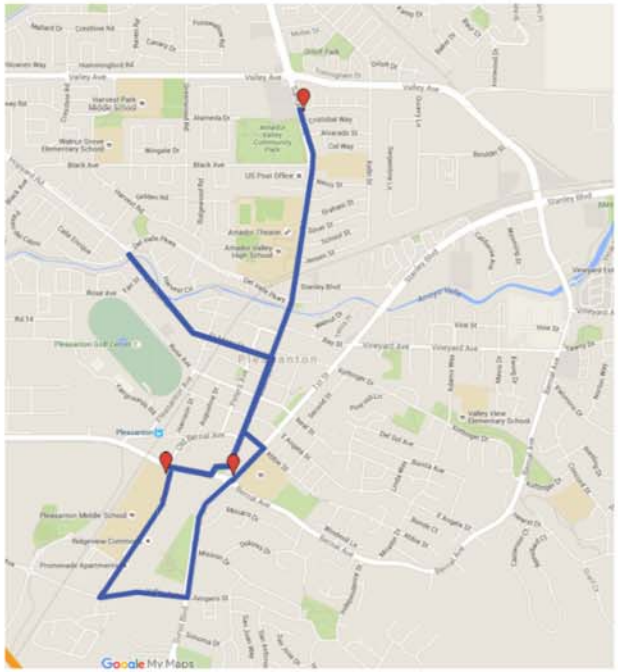
City staff and Bicycle, Pedestrian, and Trails Committee members discussing bicycle and walking access to BART issues on the walk audits.

These techniques are further defined in **Appendix A.2** Crosswalk Policy. The day ended with a debrief at city offices where issues and potential solutions were drawn onto large maps for later incorporation into the project list in this Plan.









The first walk audit (top images) focused on West Dublin/ Pleasanton and Dublin/Pleasanton BART Stations. The second walk audit focused on the Central Pleasanton bicycle boulevard project on Greenwood Road (bottom left). The third walk audit focused on accessing Downtown from the west, north, and south (bottom right).

1.4.3 Public Workshop #2 – Network Development

The second workshop was held at the Pleasanton Library on August 9, 2016. Approximately 50 community members attended and provided input on draft improvements to the bicycle and pedestrian facilities in Pleasanton and the prioritization of those projects.

Participants provided detailed feedback on each corridor project and its prioritization.

Community members were enthusiastic about opportunities the Plan update presents to improve biking and walking conditions. Key feedback included:

- Adjusting the relative prioritization of the various east-west corridor through the city, such as West Las Positas Boulevard and Stoneridge Drive
- Increasing the emphasis on safe routes to school projects and identifying how proposed projects benefit children walking and biking to school
- Revising prioritization criteria to further prioritize proximity to schools and the vulnerability of children walking and biking to school
- Emphasizing improvements the Valley Avenue/Stanley Boulevard intersection
- Adding new projects on Stanley Boulevard and Santa Rita Road

1.4.4 Special City Council Meeting

On September 13, 2016, the City of Pleasanton held a special meeting to discuss biking issues in Pleasanton. While the meeting specifically focused on the near-term, medium-term, and long-term recommendations for the Valley Avenue/Stanley Boulevard intersection after the death of a bicyclist at that intersection in the summer of 2016, the Plan update and bicycle issues in Pleasanton were generally discussed. The Council Chambers were

at capacity and numerous speakers voiced their concern and support for biking issues in Pleasanton. Many middle school students were in attendance at the meeting and came to the podium to discuss their bicycle commutes to school, express concern for their safety while biking, and state their interest in safe bicycling as a means to their own independence. Bike East Bay and Bike Pleasanton were instrumental in helping to bring people to the Council meeting.

1.4.5 Public Workshop #3 – Plan Confirmation

The third workshop was held at the City of Pleasanton Operation Service Center on December 6, 2016 and was attended by approximately 20 community members. Workshop noticing information was provided to schools citywide to get greater input on the pedestrian and safe routes to school Plan elements. The purpose of the meeting was to review the revised draft Plan recommendations – from recommended projects to support programs and implementation considerations. Community members had the opportunity to comment on each individual project as well as to provide feedback on the general direction of the Plan. Attendees confirmed the direction of the Plan and provided comments on:

- Identifying the importance of multi-modal safety education programs, particularly those targeted at drivers, and making sure these campaigns have a reach beyond those already interested in biking and walking issues
- Emphasizing the importance of student safety and comfort and accommodating those who walk and bicycle to school today as well as those who might in the future
- Looking for opportunities to partner with other community groups, such as Bike Pleasanton

2. Goals, Policies, & Actions

Goals, policies, and actions create the foundation for the community's vision for developing a citywide bicycle and pedestrian network that is safe, comfortable, convenient, and accessible for all users. Goals are broad statements of purpose; policies are set within goals to provide the course of action; and actions are the required elements to implement the policies. These goals, policies, and actions have been updated and expanded from the 2010 PBMP based on best practices, and review and input by city staff, the BPTC and other stakeholders, to reflect current issues and objectives. The following goals, policies, and actions are consistent with the city's other adopted planning documents, such as the *Pleasanton General Plan* and *Pleasanton Community Trails Master Plan*.

Goal 1: **Provide the citizens of Pleasanton with a citywide network of bikeways, walkways, and trails that are accessible, safe, comfortable and convenient for people of all ages and abilities who walk and bicycle.**

Policy 1-1: *Implement the bicycling and walking networks presented in the 2016 Pedestrian and Bicycle Master Plan.*

Action 1-1A: Encourage the city to pursue employment of a bicycle and pedestrian coordinator at minimum of 70% time to manage all non-motorized transportation projects and ongoing route maintenance program once the Pedestrian and Bicycle Master Plan has been adopted by the City of Pleasanton, as well as grant pursuits.

Action 1-1B: Pursue all potential and viable funding sources for active transportation, including sources such as Measure BB as well as funding for routine maintenance and Capital Improvement Program (CIP) budget for typical roadway projects that can integrate active mode components.

Action 1-1C: Implement at least two Class IV separated bikeway pilot projects by 2021.

Action 1-1D: Implement at least five of the high priority projects detailed in this Plan by 2021.

Action 1-1E: Conduct complete streets studies on two key roadways for all modes: Foothill Road and Santa Rita Road.

Action 1-1F: Implement the *Downtown Specific Plan* and specifically all pedestrian and public space enhancements within that plan.

Action 1-1G: Continue to update the *PBMP* every five years to reflect the latest in active transportation planning and design.

Policy 1-2: *Promote expansion and maintenance of a trail system serving Pleasanton's diverse population while respecting and protecting the integrity of its natural and cultural resources.*

Action 1-2A: Update and implement the *Community Trails Master Plan.*

Action 1-2B: Cooperate with East Bay Regional Parks District in completing a regional trail system, and with Zone 7 in completing its Arroyo Management Plan.

Action 1-2C: Enhance access to trails from the city's roadway network through the provision of paths, walkways, trail crossings, and other infrastructure to integrate parks, open space, and trails with the city's on-street bicycle and sidewalk network.

Action 1-2D: Develop a citywide signage and wayfinding system for pedestrians and bicyclists, including distances to destinations and facility type indications, that reflect the local culture and community.

Policy 1-3: *Promote the development of a comprehensive system of pedestrian, bicycle, and hiking trails throughout open-space lands in the Planning Area consistent with the Trails Master Plan.*

Action 1-3A: Continue to require developers to dedicate public-access easements for trails in private open-space areas, where feasible.

Action 1-3B: Retain all publicly-owned corridors and strive toward obtaining more – e.g., abandoned rail lines, utility corridors, water courses and canals, and other easements – for future open space and trail use.

Action 1-3C: Encourage separation of the East Bay Regional Park District's Iron Horse Trail from existing roadways and sidewalks, where feasible, particularly in the southern portion of the trail.

Action 1-3D: Develop the Downtown portion of the Alameda County Transportation Corridor for pedestrian, bicyclists and motor vehicle parking, consistent with the 2002 Master Plan for the Downtown Parks and Trails System and with the current update to the Downtown Specific Plan.

Action 1-3E: Create connections linking the trail system to Pleasanton schools, transit, and Downtown wherever possible.

Policy 1-4: *Develop a maintenance program for bicycle and pedestrian facilities by 2021.*

Action 1-4A: Maintain bikeways, including paved trails and separated bikeways, with adequate sweeping, pavement repairs and vegetation trimming on a monthly basis, or as directed by the City Traffic Engineer or Director of Engineering.

Action 1-4B: Work with the city's existing maintenance reporting system and increase public awareness of the existing system as a means to report bicycle and pedestrian facilities needing repair and/or clean-up.

Action 1-4C: Allocate a percentage of each year's CIP to trail, street maintenance and roadway improvements along bicycle and pedestrian facilities.

Goal 2: Use best practices and innovative but tested pedestrian and bicycle designs to build continuous, safe and comfortable walking and bicycling networks.

Policy 2-1: *Plan and design for low traffic stress facilities for bicyclists wherever feasible on existing streets and in new developments.*

Action 2-1A: Provide and maintain signal detection for bicyclists at all signalized intersections, including on side streets.

Action 2-1B: At intersections of designated bikeways, provide design accommodations for bicyclists making left-turns, such as detection in turn pockets, dedicated bicycle signal phases, bicycle boxes, or two-stage turn boxes where feasible.

Action 2-1C: On residential Class III bicycle boulevards, provide traffic calming to reduce speeds and, if feasible, traffic volumes.

Policy 2-2: *Plan and design all streets as complete streets serving pedestrians, bicyclists, motorists, and transit riders, striving to accommodate people of all ages and abilities.*

Action 2-2A: Routinely identify and integrate bicycle and pedestrian improvements into all standard maintenance (such as overlays and repaving), planning studies, roadway redesign, and auto-focused CIP projects (such as new signals or signal modifications).

Action 2-2B: Require design measures and facilities to accommodate access by pedestrians, bicycles, and transit in new developments and redevelopments, including bicycle parking facilities, low stress bicycle and pedestrian facilities along desire lines, and transit-friendly designs for the site perimeter and internal circulation patterns.

Goal 3: Coordinate across City departments to provide education, encouragement, and enforcement programs to improve safety for all users and increase the number of walking and bicycling trips. Chapter 6 of this Plan presents more information on existing and recommended programs.

Policy 3-1: *Increase bicycle and pedestrian mode share by increasing public awareness of the available pedestrian, bicycle and trail facilities and programs.*

Action 3-1A: Consider creating a city-sponsored self-service bicycle-sharing program.

Action 3-1B: Seek funding from Safe Routes to Schools grants.

Action 3-1C: Continue to develop and promote existing education and encouragement programs, including but not limited to Bike to Work Day, Bike to School Day, bicycle safety courses and a citywide bicycle user map. Continue Police Department programs such as Bicycle Rodeos, bicycle and pedestrian pamphlets, and classroom education.

Action 3-1D: Evaluate the success and effectiveness of each program and introduce targeted new initiatives. Promote and accommodate bicycle events such as the Pleasanton Bicycle Safety Festival and Bike to Work and School Day.

Action 3-1E: Work towards recognition as a Silver-level Bicycle Friendly Community and recognition as a Walk Friendly Community.

Policy 3-2: *Promote traffic safety, bicycle safety, and pedestrian safety education in Pleasanton.*

Action 3-2A: Coordinate across city departments and with community partners such as Bike East Bay and the Alameda Safe Routes Partnership to promote safety education and awareness for all modes in Pleasanton.

Goal 4: Maximize multi-modal transportation options for people who live, work, and/or play in Pleasanton by enhancing walking and bicycling connections to transit including BART, ACE, and bus connections, as well as parks, schools, shopping, and other key destinations.

Policy 4-1: *Provide safe, comfortable, and convenient bicycle and pedestrian connections and support facilities at transit stations.*

Action 4-1A: Provide safe, comfortable, convenient, and continuous bicycle and pedestrian facilities within one mile of the BART and ACE stations, and within an eighth of a mile of Wheels bus stops.

Action 4-1B: Provide short-term bicycle racks and longer-term secure bicycle parking, such as bicycle lockers or a bicycle station, at the two BART stations and the ACE station.

Policy 4-2: *Ensure secure, adequate and easily accessible bicycle parking at destinations throughout Pleasanton.*

Action 4-2A: Provide a citywide bicycle rack request program, siting racks in locations out of the pedestrian through zone and in highly visible locations, as described in the PBMP Design Guidelines. Consider Pleasanton-specific branding of the bicycle racks.

Action 4-2B: Update the Municipal Code to provide adequate and secure bicycle parking (i.e., a combination of outdoor racks, covered or indoor storage at workplaces and residences, etc.) with new development and at existing locations where long-term parking is desirable, such as in Downtown and near the three transit stations, consistent with the PBMP Design Guidelines.

Action 4-2C: Request the Pleasanton Unified School District and commercial businesses provide and actively maintain sufficient, convenient, safe, and attractive bicycle racks.

Action 4-2D: Implement a pilot on-street bicycle parking corral in Downtown.

Policy 4-3: *Integrate land-use and transportation planning to ensure patterns facilitate safe and convenient mobility of people and goods at a reasonable cost, and to increase travel alternatives to single-occupant automobiles.*

Action 4-3A: Prioritize projects that provide bicycle and pedestrian connections at BART, ACE, and major bus stops.

Goal 5: Improve traffic safety for all modes, and particularly the most vulnerable roadway users - bicyclists and pedestrians.

Policy 5-1: *Work to reduce the number of severe injury and fatal bicycle and pedestrian crashes to zero.*

Action 5-1A: Adopt a multi-modal citywide Vision Zero policy and systemic safety strategy to proactively identify safety issues and implement safety countermeasures, utilizing best practice engineering, enforcement, and public education tools.

Action 5-1B: Monitor and record bicycle and pedestrian-related collisions. At areas with high injury collisions, develop improvement plans to lower crash rates.

Action 5-1C: Implement the continuous network of low-traffic stress bicycle facilities proposed in this PBMP with high levels of protection (such as Class IV separated bikeways) on arterials, and shared lanes with traffic calming on low-volume residential streets (such as residential bicycle routes).

Action 5-1D: Allocate staff time to applying for and developing improvement plans for Caltrans Highway Safety Improvement Program (HSIP) or other grant funding to install walking and bicycling safety improvements at areas with high numbers of high injury collisions in order to lower the crash rate.

Action 5-1E: Adopt a citywide, multi-modal Vision Zero policy and prepare systemic safety analyses.

Policy 5-2: *Proactively improve safety for bicyclists, pedestrians, transit users and drivers.*

Action 5-2A: Implement the proposed Vision Zero Strategy and monitor and evaluate on an ongoing basis.

Action 5-2B: Adopt and implement a multi-modal safety assessment methodology for all city transportation studies.

Action 5-2C: Provide sidewalks on both sides of arterial streets, as detailed in the PBMP design guidelines.

Action 5-2D: Restrict parking near intersections to ensure pedestrian visibility.

Action 5-2E: Explicitly prohibit parking in bicycle lanes and work with the Police Department to provide enforcement.

Action 5-2F: Work with Pleasanton Unified School District to implement the school's traffic-calming and shared-parking solutions in the Rides-to-School Program.

Action 5-2G: Provide marked crosswalks to serve key desire lines.

Action 5-2H: Where feasible, tighten corner radii at arterial intersections to slow turning vehicular traffic and improve pedestrian and bicycle safety at intersections.

Action 5-2I: Routinely consult the Crosswalk Policy in **Section A.2** to identify crosswalk improvements at signalized, stop-controlled, and uncontrolled locations for all development review, planning studies, signal modifications and new signal projects.

3. Walking and Bicycling in Pleasanton Today

3.1 Destinations and Desire Lines

Residents, employees, and visitors in Pleasanton walk and bicycle for both recreational and utilitarian reasons. Understanding popular destinations and desire lines (efficient routes of travel) is essential for identifying and prioritizing improvement projects that best meet the needs of the most users. The diverse mix of land uses in the city, and range of development types and densities, results in varying levels of access for pedestrians and bicyclists. This offers opportunity areas but also major challenges.

With numerous trails, parks, and open space areas, and on-street cycling loops, climbs and group rides, walking, bicycling, running and hiking for exercise is popular, and enjoyed year-round in Pleasanton. Key destinations for recreation include the skate park at Stoneridge, the BMX park at Stanley, Pleasanton Ridge, Augustin Bernal Park, Alviso Adobe Community Park, the Senior Center on Sunol Boulevard, Aquatic Center on Black Avenue, Pleasanton Library on Old Bernal Avenue, Pleasanton Sports and Recreational Park along Parkside Drive, and the Iron Horse Trail.

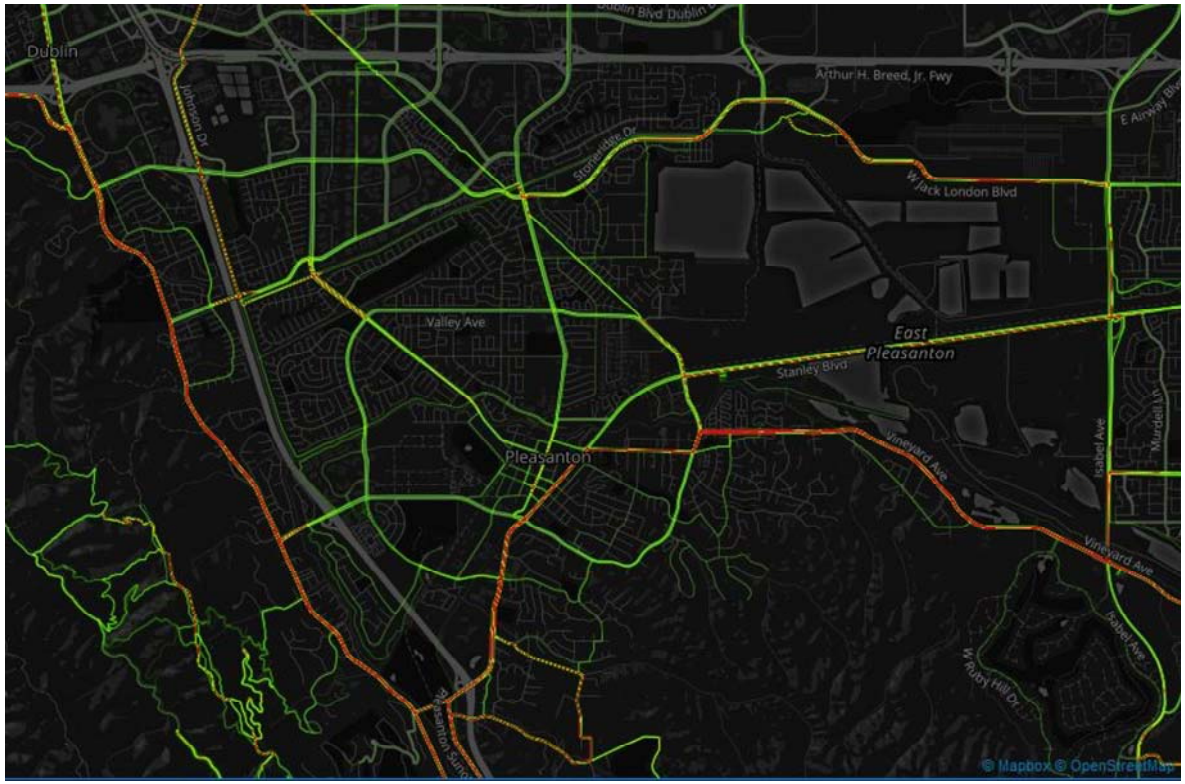
The heat map from the Strava exercise app illustrates some of the on-street routes used by recreational cyclists in Pleasanton and nearby areas. Popular routes shown include the Vineyard Avenue into Livermore, as well as Foothill Road and Sunol Boulevard.

Bicycling and walking are also important modes for travel to and from home, work, school, and shopping/errands/entertainment. Pleasanton has many residential neighborhoods around the historic downtown area, as well as reaching north toward I-580 and west, just beyond I-680 to Pleasanton Ridge. Residential areas typically have landscaped medians, local parks, and local schools. Most have sidewalks and are walkable internally, but often require major arterial crossings for access to other neighborhoods or major destinations.

In addition to neighborhood elementary schools, three public junior high schools and three public high schools, as well as several private schools, are key destinations for walking and bicycling in the city.

The city also boasts significant commercial and office centers on its northern edge along I-580 and near the West Dublin/Pleasanton and Dublin/Pleasanton BART Stations. This includes the commercial development near Stoneridge Mall, Hacienda Business Park, Dublin/Pleasanton Park and Rose Pavilion. Several other office parks, including Bernal Corporate Park, are located throughout central Pleasanton.

Downtown Pleasanton is a significant destination for dining and shopping, and is also where city offices, the ACE train station, and community facilities, such as the senior center and library, and Firehouse Arts Center, are located. Other retail hubs include Stoneridge Mall and Pleasanton Gateway Shopping Center, as well as several neighborhood retail centers and strip malls. In the summer, the Alameda County Fairgrounds is an important local and regional destination. **Figure 3-1** presents existing citywide land use patterns per the General Plan.



Many bicyclists in Pleasanton ride long distances for recreation. Some of the popular routes that provide important regional connections include Foothill Road, Dublin Canyon Road, Sunol Boulevard, and Vineyard Avenue. Some Pleasanton bicyclists use the Strava app to document their rides, as shown in the heat map at left. Orange and red lines indicate more Strava riders.

Source: http://labs.strava.com/heatmap/#13/-121.91279/37.66779/yellow/bike

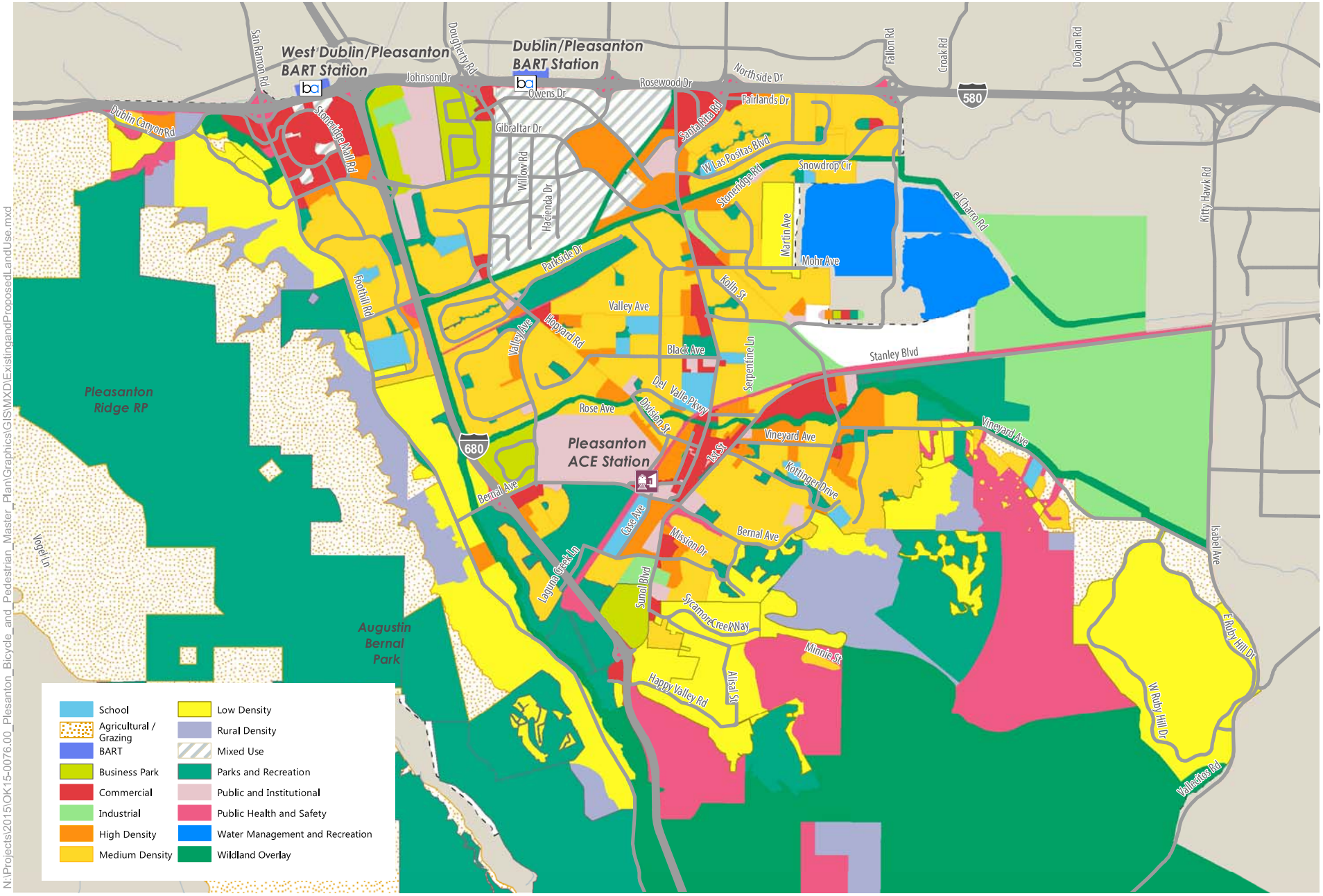


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Figure 3-1
Existing and Proposed Land Use

3.2 Active Transportation Mode Share

Table 3-1 presents the 2015 Citywide Travel Demand Model estimates of the number of existing trips taken each day by travel mode. Another data source, the California Household Travel Survey, which is a statewide survey on travel patterns, is presented as a point of comparison. Both show a walking mode share of just under 8% and a bicycling mode share of around 0.5%. The total person trips represents the sum of each individual trip taken on a typical day across Pleasanton. These estimates include all trip purposes, such as travel to/from home, work, and other destinations as well as recreational activities.

Table 3-1: Existing Trips in Pleasanton by Travel Mode

Travel Mode	City of Pleasanton Existing Trip Estimate [1]		CHTS Mode Split Estimate[2]
	Person Trips	Mode Split	
Auto	1,448,032	90.5%	89.8%
Transit	15,226	1.0%	2.2%
Bike	12,822	0.8%	0.4%
Walk	123,632	7.7%	7.6%
Total	**1,599,711**	**100.0%**	**100.0%**

1. Per the City of Pleasanton Citywide Travel Demand Model (2015).
2. Statistics presented from the California Household Travel Survey (CHTS) (2013).

3.3 Walking Conditions in Pleasanton

This section presents a baseline of current issues and opportunities for walking in Pleasanton. With a goal of more and safer walking, future year comparisons versus this baseline can be used to illustrate progress in these areas.

3.3.1 Pedestrian Safety

The following summarizes pedestrian-involved collisions that occurred between 2010 and 2015, identifying trends and collision hot spots. In general, the total number of collisions is lower than other California cities similar in size to Pleasanton. Although the collision rates are low, pedestrian-related collisions result in injuries 88 percent of the time.

3.3.1.1 Pedestrian Safety in a Statewide Context

The California Office of Traffic Safety (OTS) maintains a database of collision injuries and fatalities across the state. Cities are grouped by size according to total population. Pleasanton is in a population cohort with 103 total cities ranging in size from 50,001 to 100,000 residents. Pleasanton's rankings from 2013, the most recent year available for OTS rankings, are summarized in **Table 3-2**.

Table 3-2: Pleasanton Collision Rankings among Similar Cities, 2013

Type of Collision	Injures[1]	Percentage of All Injury Collisions[1]	OTS Ranking (of 103 cities)
Total[2] Fatal and Injury	320	100%	76th
Pedestrians	12	4%	90th
Pedestrians <15	1	<1%	77th
Pedestrian 65+	2	1%	71th

1. Injury figure includes all types of injuries: complaint of pain, other visible injury, severe injury, and fatality. Per the City of Pleasanton's crossroads database, one fatal pedestrian collision in 2013.
2. Total includes fatal and injury collisions for all travel modes, including auto-auto, auto-pedestrian, and auto-bicycle.
Source: California Office of Traffic Safety 2013 OTS Rankings

Key findings from the OTS rankings include:

- Pleasanton ranked favorably for pedestrian safety overall, with fewer reported collisions than 87 percent of similarly sized California jurisdictions.
- Pleasanton also ranked favorably for pedestrian safety for students (those under 15 years of age) and for seniors (those over 65 years of age), with fewer reported collisions than 75 percent and 69 percent of similarly sized California jurisdictions, respectively.

3.3.1.2 Pedestrian-Involved Collisions

Pedestrian-involved collision records in the City of Pleasanton Crossroads database from September 2010 to August 2015 show 68 pedestrian-involved collisions were reported during this period. On average, 13 pedestrian-involved collisions were reported annually with a high of 15 collisions in both 2013 and 2014. The location of collisions was split fairly evenly, with 53 percent occurring mid-block and 47 percent occurring at intersections.

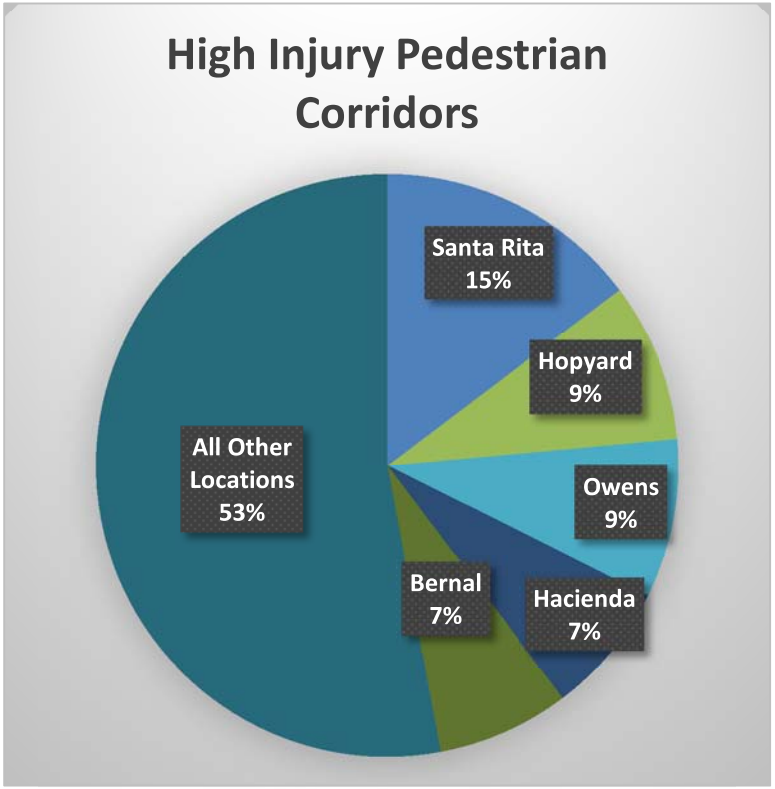

Figure 3-2 identifies the location, severity, and frequency of these pedestrian-involved collisions. The highest injury corridors for pedestrians are:

- Santa Rita Road/Main Street, including one fatal and two severe injury collisions
- Hopyard Road, including two severe injury collisions
- Owens Drive, including two severe injury collisions
- Hacienda Drive
- Bernal Avenue

Seventy-four percent of all pedestrian-involved collisions occurred on the following 13 roadways: Bernal Avenue, Chabot Drive, First Street, Gibraltar Avenue, Hacienda Drive, Hopyard Road, Las Positas Boulevard, Main Street, Owens Drive, Santa Rita Road, Stoneridge Road, Stoneridge Mall Road, and Valley Avenue

Table 3-3 identifies locations where more than one pedestrian collision was recorded in or near the intersection over the five-year period.

Table 3-3: Locations With the Highest Frequency of Pedestrian Collisions In Or Near the Intersection	
Intersection	**Number of Collisions**
Foothill Road and Oak Creek Drive	2
Stoneridge Mall Road and Deodar Way	2
Stoneridge Mall Road and Embarcadero Court	2
Hacienda Drive and Park Hacienda Driveway	2
Santa Rita Road and Rosewood Drive	2
Santa Rita Road and Sutter Gate Avenue	2
Santa Rita Road and Valley Avenue	2
Santa Rita Road and Francisco Street	2
Valley Avenue and Paseo Santa Cruz	2
Source: City of Pleasanton Crossroads database, 2010-2015	

Table 3-4 identifies the reported violations for pedestrian-involved collisions in Pleasanton for 2010-2015. Driver violation of pedestrian right-of-way represented the majority of the reported collisions at 57 percent. Of those collisions, 64 percent happened at intersections. This may be indicative of drivers not yielding to pedestrians during permitted left turns or right turns. Elevating the visibility of pedestrians, protecting turn movements, and driver education campaigns could be targeted at these locations.

The second most common violation category was pedestrian violations, accounting for 16 percent of collisions. Support programs that target pedestrian behaviors through enforcement and education campaigns could be opportunities to reduce these collision types.

The third most common violation category was unsafe starting or backing violations. All four of these collisions occurred at midblock locations.

Table 3-4: Violation Category of Pedestrian Collisions		
Violation Category	**Number of Collisions**	**Percent of Collisions**
Auto Violation of Pedestrian Right of Way	39	57%
Pedestrian Violation	11	16%
Not Stated/Unknown	5	7%
Unsafe Starting or Backing	4	6%
Other Improper Driving	3	4%
Auto Right of Way Violation	3	4%
Improper Turning	2	3%
Unsafe Speed	1	1%

Source: City of Pleasanton Crossroads database, 2010-2015

As shown in **Table 3-5**, approximately 88 percent of all pedestrian-involved collisions in 2010-2015 resulted in an injury. Severe injury and fatal collisions accounted for 16% of all pedestrian collisions.

Table 3-5: Pedestrian Injury Severity

Injury Severity		Number of Collisions	Percent of Collisions
Property Damage Only		8	12%
Injury Collisions	Other Visible Injury	28	41%
	Complaints of Pain	21	31%
	Severe Injury	10	15%
	Fatal	1[1]	1%

1. Note that as shown on Figure 1, an additional pedestrian fatality occurred at First Street/Abbie Street in November, 2015.
Source: City of Pleasanton Crossroads database, 2010-2015

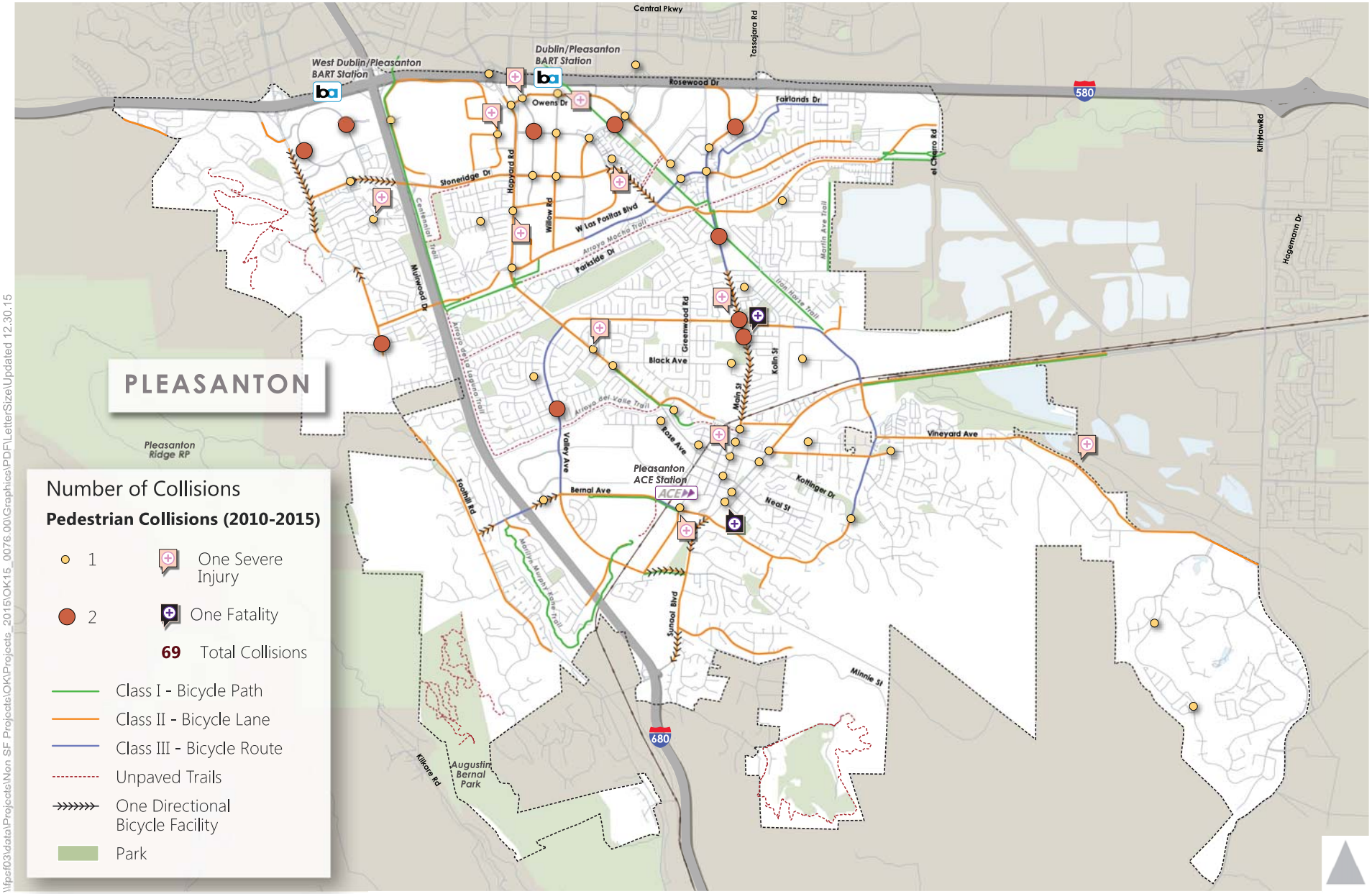

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Figure 3-2

Pedestrian Collisions (2010 - 2015)

3.3.2 Pedestrian Infrastructure

Pedestrian-related issues and opportunities were identified in the following focus areas, which generally have the highest concentration of walking in the city:

- Downtown Pleasanton
- Alameda County Fairgrounds
- ACE and Dublin/Pleasanton BART Train stations
- Stoneridge Mall/ West Dublin/Pleasanton BART station
- Areas surrounding all schools and parks

In each area, presence and quality of sidewalks were inventoried. Signalized, stop-controlled, and uncontrolled crossings were also examined.

3.3.3 Sidewalks

Walking can be a utilitarian activity that ranges in distance from relatively short (from a parked car to a business) to longer trips. Walking also has an important social function – walking children to school or walking with friends to shop or exercise. Therefore, sidewalks should be comfortable enough for people to walk side-by-side and pass each other. Other important variables in pedestrian comfort include landscaping and street trees: these provide a horizontal and vertical buffer from busy roadway traffic, and shade during Pleasanton's warm summers. Good quality of the sidewalk surface – with no cracks in the surface, few driveways, and where driveways are present, cross-slopes and level areas that provide continuity of the sidewalk environment – supports people of all abilities successfully navigating and enjoying the city as pedestrians.

Sidewalks in Pleasanton are typically continuous and in good condition, allowing people to generally walk to destinations. Portions of the city have sidewalks narrower than five feet and, in a few areas, no sidewalk is provided. As mapped on **Figure 3-3**, key sidewalk deficiencies include:

- The Stoneridge Mall area: significant sidewalk gaps within ½ mile of the West Dublin/Pleasanton BART Station.

- Foothill Road: significant sidewalk gaps along the length of the corridor. County pockets on Foothill Road also contribute to sidewalk discontinuity.
- Downtown: Outdoor seating and street furnishings encroach on the usable sidewalk space.
- Residential streets: sidewalks are less than five feet or no sidewalk is provided in some areas.

3.3.4 Paths and Trails

Paths and trails in Pleasanton provide a great resource for both utilitarian and recreational trips. They are located citywide, often along waterways as well as in the open space areas. This Plan focuses on the paths and trails within the developed portions of the city, with an emphasis on access to those paths and trails. The Community Trails Master Plan is an important document that treats all paths and trails citywide.

Some trails in Pleasanton are not paved, such as the Arroyo de Laguna and Arroyo Del Valle Trails, which may limit the usability of those trails for people of all abilities and utilitarian bicycling trips. Off-street facilities are more expensive and more difficult to maintain, particularly in terms of maintaining surface quality. The city is currently testing various paving treatments for Arroyo Mocho Trail to better understand a preferred trail design to maximize durability and minimize maintenance costs.

In addition to different paving types, the width of paths throughout the city can vary, typically ranging from 8-10 feet. At newer trail crossings, such as the Iron Horse Trail extension near Dublin/Pleasanton BART, the city has signalized trail crossings, which provides high quality support for trail users to cross major roadways.

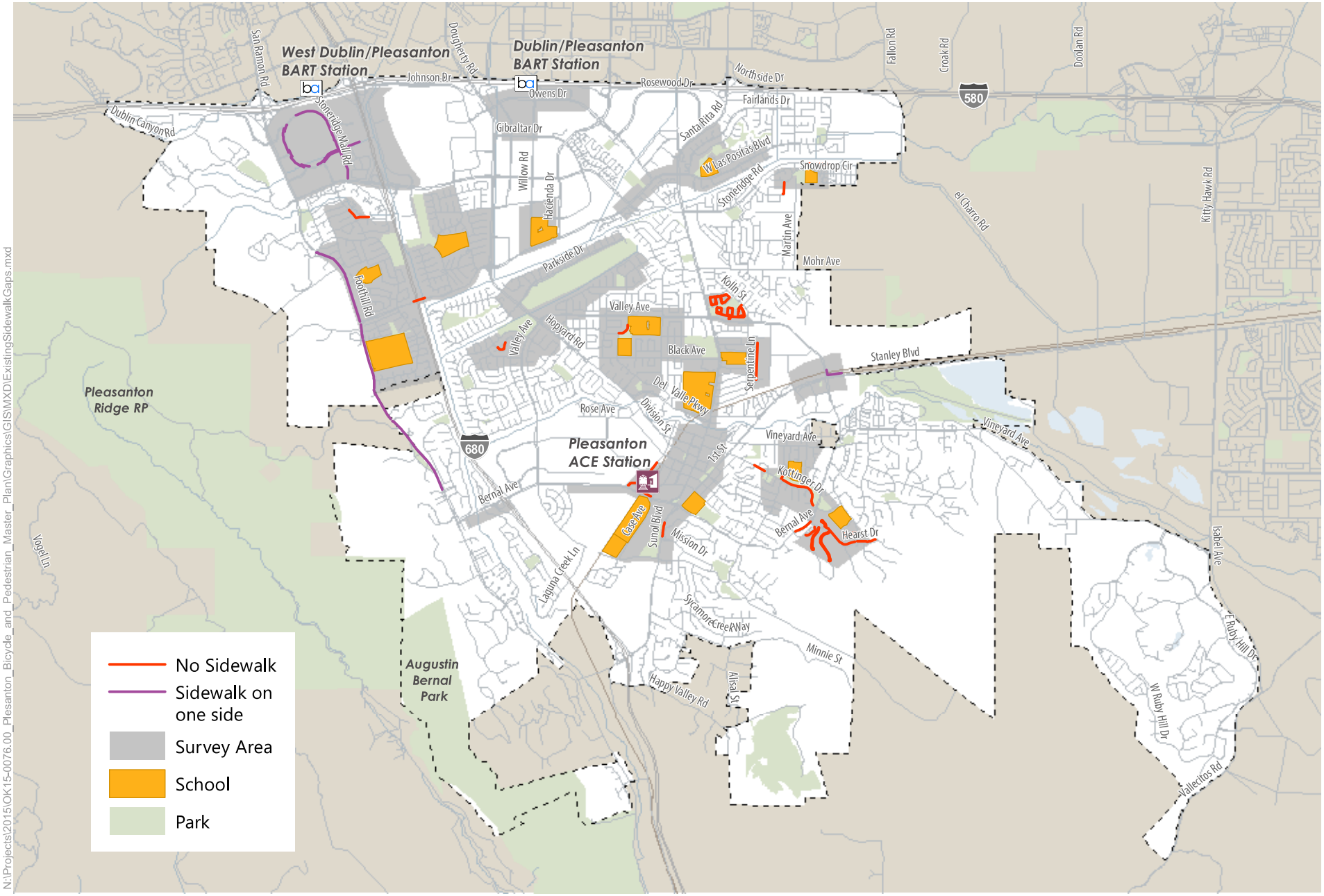

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Figure 3-3
Existing Sidewalk Gaps

3.3.5 Crosswalks

Signalized intersections in Pleasanton are frequently large with many lanes of traffic in each direction, particularly where arterial and/or collector roadways intersect. At these locations, crosswalks are typically marked but have very long crossing distances. In some cases a fourth leg may not be marked, in favor of vehicle traffic operations. Many intersections have slip lanes which may further lengthen the crossing distance and, where those right-turn slip lanes are not signalized, may allow autos to make free, and often higher speed, turns across the crosswalk. Even without slip lanes, curb radii at these locations often allow vehicles to make higher speed right-turns and further lengthen crossing distances.

All signals in the city have pedestrian countdown indicators to warn those crossing of time remaining before the signal changes. Many signals in the city are designed with protected left turns. This design is generally safer for pedestrians as it removes the conflict between the crosswalk and left turn movements. Pedestrian push buttons are also used at signalized intersections throughout the city. In areas with high pedestrian demand, removing push buttons or placing the signal on a pedestrian recall setting during peak periods (where the walk signal is provided automatically each cycle) can be a preferred installation.

At all-way stop-controlled intersections, vehicles stop and give the right-of-way to pedestrians crossing the street. Some all-way stop-controlled intersections in the city do not have marked crosswalks. Vehicles typically stop at the stop bar and can impede the pedestrian travel way in these cases. Advanced stop bars and marked crosswalks can encourage vehicles to stop in advance of the pedestrian crossing area. All-way stop-controlled locations with multiple lanes per approach, as shown at right, can cause sight distance issues for pedestrians in the crosswalk and generally make right-of-way for all users confusing.

Bent or angled crosswalks, such as the one shown above, create longer crossing distances for pedestrians and pose challenges for those with visual impairments who typically cannot detect the change in crosswalk alignment, making navigation difficult.

Uncontrolled crosswalks do not have stop sign or signal for vehicles. These crosswalks are present at all intersections, and at any marked midblock crossings, without signals or stop signs. Marking crosswalks can be important for improving the perception of the legitimacy of pedestrian crossings and designating preferred crossing locations. When uncontrolled crosswalks are located on two-lane roadways in residential areas, signing and striping are typically sufficient to signal drivers to yield to pedestrians in the crosswalk. However, in more auto-dominated environments, such as multi-lane or higher-speed roadways, signing and striping alone may not be enough to ensure safety and remind drivers to yield to pedestrians. On multi-lane roadways, "multiple threat" collisions, where a driver yields to a pedestrian and a car in the adjacent travel lane cannot see the pedestrian, the pedestrian is obscured by the yielding vehicle, are the most common crash type.[1] As a result, additional devices such as flashing beacons or signals may be required. Flashing beacons, including rectangular rapid flashing beacons (RRFBs) or pedestrian hybrid beacons (PHBs), have demonstrated safety benefits.

Pleasanton has uncontrolled crosswalks in areas with high pedestrian activity that could benefit from additional treatments. Installing RRFBs and PHBs at uncontrolled crossing locations near schools, parks, BART stations and downtown could increase the awareness of drivers to the presence of pedestrians.

3.3.6 Other Walkability Considerations

3.3.6.1.1 Americans with Disabilities Act (ADA) Non-Compliance Locations

The best practice for ADA curb ramps at crossings is typically to provide directional curb ramps orienting those with mobility and visual impairment directly into the crosswalk. This often requires curb extensions or tighter curb radii. Pleasanton typically has diagonal ramps – one per corner – at

[1] Zeeger, et al. "Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations." FHWA, 2005.

most locations. In some cases, these may need to be upgraded to include truncated domes to signal those with visual impairments they are approaching a crossing.

3.3.6.1.2 Wide, High-speed Arterial Roadways

In Pleasanton, as is the case in many areas with suburban development patterns, a major barrier to pedestrian travel is crossing and walking along wide, high-speed arterial roadways. Many arterials have been built wide to accommodate peak traffic levels. However, during non-peak hours, these wide roadways can encourage high speed travel above established speed limits. High vehicle speeds are problematic for pedestrians by limiting the opportunities where pedestrians can safely cross the street and making them vulnerable to more severe injuries in a collision. While arterials allow for good auto and, in some cases, bus access, these can create inhospitable environments for pedestrians, particularly where close to major destinations such as schools, Downtown, and the BART stations.

The presence of wide multi-lane arterials means large intersections and long pedestrians crossing distances. Signal cycle lengths at large intersections can be upwards of two minutes to account for the heavy volumes traveling through the intersection and the long time required for pedestrians to cross. Pedestrian delay at these intersections can be very high, especially if they are crossing more than one leg of the intersection. To avoid delay for autos, many of these intersections also have uncontrolled or yield-controlled channelized right-turn lanes, allowing higher speed turns through the crosswalk, such as the example from the Stanley Boulevard/Bernal Avenue/Valley Avenue intersection. Walking along these roads can also be stressful to pedestrians, especially if parking or landscape barriers are not present as a buffer.

3.3.6.1.3 Barriers to Access and Connectivity

Because Pleasanton is located at the junction of I-680 and I-580, the city is well-connected to destinations throughout the Bay Area. The two Dublin/Pleasanton BART stations further serve residents' and employees' regional transportation needs. However, both the freeway and BART system present challenges to walking in Pleasanton. Many freeway interchanges do not have specific accommodations for pedestrians.

In some cases, sidewalks end or substantially narrow before the interchange or the overpass. For example, the sidewalk on the south side of West Last Positas Boulevard drops in advance of the I-680 overpass, often resulting in pedestrians walking in the bicycle lane. The city recently closed sidewalk gaps at Santa Rita Road and I-580; however, the multi-lane westbound on-ramp crossing, for example, still poses a significant barrier to pedestrian travel. In all cases, wide travel lanes and high speed vehicular traffic at on- and off-ramps create difficult crossing points for pedestrians. This affects access between Pleasanton neighborhoods across I-680 and to/from destinations in Dublin across I-580.

3.3.7 Pedestrian Connections to Key Destinations

3.3.7.1 Schools and Parks

Pedestrian activity is high around Pleasanton schools, as many schools are conveniently located in neighborhoods. The pedestrian challenges in these neighborhoods can include auto traffic during pick-up and drop-off times, and conflict points at pedestrian crossings. Improvements for safe routes to schools and parks could include installing high visibility crosswalks with flashing beacons at uncontrolled locations, creating clear expectations between parents driving to pick-up/drop-off students and those walking, and providing traffic calming near schools.

While elementary schools are neighborhood-based, middle and high schools are located on higher speed and volume arterials and collectors, which can create difficult crossings for students. Examples include Pleasanton Middle School off of Case Avenue, shown at right, where students frequently cross Bernal Avenue to get to the library and other Downtown destinations after school. Other examples include Amador Valley High School on Santa Rita Road, Harvest Park Middle School on Valley Avenue, and Foothill High School on Foothill Road.

3.3.7.2 Transit

Pleasanton has three major transit stations in addition to bus service. Pedestrian access to and from these stations has major barriers and opportunity areas.

- **West Dublin/Pleasanton BART Station** – Lack of pedestrian wayfinding signage and continuous sidewalk creates a challenge for pedestrians accessing the station. Key destinations near the stations, such as employment centers and the Stoneridge Mall, provide the potential for significant pedestrian activity with the improvement of infrastructure in the area.
- **Dublin/Pleasanton BART Station** – Wide roadways with long blocks and vehicles traveling at high speeds create barriers for pedestrians accessing the station. The Iron Horse Trail provides access mid-block on Owens Drive and connects to the station area. A pedestrian plaza and transit waiting area are located south of I-580 and the fare gates.
- **ACE Train Station** – The ACE train station is located downtown, directly adjacent to the fairgrounds. This creates a great opportunity for visitors to access key destinations in Pleasanton. The station is at-grade, on the opposite side of the tracks from downtown, which creates challenges for connecting pedestrians to the downtown neighborhood and businesses on Main Street. Pedestrian scale wayfinding to safe crossings could improve the connectivity between ACE and the rest of the neighborhood.

3.4 Bicycling Conditions in Pleasanton

This section describes the existing bicycling conditions in Pleasanton, including a review of bicycle-involved collisions and an inventory of infrastructure and associated connectivity.

3.4.1 Bicycle Safety

3.4.1.1 Pleasanton Bicycle Safety in Context

The California Office of Traffic Safety (OTS) maintains a database of collision injuries and fatalities across the state. Cities are grouped by size according to total population. Pleasanton is in a population cohort with 103 total cities ranging in size from 50,001 to 100,000 residents. Pleasanton's rankings for 2013, the most recent year available for OTS rankings, are summarized in **Table 3-6**.

Table 3-6: Pleasanton Collision Rankings among Similar Cities, 2013

Type of Collision	Injuries[1]	Percentage of All Injury Collisions[1]	OTS Ranking (of 103 cities)
Total[1] Fatal and Injury	342	100%	76th
Bicyclists	25	8%	79th
Bicyclists <15	6	2%	**21st**

1. Injury figure includes all types of injuries: complaint of pain, other visible injury, severe injury, and fatality. Per the City of Pleasanton's crossroads database, one fatal bicycle collision in 2013.

2. Total includes fatal and injury collisions for all travel modes, including auto-auto, auto-pedestrian, and auto-bicycle.

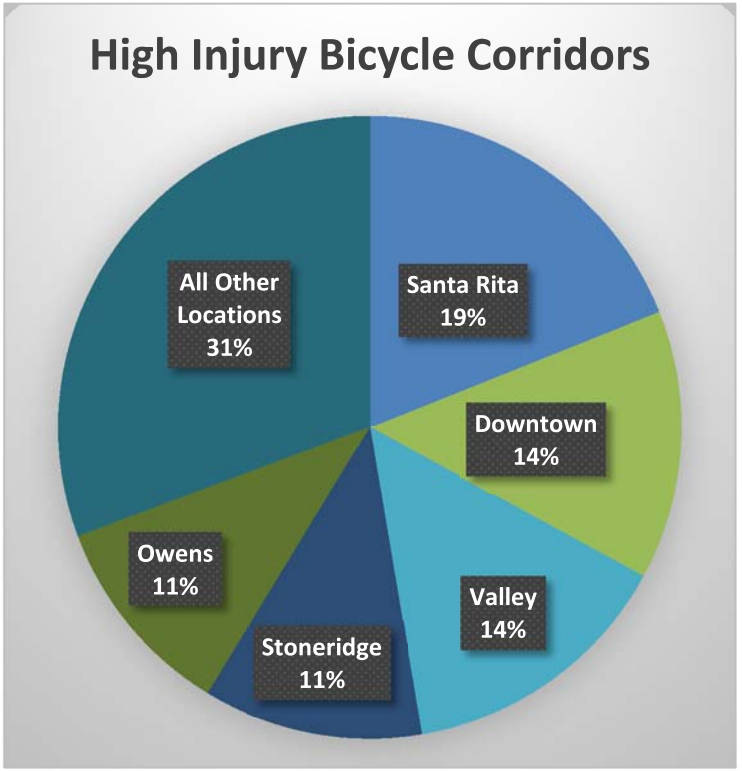
Sources: Pleasanton Crossroads Database; California Office of Traffic Safety 2013 OTS Rankings

Key findings from the 2013 OTS rankings include:

- Pleasanton ranked favorably for overall bicyclist safety, with fewer reported bicycle collisions than about 77 percent of similarly sized cities.
- For collisions involving bicyclists under 15 years of age, Pleasanton ranked less favorably, in the top 20 percent of cities with the highest number of collisions involving young bicyclists. This number still represents a small total percentage of injury collisions – only two percent of all collisions that occurred in the city in 2013 – and can vary significantly from year to year given the small sample size. Potential solutions may include biking improvements along popular routes to school, expanded participation in Safe Routes to School education programs to improve bicycle safety skills of students, and driver education about safely interacting with bicyclists, particularly children.

3.4.1.2 Bicycle-Involved Collisions

Between 2010 and 2015, 132 bicycle-involved collisions were reported per the city's Crossroads database. On average, Pleasanton had 26 bicycle collisions each year, with a high of 33 collisions in 2014. **Figure 3-4** identifies the locations, severity, and frequency of these collisions. Key findings from the analysis include the following:



- The highest injury concentration areas for bicyclists are:
  - Santa Rita Road/Main Street, including one fatal and two severe injury collisions
  - Downtown Pleasanton area
  - Valley Avenue, including one severe injury collision
  - Stoneridge Drive
  - Owens Drive
- Eighty-two percent of all bicyclist collisions occurred on the following nine roadways: Bernal Avenue, First Street, Hopyard Road, Las Positas Boulevard, Owens Drive, Santa Rita Road, Stoneridge Road, Valley Avenue, and Vineyard Avenue

Table 3-7 identifies locations where more than one bicycle-involved collision was recorded in or near the intersection over the five-year period.

Table 3-7: Locations With the Highest Frequency of Bicycle Collisions in or Near The Intersection			
Intersection	**Number of Collisions**	**Intersection**	**Number of Collisions**
Santa Rita Road and Valley Avenue	4	Hacienda Drive and Stoneridge Drive	2
Stoneridge Drive and Johnson Drive	4	Hopyard Road and Del Valle Pkwy	2
First Street and W Angela Street	3	Hopyard Road and Inglewood Drive	2
Hopyard Road and Valley Avenue	3	Hopyard Road and Owens Drive	2
W Las Positas Boulevard and Owens Drive	3	Owens Drive and Rosewood Drive	2
Santa Rita Road and Francisco Street	3	Peters Avenue and St. Marys Street	2
Santa Rita Road and Morganfield Road	3	Pleasanton Avenue and W Angela Street	2
Santa Rita Road and Old Santa Rita Road	3	Santa Rita Road and Black Avenue	2
Willow Road and Gibraltar Drive	3	Santa Rita Road and Rosewood Drive	2
Bernal Avenue and Case Avenue	2	Santa Rita Road and Stoneridge Drive	2
Bernal Avenue and I-680 NB Ramps	2	Stoneridge Drive and I-680 SB Ramps	2
Bernal Avenue and Koll Center Drive	2	Stoneridge Mall Road and Workday Way	2
Bernal Avenue and Stanley Blvd	2	Valley Avenue and Case Avenue	2
First Street and Neal Street	2		
Foothill Road and Muirwood Drive	2		
Greenwood Road and Valley Avenue	2		

Source: City of Pleasanton Crossroads database, 2010-2015

3.4.1.2.1 Reported Violations

Table 3-8 details the reported vehicle-code violations for all bicycle-involved collisions in the city from 2010-2015. Most common is auto right-of-way violations. Auto right-of-way violations were widely distributed across violation categories, including high speed traffic, not obeying traffic signals and signs, improper turning, vehicles starting/backing up in unpredictable ways, and unsafe lane changes, among others. Only a small number of collisions – three percent – were due to wrong-way bicycle riding.

Table 3-8: Violation Category of Bicycle Collisions

Violation Category	Number of Collisions	Percent of Collisions
Auto Right of Way Violation	51	39%
Not Stated/Unknown	13	10%
Unsafe Speed	12	9%
Improper Turning	11	8%
Other Hazardous Movement	10	8%
Traffic Signal and Signs	9	7%
Auto Violation of Bicycle Right of Way	6	5%
Unsafe Starting or Backing	6	5%
Wrong Side of Road	4	3%
Other Improper Driving	4	3%
Unsafe Lane Change	3	2%
Bicycle Violation	2	2%

Table 3-8: Violation Category of Bicycle Collisions		
Violation Category	**Number of Collisions**	**Percent of Collisions**
Other than Driver	1	1%

Source: City of Pleasanton Crossroads database, 2010-2015

3.4.1.2.2 Injury Severity

Table 3-9 shows bicyclists sustained an injury in **90 percent** of the reported collisions. The majority of injuries (86%) was lower-order – other visible injury or complaints of pain. Severe injuries occurred in three percent of collisions. One bicyclist was killed in Pleasanton between 2010 and 2015, on Foothill Road 1000 feet south of the intersection with Golden Eagle Way.

Bicyclists were injury in 90% of reported collisions

Table 3-9: Bicyclist Injury Severity		
Injury Severity	**Number**	**Percent of Collisions**
Property Damage Only	13	10%
Other Visible Injury	66	50%
Complaints of Pain	48	36%
Severe Injury	4	3%
Fatal	1	1%

Source: City of Pleasanton Crossroads database, 2010-2015

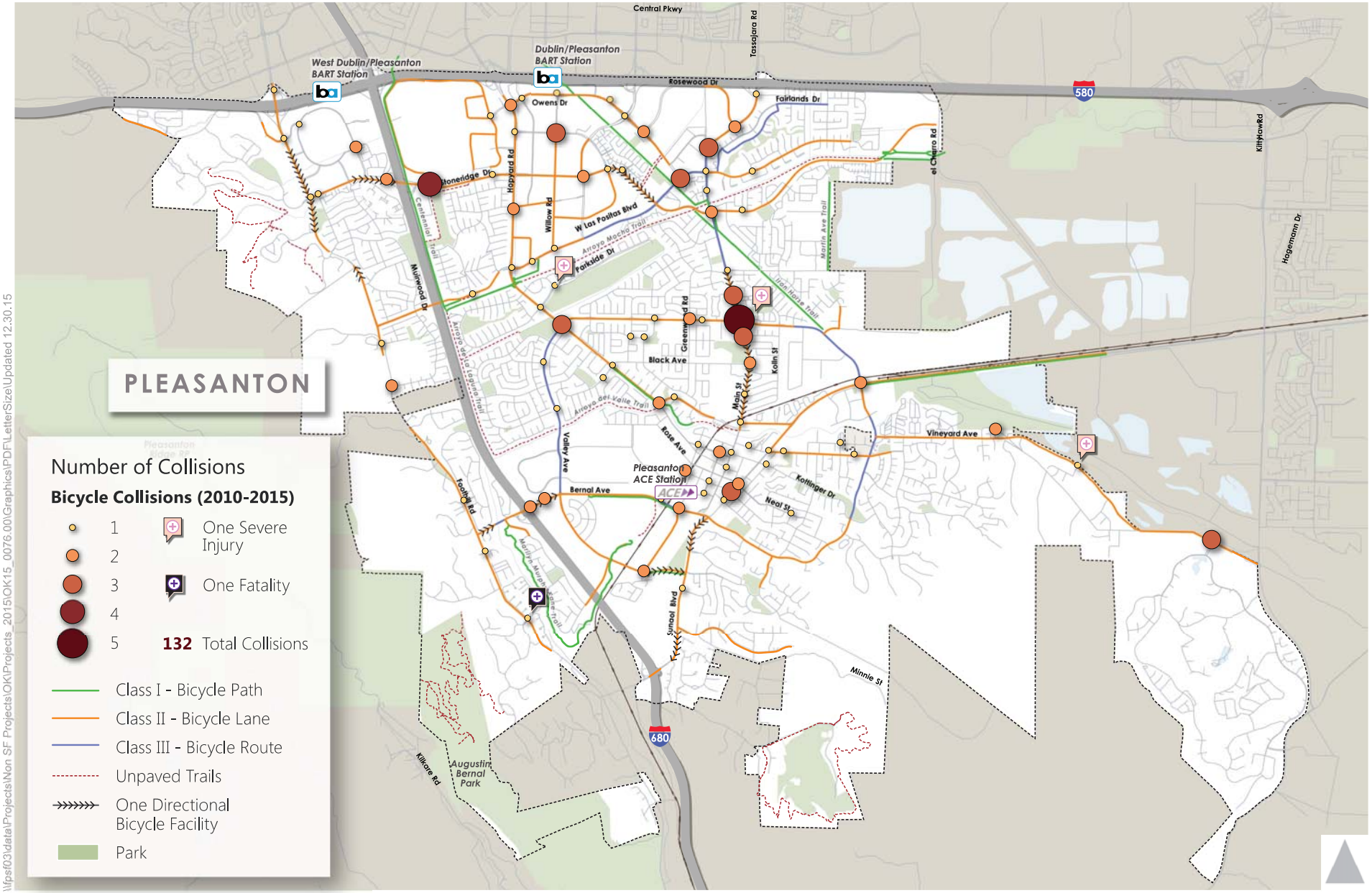
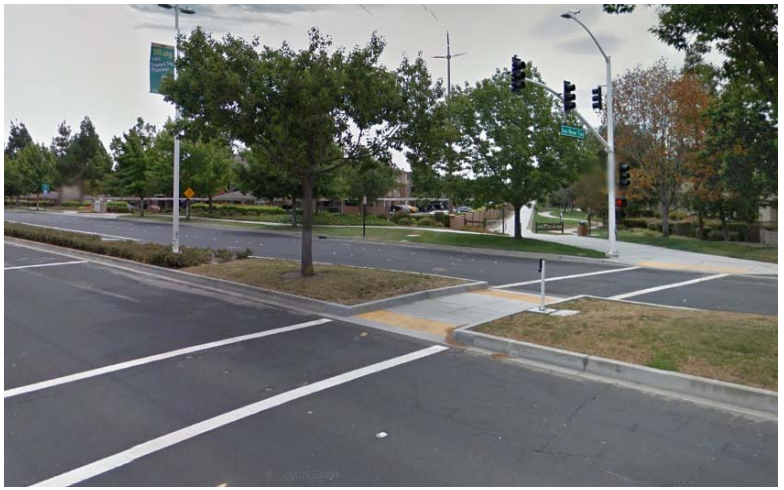


Figure 3-4

Bicycle Collisions (2010 - 2015)

3.4.2 Existing Bicycle Infrastructure

3.4.2.1 Class I Paths



Class I Bikeways (Bicycle Path or Multi-Use Path) provide a completely separate right-of-way and are designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized. The city has a variety of paved and unpaved multi-use paths connecting Pleasanton to other cities in the region. Approximately 13 miles of paved bicycle paths exist in the city. These include the following:

- Iron Horse Trail
- Centennial Trail
- Arroyo Mocho Trail
- Pleasanton Canal Trail
- Marilyn Murphy Kane Trail

With the recent Iron Horse Trail gap closure project south of the Dublin/Pleasanton BART Station, the city installed signalized trail crossings to support pedestrians and bicyclists, such as the one shown at right at Hacienda Drive.

3.4.2.2 Class II Bicycle Lanes

Class II Bikeways (Bicycle Lanes) provide a restricted right-of-way and are designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally at least five feet wide. Vehicle/pedestrian cross-flow is permitted as required. Where these

conflict zones occur, the bicyclist path of travel can be highlighted with green paint, similar to what the city installed at Sunol Boulevard through the I-680 interchange.

Approximately 40 miles of Class II bicycle lanes exist in the city.

3.4.2.3 Class III Bicycle Routes

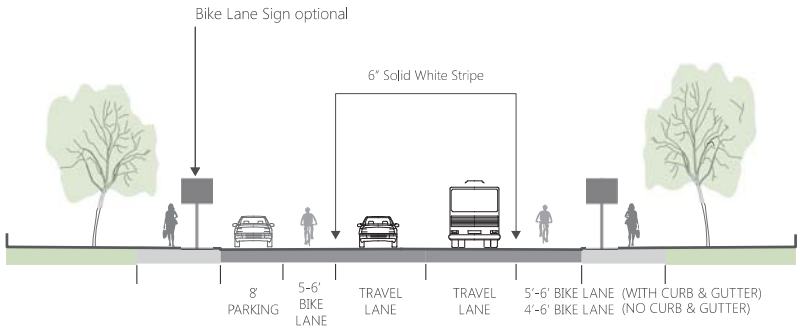
Class III Bikeways (Bicycle Route) are designated by signs or pavement markings for shared use with motor vehicles. A sharrow is typically marked on a Class III route to show the suggested path of travel for bicyclists. This is often done when the route has on-street parking to encourage cyclists to ride a safe distance away from the parked vehicles' "door zone" and/or to show the recommended path of travel for the bicyclist. Sharrows also inform drivers that cyclists should be expected on the street and given sufficient room. Approximately seven miles of Class III bicycle routes exist in the city.

In many cases, less confident bicyclists and especially younger bicyclists may not feel comfortable riding in the travel lane. For example, after school at Amador Valley Community Park, students often walk and bicycle in groups, with almost all students riding on the sidewalk through the park area.

Approximately 13 miles of paved bicycle paths, 40 miles of Class II bicycles lanes and 7 miles of Class III bicycle lanes exist in the city.

CLASS I BIKEWAY (Bike Path) Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flow minimized.

CLASS II BIKEWAY (Bike Lane) Provides a striped lane for one-way bike travel on a street or highway.



CLASS III BIKEWAY (Signed Bike Route) With Optional Sharrow Pavement Marking
Provides for shared use with motor vehicle traffic.

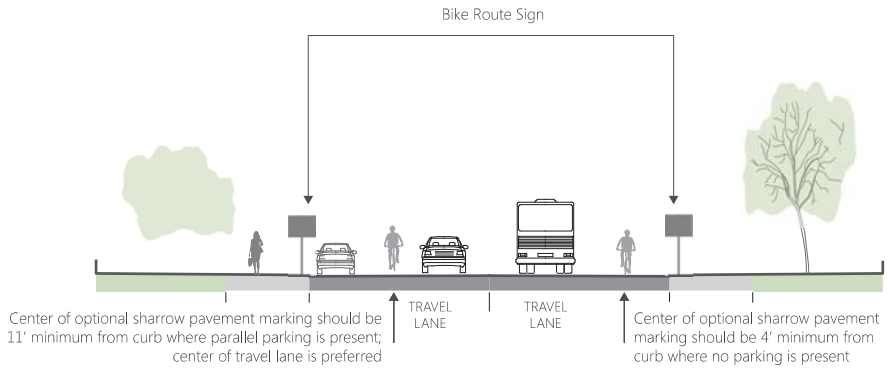


Figure 3-5

Existing Bikeway Classifications

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Figure 3-6

Existing Bicycle Facilities

3.4.2.4 Key Destinations and Access Considerations

Based on community input and field reviews, the following primary barriers were identified to bicycling exist in Pleasanton:

1. Lack of North-South Bicycle Routes
2. Challenging Access to BART Stations
3. Limited Signage and Wayfinding
4. Maintenance Issues
5. Large Intersections and Interchanges
6. High-stress Bicycle Facilities (discussed in **Section 3.3.3.6 Bicycle Comfort**)

3.4.2.4.1 Lack of North-South Bicycle Routes

Foothill Road is an important asset to Pleasanton's bicycle network. Tree cover, gentle hills and curves make the two-lane road ideal for more experienced road cyclists. However, short sight distances, narrow lanes and lack of shoulder may discourage less experienced and/or capable bicyclists, who feel less comfortable riding on roads without dedicated space for bicycles. Widening the shoulder and improving signage could be priorities. In particular, areas south of Bernal Avenue would benefit from such improvements. In the short-term, Foothill Road should be swept regularly to keep brush and fallen branches out of the roadway.

Hopyard Road and Santa Rita Road are key routes serving both regional and local destinations. Current conditions on these roads include fast moving vehicular traffic, insufficient signage for bicyclists, and wide intersections with multiple turning lanes and right-turn pockets that are difficult to navigate by bicycle. While several sections of these roads are designated Class III routes, comfort and access for bicyclists on these roads could be improved.

3.4.2.4.2 Challenging Access to BART Stations

Bicycles are allowed on BART trains, and short- and long-term bicycle parking is available at stations, including 40 Bicycle Link electronic lockers. However, current conditions in and around the two Pleasanton BART stations can create an inhospitable or inconvenient environment for those accessing the stations.

At the **Dublin/Pleasanton BART station**, bicycle access is from Owens Drive, which has Class II bicycle lanes, and the Iron Horse Trail, which provides access directly to the station area. Upon entering the station area, signage indicates bicyclists must dismount their bicycles. According to BART's *Bicycle Access and Parking Plan*, the Dublin/Pleasanton BART Station has a high priority for bicycle parking improvements based on current bicycle locker use. The Dublin/Pleasanton BART Station Access Plan recommends installing at least 34 additional lockers, as well as bicycle-sensitive loop detectors and signage on key bicycle routes.

BART has recently developed wayfinding signage for bicyclists in station areas and on surrounding bikeways and other roads. These signs help direct bicyclists to the station as well as to bicycle parking, stairs, and elevators. This station is located along the Iron Horse Trail, which provides an important connection to the all ages and abilities bicycle network of Pleasanton.

The BART station is also used as a hub by the Livermore Amador Valley Transit Authority (LAVTA) Wheels bus service, Amtrak, and Contra Costa County's County Connection bus service. Wheels operates approximately 24 bus routes through Pleasanton, and all buses are equipped with bicycle racks. County Connection operates four bus routes connecting at the Dublin BART station, all with bicycle racks. Wheels bus service connects a park-and-ride lot at the Dublin Corporate Center at the southwest corner of Tassajara Road and Dublin Boulevard to the BART station.

At the **West Dublin/Pleasanton BART station**, bicycle access to the station is through the parking structure off of Stoneridge Mall Road as well as a path along the east side of the BART parking garage. Bicycle parking, including 16 secure bicycle lockers, is available at the station. Bus service is provided to this station by Wheels and Tri-Delta Transit on the Pleasanton side and LAVTA on the Dublin side only.

The West Dublin/Pleasanton station lacks a gateway and wayfinding information from Stoneridge Mall Drive. Connectivity to the bicycle network is limited, as there are no bicycle facilities on Stoneridge Mall Road. The many driveways and lack of facilities on Stoneridge Mall Road, which provides

the main access to the station, create an uncomfortable environment for bicyclists accessing the station. Enhanced wayfinding signage and connectivity to the Pleasanton bicycle network from both stations could improve the experience for bicyclists.

3.4.2.4.3 Limited Signage and Wayfinding

Pleasanton's bikeway routes have basic signage indicating where bicycle lanes and routes are present, begin, and end. In several areas signs are missing or obscured by trees and other barriers. Trail access from the roadway is often difficult to identify and once found, trail names are often missing or obscured. The City of Pleasanton does not currently have a signed route system to indicate destinations, distances and directions.

The wayfinding and signage system could be enhanced to make the bicycle network more visible and easy to navigate. In particular, wayfinding improvements are needed to better connect the on-street and off-street bicycle network. While trail maps are clearly marked at the access gates to the off-street network, the access gates are often hidden from street view and difficult to find. On-street signage and pavement markings would help to create better connections to the off-street network. From within the trails system, additional signage would enhance connections back to the on-street network.

3.4.2.4.4 Maintenance Issues

Existing bicycle facilities are typically narrow bicycle lanes next to the curb and gutter, which can collect debris. The City has an ongoing maintenance contract for regular street sweeping, but this contract does not address or contain provisions specific to bicycle lanes or trails. Prioritization of street cleaning in the bicycle lanes and design of new bicycle lanes with a larger width and a buffer where possible could create a lower stress, easier to maintain environment with more space for cyclists to maneuver without entering the vehicle travel lanes. Any new street sweeping contract should incorporate provisions for sweeping bicycle lanes, separated bikeways, and paved trails. Some existing bicycle facilities were observed to have faded striping. Fresh paint for bicycle facility striping could reduce confusion for bicyclists and vehicles.

Finding long-term funding streams for path maintenance should be a priority.

Path maintenance is also a major concern for the city. The city's extensive trails network is partially operated by the city and partially by the East Bay Regional Park District. In some cases, Zone 7 may operate the trails. The maintenance burden of providing smooth, crack-free pavement is high. Finding long-term funding streams for path maintenance should be a priority.

3.4.2.4.5 Large Intersections and Interchanges

The City has programmed all of its video cameras to detect bicyclists in bicycles lanes. Where video programming has not yet been installed, in-pavement loop detector technologies for actuating signal changes can be challenging, as some may not register the presence of bicyclists and therefore not trigger a green light. When that is the case, bicyclists must wait through lengthy signal cycles until a car triggers the detection or risk proceeding through the intersection against the light. Bicycle-specific detectors and minimum green times are required at major intersections along the bicycle network. Specifications are provided in the Design Guidelines section. At some signals, bicyclists have minimal time to cross the intersection, and signals should be able to detect and distinguish a bicycle from a car and provide the minimum clearance interval as necessary.

Improvements should focus on extending bicycle lanes all the way to intersections through appropriate design

The crossings of I-580 and I-680 on the northern and western edge of Pleasanton are key barriers for bicyclists. Stressful, conflicting movements and high speed turns at on- and off-ramps are prevalent. Best practices for retrofitting interchanges to accommodate pedestrians and bicyclists are included in the Design Guidelines section. The city has recently retrofitted the Foothill Road/I-580 interchange, providing substantial bicyclist and pedestrian improvements including striped Class II bicycle lanes. However, given the speeds, traffic volumes, and wide cross-section, these bicycle facilities are still likely only used by the most confident and traffic tolerant of bicyclists. Additional improvements such as protected bicycle lanes and green pavement would improve the comfort level for those "Interested but Concerned" bicyclists.

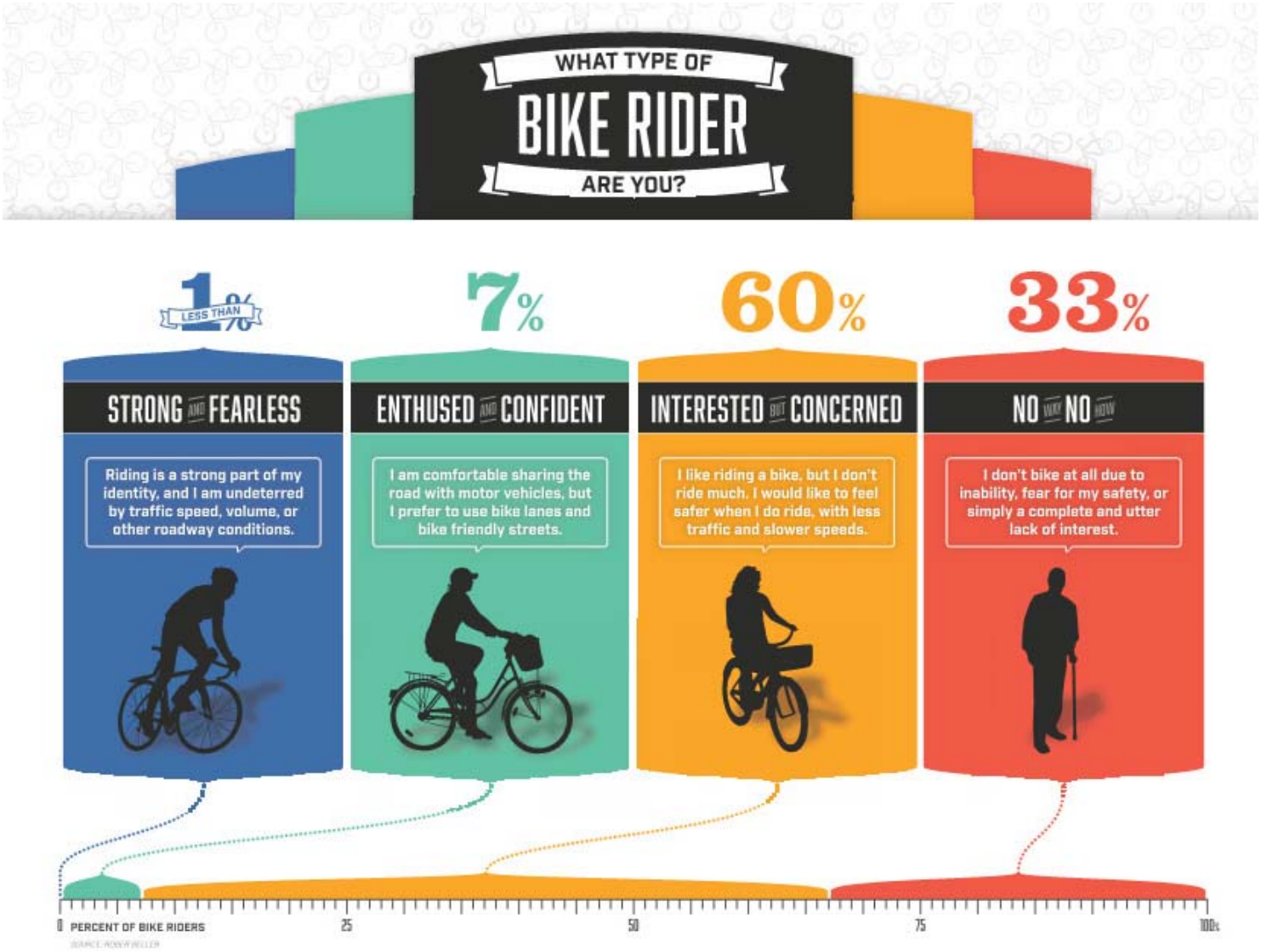
In some cases in Pleasanton, bicycle lanes end in advance of intersections. While this is acceptable practice according to the *Highway Design Manual* (Caltrans), this practice discontinues bicycle lanes at the point where bicycles encounter the most conflicts with vehicles. Improvements should focus on extending bicycle lanes all the way to intersections through appropriate design as outlined in the Design Guidelines section of this Plan. With the many intersections in the city providing right turn slip lanes, lengthy right-turn pockets are also common. Reducing the length of these turn pockets would create a shorter transition zone, an area of high exposure for bicyclists.

3.4.2.5 Bicycle Comfort

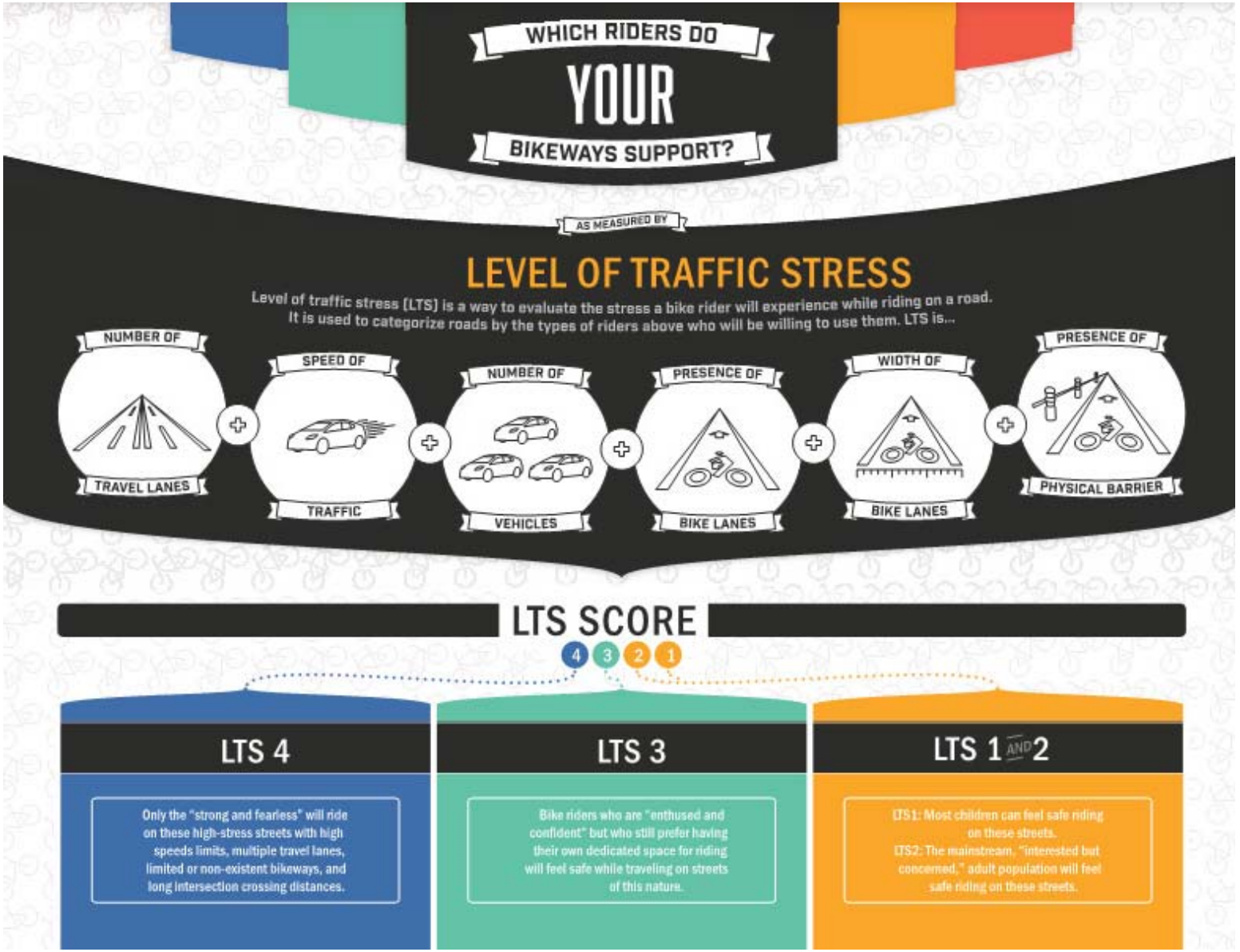
The low-stress bicycle network must have a broad reach with continuous facilities and comfortable crossings to promote new bicycling trips

Level of Traffic Stress (LTS) analysis seeks to measure how much stress is experienced by bicyclists across a city's street network due to various characteristics of roads and bicycle facilities. The Level of Traffic Stress (LTS) methodology was developed by Merkuria, Furth, and Nixon in *Low-stress Bicycling and Network Connectivity* (2012).[2] LTS methodology is based on an application of Dutch bicycling standards and existing research in bicycle transportation. LTS rankings range from 1 (very low-stress; tolerable by all) to 4 (very high-stress; tolerable to only a few). LTS is closely related to the Four Types of Cyclists theory[3]. While the Four Types of Cyclists theory focuses on willingness to bicycle, LTS measures the quality of a person's experience while bicycling. The two are inter-related: low-stress bikeways (LTS 1 and 2) are generally tolerated by Strong and Fearless, Enthused and Confident, and most Interested but Concerned cyclists; in contrast, high-stress bikeways are tolerated by only Strong and Fearless cyclists. The development of a low-stress network and elimination of high-stress barriers is critical to broadening the appeal of bicycling, especially for "Enthused and Confident" and "Interested but Concerned Cyclists," who represent a large share of the population. The low-stress bicycle network must therefore have a broad reach with continuous facilities and comfortable crossings to promote new bicycling trips. **Figure 3-7** presents the LTS score for each roadway in Pleasanton.

[2] Methodology available here: http://transweb.sjsu.edu/PDFs/research/1005-low-stress-bicycling-network-connectivity.pdf
[3] Roger Geller, "Four Types of Cyclists," undated. https://www.portlandoregon.gov/transportation/article/264746



The Four Types of Cyclists and their typical breakdown across the population are shown at left. Research has shown that the Interested but Concerned are a large segment of the population that are attracted to highly comfortable bicycle facilities on which they feel safe riding. To feel comfortable and safe, they require low traffic stress (LTS 1 or 2) roadways that access important destinations throughout the city.



Roadway characteristics and type of bicycle infrastructure are the primary variables influencing the Level of Traffic Stress (LTS). The LTS score enables the public and the City to understand who is likely to feel comfortable riding on a given roadway.

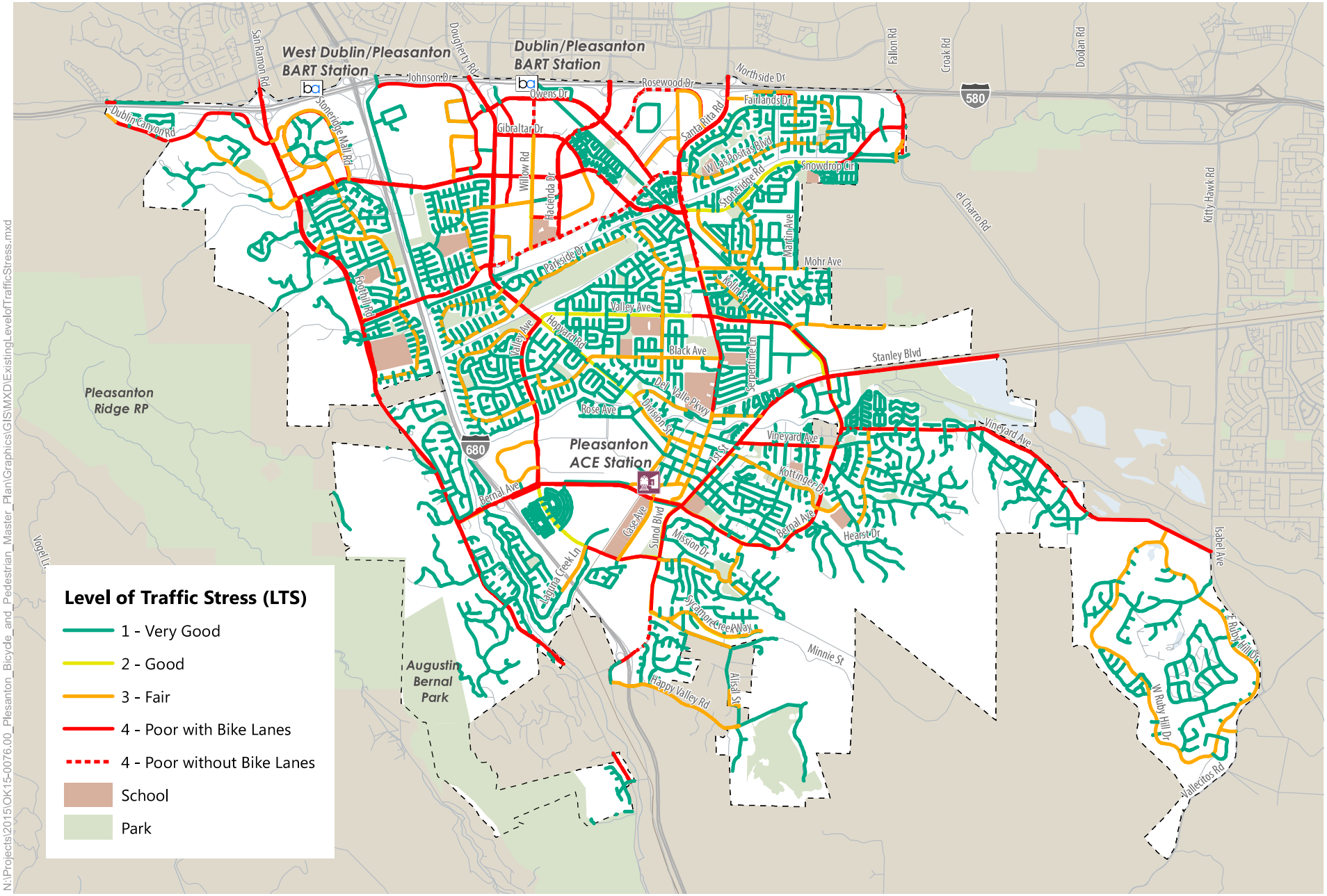


Figure 3-7
Existing Level of Traffic Stress

3.4.2.5.1 Pleasanton's All Ages and Abilities ("Low-stress") Network

One of the primary goals of this Plan is to greatly expand and create a continuous low-stress network, so analyzing the bicycle comfort of the existing network is critical. Pleasanton's existing low traffic stress network is presented on **Figure 3-8**. The low-stress bicycling network in Pleasanton today is highly discontinuous. The low-stress network includes some east-west connections through Downtown, though stress at some intersections may be high where local streets cross busy roadways, such as Bernal Avenue or First Street. With Pleasanton's suburban land use patterns, most bicycle routes traversing the city are part of the high traffic stress network, shown in orange, with either shared lanes or basic bicycle lanes present on major roadways. These types of facilities are suitable only for the most confident of riders, such as the many riders who traverse Foothill Road today.

Several "spines" or "corridors" will be needed in Pleasanton to connect the many low-stress, residential streets into an all ages and abilities network. Connecting major destinations through all ages and abilities corridors can help Pleasanton build out its bicycle network to have the most impact and serve the most demand. For example, the two BART stations can be connected with Downtown and the ACE Station through east-west and north-south spines. The spines may consist of improved Class I path connections and low-stress on-street bikeway improvements, such as separated bikeways, bicycle boulevards, and bicycle lanes on low-stress roadways. A one-mile buffer is highlighted around each of the three transit stations on Figure 3-8.

Several "spines" or "corridors" will be needed in Pleasanton to connect the many low-stress, residential streets into an all ages and abilities network.

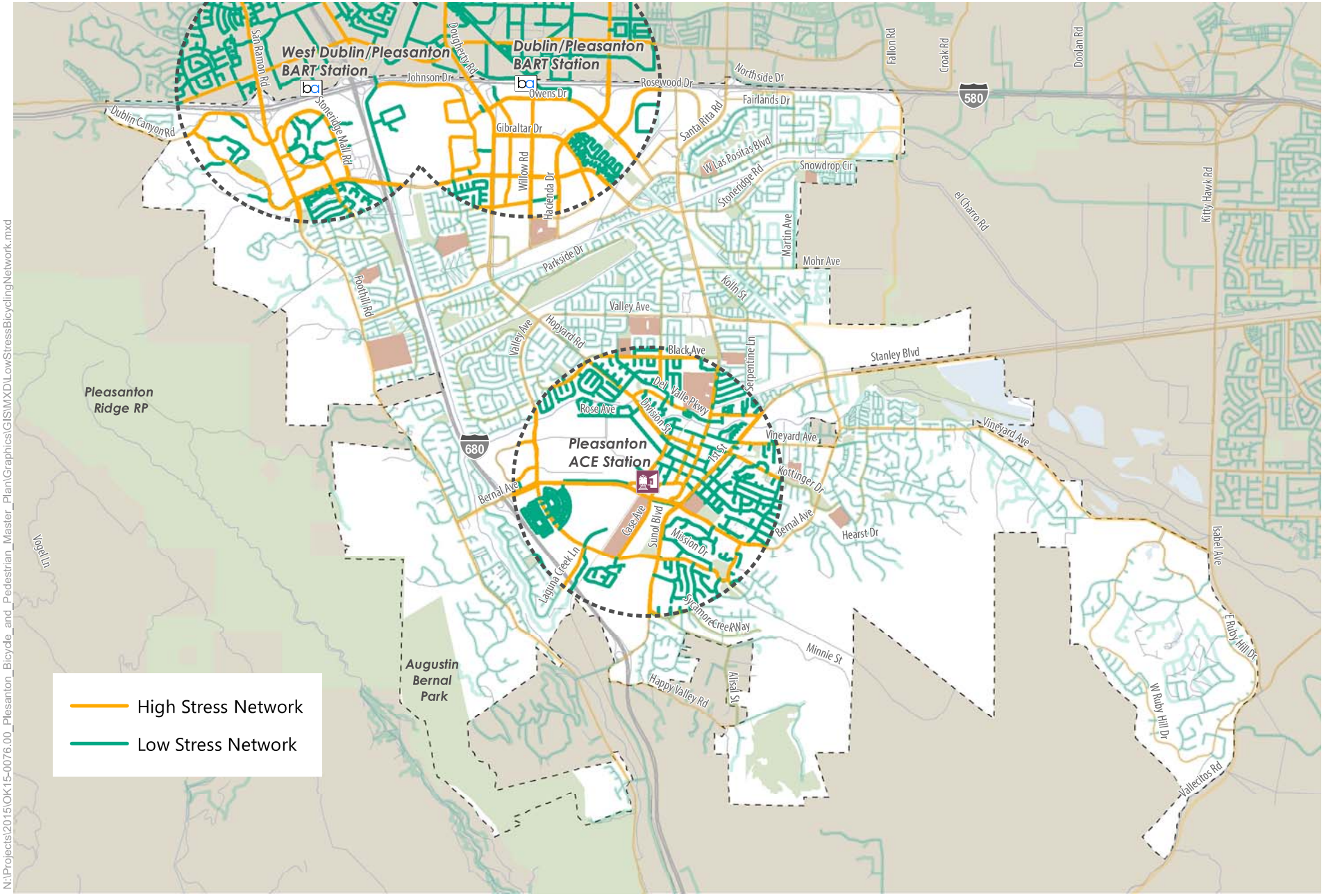


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Figure 3-8
Low and High Stress Bicycling Network

4. Opportunity Corridors

This chapter identifies opportunity areas to enhance the bicycling and walking environments across Pleasanton. These improvements focus on engineering solutions to enhance safety, comfort, and connectivity for people who walk and bicycle. As discussed earlier in the Plan, the major emphasis is on creating bicycling and walking networks that meet the needs of people of "all ages and abilities", which is to say biking and walking infrastructure that meet the needs of the young, the old, the less experienced, the more experienced, and everyone in between. Designing for people of all ages and abilities makes streets safer and more comfortable for everyone, including both people who walk and bicycle today and those who may walk and bicycle in the future as infrastructure improves. This chapter defines the walking and biking network and outlines the projects that will continue to make Pleasanton a great place for people of all ages and abilities to walk and bicycle.

The major emphasis is on creating bicycling and walking networks that meet the needs of people of "all ages and abilities."

4.1 Toolbox for Walking and Bicycling

To implement the all ages and abilities network, new walking and bicycling tools need to be incorporated to maximize comfort and safety for people who walk and bicycle. The section outlines the walking and biking tools that are new to Pleasanton. For more information on the tools already used in Pleasanton, refer to **Chapter 3** and **Appendix A Design Guidelines**.

4.1.1 New Walking Tools

A variety of walking improvements are identified in this chapter, many of which Pleasanton already use today. In addition to those, the following tools are considered:

- ***Removal or modification of slip lanes*** reduce the speeds of right-turning drivers as they enter the crosswalk and may lead to increase driver yielding at the crosswalk.
- ***Reduced curb radii*** require drivers to take turns at slower speeds as they turn through crosswalks at intersections.
- ***Extended pedestrian crossing times at traffic signals near schools, senior centers***, or other locations if necessary to accommodate people who walk at slower speeds.
- ***Directional curb ramps*** (two per corner) improve accessibility for those with mobility and visual impairments, directing them into the crosswalk.
- ***Staggered advanced stop bars*** to define where vehicles should stop in advance of the crosswalk to reduce risk of multiple-threat collisions when pedestrians are in the crosswalk but not visible to cars waiting at the stop bar.
- ***Rectangular Rapid Flashing Beacons (RFFBs)*** are flashing beacons located at uncontrolled crosswalks. Pedestrian push a button that triggers flashing lights, signaling to drivers that a pedestrian is waiting to cross the street.

Rectangular rapid flashing beacons (RRFBs) alert drivers to pedestrian's presence in the crosswalk

- **Pedestrian Hybrid Beacons (PHBs)** are beacons that operate similar to a traffic signal. They require autos to come to a complete stop when pedestrians push a button that triggers the beacon to become a flashing yellow ball and then a solid red ball, indicating that drivers must stop completely to yield to pedestrians. California requires that certain conditions be met in order to install a PHB. More information can be found in the CAMUTCD and **Appendix A Design Guidelines**.

4.1.2 New Biking Tools

Bicyclists in Pleasanton are already familiar with the paths, bicycle lanes, and buffered bicycle lanes, and green bicycle lanes throughout the city. In addition to those, the following are the new bicycling tools recommended in this chapter:

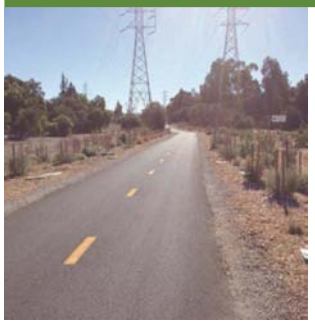
- ***Separated Bikeways (Class IV)*** are bicycle lanes that are fully protected from auto traffic through raised elements, such as curbs, plastic bollard, landscaping, or parking. They are a key element of the all ages and abilities network due to their comfort and safety benefits. They are also known as protected bike lanes or cycle tracks.

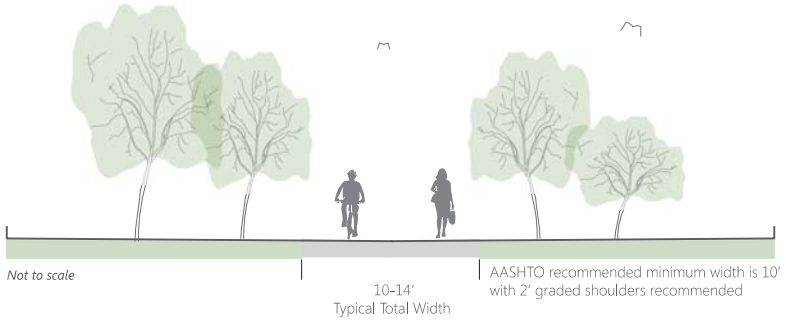
- ***Bicycle Boulevards (Class III)*** are similar to bicycle routes, where bicyclists and drivers share the travel lane; however, they are always located on low auto volume and low speed residential streets. They typically include traffic calming measures to create, safe, comfortable streets, together with enhanced signage and pavement parkings. They are important element of the all ages and abilities network and often provide important safe routes to school connections for children.

Figure 4-1A and **Figure 4-1B** present cross-sections for each bikeway type. For more information on these and other bicycle intersection treatments refer to **Appendix A Bicycle Guidelines.**

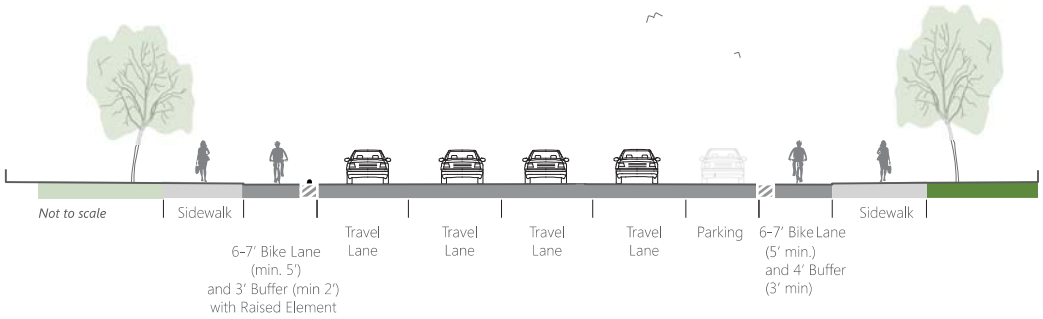
Example separated bikeway (top) and bicycle boulevard (bottom).

SHARED-USE PATH (CLASS I) Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flow minimized.





CYCLE TRACK/SEPARATED BIKEWAY (CLASS IV) Provides a physically separated bicycle lane for increased comfort and protection of bicyclists. Can be physically separated by a barrier, such as planters or on-street parking, or grade-separation from the roadway.



BICYCLE LANES (CLASS II) Provides a striped lane for one-way bike travel on a street or highway.

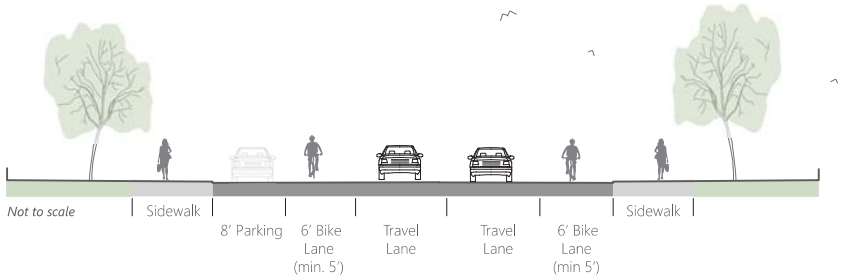
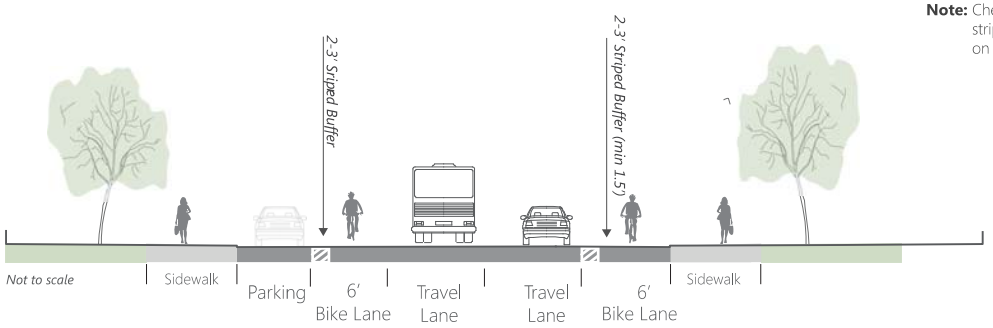


Figure 4-1A

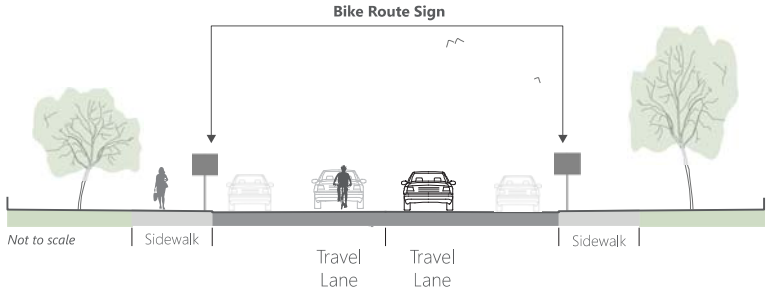
Proposed Bikeway Classifications

BUFFERED BICYCLE LANE (CLASS II) Modified on-street bike lane with vehicle and/or parking-side buffer for additional comfort and safety on high speed or high volume roadways



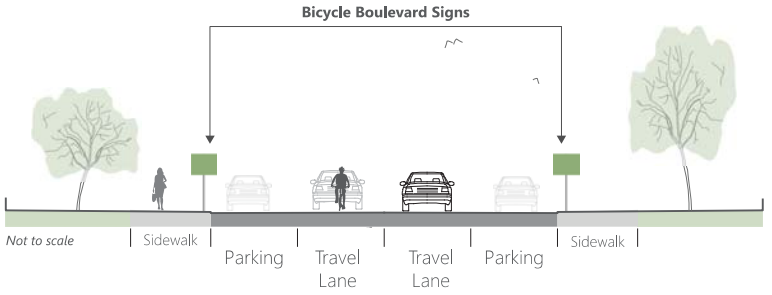
Note: Chevrons should be used instead of diagonal hatching where striped buffers are over 3 feet in width. Buffers can be located on either or both sides of the bicycle lane

BICYCLE ROUTE WITH SHARROWS (CLASS III) Provides for shared use with motor vehicle traffic



Note: Sharrows should typically be centered on the effective travel lane width

BICYCLE BOULEVARD (CLASS III) Shared on-street facility with improvements to manage vehicle speed and volume and prioritize bicycle traffic



Note: Additional traffic devices such as speed tables, chicanes, medians, wayfinding signs, and pavement markings are also included

Sharrows should typically be centered on the effective travel lane width

Figure 4-1B

Proposed Bikeway Classifications

4.2 Corridors

To achieve the Plan's goals of creating safe and comfortable streets for everyone who walks and bicycles, the bicycle and walking opportunity areas identified in the 2010 Plan were updated with the following considerations:

- ***Connectivity***: Closing gaps in existing walkways or bikeways and providing new routes to create a comprehensive citywide network.
- ***Demand***: Improving walking and bicycling access to the great places in Pleasanton that people enjoy going to today.
- ***Safety***: Using reported collisions and areas of safety concern to address site-specific safety issues for walking and bicycling.
- ***Comfort***: Refining recommended biking and walking projects to provide highly comfortable infrastructure for people of all ages and abilities.
- ***Feasibility***: Refining and identifying feasibility considerations, such as community-support, engineering issues, and fundability.

Through multiple public workshops and Pleasanton BPTC meetings, the bicycling and walking opportunity areas were refined through extensive community feedback. The recommended pedestrian projects are presented on **Figure 4-2**. The recommended near-term "All Ages and Abilities Network" is presented on **Figure 4-3**, and the long-term "Vision Network" is presented on **Figure 4-4**. **Appendix D** contains a comprehensive table of all pedestrian and bicycle projects defined in this chapter.

Because Pleasanton's roadway network relies heavily on arterial and collector roadways to provide neighborhood and citywide access, the bicycle and pedestrian opportunity areas are organized into corridor projects. Each corridor project is designed with the all ages and abilities approach at the forefront. As projects are implemented over time, the corridor projects will stitch together an all ages and abilities walking and biking network for Pleasanton. **Table 4-1** presents each corridor project and identifies the primary purpose of each project. For example, some projects serve both

Each corridor project is designed with the all ages and abilities approach at the forefront.

bicyclists and pedestrians, and some projects also benefit students walking and biking to school or people walking to BART and ACE stations. Sections 4.2.1 – 4.2.17 present both walking and biking projects for each opportunity corridor.

In addition to the corridor projects, a smaller group of "vision" projects will improve connectivity and close gaps in the biking network across the city but are either designed for more experience bicyclists or have major engineering and funding feasibility challenges that make them impractical to implement in the near-term. **Chapter 5** explains how projects are prioritized for implementation.

Table 4-1: Corridor Opportunity Projects

Project Title	Project Extents	Project Type			
		Pedestrian	Bicycle	Safe Routes to School	Safe Routes to Transit
Arroyo de Laguna and Iron Horse Trails Connection	Extension of the Arroyo De Laguna trail to the north and east to connect with the Iron Horse Trail	✓	✓	✓	
Bernal Avenue	Foothill Road to Stanley Boulevard	✓	✓		
Centennial Trail to Iron Horse Trail via BART	Johnson Drive at the Centennial Trail to the Iron Horse Trail Access at Ithaca Way	✓	✓		✓
Central Pleasanton Bicycle Boulevards	Arroyo Mocho Trail at Sutter Gate and the Iron Horse Trail at Kolln Street to the Arroyo de Laguna Trail access to downtown	✓	✓	✓	
Downtown Access	Throughout Downton Pleasanton	✓	✓		✓
Dublin/Pleasanton BART to Downtown	Owens Drive at the BART Driveway to Main Street	✓	✓	✓	✓
East Side Bicycle Boulevards	East end of the Arroyo Mocho Trail at Stoneridge Drive to Santa Rita Road at School Street		✓	✓	
Foothill Road	I-580 Interchange and Castlewood Drive	✓	✓	✓	
I-580 and I-680 Overcrossing Improvements	Interchanges citywide	✓	✓		✓

Table 4-1: Corridor Opportunity Projects					
Project Title	**Project Extents**	**Project Type**			
		Pedestrian	**Bicycle**	**Safe Routes to School**	**Safe Routes to Transit**
Santa Rita Road	I-680 Interchange to Bernal Avenue	✓	✓	✓	
Stanley Boulevard	First Street to Valley Avenue	✓	✓		✓
Stoneridge Drive	Foothill Road to Santa Rita Road		✓		
Sunol Boulevard	Castlewood Drive to Bernal Avenue	✓	✓	✓	✓
Valley Avenue Alternatives	Neighborhood Connections from Arroyo Mocho Trail at Sutter Gate and Kolln Street at Francisco Street to Hopyard Road and Valley Avenue from Hopyard Road to Sunol Boulevard	✓	✓	✓	✓
West Dublin/Pleasanton BART to Downtown	Stoneridge Mall Road at BART to the Marilyn Murphy Kane Trail	✓	✓	✓	✓
West Las Positas Boulevard	Foothill Road to the North Pimlico Drive Intersection	✓	✓	✓	✓

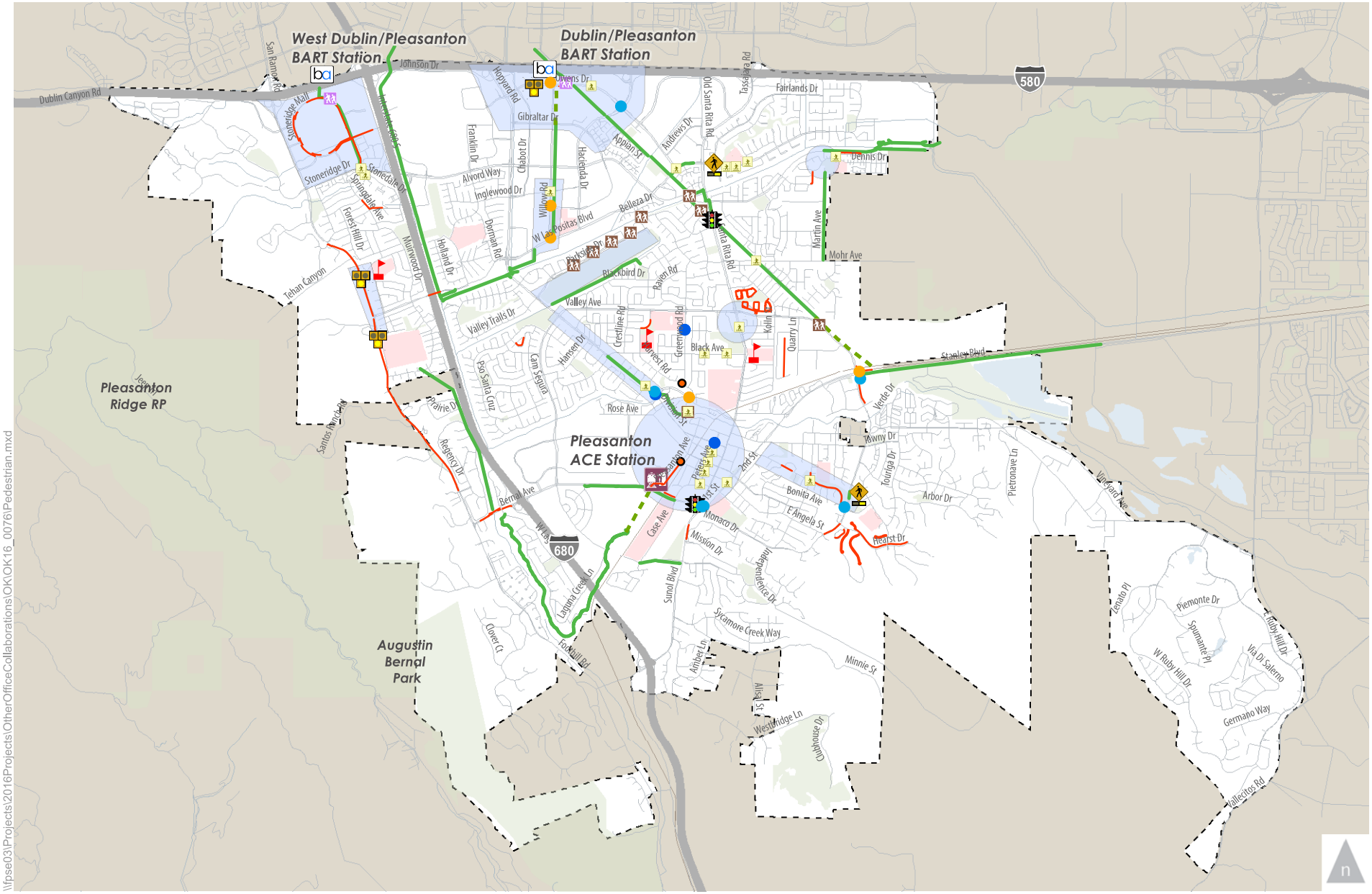


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Figure 4-2

Recommended Pedestrian Improvements

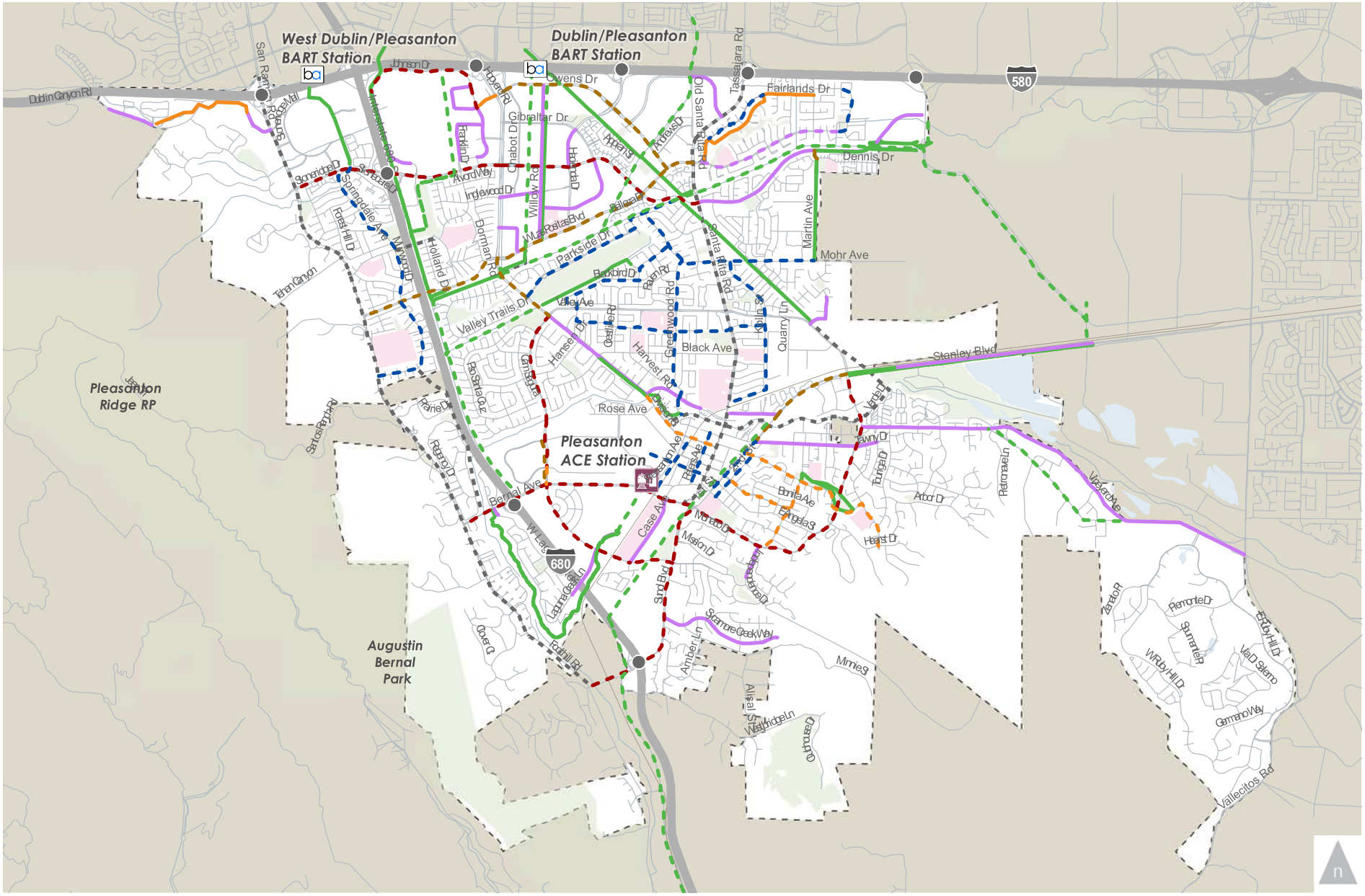

Figure 4-3

Near-Term All Ages and Abilities Network

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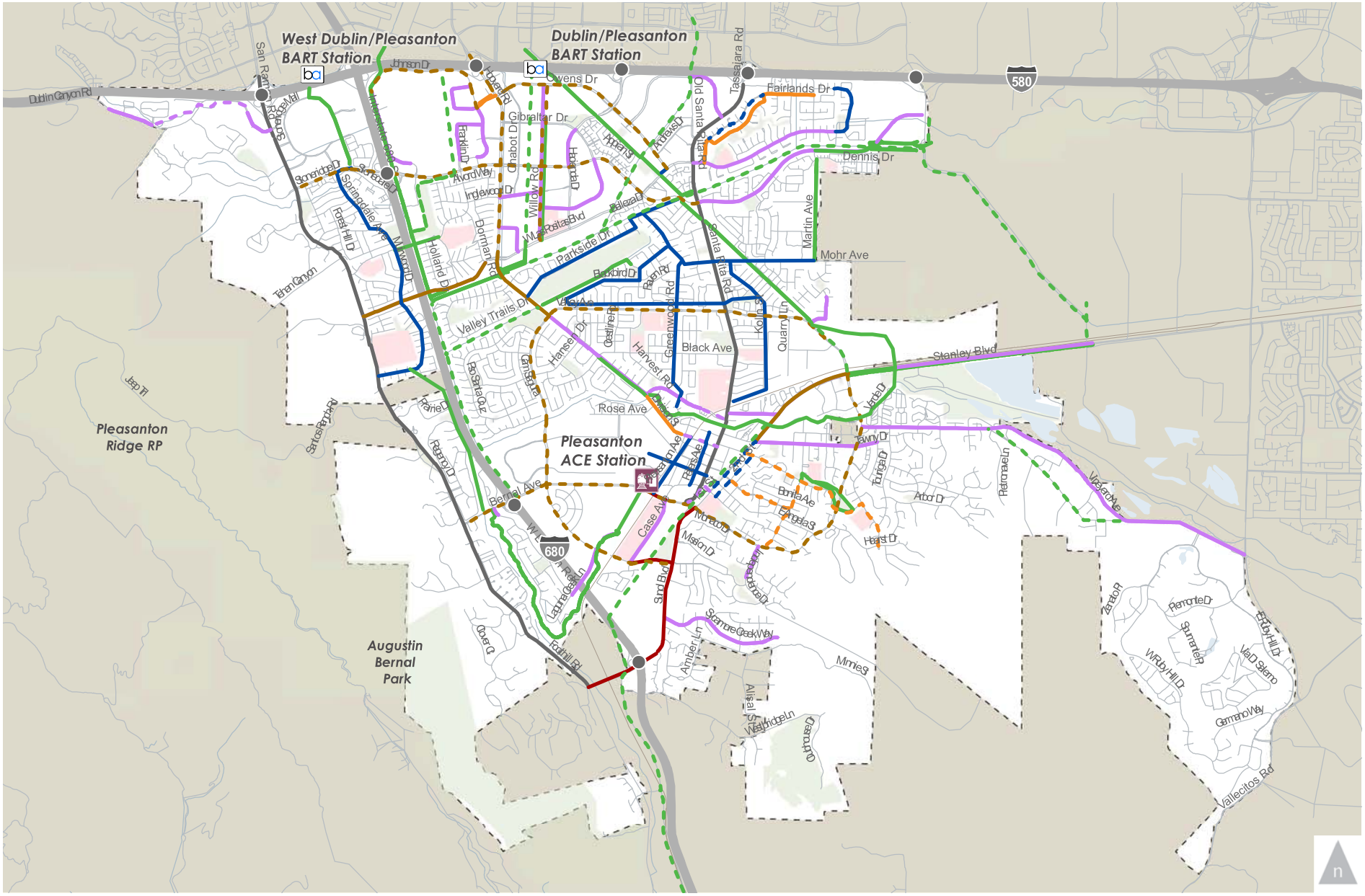

Existing Bicycle Facilities

- Shared Use Path (Class I)
- Bicycle Lane (Class II)
- Buffered Bicycle Lane (Class II)
- Bicycle Routes (Class III)
- Bicycle Boulevard (Class III)
- Seperated Bikeway (Class IV)

Proposed Vision Network

- Shared Use Path (Class I)
- Bicycle Lane (Class II)
- Buffered Bicycle Lane (Class II
- Bicycle Routes (Class III)
- Bicycle Boulevard (Class III)
- Seperated Bikeway (Class IV)
- Feasibility Study to be Determined by Facility Type

- Schools
- Parks
- City Boundary

Figure 4-4

Proposed Vision Network Bicycle Facilities

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4.2.1 Arroyo Del Valle Trail Improvements and Extension

This project would improve and extend the existing Arroyo Del Valle Trail to improve the Arroyo de Laguna Trail connection and extend the trail to the Iron Horse Trail. The proposed Arroyo Del Valle Trail would run along the Arroyo Del Valle Creek from the Arroyo de Laguna Trail to the Shadow Cliffs Recreation Area, connecting to the Iron Horse Trail. The trail currently ends at Main Street. The first phase of this project is a feasibility study to examine repaving the existing trail and extending it east to connect with the proposed Iron Horse Trail extension to the east at Stanley Boulevard.

4.2.1.1 Issues and Opportunities

Issues and opportunities to be addressed in the feasibility study include:

- Paving the existing trail near Downtown, where the existing surface and pavement is in poor condition.
- Improving the existing trail connection to Downtown via St. John Circle, which has a steep ramp up from the creek to Downtown
- Studying a bridge over the creek to connect the Arroyo Del Valle Trail, Arroyo de Laguna Trail, and Downtown
- Studying a grade separated crossing of the railroad tracks north of Stanley Boulevard on the Iron Horse Trail extension portion
- Studying a signalized trail crossing of Stanley Boulevard
- Consideration of a access to Downtown, BMX Sports Park, Shadow Cliff Recreation Area, and the on-street bicycle network on either side of the Trail

4.2.1.2 Recommendations

Table 4-2 details the components of the project. **Figure 4-5** presents the location of the proposed study.

Table 4-2: Arroyo Del Valle Trail Improvements and Extension

Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Cost
Arroyo Del Valle Trail	Division Street/Arroyo Del Valle Parkway Intersection	Shadow Cliffs Regional Park		Study feasibility of paving trail, providing trail access points and connections, and extending the existing trail east to the Iron Horse Trail and Shadow Cliffs. Study opportunity for a bridge between Arroyo Del Valle Trail and Downtown.	Implement improvements and crossings identified in the Study	$$$$

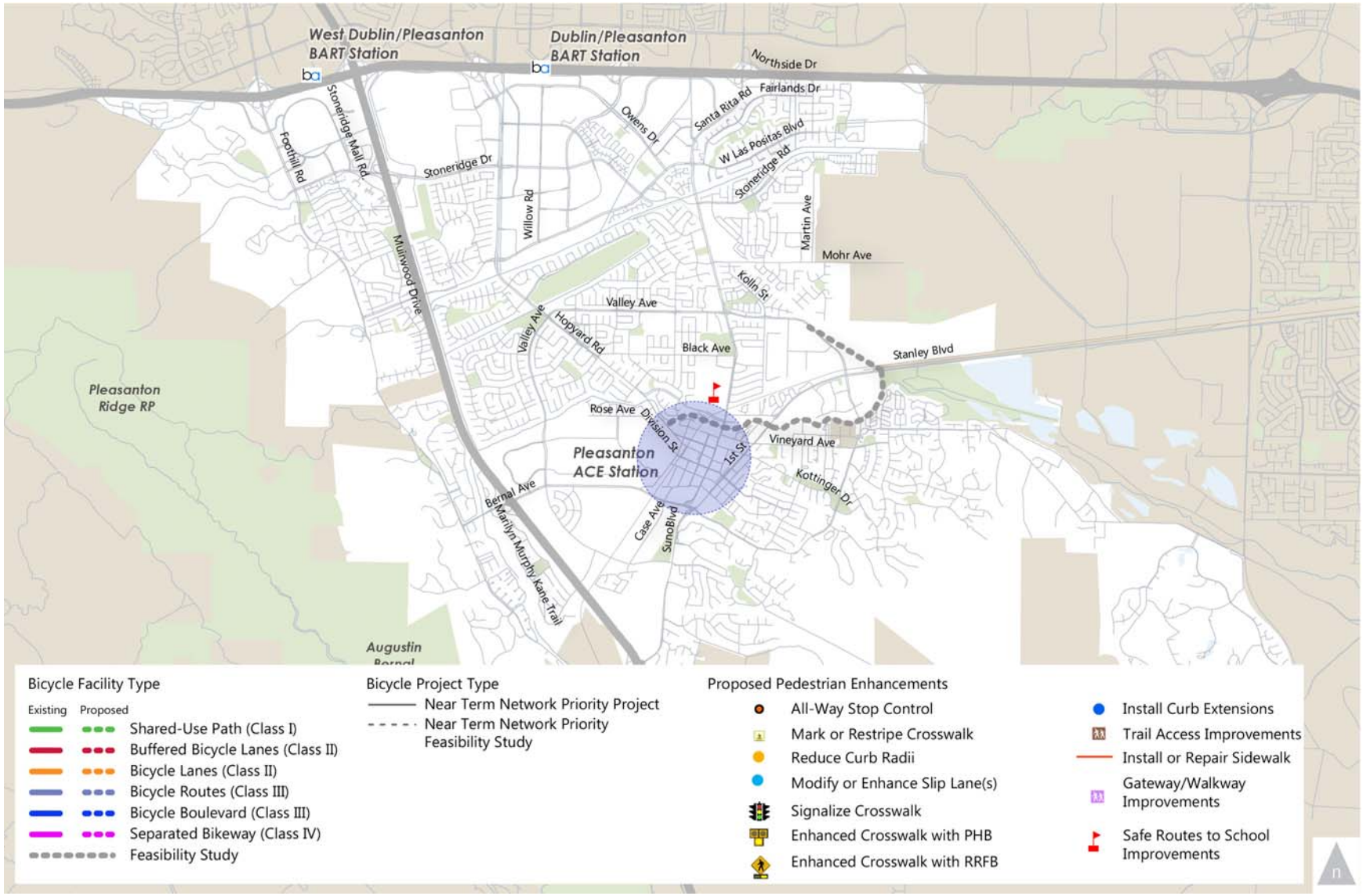


Figure 4-5: Arroyo Del Valle Improvements and Extension

4.2.2 Bernal Avenue

Buffered bicycle lanes are proposed for Bernal Avenue in the near-term between I-680 and Valley Avenue. As a phased strategy, the buffered bicycle lanes can later become a physically separated bikeway to maximize protection for cyclists. This project also includes crosswalk enhancements where Bernal Avenue intersects the Kottinger Community Park paths.

Example buffered bicycle lanes on Stoneridge Drive.

4.2.2.1 Issues and Opportunities

The issues and opportunities to be addressed in the project include:

- Improving the bicycling experience on high volume and high speed arterials
- Providing a more comfortable connection for experienced riders to Downtown and destinations to the south
- Creating a complete east-west connection for bicyclists in south Pleasanton
- Improving crossings on the Kottinger Park paths
- Consider phasing in posts/curbs to convert buffered bicycle lanes to separated bikeways

4.2.2.2 Recommendations

Table 4-3 details the projects. **Figure 4-6** maps the proposed projects.

Table 4-3: Bernal Avenue						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Bernal Avenue	I-680 Interchange	Stanley Boulevard		Provide buffered bicycle lanes. Transition bicycle lanes from curbside to between through and right lane no farther than 150' back from the intersection[4]	Install separated bikeways with separated bikeway intersection treatments	$$$$
Bernal Avenue	Intersection with Main Street			Install traffic signal to facilitate bicyclist turns and improve pedestrian connectivity	-	$$$
Bernal Avenue	Intersection with Kottinger Drive			Enhance or modify slip lane	-	$$$
Bernal Avenue	Intersection with Kottinger Community Park Path			Enhance crosswalk with RRFBs[1]; Widen sidewalk on east side to improve path connection	-	$$
Tawny Drive	Norton Way	Touriga Drive		-	Provide bicycle boulevard treatment	$

1. Prevailing speed, number of travel lanes, and presence of median are key factors in determining the need for crosswalk safety enhancements. In addition that, PHBs have specific volume warrants requirement per the CAMUTCD that must be met. Crosswalk installation and enhancements should be determined according to Appendix A Crosswalk Policy and engineering judgment.

[4] 150' minimum based on existing engineering national best practices per ITE Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges.

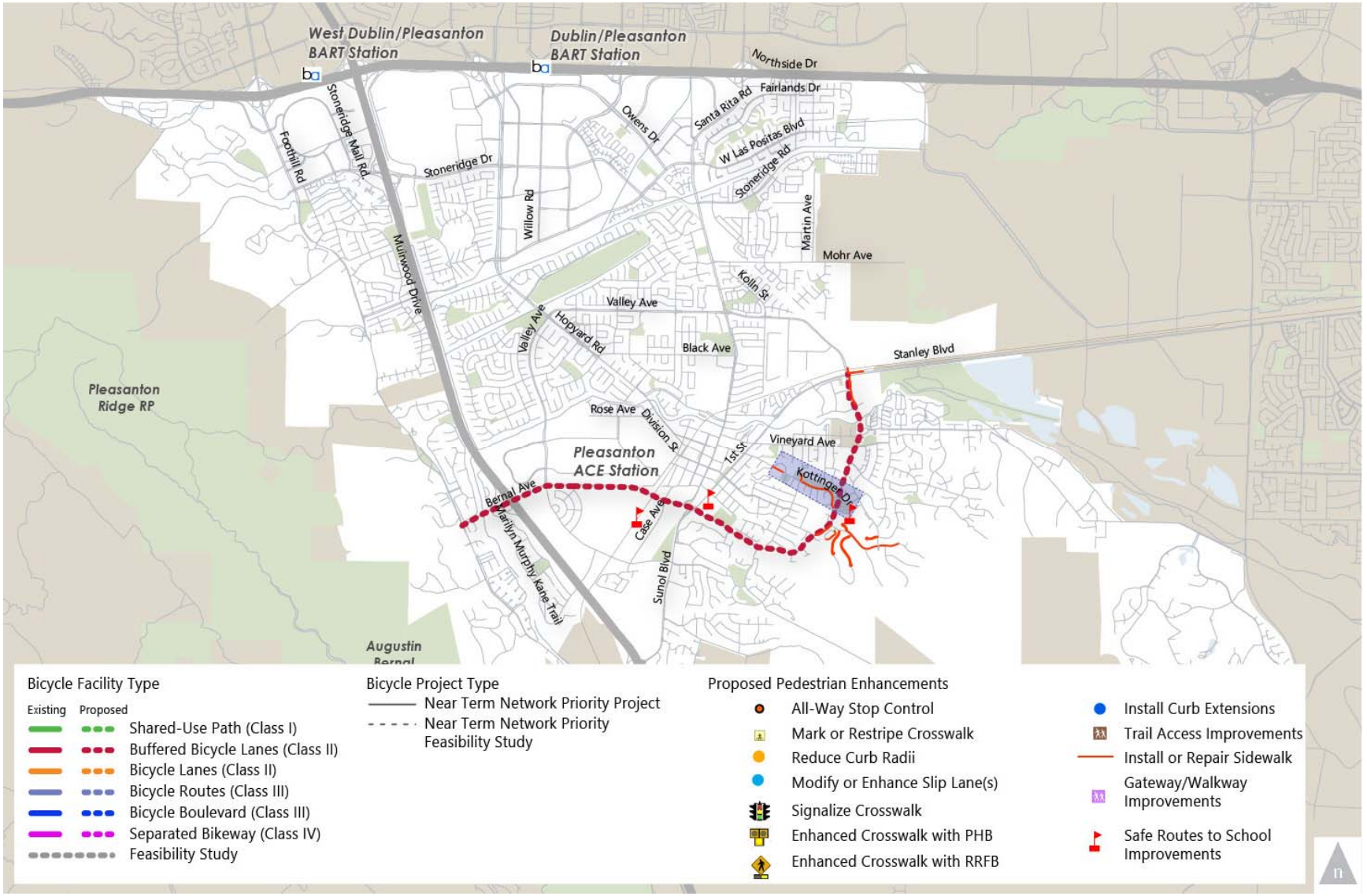


Figure 4-6: Bernal Avenue

4.2.3 Centennial Trail to Iron Horse Trail via BART

The Centennial Trail to Iron Horse Trail via BART project provides an important east-west connection in the northern part of the city on Johnson Drive and Owens Drive. The project provides a low-stress bicycle connection between the Centennial Trail, Dublin/Pleasanton BART Station, area employers, and the Iron Horse Trail. The project also improves pedestrian safety and connectivity through improved crossing opportunities near BART.

4.2.3.1 Issues and Opportunities

Issues and opportunities to be addressed by this project include:

- Considering converting an existing travel lane to a separated bikeway with the low auto volumes on Owens Drive
- Addressing the infrequent pedestrian crossing opportunities near BART Station given the long block sizes
- Addressing the need for a continuous east-west connection in northern Pleasanton that integrate the on-street bikeway network with the trails network
- Identifying countermeasures to address the numerous reported bicycle and pedestrian collisions occurred on Owens Drive between 2010-2015, including two severe pedestrian injuries
- Addressing need for biking and walking connections between regional trails, major employers, and the Dublin/Pleasanton BART

4.2.3.2 Recommendations

Table 4-4 details the project components. **Figure 4-7** maps the proposed project.

Table 4-4: Centennial Trail to Iron Horse Trail via BART						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Owens Drive	Hopyard Road	Ithaca Way		Provide separated bikeways with lane reduction	-	$$$
Ithaca Way	Owens Drive	Iron Horse Trail		Provide bicycle boulevard treatment, including wayfinding to the Iron Horse Trail	-	$$
Owens Drive	Intersection with West Las Positas Boulevard/Ithaca Way			Install cut through to provide access between Owens Drive/W Las Positas Boulevard and the Iron Horse Trail. Complete with Ithaca Way improvements. Coordinate with W. Las Positas Boulevard separated bikeway project	-	$$
Owens Drive	Intersection with West Las Positas Boulevard			Install marked crosswalks across W Las Positas Boulevard at all approaches and modify signal to allow pedestrian crossing.[1] Complete with Ithaca Way improvements.	-	$$
Owens Drive	Intersection with Iron Horse Trail			Improve trail wayfinding and widen curb ramp	-	$
Owens Drive	Intersection with Willow Road			-	Reduce curb radius and remove acceleration lane. Install protected intersection at Owens Drive/Willow Road.	$$$
Owens Drive	Between Owens Ct and Willow Road			Enhance marked crosswalk with signal or PHB[1]	-	$$$
Owens Drive	Intersection with Hacienda Drive			Enhance or modify slip lanes	-	$$$

Table 4-4: Centennial Trail to Iron Horse Trail via BART						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Owens Drive	Johnson Drive	Hopyard Road		Provide separated bikeways with lane reduction. If lane reduction is infeasible, stripe sharrows and sign as bicycle route. Consider widening sidewalk to provide directional paths on either side of this short segment if lane reduction is infeasible.	Provide separated bikeways or shared-use path	$$
Johnson Drive	Centennial Trail	Owens Drive		Stripe buffered bicycle lanes	Install separated bikeways	$$$
Johnson Drive	Centennial Trail			Install new bicycle ramp to sidewalk at the western Club Sport/Double Tree driveway, mark high visibility crosswalk to new ramp on west side of driveway intersection; install wayfinding to Centennial trail	-	$$
Iron Horse Trail	Dublin/Pleasanton BART Station Area and Parking Lot			Implement the wayfinding, trail enhancements, and bicycle and pedestrian BART and Iron Horse Trail access improvements in the Iron Horse Trail Feasibility Study. Requires coordination with East Bay Regional Park District, BART, and the City of Dublin	-	$$$

1. Prevailing speed, number of travel lanes, and presence of median are key factors in determining the need for crosswalk safety enhancements. In addition that, PHBs have specific volume warrants requirement per the CAMUTCD that must be met. Crosswalk installation and enhancements should be determined according to Appendix A Crosswalk Policy and engineering judgment.

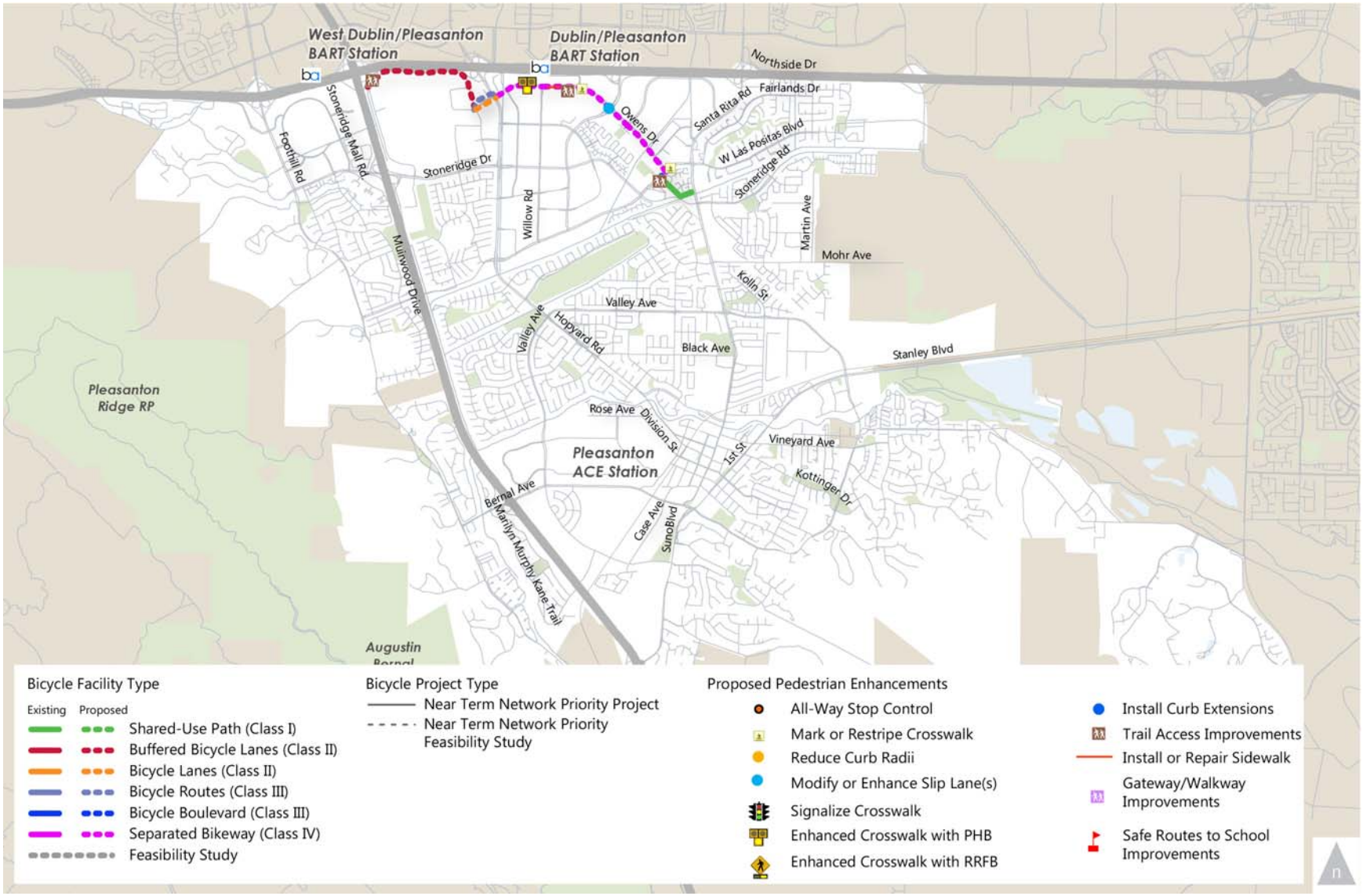


Figure 4-7: Centennial Trail to Iron Horse Trail via BART

4.2.4 Central Pleasanton Bicycle Boulevards

The Central Pleasanton Bicycle Boulevards project connects trails and schools in residential Central Pleasanton neighborhoods, routing bicyclists on low-stress residential streets. The project consists of two bicycle boulevard connections – Greenwood Road and Mohr Avenue - in the neighborhoods north of Downtown and east of Santa Rita Road.

4.2.4.1 Issues and Opportunities

The issues and opportunities to be addressed in the project include:

- Utilizing existing low-volume and low-speed residential streets to providing a low-stress bicycle route through neighborhoods in Central Pleasanton
- Improving connections between the Arroyo Mocho Trail and the on-street bicycle network
- Providing a Safe Routes to Schools biking and walking spine to Harvest Park Middle School, Walnut Grove Elementary School, and Amador Valley High School
- Improving wayfinding to off-street paths and parks
- Providing an all ages and abilities alternative to Santa Rita Road through the neighborhoods on the west side of Santa Rita

Example Bicycle Boulevard and Sample Wayfinding

4.2.4.2 Recommendations

Table 4-5 details the components of the project. **Figure 4-8** maps the proposed projects. The projects are broken down into segment and intersection components; however, the projects are intended to be implemented at the same time to provide continuous bicycle boulevard segments.

Table 4-5: Central Pleasanton Bicycle Boulevards						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Harvest Circle and Harvest Road	Greenwood Road	Arroyo Del Valle Trail		Bicycle boulevard treatment	-	$$
Harvest Circle	Intersection with Arroyo Del Valle Trail			Install raised crosswalk/speed table across Harvest Circle aligning to daylight the trail and provide access	-	$$
Harvest Circle and Harvest Road	Intersection with Del Valle Parkway			Reduce crossing distances at Del Valle Parkway intersection with bulb-outs and median refuge	-	$
Greenwood Road	Mohr Avenue	Harvest Road		Bicycle boulevard treatment; Install wayfinding to destinations and routes such as Downtown, Alameda Drive/Northway Road bicycle boulevard, BART, Arroyo Mocho, and Iron Horse Trail.	-	$
Greenwood Road	Intersection with Mohr Avenue			Consider traffic circle at Mohr Avenue	-	$$
Greenwood Road	Intersection with Harvest Road			Evaluate need to modify traffic control, as none exists today. Consider adding traffic circle and/or yield or stop control at Greenwood Road intersection to support bicyclists turning movements from Greenwood to Harvest. Include consideration of changing existing all-way stop at Ridgewood Road to side-street stop in evaluation.	-	$$
Greenwood Road	Intersection with Alameda Drive			Reduce crossing distances of school crosswalks at Alameda Drive through curb extensions and reduced curb radii	-	$$
Greenwood Road	Intersection with Valley Avenue			Reduce curb radii at Valley.	-	$$
Greenwood Road	Intersection with Canary Drive			Consider traffic circle at Canary Drive	-	$

Table 4-5: Central Pleasanton Bicycle Boulevards						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Mohr Avenue	Sutter Gate Avenue Gate to Arroyo Mocho Trail	Santa Rita Road		Bicycle boulevard treatment; improve gate/access at Sutter Gate for bicyclists including those with trailers	-	$$
Laramie Gate Circle	Paths on southwest corner of Santa Rita Road/Stoneridge Road			Improve trail wayfinding (to Arroyo Mocho and Iron Horse Trails) and widen curb ramp	Connect to the Iron Horse Trail	$
Ross Gate Way/Laramie Gate Cir	Mohr Avenue	Arroyo Mocho Trail Connection		Bicycle boulevard treatment to Arroyo Mocho Trail connector entrance. Install wide trail curb ramp onto sidewalk at opening in wall with wayfinding signage	-	$$
Sutter Gate Avenue and Arroyo Mocho Trail				Improve trail wayfinding (to Arroyo Mocho and Iron Horse Trails) and widen curb ramp	-	$
Mohr Avenue	Intersection with Iron Horse Trail			Restripe existing trail crossing as high-visibility trail crossing.	-	$$
Mohr Avenue	Santa Rita Road	Kolln Street		Stripe bicycle lanes between Santa Rita Road and Kolln Street.	-	$$
Mohr Avenue	Kolln Street	Iron Horse Trail		Bicycle boulevard treatment OR remove existing on-street parking and stripe buffered bicycle lanes (to Kamp Drive); install median refuge at Iron Horse Trail crossing.	-	$$

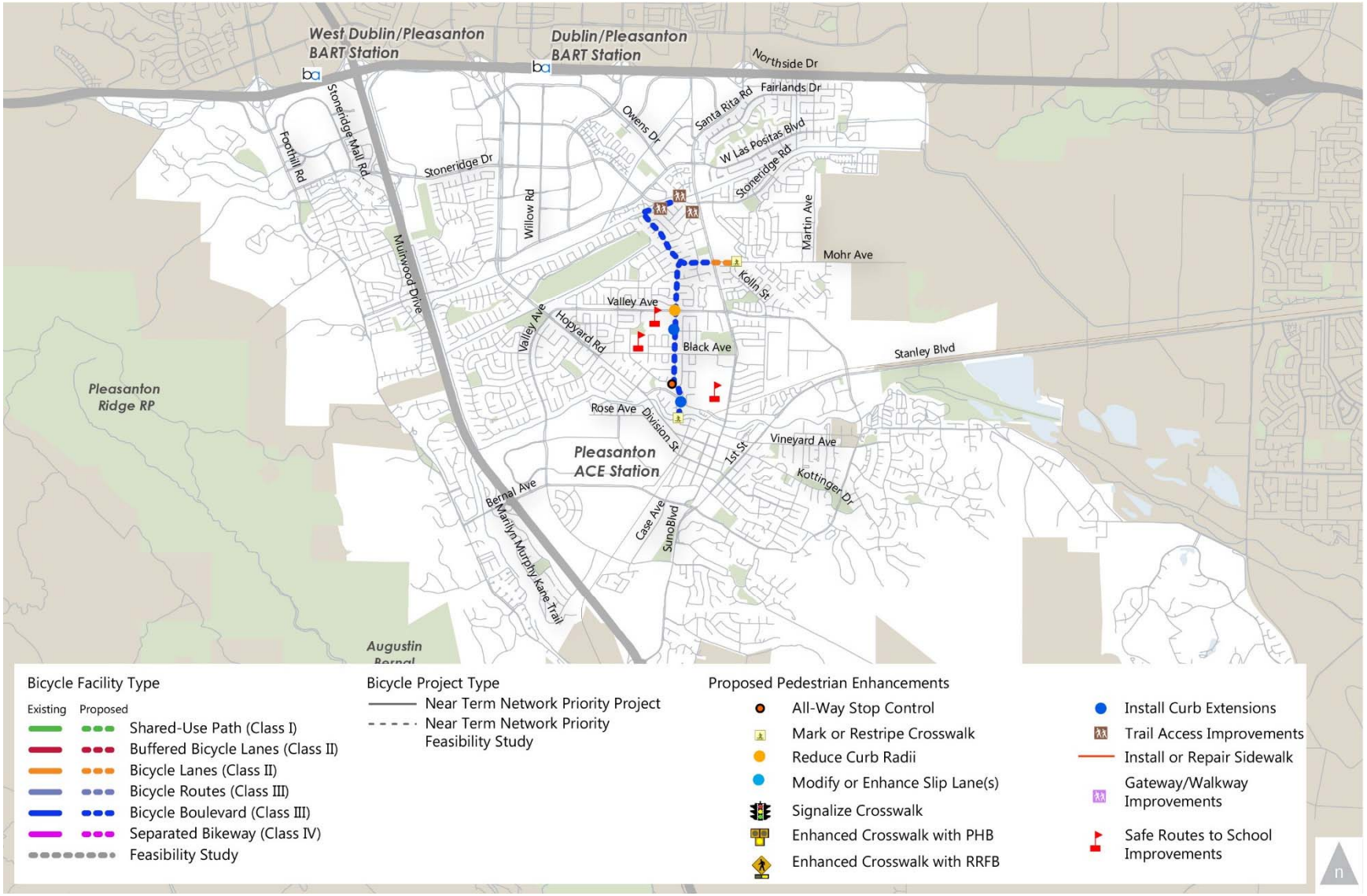


Figure 4-8: Central Pleasanton Bicycle Boulevards

4.2.5 Downtown Access

The Downtown Access project enhances walking and biking routes to and within Downtown through bicycle boulevards, sidewalk gap closures, and pedestrian crossing enhancements. This project also includes a study to repurpose the old Southern Pacific Railroad right-of-way into a shared-use path through and to the south of Downtown.

4.2.5.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Converting the old Southern Pacific Railroad to a "rail to trail" providing a shared-use path into Downtown, as an alternative to the Sunol Boulevard/First Street corridor
- Providing an all ages and abilities alternative to Main Street for biking
- Improving pedestrian safety and visibility at existing crosswalks in Downtown
- Providing continuous sidewalks near the ACE Station and Pleasanton Library

4.2.5.2 Recommendations

Table 4-6 details the project components. **Figure 4-9** maps the proposed projects.

Table 4-6: Downtown Access						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Southern Pacific Railroad/Alameda County Transportation Corridor	Castlewood Drive	Bernal Avenue		Conduct Trail Feasibility Study to convert old railroad right-of-way to shared-use path	Install pedestrian/bicycle path with decomposed granite jogging path. Install intersection and trail crossing improvements.	$$$$
Old Bernal Avenue	Bernal Avenue	Bernal Court		Stripe bicycle lanes. Close 500' sidewalk gap on west side.	-	$$$
Old Bernal Avenue	Bernal Court	Main Street		Stripe sharrows and sign as bicycle route.	-	$
Angela Street	Pleasanton Avenue	Bernal Avenue		Provide bicycle boulevard treatment	-	$$$
Angela Street	Intersection with Pleasanton Avenue			Evaluate traffic circle or all-way stop control to facilitate bicycle turning movements and pedestrian access to the ACE Station and Downtown	-	$$
Peters Avenue	St. John Street	Old Bernal Avenue		Provide bicycle boulevard treatment.	-	$$
Peters Avenue	Intersection with Old Bernal Avenue			Narrow intersection with curb extension/pocket park; mark high-visibility crosswalks	-	$$$
Peters Avenue	Intersection with Rose Avenue			Mark new high-visibility crosswalk[1]	-	$
Peters Avenue	Intersection with W Angela Street			Mark new high-visibility crosswalk[1]	-	$

Table 4-6: Downtown Access						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Peters Avenue	Intersection with St. Marys Street			Install curb extensions and mark new high-visibility crosswalk[1]	-	$$
St. John Street	Peters Avenue	Main Street		Install bicycle boulevard treatment.	-	$$

1. Prevailing speed, number of travel lanes, and presence of median are key factors in determining the need for crosswalk safety enhancements. In addition that, PHBs have specific volume warrants requirement per the CAMUTCD that must be met. Crosswalk installation and enhancements should be determined according to Appendix A Crosswalk Policy and engineering judgment.

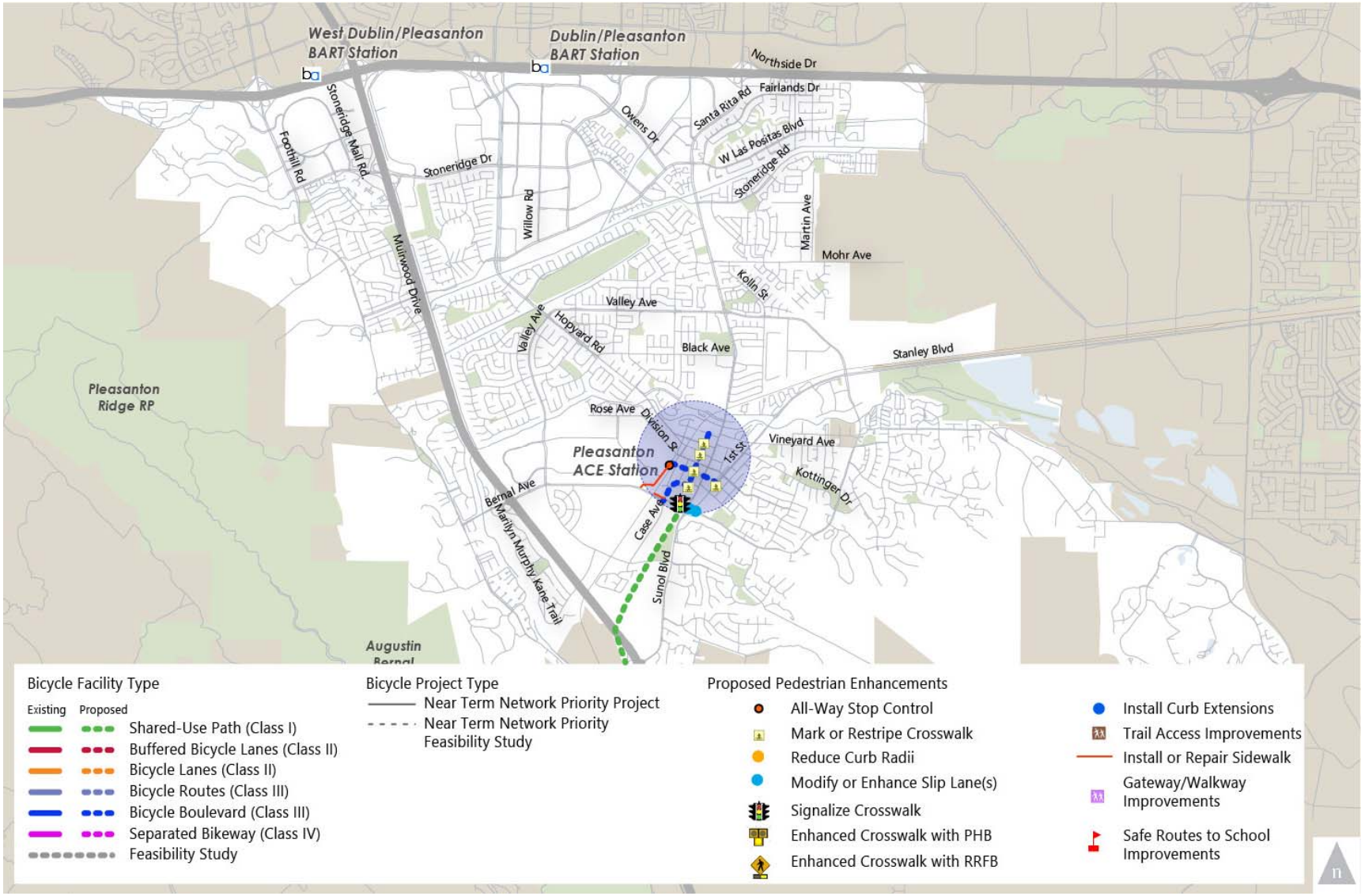


Figure 4-9: Downtown Access

4.2.6 Dublin/Pleasanton BART to Downtown

The Dublin/Pleasanton BART to Downtown project provides a key north-south connection from Dublin BART to Downtown along Willow Road, West Last Positas Boulevard, and Hopyard Road. The project also includes safe routes to school improvements and provides all ages and abilities bikeway along the corridor.

4.2.6.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Replacing high-stress bicycle lanes with all ages and abilities separated bikeways
- Providing safe routes to school for Thomas S. Hart Middle School
- Improving pedestrian access across Hopyard Road to provide safe routes to schools, parks, and businesses
- Improving access between the BART Station, employers on Willow Road, and Downtown Pleasanton
- Providing bicycle and pedestrian access to Downtown from neighborhoods north of the Arroyo del Valle Creek

Example separated bikeway

4.2.6.2 Recommendations

Table 4-7 details the components of the project. **Figure 4-10** presents the proposed project.

Table 4-7: Dublin/Pleasanton BART to Downtown						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Hopyard Road	West Las Positas Boulevard	Black Avenue		Convert existing bicycle lanes to separated bikeways		$$$
West Las Positas Boulevard	Hopyard Road	Willow Road		Convert existing bicycle lanes to separated bikeways, including intersection improvements.	-	$$$
Hopyard Road	Black Avenue	Del Valle Parkway		Improve existing shared-use path on west side of street. Remove bollards, install wide curb ramps, wayfinding and improved crossings. Spot improve pavement quality.	-	$$
Hopyard Road	Intersection with Hansen Drive			Mark high-visibility crosswalk with median refuge and RRFBs[1]. Provide cut through to Hopyard Road frontage on the east side.	-	$$
Willow Road	Owens Drive	West Las Positas Boulevard		Consider designating and east sidewalk as a path and provide wayfinding directing less-experienced bicyclists to use the path. Maintain existing bicycle lanes.	Consider removing a travel lane in each direction, and add dedicated left-turn pockets for autos at each intersection; use remaining space to add raised buffer to existing bicycle lanes to create separated bikeways Enhance uncontrolled crosswalks across Willow with high visibility striping and median refuges	$
Willow Road	Intersection with Gibraltar Drive			Reduce curb radius	-	$$
Willow Road	Intersection with Inglewood Drive			Install new high-visibility crosswalk with RRFB or PHB[1] and median refuge	-	$$$

Table 4-7: Dublin/Pleasanton BART to Downtown						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Willow Road	Intersection with West Las Positas Boulevard			Reduce curb radii and install improvements to support bicyclists turning onto/off-of Willow Road	-	$$
Hopyard Road	Intersection with Valley Avenue			Enhance or modify slip lanes or install upgrades to allow for improved bicycle and pedestrian circulation. Improve connection to the Sports Park, Tennis Park, and the Pleasanton Canal Trail, including wayfinding.	-	$$$
Hopyard Road	Intersection with Black Avenue			Enhance or modify slip lanes or install upgrades to allow for improved bicycle and pedestrian circulation. Install high visibility striping and median refuges. Provide separated bikeway intersection improvements, such as a protected intersection.	-	$$$
Hopyard Road	Intersection with Golden Road			Restripe existing crosswalk as high visibility crosswalk	-	$
Hopyard Road	Intersection with Del Valle Parkway/Division Street			Modify westbound approach. Enhance or modify slip lane to allow right turns at the intersection. Install curb extension on southeast corner of intersection. Rebuild northeast corner and refuge on east crosswalk to improve accessibility for pedestrians and bicyclists. Improve connection to the Arroyo Valle Trail.	-	$$
Division Street	Del Valle Parkway	St. Mary Street		Stripe sharrows and install bicycle route signage; install wayfinding to Downtown; work with neighbors to not place trash cans in roadway shoulder. Consider Rose Avenue/Fair Street as an alternative bicycle boulevard route to Downtown.	-	$

Table 4-7: Dublin/Pleasanton BART to Downtown						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
St. Mary Street	Division Street	Main Street		Stripe sharrows and sign as bicycle route. Complete with Division Street bicycle route.	-	$

1. Prevailing speed, number of travel lanes, and presence of median are key factors in determining the need for crosswalk safety enhancements. In addition that, PHBs have specific volume warrants requirement per the CAMUTCD that must be met. Crosswalk installation and enhancements should be determined according to Appendix A Crosswalk Policy and engineering judgment.

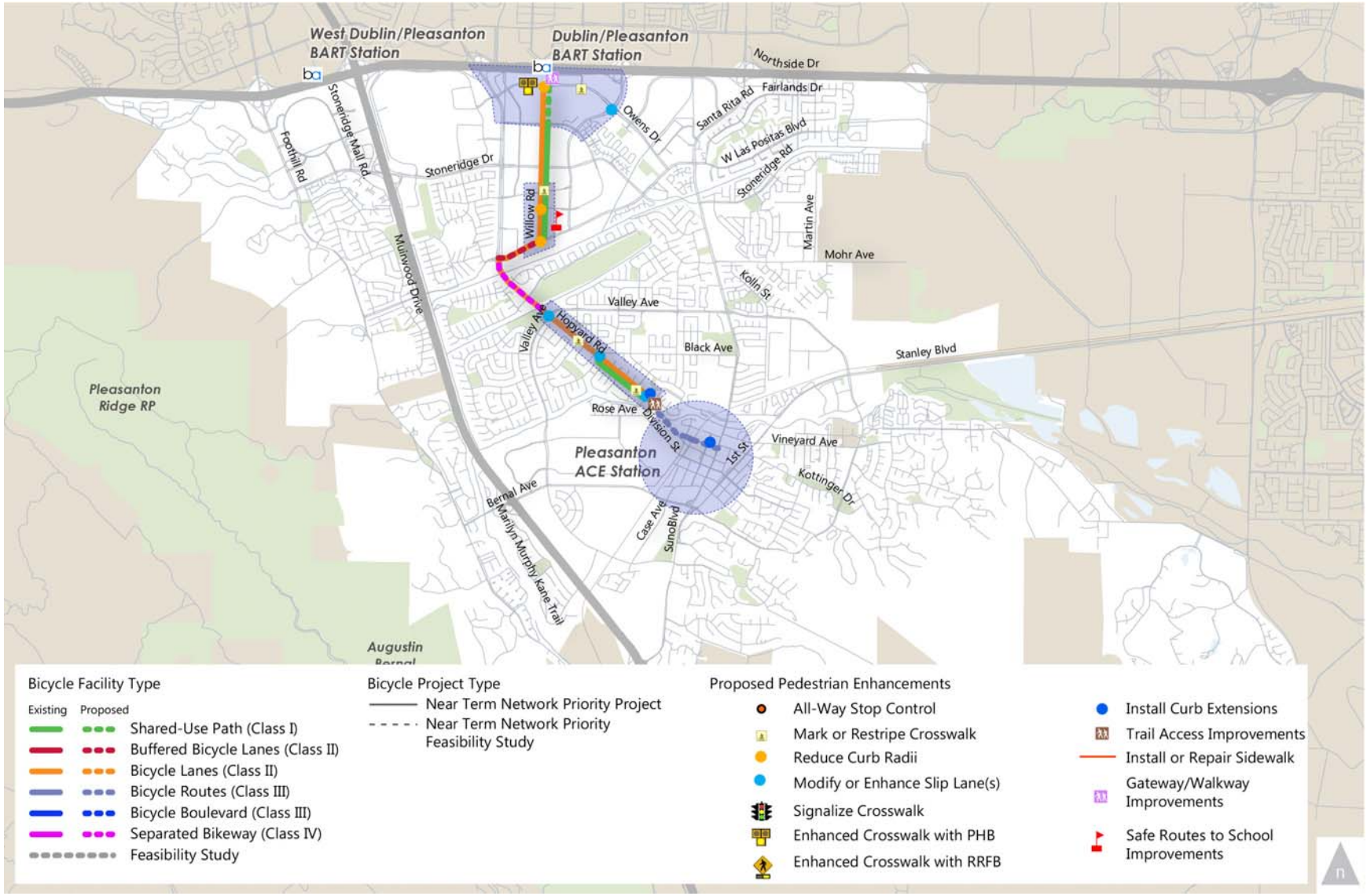


Figure 4-10: Dublin/Pleasanton BART to Downtown

4.2.7 East Side Bicycle Boulevard

The East Side Bicycle Boulevard connects Amador Valley High School, Alisal Elementary School, Orloff Park, Iron Horse Trail, and Mohr Elementary School along residential streets in the neighborhoods east of Santa Rita Road. It also provides access from the east side neighborhoods to Downtown. The bicycle boulevard begins on School Street, continues on Kolln Street, and connects with the Mohr Avenue bicycle boulevard in order to provide a bicycle boulevard alternative to Santa Rita Road.

4.2.7.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Addressing the needs of students walking and biking to Mohr Elementary School, Alisal Elementary School and Amador Valley High School
- Improving access to existing shared use paths through wayfinding and installation of new neighborhood bicycle routes
- Providing an all ages and abilities alternative to Santa Rita Road through the neighborhoods on the east side of Santa Rita

Example traffic circle, a traffic calming device that could be considered on a bicycle boulevard

4.2.7.2 Recommendations

Table 4-8 details the components of the project. **Figure 4-11** presents the proposed project.

Table 4-8: East Side Bicycle Boulevard						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Guzman Parkway	Amaral Park/Dennis Drive	Arroyo Mocho Trail /Stoneridge Drive		Install separated bikeways between Amaral Park/Dennis Drive and Stoneridge Drive/Arroyo Mocho Trail	-	$$$
Dennis Drive	Intersection with Carrisa Court			Restripe existing crosswalk as high-visibility	-	$$
Martin Avenue	At Amaral Park			Install wayfinding between Martin Avenue Path, Amaral Park, Mohr Elementary School, and Arroyo Mocho Trail	-	$$
Mohr Avenue	Iron Horse Trail	Martin Avenue		Extend existing Class I path on north side of the street; stripe trail crossing at all cross-streets: Kamp Drive, Courtney Avenue, and Martin Avenue; install wayfinding between Iron Horse Trail and Martin Avenue path	-	$$$$
Kolln Street	Mohr Avenue	School Street		Install bicycle boulevard treatment. Add wayfinding to Downtown (southbound) and access to BART, Arroyo Mocho Trail, and Iron Horse Trail (northbound).	-	$$
Kolln Street	Intersection with Valley Avenue			Add bicycle cut through with signal detection at Valley Avenue. Complete with Kolln Street bicycle boulevard treatments.	-	$$
School Street	Kolln Street	Santa Rita Road		Install bicycle boulevard treatment with wayfinding to Amador Valley High School. Use sharrows and wayfinding signs to identify the preferred route between the School Street intersection and the signal at Santa Rita Road, which are offset.	-	$$

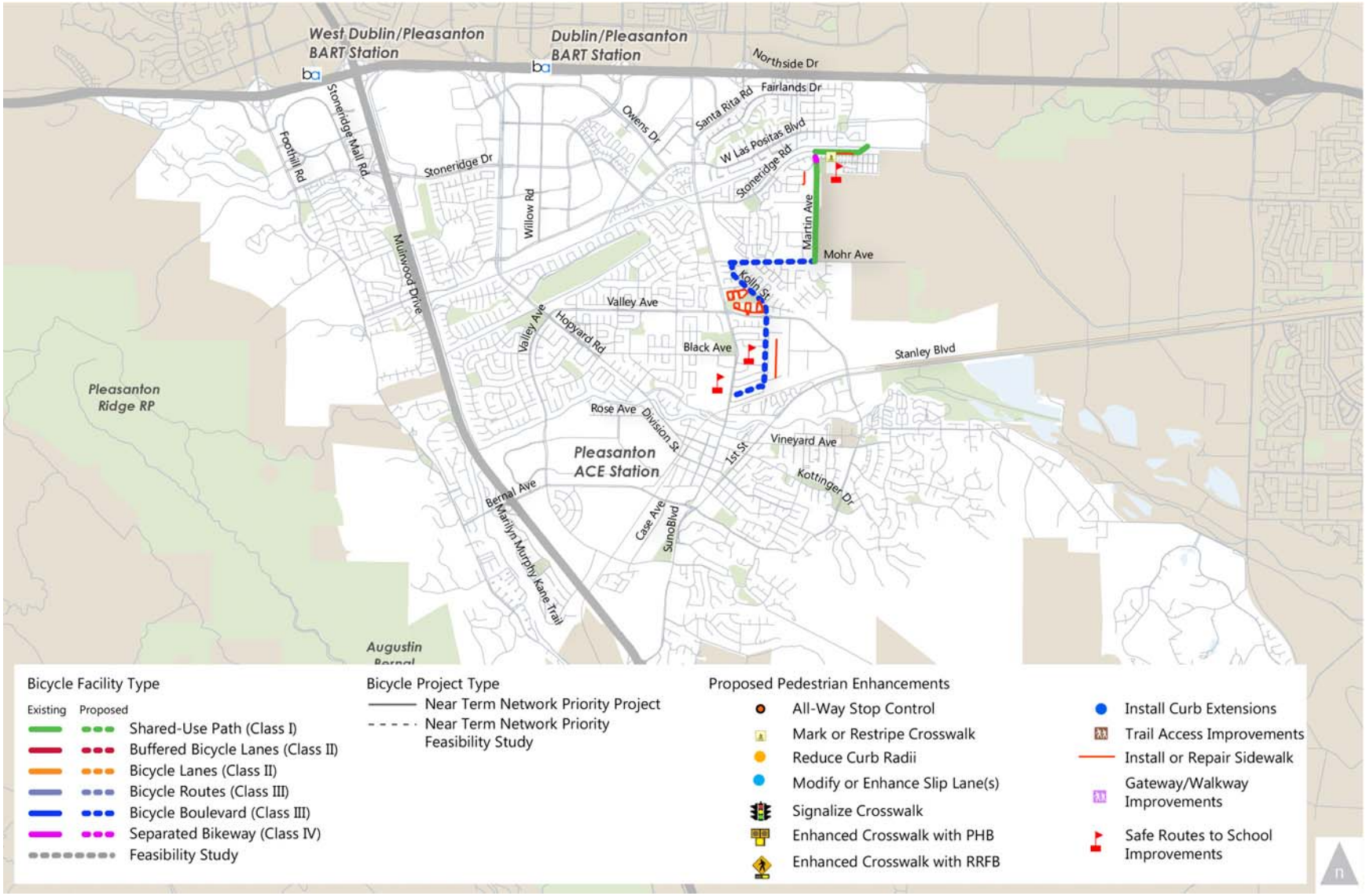


Figure 4-11: East Side Bicycle Boulevards

4.2.8 Foothill Road

The Foothill Road project consists of safe routes to school projects and a complete streets study of the entire length of Foothill Road. The near-term improvements include walking and biking access for students at Lydiksen Elementary School and Foothill High School. The complete streets study is expected to identify a low-stress bicycle facility for Foothill Road.

4.2.8.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Studying the feasibility of providing a continuous and low-stress north to south bicycle facility in west Pleasanton
- Addressing the inconsistent cross-section and gaps in existing bicycle facilities on Foothill Road
- High speeds on Foothill Road require separated bikeways or a path to be considered part of the all ages and abilities network
- Providing crosswalk improvements to support safe routes to school

4.2.8.2 Recommendations

Table 4-9 details the components of the project. **Figure 4-12** presents the proposed project.

Table 4-9: Foothill Road Complete Streets						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Foothill Road	I-580	Castlewood Drive		Prepare bikeway feasibility/complete streets study focused on providing continuous, protected bikeways and separated bikeway intersection improvements. Coordinate with County to address portions outside of Pleasanton.	Install continuous separated bikeways and separated bikeway intersection improvements	$$$
Foothill Road	Intersection with Highland Oaks Drive			Enhance existing crosswalk with ladder striping and PHB[1]	-	$$$
Foothill Road	Lydiksen Elementary School Safe Routes to School Projects			Provide crossing, bicycle rack, and access improvements on Highland Oaks Drive and Driftwood Way. Coordinate with Muirwood Drive and West Las Positas Boulevard Improvements	-	$$$
Foothill Road	Intersection with Oak Creek Drive			Enhance existing crosswalk with ladder striping and PHB[1]	-	$$$

1. Prevailing speed, number of travel lanes, and presence of median are key factors in determining the need for crosswalk safety enhancements. In addition that, PHBs have specific volume warrants requirement per the CAMUTCD that must be met. Crosswalk installation and enhancements should be determined according to Appendix A Crosswalk Policy and engineering judgment.

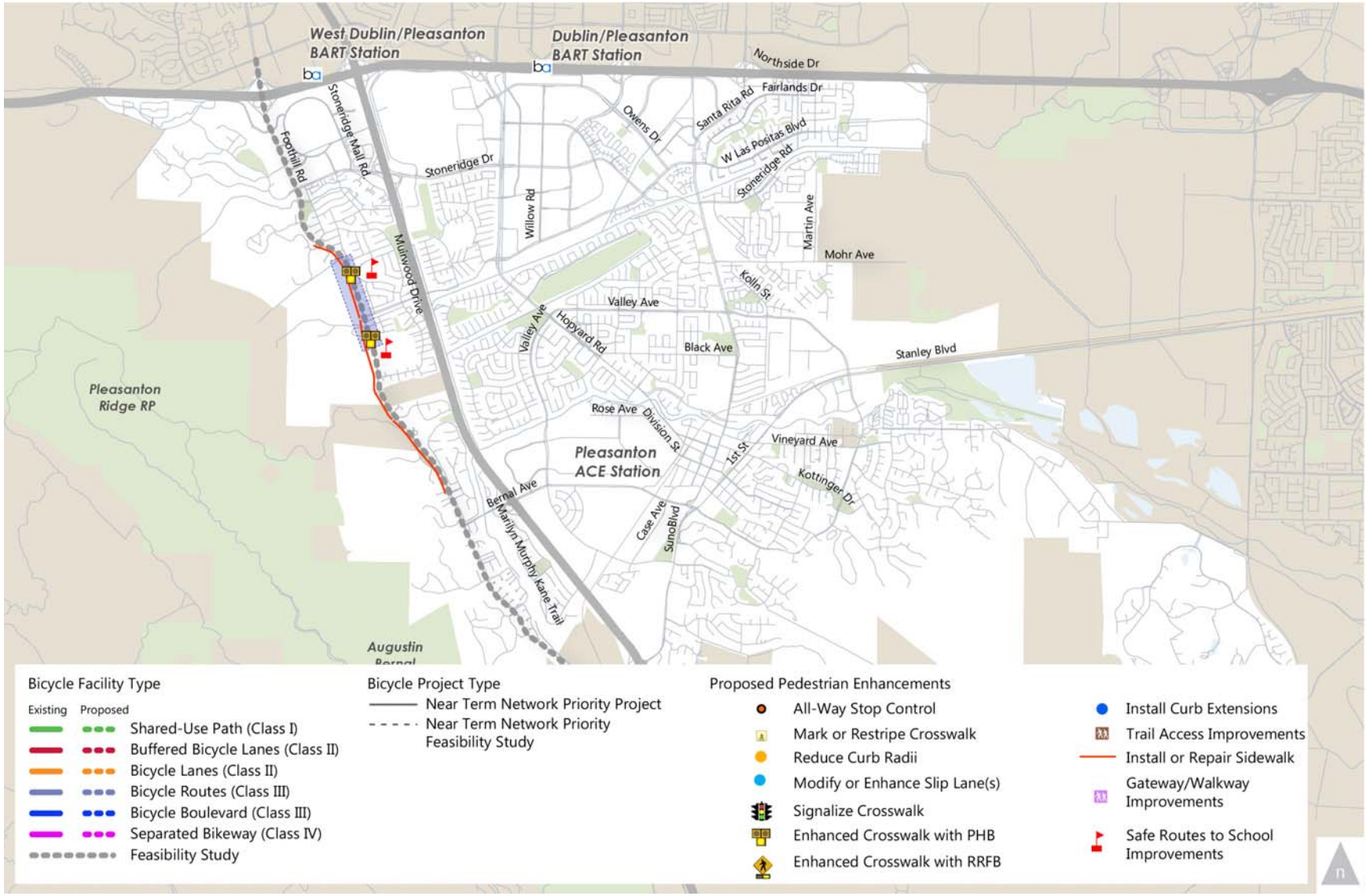


Figure 4-12: Foothill Road Complete Streets

4.2.9 I-580 and I-680 Overcrossing Improvements

In the near-term, the I-580 and I-680 Overcrossing Improvement Study will examine multi-modal improvements, including bicycle and pedestrian improvements, at each interchange in the city. The Study is funded and anticipated to be completed in 2017. Improvements recommended by the study will be implemented in the long-term; the study will also identify lower-cost solutions to improve bicycle and pedestrian safety through interchanges.

4.2.9.1 Issues and Opportunities

Issues and opportunities to be addressed by this project include:

- Addressing existing ramp geometries that provide high speed turns across crosswalks and bicycle lanes onto and off of the highways
- Providing context-sensitive solutions for different ramp geometry types on the I-580 and I-680 crossings
- Addressing the risk of multiple-threat collisions at on-ramps with more than one travel lane
- At uncontrolled ramps, apply the Citywide Crosswalk Policy in **Appendix A** to identify crosswalk enhancements
- Consideration of near-term improvements such as improving bicycle lane geometries, using green skip-striping, installing bicycle "escape ramps" before and after the ramp, and restriping high-visibility crosswalks where drivers are at the lowest speed in their turn while still providing short paths of travel
- Consideration of long-term improvements, such as redesigning ramp geometries to intersect at 90-degrees to the roadway

4.2.9.2 Recommendations

Table 4-10 details the components of the project. **Figure 4-13** presents the proposed project.

Table 4-10: I-580 and I-680 Overcrossing Improvements						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
All I-580 and I-680 Overcrossings	-	-		Prepare bicycle and pedestrian improvements feasibility study, utilizing best practices such as the *ITE Recommended Practices on Accommodating Pedestrians and Bicyclists at Interchanges* report	Implement Feasibility Study recommendations	$$$$

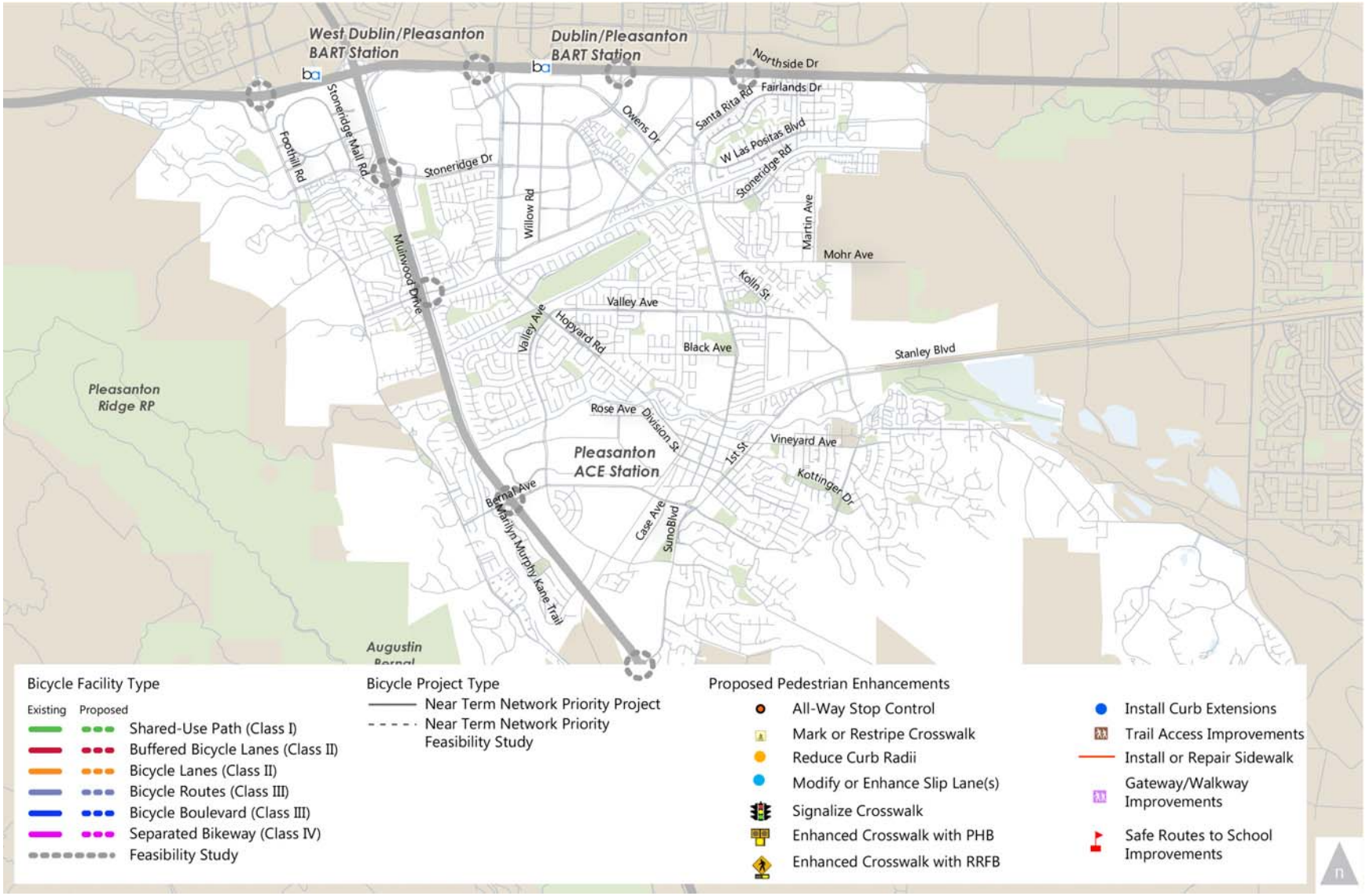


Figure 4-13: I-580 and I-680 Overcrossing Improvements

4.2.10 Santa Rita Road

The Santa Rita Road project consists of near-term improvements to close bicycling and walking gaps on the corridor in addition to a complete streets study along the entire length of Santa Rita Road to identify long-term solutions. The long-term study should consider traffic operations, parking regulations and utilization, and bicycle and pedestrian safety and comfort needs to assist in identifying feasible improvements for all travel modes. With many schools and parks nearby, this an important safe routes to school corridor, which should be addressed through the complete streets study.

Example Pedestrian Hybrid Beacon (top) and separated bikeway with parking (below).

4.2.10.1 Issues and Opportunities

Issues and Opportunities to be addressed by this project include:

- Addressing the need for separated bikeways in order to include Santa Rita Road in the all ages and abilities network given high speeds and the number of travel lanes
- Considering the importance of Santa Rita Road in the bicycle network, as it is the most direct and desirable route to many locations, such as Downtown
- Closing gaps in the bicycle facility on Santa Rita Road in the near term where feasible
- Improving access to Alisal Elementary School and Amador Valley High School by providing crosswalk improvements
- Provide a portion of all ages and abilities bikeway in the near term by creating a bicycle boulevard with wayfinding on the frontage road on the east side of Santa Rita Road
- Address pedestrian desire lines between schools, shopping centers, and residential areas on both sides of Santa Rita and the need for enhanced crosswalks due to the speed and number of traffic lanes

4.2.10.2 Recommendations

Table 4-11 details the components of the project. **Figure 4-14** presents the proposed project.

Table 4-11: Santa Rita Road

Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Cost
Santa Rita Road/Main Street	Del Valle Parkway	I-580		• Close gaps in existing bicycle facility with bicycle lane or sharrows where dedicated spaces cannot be provided. Stripe bicycle lanes between Old Santa Rita Road and Stoneridge Drive and Valley Avenue and Francisco Street NB. Stripe sharrows centered on the travel lane or remove parking where there is not enough space for a bicycle lane between Sutter Gate Avenue and Mohr Avenue and Mohr Avenue to Valley Avenue NB; . • At intersections, transition bicycle lanes from curbside to between through and right lane no further than 150' back from the intersection. • Install a bicycle boulevard on the Santa Rita Frontage Road between Francisco Street and Stanley Avenue; direct bicyclists traveling on Santa Rita Road north of Stanley Avenue and south of Francisco Street to use bicycle boulevard through wayfinding • Install wayfinding encouraging use of sidewalk between the end of the Santa Rita Road frontage road near Jensen Street to Stanley Boulevard. • Prepare complete streets study to provide continuous, protected bicycle facilities and pedestrian safety and comfort improvements, including parking inventory and utilization to understand where parking can be removed; closing the existing gap in the Iron Horse Trail in the most direct way; improving the I-580 interchange biking and walking improvements;	Install separated Bikeway; streetscape and crosswalk improvements	$$$$

Table 4-11: Santa Rita Road						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
				improving pedestrian environment and crosswalks; and addressing safe routes to school considerations. Coordinate with the Iron Horse Trail improvements project		
Santa Rita Road	Intersection with W Las Positas Boulevard			Enhance or modify slip lanes	-	$
Santa Rita Road	Intersection with Valley Avenue			Enhance or modify slip lanes or install upgrades to allow for improved bicycle and pedestrian circulation	Consider protected intersection with Valley Avenue and Santa Rita bicycle improvements	$$$
Santa Rita Road/Main Street	South end of Santa Rita frontage Road	Stanley Boulevard		-	Realign existing path on east side of Main Street and south side of the railroad. Add bicycle/pedestrian crossing gate at the railroad crossing from Santa Rita frontage road southbound.	$$$$
Santa Rita Road	Alisal Elementary			Provide crosswalk[1], bicycle rack, accessibility, and pathway improvements near Santa Rita Road frontage road and Nevis Street.	-	$$$
Santa Rita Road	Intersection with Francisco Street			Enhance existing crosswalk with PHB or signal[1]	-	$$$

1. Prevailing speed, number of travel lanes, and presence of median are key factors in determining the need for crosswalk safety enhancements. In addition that, PHBs have specific volume warrants requirement per the CAMUTCD that must be met. Crosswalk installation and enhancements should be determined according to Appendix A Crosswalk Policy and engineering judgment.

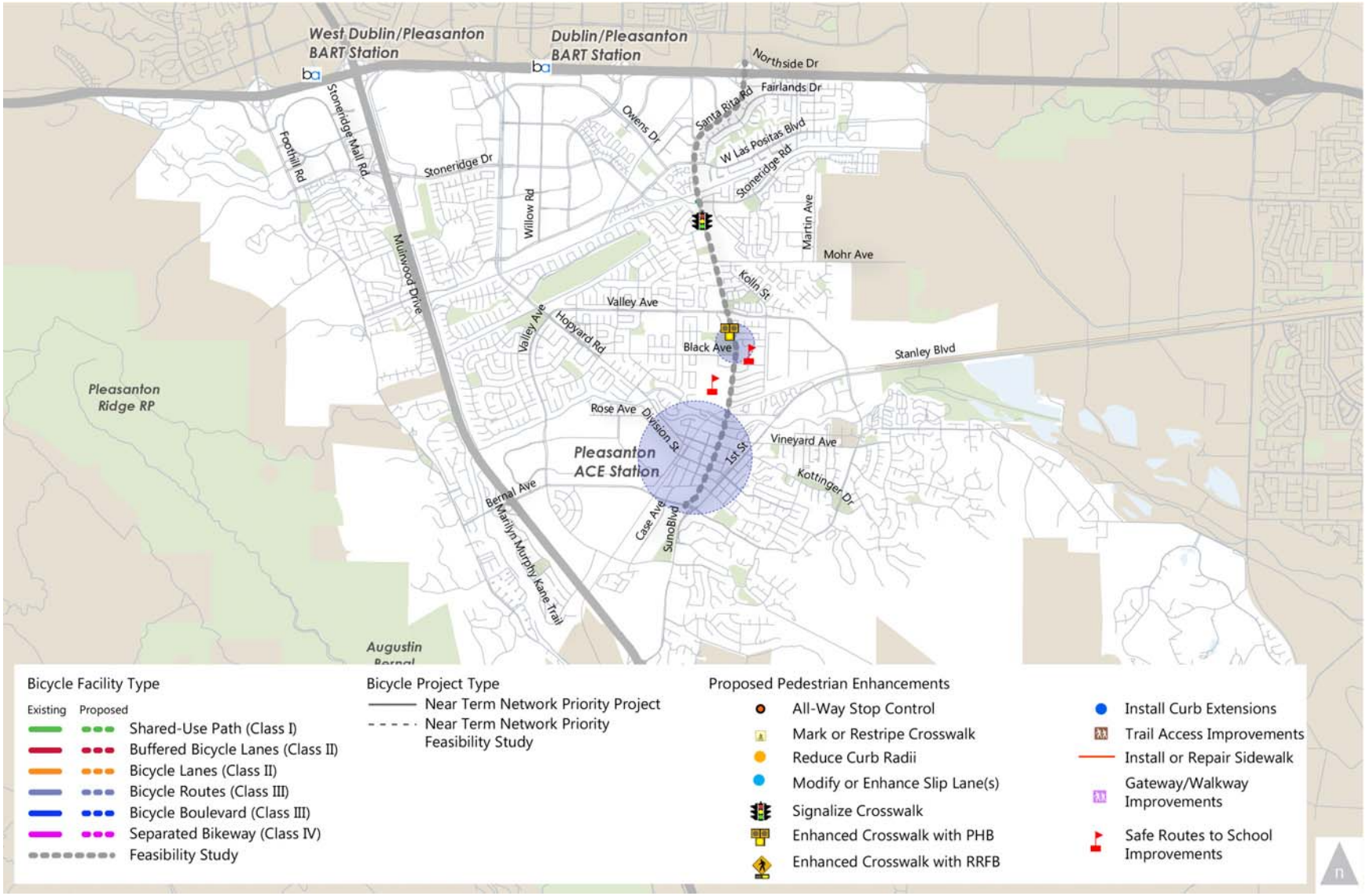


Figure 4-14: Santa Rita Road

4.2.11 Stanley Boulevard

The Stanley Boulevard project consists of a separated bikeway between Valley Avenue and First Street with additional bicycle and pedestrian improvements at the intersection with Valley Avenue.

4.2.11.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Providing a safe, comfortable connection between the Iron Horse Trail and Stanley Boulevard bikeways through the Valley Avenue/Stanley Boulevard intersection
- Improving access to Downtown from neighborhoods to the north and east
- Creating a safe, low-stress bicycle route to Downtown from east Pleasanton and the Iron Horse Trail

Example separated bikeway (Source: FHWA Guide, Dianne Yee)

4.2.11.2 Recommendations

Table 4-12 details the project components. **Figure 4-15** maps the proposed projects.

Table 4-12: Stanley Boulevard						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Stanley Boulevard	Valley Avenue	First Street		Install separated bikeway	-	$$$
Valley Avenue/ Bernal Avenue	Intersection with Stanley Boulevard			• Near-term improvements include: install trail wayfinding and shared path markings; enhance or modify slip lane; install upgrades to allow for improved bicycle/pedestrian circulation; stripe crosswalks as trail crossings and stripe green bicycle lanes on approaches and through the intersection; Install two stage bicycle turn boxes and install cyclist detection from sidewalk/paths • Medium-term improvement is to construct a protected intersection	Close 200' sidewalk gap on east side of Valley Avenue and install east crosswalk at Valley Avenue/Stanley Boulevard; widen underpass to provide protected bicycle lanes on Valley Avenue	$$$$

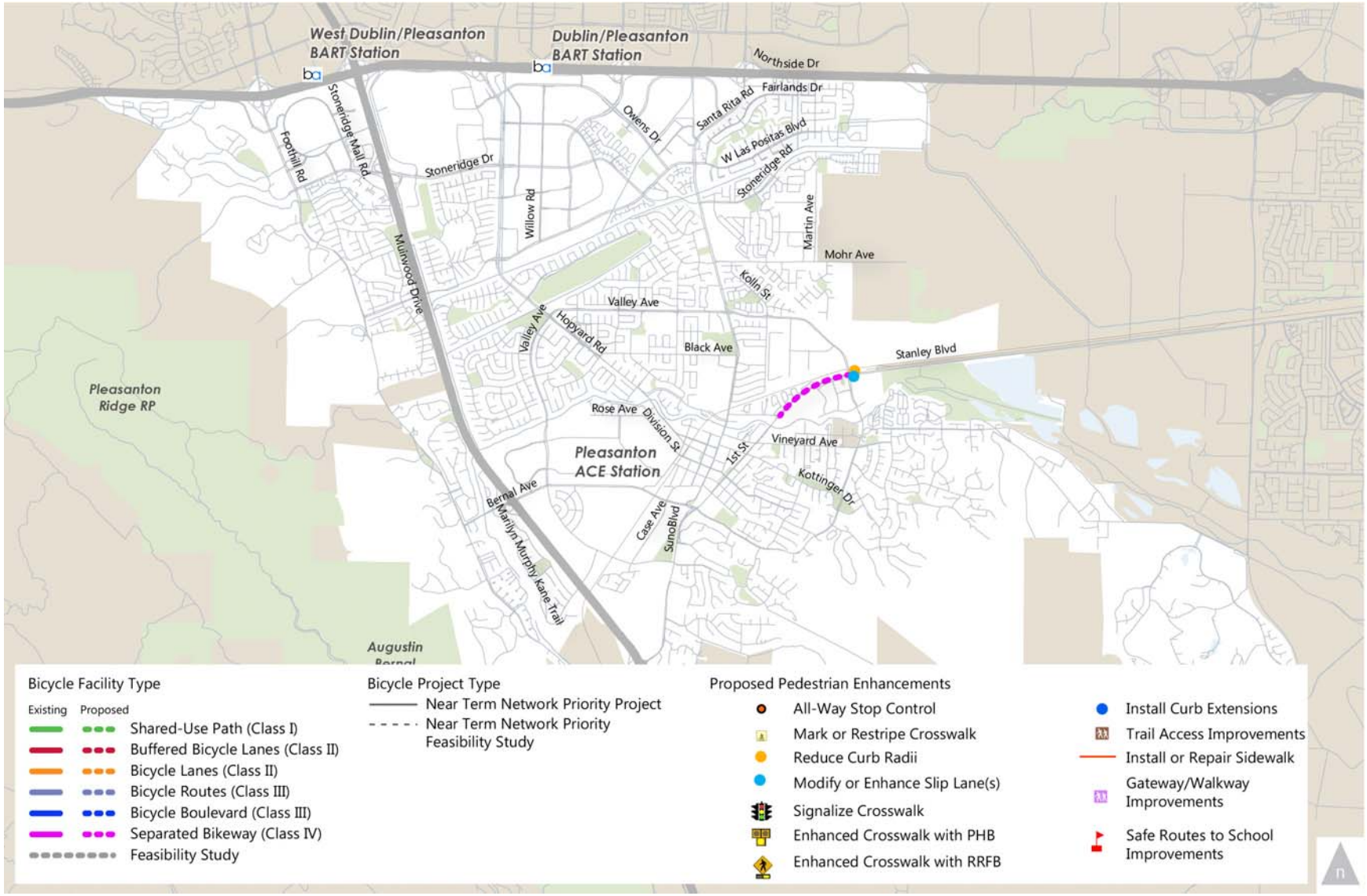


Figure 4-15: Stanley Boulevard

4.2.12 Stoneridge Drive

The Stoneridge Drive project would convert existing bicycle lanes to buffered bicycle lanes along the whole corridor in the near-term, with installation of separated bikeways in the long-term.

4.2.12.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Improving east-west connections on the north side of Pleasanton
- Upgrade the existing bicycle lanes to buffered bicycle lanes for improved comfort
- In the long-term, considering upgrading the buffered bicycle lanes with installation of posts in the painted buffer to convert buffered lanes to separated bikeways, making Stoneridge Drive part of the all ages and abilities network

4.2.12.2 Recommendations

Table 4-13 details the project components. **Figure 4-16** maps the proposed projects.

Table 4-13: Stoneridge Drive

Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Cost
Stoneridge Drive	Foothill Road	Santa Rita Road		Stripe buffered bicycle lanes, and transition bicycle lanes from curbside to between through and right lane no farther than 150' back from the intersection	Install separated bikeways with separated bikeway intersection treatments	$$$

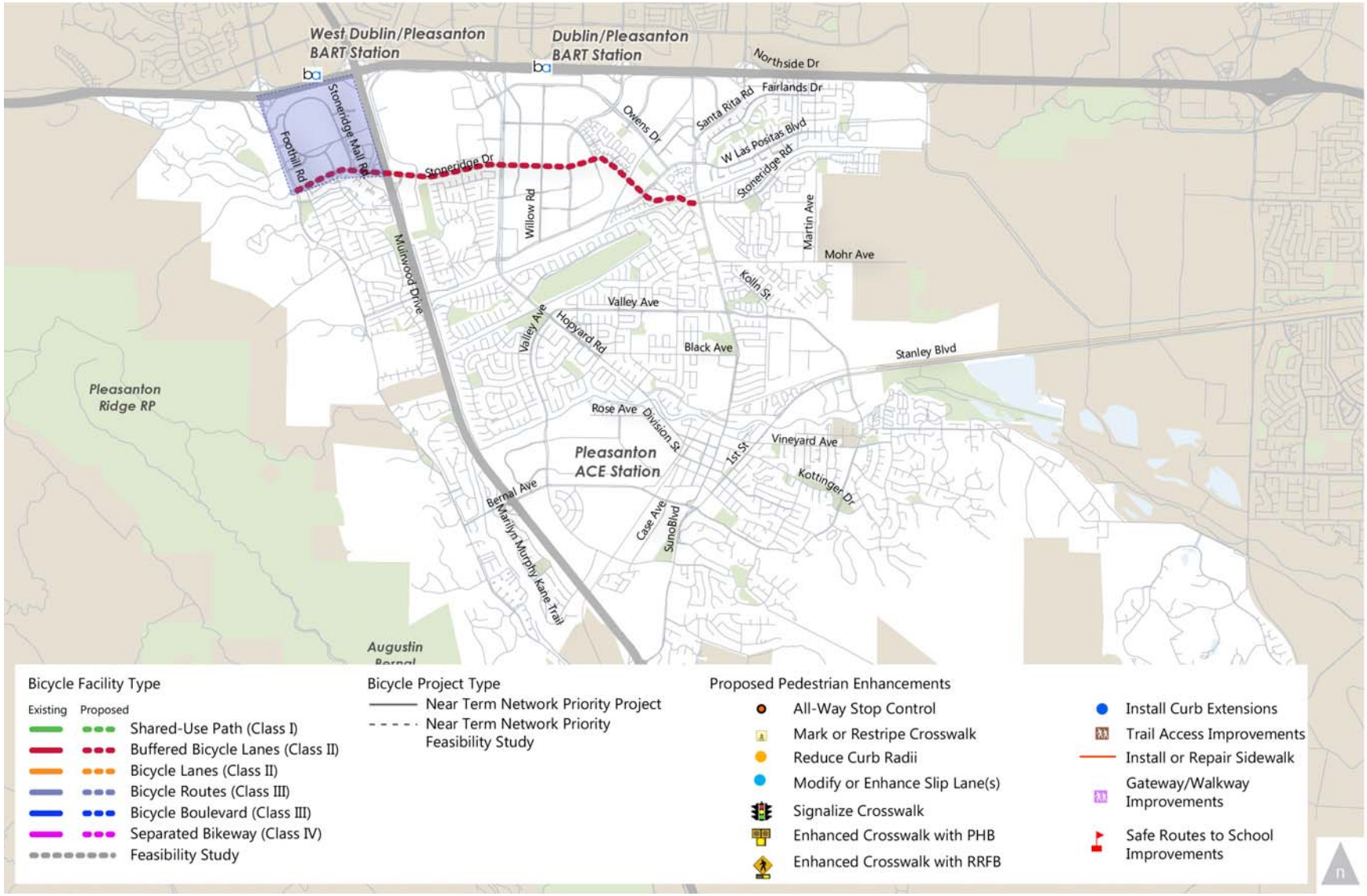


Figure 4-16: Stoneridge Drive

4.2.13 Sunol Boulevard

The Sunol Boulevard project provides a continuous buffered bicycle lane in the near-term and includes bicycle and pedestrian improvements at signalized intersections. In the long-term, separated bikeways are recommended for Sunol Boulevard.

4.2.13.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Upgrading the existing bicycle lanes to provide a more comfortable, continuous, north to south bikeway for experienced riders
- Improving bicycle and pedestrian access to Pleasanton Middle School, Village High School, Hearst Elementary School, Centennial Park, and Downtown
- Addressing the large slip lane on the southwest corner of Bernal Avenue/Sunol Boulevard intersection that creates a barrier to bicycling
- Addressing the need to improve existing bicycle lanes on Sunol Boulevard near the First Street/Bernal Avenue intersection

Example bicycle box Source: Inhabit.com

4.2.13.2 Recommendations

Table 4-14 details the project components. **Figure 4-17** maps the proposed projects.

Table 4-14: Sunol Boulevard						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Sunol Boulevard	Sycamore Road	Bernal Avenue		Stripe buffered bicycle lanes	Install separated bikeways with separated bikeway intersection improvements	$$$
Sunol Boulevard	Castlewood Drive	Sycamore Road		• Close gap with buffered Class II bicycle lanes • Restripe existing bicycle lanes as buffered bicycle lanes • Transition bicycle lane from curbside to between through and right lane no further than 150' back from the northbound and southbound I-680 On-Ramps	• Install sidewalk/path on the north and south sides of Sunol Boulevard for use by bicyclists and stripe high-visibility crosswalks across all on-ramps. • Convert buffered bicycle lanes to separated bikeways with raised islands through interchange. • Enhance or modify slip lane westbound and bring right-turns into the intersection. Coordinate with recommendations of I-580/I-680 Improvements Feasibility Study	$$$$
Sunol Boulevard	Intersection with Bernal Avenue/First Street			Enhance or modify slip lanes or install upgrades to allow for improved bicycle and pedestrian circulation and stripe bicycle lane and right-turn pocket on southbound approach; continue northbound bicycle lane to the intersection; stripe bicycle boxes and/or two stage left turns to support bicycle turning movement	Separated bikeway on northbound approach	$$$$

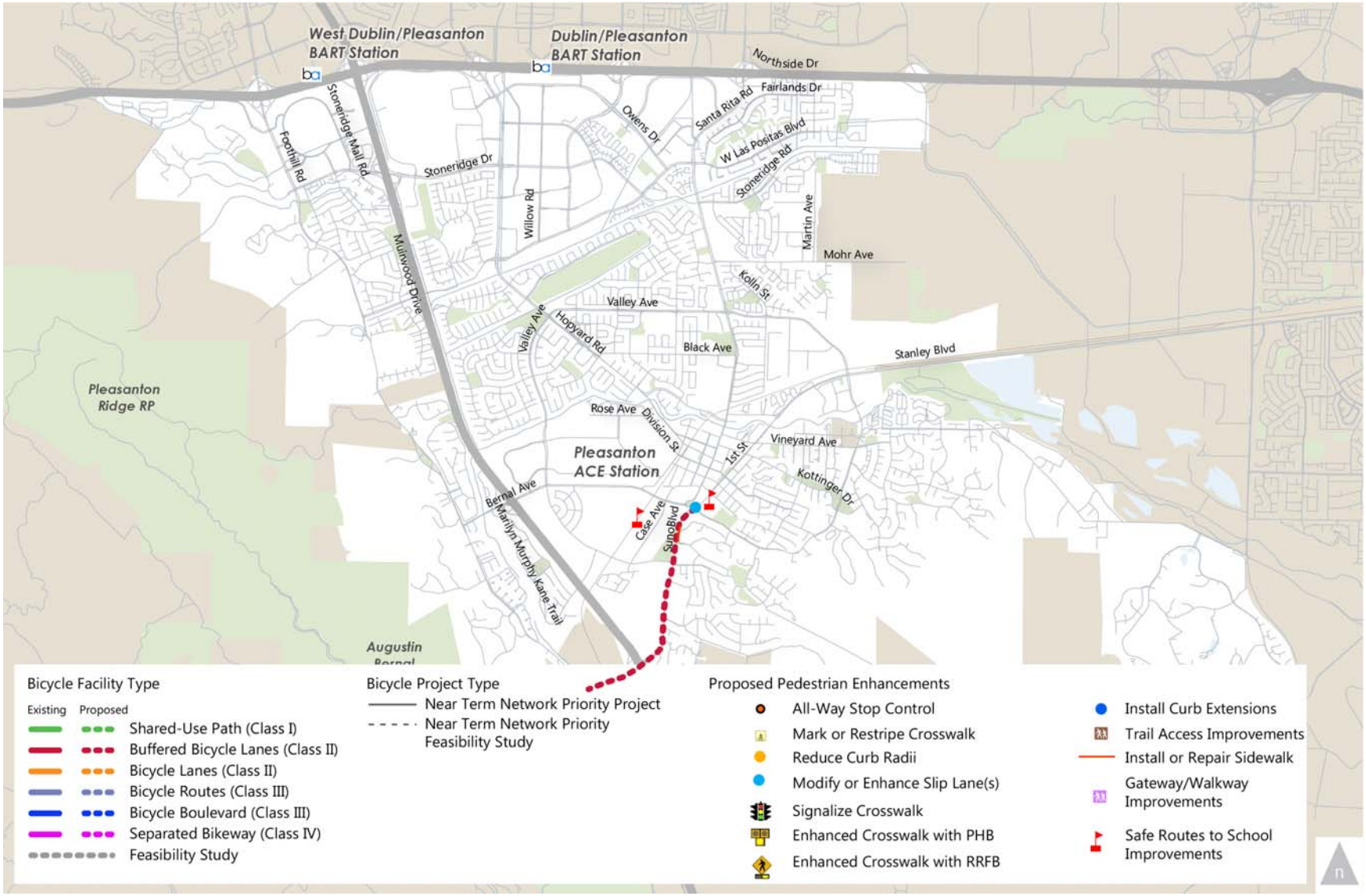


Figure 4-17: Sunol Boulevard

4.2.14 Valley Avenue and Valley Avenue Alternatives

Valley Avenue is an important roadway in Pleasanton's overall transportation network, but portions of it are high traffic stress for cyclists due to high speeds and volumes. Given the constrained roadway width in many places, a low-stress bikeway is not feasible in the near-term. However, bicycle lanes on Valley Avenue between Hopyard Road and Sunol Boulevard are feasible, and between Hopyard Road and Santa Rita Road, bicycle boulevard alternatives are possible. The Valley Avenue Alternatives are bicycle boulevard connections to the north and south of Valley Avenue between Hopyard Road and Santa Rita Road. The Alternatives will utilize low-volume residential streets and existing paths through parks to provide access to schools and parks, including Harvest Park Middle School, Walnut Grove Elementary School, Amador Valley Community Park, Ken Mercer Sports Park, and Woodthrush Park. The Valley Avenue Alternatives bicycle boulevard projects also connect to the Central Pleasanton Bicycle Boulevards project.

4.2.14.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Addressing need for all ages and abilities bikeways on or near the Valley Avenue corridor
- Providing a continuous bikeway around Downtown, connecting residential neighborhoods and schools
- Improving access to the Arroyo Mocho Trail in the Parkside neighborhood
- Improving bicycle and pedestrian access to Case Middle School, Harvest Park Middle School, Alisal Elementary School and Amador Valley High School with crosswalk improvements and traffic calming
- Integrate on-street bikeways with the trail networks

Example curb extensions Source: pedbikeimages.org

4.2.14.2 Recommendations

Table 4-15 details the components of the project. **Figure 4-18** maps the proposed projects.

Table 4-15: Valley Avenue Alternatives						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Amador Valley Community Park Path	Alameda Drive	Santa Rita Road		Install wayfinding to trails, parks, and schools and Kolln Street bicycle boulevard and widen path	-	$$
Black Avenue	Amador Valley Community Park	Santa Rita Road		-	Widen sidewalk on north side of Black Avenue to create Class I Path next to Amador Valley Community Park	$$$
Canary Drive - Raven Road - Crestline Road - Woodthrush Road - Skylark Way - Existing Path on south side of the Sports Park	Greenwood Road	Hopyard Road		Install bicycle boulevard treatment with wayfinding to trails, parks, and schools	-	$$
Northway Road	Valley Avenue	Walnut Grove Park Path		Install bicycle boulevard treatment with wayfinding to trails, parks, and schools.	-	$$
Northway Road (at both West and East intersections)	Intersection with Valley Avenue			Enhance or modify slip lanes for pedestrian and bicycle safety at both intersections with Northway Road/Valley Avenue	-	$$$
Walnut Grove Elementary School Safe Routes to School Project	Harvest Road, Black Avenue, Northway Road			Improve accessibility, bicycle racks, pathways, and access around Walnut Grove Elementary School.	-	$$$

Table 4-15: Valley Avenue Alternatives						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Walnut Grove Park Path/Harvest Park Middle School Path	Northway Road	Greenwood Road		Install wayfinding to trails, parks, and schools.	-	$
Alameda Drive	Harvest Park Middle School Path/Greenwood Road	Amador Valley Community Park Path		Install bicycle boulevard treatment with wayfinding to trails, parks, and schools.	-	$$
Alameda Drive	Intersection with Greenwood Road			Part of Central Pleasanton Bicycle Boulevard project: improve connection between Harvest Park Path and Alameda Drive; reduce crossing distances of school crosswalks through curb extensions and reduced curb radii	-	$$
Amador Valley Community Park Path	Intersection at Francisco Street/Santa Rita Road			Widen sidewalk on west side of Santa Rita Road to improve connection between the Park and the proposed PHB/signal at Francisco Street.	-	$$
Omega Circle	Parkside Drive	Arroyo Mocho Trail Connection		Install bicycle/pedestrian cut through and wayfinding at end of Parkside Drive connecting to the Sports Park and at the path spur to the Arroyo Mocho Trail.	-	$$
Arroyo Mocho Trail Access Improvements from Parkside Drive	Hopyard Road	Omega Circle		Work with community and EBRPD to provide access at Marilyn Court, Anastacia Court, and/or Glenda Court	-	$$$

Table 4-15: Valley Avenue Alternatives						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Valley Avenue	Hopyard Road	Koll Center Parkway/ Road 12		Review ability to reduce auto travel lanes to provide minimum 6' bicycle lanes; Stripe bicycle lanes continuously up to intersections	Install separated bikeways and separated bikeway intersection improvements	$$
Valley Avenue	Intersection with Busch Road			Install stripe crossbike/trail crossing and wide curb ramps for path extension. Install wayfinding and utilize the existing sidewalks on Valley Avenue to direct north/westbound bicyclists to Quarry Lane intersection and south/eastbound bicyclists to Boulder Street.	Install missing crosswalks at intersection.	$$
Valley Avenue	Bernal Avenue	Sunol Boulevard		Restripe existing NB bicycle lane as buffered bicycle lane and close gaps: (1) at signals, bring bicycle lane up to intersection, and (2) at roundabouts, continue striping to within 50' of intersection and install bicycle ramps up to sidewalk; stripe sharrows through roundabouts; mark all crosswalk at roundabouts. Close bicycle lane gaps westbound between Case and Sunol.	Install buffered bicycle lanes or separated bikeways	$$
Valley Avenue	Koll Center Parkway/ Road 12	Bernal Avenue		Install separated bikeway to 500' north of Koll Center; buffered bicycle lanes SB; stripe sharrows northbound	Install separated bikeways and separated bikeway intersection improvements	$$
Sports Park Drive	Parkside Drive	Omega Circle		Consider bicycle boulevard on Parkside Drive or two-way separated bikeway on Sports Park Drive	-	$$$

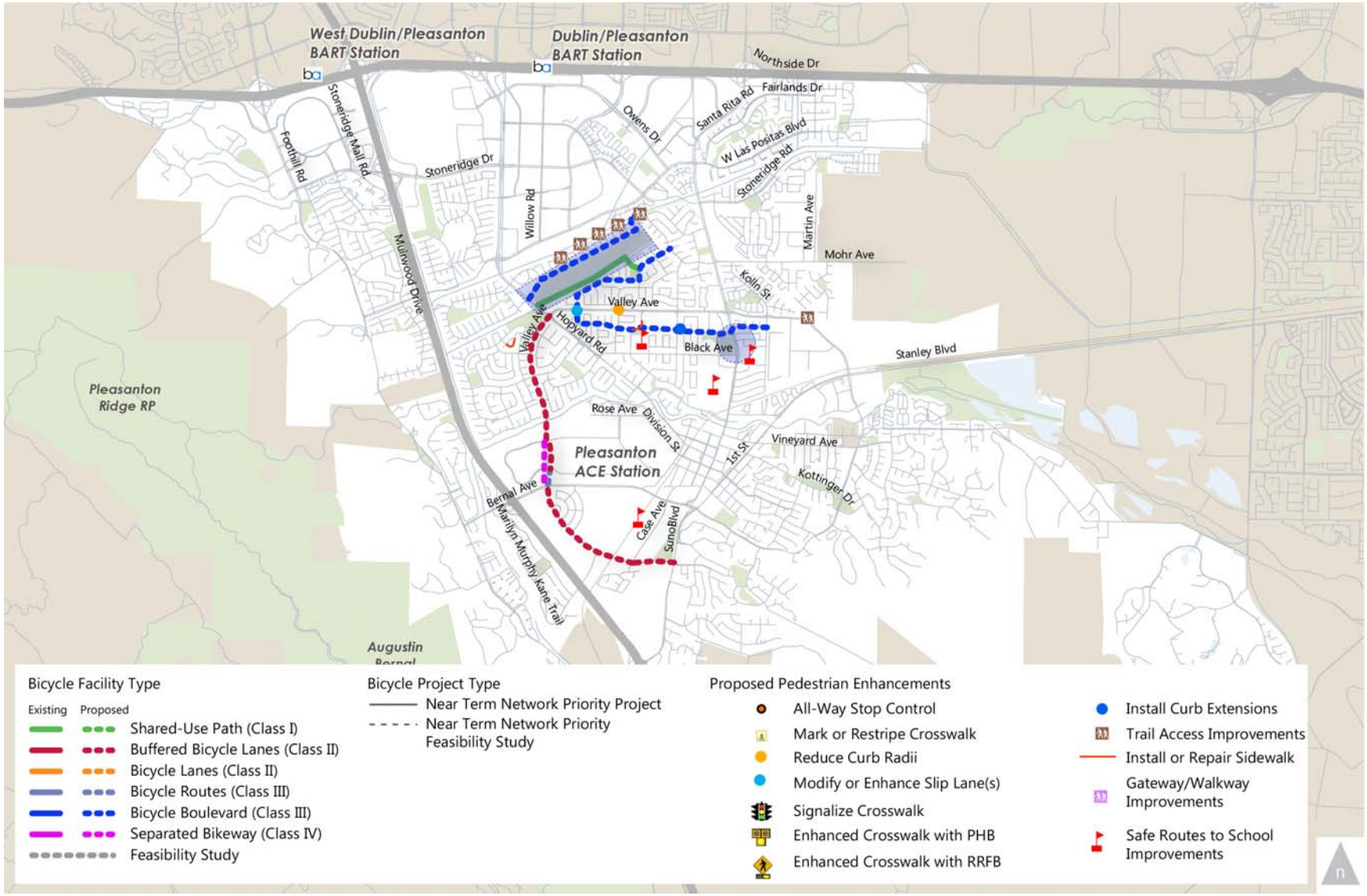


Figure 4-18: Valley Avenue Alternatives

4.2.15 West Dublin/Pleasanton BART to Downtown

The West Dublin/Pleasanton BART to Downtown project provides a north-south connection between BART through the residential neighborhoods on the west side of I-680 to the Marilyn Murphy Kane Trail and Bernal Avenue, ultimately connecting to Downtown. This route relies on shared-use paths and bicycle boulevards. In doing so, this project provides a near-term low-stress bikeway alternative to Foothill Road, which cannot easily be improved in the near-term. This project improves biking and walking access to school for students at Lydiksen Elementary School and Foothill High School.

4.2.15.1 Issues and Opportunities

Issues and opportunities to be addressed by this project include:

- Improving bicycle and pedestrian access to West Dublin/Pleasanton BART
- Creating a continuous, north to south bikeway through west Pleasanton
- Improving bicycle and pedestrian access to Foothill High School and Lydisken Elementary School with traffic calming and improved crosswalks
- Closing sidewalk gaps near Stoneridge Mall and the West Dublin/Pleasanton BART Station
- Studying a bridge over I-680 to connect the neighborhoods and the Muirwood bicycle boulevard to the west of the freeway to Centennial Trail and Val Vista Park
- Studying the feasibility of installation of a mixed use path through the county parcel south of Muirwood Drive
- Studying a grade separated crossing of I-680 to the Centennial Trail
- Studying a grade separated crossing over the Arroyo Valle Creek to connect to the Marilyn Murphy Kane Trail. As an alternative, evaluate a bicycle boulevard on Regency Drive/Paragon Circle with a path connection to Bernal Avenue connecting to the Marilyn Murphy Kane Trail. This may require widening of the existing Bernal Avenue bridge over Arroyo Valle Creek.

4.2.15.2 Recommendations

Table 4-16 details the project components. **Figure 4-19** maps the proposed projects.

Table 4-16: West Dublin/Pleasanton BART to Downtown

Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Cost
Foothill Road	Dublin Canyon Road	Stoneridge Drive		Repair/repave asphalt sidewalk/path on the east side of Foothill Road	-	$$
Stoneridge Mall Road	West Dublin/ Pleasanton BART Driveway	Stoneridge Drive		Designate east side sidewalk as Class I path; widen path as feasible with concrete sidewalk or decomposed granite, particularly at intersections.	-	$$
Stoneridge Drive	Intersection with Stoneridge Mall Drive			Review ability to install east leg marked crosswalk at signal	-	$$$
Stoneridge Mall Road	Intersection with BART Driveway			Improve BART path and wayfinding to BART and the West Dublin/Pleasanton BART to Downtown bikeway	-	$
Stonedale Drive	Stoneridge Mall Road/Stoneridge Drive Intersection	Springdale Avenue		Install bicycle boulevard treatment. Install cut through between Stoneridge Drive/Stoneridge Mall Road intersection and Stonedale Drive for bicyclists and pedestrians. Stripe ladder crosswalk across Stonedale Drive to provide access to Stoneridge Drive/Stoneridge Mall Road intersection.	-	$$
Springdale Avenue	Stonedale Drive	Muirwood Drive		Provide bicycle boulevard treatment. Install enhanced marked crosswalk with RRFB and extend median to provide minimum 6' wide refuge wide enough for bicyclists at Stonedale Drive/Springdale Avenue.	-	$$

Table 4-16: West Dublin/Pleasanton BART to Downtown						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Muirwood Avenue	Springdale Avenue	Eastwood Way		Provide bicycle boulevard treatment.	-	$$
Val Vista Park/Muirwood Park I-680 Overcrossing	Muirwood Drive	Denker Drive		Conduct Feasibility Study of a grade-separated I-680 crossing connecting Val Vista Park and Muirwood Park. Complete in tandem with Val Vista Park/Muirwood Park I-680 Crossing Feasibility Study and Arroyo de Laguna Trail Feasibility Study	Install grade-separated I-680 crossing	$$$$
Arroyo de Laguna/Centennial Trail Connection	Centennial Trail	Bernal Avenue		Connect Centennial Trail to Meadowlark Park/Minton Court bicycle boulevard/paths.	Install path connecting Muirwood Drive and Foothill Knolls Drive Path	$$$$
Connection over Arroyo de Laguna	End of Minton Ct	Meadowlark Park Path		Connect Meadowlark Park/Minton Court connection with Centennial Trail and Arroyo Valley Trail via I-680 grade separation. Complete in tandem with Val Vista Park/Muirwood Park I-680 Crossing Feasibility Study	Provide shared-use path with overcrossing of Arroyo de la Laguna to connect Bicycle boulevards	$$$$
County Parcel Trail Connection	Muirwood Drive	Meadowlark Drive		Conduct Trail Feasibility Study and/or coordinate with Alameda County and property owner	Provide shared-use path to connect bicycle boulevard treatments	$$
Meadowlark Drive	Minton Ct	Bernal Avenue		Install bicycle boulevard treatment.	-	$$
W Lagoon Road	Bernal Avenue	Marilyn Kane Trail Head		Extend existing bicycle lanes to intersection with Bernal Avenue. Mark sharrows through Marilyn Murphy Kane Trail Head parking lot.	-	$

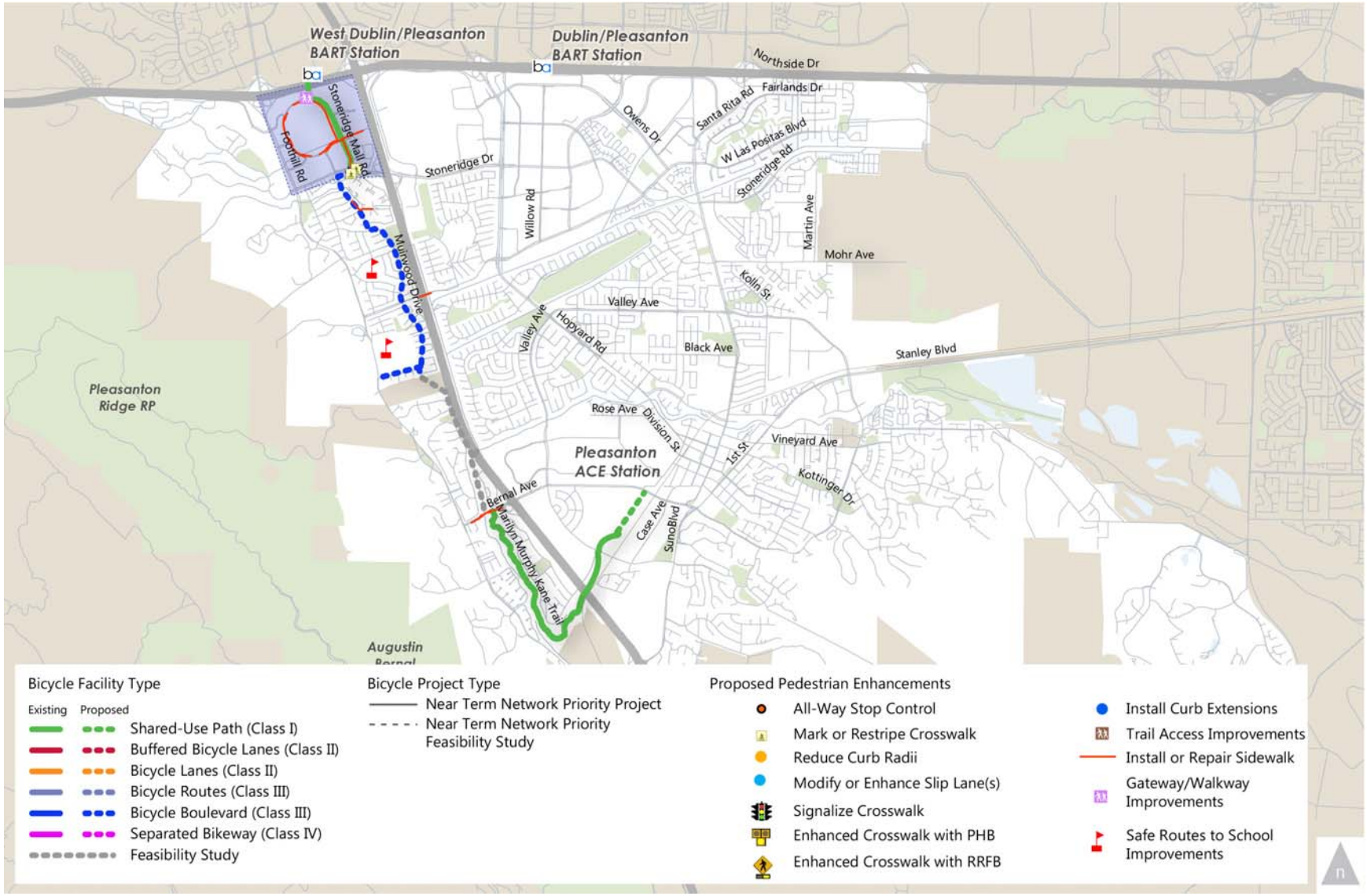


Figure 4-19: West Dublin/Pleasanton BART to Downtown

4.2.16 West Las Positas Boulevard

The West Las Positas Boulevard creates a separated bikeway in the near-term as well as a series of pedestrian safety improvements near Hart Middle School and Fairlands Elementary School.

Example separated bikeway Source: City of Boulder

4.2.16.1 Issues and Opportunities

Issues and opportunities to be addressed by the project include:

- Addressing the need for separated bikeways to make West Las Positas Boulevard part of the all ages and abilities network
- Creating a continuous, east-west bikeway in north Pleasanton providing access to neighborhoods, employment centers, and schools while avoiding I-680 interchanges
- Improving safety and comfort for bicyclists and pedestrians at large intersections
- Providing Safe Routes to School improvements for Thomas S. Hart Middle School and Fairlands Elementary School with improved and more frequent pedestrian crossings

4.2.16.2 Recommendations

Table 4-17 details the project components. **Figure 4-20** maps the proposed vision projects.

Table 4-17: West Las Positas Boulevard						
Location	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
W. Las Positas Boulevard	Foothill Road	Santa Rita Road		Install separated bikeway. Coordinate with intersection improvements at Willow Road	-	$$$
W. Las Positas Boulevard	Intersection with Santa Rita Road			Enhance or modify slip lanes	-	$
W. Las Positas Boulevard	Intersection with Hopyard Road			Enhance or modify slip lanes or install upgrades to allow for bicyclists turning between W. Las Positas and Hopyard Road.	-	$$$
W. Las Positas Boulevard	Intersection with Fairlands Drive			Enhance existing crosswalk with high-visibility striping[1]	-	$$
W. Las Positas Boulevard	Intersection with Montpelier Court			Install new marked crosswalk with median refuge and curb extensions[1]	-	$$
W. Las Positas Boulevard	Santa Rita Road	North Pimlico Drive Intersection		Improve consistency of existing bicycle lane and shoulder striping between Santa Rita Road and Boardwalk Street. Provide bicycle boulevard treatment with wayfinding to trails, parks, and schools east of Boardwalk Street	-	$$

1. Prevailing speed, number of travel lanes, and presence of median are key factors in determining the need for crosswalk safety enhancements. In addition that, PHBs have specific volume warrants requirement per the CAMUTCD that must be met. Crosswalk installation and enhancements should be determined according to Appendix A Crosswalk Policy and engineering judgment.

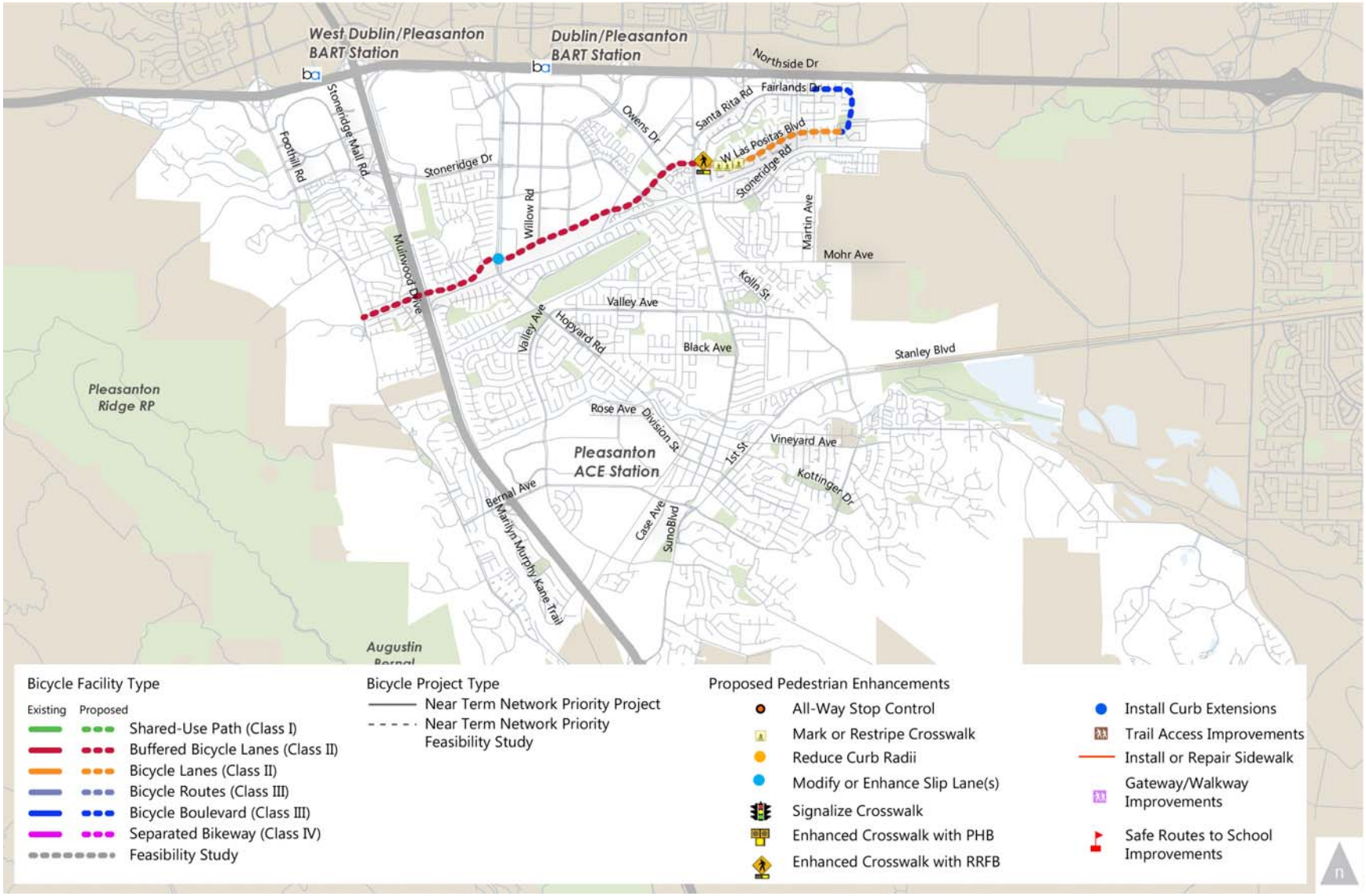


Figure 4-20: W. Las Positas Boulevard

4.2.17 Vision Projects

The Vision Projects encompass additional long-term projects that (1) improve bicycling and walking facilities but do not substantially improve comfort for those who walk and bicycle and/or (2) due to constraints, require significant engineering studies, other feasibility studies, and/or capital costs. The Vision Projects received input from the community at multiple community workshops and Bicycle, Pedestrian and Trails Committee meetings. **Table 4-18** details the project components. **Figure 4-21** maps the proposed vision network projects.

Table 4-18: Vision Network Projects

Project Title	Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Cost
East-West Access Vision Projects	Arroyo Mocho Trail	Hopyard Road	City Limit near Busch Road		Install 10' paved path on south bank with compacted soil / decomposed granite side path for pedestrian/runner /equestrian use. Provide connection to future trails to the east in Livermore.	-	$$$$
East-West Access Vision Projects	Arroyo Mocho Trail Continuation	Stoneridge Drive	El Charro Road		Continue paving of Arroyo Mocho Trail to El Charro Road	-	$$$$

Table 4-18: Vision Network Projects							
Project Title	**Location**	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
East-West Access Vision Projects	Arroyo Mocho Trail - Fairlands connector	West Las Positas	Arroyo Mocho Trail		-	In coordination with any future major redevelopment of the Walmart Neighborhood Market shopping center site at the southeast corner of West Las Positas and Santa Rita Road, provide a multi-use trail connecting from Fairlands Elementary School to the Arroyo Mocho trail. Consider new bicycle/pedestrian bridge for this connection.	$$$$
East-West Access Vision Projects	Dublin Canyon Road	Pleasanton Marriot Driveway	Canyon Meadow Circle		-	Improve/widen shoulder where necessary. Stripe buffered bicycle lanes	$$$$
Downtown Access Vision Projects	First Street	Vineyard Avenue	Bernal Avenue		-	Install buffered bicycle lanes or separated bikeway through lane reduction or parking removal	$$$
Downtown Access Vision Projects	Second Street	Spring Street/ Kottinger Drive	Abbie Street		-	Provide bicycle boulevard treatment	$$
East-West Access Vision Projects	Spring Street/ Kottinger Drive/ Concord Street	Main Street	Hearst Drive		-	Provide bicycle boulevard treatment	$$
East-West Access Vision Projects	Neal Street	Main Street	Mirador Drive		-	Provide bicycle boulevard treatment	$$

Table 4-18: Vision Network Projects							
Project Title	**Location**	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
East-West Access Vision Projects	Pleasanton Canal Trail	Arroyo de la Laguna	Hopyard Road		-	Provide north bank: 10' paved bikeway, Use compacted soil/decomposed granite side path for pedestrian/runner/equestrian use. Provide connection between Tennis & Community Park and Pleasanton Sports & Recreation Park; improve bicycle/pedestrian signage to/from access points Haleakala Road, Tennis & Community Park, Hopyard Road	$$$$
East-West Access Vision Projects	Pleasanton Canal Trail via Pleasanton Sports & Recreation Park	Hopyard Road	Omega Cir		Improve bicycle/pedestrian signage to/from Arroyo Mocho Trail, Pleasanton Canal Trail, Woodthrush Park Neighborhood	-	$
East-West Access Vision Projects	Valley Avenue	Santa Rita Road	Stanley Boulevard		-	Close bicycle lane gaps	$$
Iron Horse Trail	Intersection with the Iron Horse Trail (south segment)				Install new trail crossing with ladder striping and PHB or signal	-	$$$

Table 4-18: Vision Network Projects							
Project Title	**Location**	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
Iron Horse Trail	Iron Horse Trail Extension	Busch Road/Iron Horse Trail Terminus	Stanley Boulevard/Iron Horse Trail Path		Study the gap closure of the Iron Horse Trail between Busch Road and Stanley Avenue, including finalizing preferred alignment, cost estimates, and phasing/funding strategy	Install 10' paved bikeway with compacted soil/decomposed granite side path for pedestrian/runner/equestrian use from Busch Road to Stanley Boulevard, including at Shadow Cliffs Regional Park Entrance. Provide intersection/trail crossing improvements at Busch Road and Valley/Stanley intersection, and railroad crossing. Coordinate with EBRPD and railroad.	$$$$
Iron Horse Trail	Intersections with the Iron Horse Trail and Arroyo Mocho Trail				Prepare trail feasibility study to improve the connection between the two Iron Horse Trail segments and the Arroyo Mocho Trail, considering grade-separated crossing(s).	Provide continuous connections between the two segments of Iron Horse Trail and the Arroyo Mocho Trail	$$$$
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: W. Las Positas / Arroyo de la Laguna Trail Access Point	Arroyo de la Laguna	W. Las Positas		Access gate and pathway from north side of W. Las Positas Road.	-	$$$$

Table 4-18: Vision Network Projects							
Project Title	**Location**	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Pleasanton Canal Bridge Improvements	Alamo Canal Trail	Pleasanton Canal		Change bridge railings to meet Caltrans standards, 55" height. (Coordinate with Zone 7)	-	$$$$
North-South Access Vision Projects	Adams Way/ Mirador Drive	Vineyard Avenue	Bernal Avenue		-	Provide bicycle boulevard treatment	$$
North-South Access Vision Projects	Hopyard Road	I-580 Ramps	W Las Positas Boulevard		-	Install buffered bicycle lanes or separated bikeways	$$$
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Arroyo de la Laguna Trail - South Extension	Arroyo Del Valle	Near south end of Laguna Creek Lane		-	Install 10' paved bikeway with compacted soil/decomposed granite side path for pedestrian/runner use. Install intersection improvements at Bernal Avenue. Install new access points at Lylewood Drive, Bernal Avenue, and along Laguna Creek Lane.	$$$$
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Arroyo de la Laguna Trail - South Extension	Intersection with Arroyo Del Valle			-	Study and install a new bicycle/pedestrian bridge.	$$$

Table 4-18: Vision Network Projects							
Project Title	**Location**	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
North-South Access Vision Projects	Chabot Canal	Owens Drive / Dublin/Pleasanton BART Station	W. Las Positas Boulevard / Arroyo Mocho Trail		-	Install 10' paved path with compacted soil/decomposed granite side path for pedestrian/runner use. Install intersection Improvements at West Las Positas, Inglewood, Stoneridge, Gibraltar, Owens. Note this project requires a new bridge at Arroyo Mocho. Provide access between Arroyo Mocho Trail and Dublin/Pleasanton BART, and Hart Middle School. The project will require multiple mid-block crossings with enhancements.	$$$$
North-South Access Vision Projects	Tassajara Canal	Rosewood Drive / Interstate 580	W. Las Positas Boulevard / Arroyo Mocho Trail		-	Install 10' paved bikeway with compacted soil/decomposed granite side path for pedestrian/runner use. Install intersection improvements at Rosewood, Owens, Stoneridge, West Las Positas. Note this project requires bridge at Arroyo Mocho. Study potential for crossing at I-580 to connect with Tassajara Creek Trail (EBRPD, regional trail) in Dublin. (Constraints, multiple mid-block crossings, current adjacent land uses are commercial office/industrial parks which turn backs to canal with no access points.)	$$$$
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Val Vista Community Park Trail	Johnson Drive / Stoneridge Drive	Johnson Drive North / Interstate 580		-	Install 10' paved path on south and east banks with compacted soil/decomposed granite side path for pedestrian/runner use, Intersection trail crossing at Hopyard Road	$$$$

Table 4-18: Vision Network Projects							
Project Title	**Location**	**Cross Street 1**	**Cross Street 2**	**Project Type**	**Near-Term Proposal**	**Long-Term Proposal**	**Cost**
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Arroyo de la Laguna	Arroyo Mocho	Arroyo Del Valle		-	Install 10' paved path on east bank with compacted soil/decomposed granite side path for pedestrian/runner/equestrian use	$$$$
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Val Vista Bridge Improvements	Val Vista Community Park Trail & Arroyo de la Laguna	--		-	Update bridge railings to meet Caltrans standards. Coordinate with Zone 7.	$$$$
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Val Vista Community Park Trail	Arroyo de la Laguna	Johnson Drive / Stoneridge Drive		-	Install 10' paved path on east bank with compacted soil/decomposed granite side path for pedestrian/runner/equestrian use	$$$$

4.3 Walking and Bicycling Forecasts

With the implementation of the walking and biking project described in this chapter, increase in the mode share for walking and biking is anticipated. With the focus on all ages and abilities bicycle and pedestrian infrastructure, walking trips are expected to double by 2040. Biking is expected to increase modestly. However, it is possible and likely that the biking mode share may increase beyond that with robust, low-stress bikeways. **Table 4-19** presents estimates of the increase in walking and biking utilizing Alameda County Transportation Commission's bicycle and pedestrian forecasting tools.

Table 4-19: Pleasanton Walking and Bicycling Mode Share Forecasts		
Mode Type	**Existing Mode Split[1]**	**Percent of All Trips for the Vision Network in 2040[2]**
Walking Mode Share for All Trip	7.7%	14.2%
Bicycling Mode Share for All Trips	0.8%	1.1%

1. Per the City of Pleasanton's Travel Demand Model (2015)
2. Per the Alameda CTC Demand Forecasting Tool and Alameda CTC Travel Demand Modal.

5. Project Prioritization

Prioritization of the projects in Chapter 4 is necessary to understand how the community would like to see city investments for walking and biking directed. Chapter 5 presents a methodology for prioritizing projects that weighs connectivity, demand, safety, safe routes to school functions, and feasibility to assign a relative priority score for each opportunity area corridor project. The prioritized list gives the city a clear framework for how to allocate discretionary funding for bicycling and walking projects. More information on those funding source and implementation is provided in **Chapter 7**. While this chapter provides a general road map of community priorities, in some cases, lower priority projects may be implemented sooner as discrete opportunities arise, such as through repaving projects or development-related improvements.

The prioritization methodology consits of a series of community-vetted criteria with associated weightings that were used to score each corridor project as well each individual project within the corridor. The projects were sorted in numerical order and therefore ranked based on how they deliver on the five prioritization criteria: connectivity, demand, safety, safe routes to school functions, and feasibility. Both the corridors and individual projects that make up the near-term and vision networks are ranked and scored as follows:

Connectivity, demand, safety, safe routes to school functions, and feasibility were used as criteria to prioritize projects

- **Corridor score**: The group score is the average score of each individual project within the corridors group. When sorted from highest score to lowest it presents the ranked order in which corridor projects are prioritized for implementation.
- **Individual project score**: This is the individual project score within each corridor. When sorted from highest score to lowest it presents the ranked order in which projects are prioritized for implementation within each corridor.

For example, Hopyard Road separated bikeway between West Las Positas Boulevard and Valley Avenue is organized under the Dublin/Pleasanton BART to Downtown corridor grouping, the eighth highest priority project overall and the highest priority project with the group.

Groups with a prioritization score of eight or more points are considered part of the near-term network. Those groups with a score below eight points are considered part of the vision network and are conisdered long-term improvements. Some roadways have near-term priority projects with a series of phased long-term improvements; in those cases, the near-term projects are prioritized. **Table 5-1** presents the high priority groupings in ranked order. The full prioritized project list, including vision network projects, is presented in **Appendix C** and on **Figures 4-1, 4-2, and 4-3,** respectively.

The criteria and scoring used are described in the next section. The criteria and relative weight are based on numerous conversations with the public at community workshops; Bicycle, Pedestrian, and Trails Committee meetings; and conversations with city staff. Each criterion was assigned either three or four points, and projects were scored out of a total 18 points.

Table 5-1: Prioritized Project Corridors

Rank	Project Corridor	Score
1	West Las Positas Boulevard	14.3
2	Santa Rita Road	13.9
3	I-580 and I-680 Overcrossing Improvements	13
3	Foothill Road	13
5	Stanley Boulevard	12
5	Bernal Avenue	12
5	Stoneridge Drive	12
8	Dublin/Pleasanton BART to Downtown	11.7
9	Downtown Access	11.3
10	Arroyo de Laguna and Iron Horse Trails Connection Feasibility Study	11
11	Valley Avenue Alternatives	10.5
12	East Side Bicycle Boulevards	10.1
13	Centennial Trail to Iron Horse Trail via BART	9.6
14	Central Pleasanton Bicycle Boulevards	9.6
15	Sunol Boulevard	9.3
16	West Dublin/Pleasanton BART to Downtown	8.5
17	Vision Projects	8.5

5.1 Connectivity (4 Points)

This criterion evaluates a project's ability to create new connections or to enhance existing connections for bicyclists and pedestrians. Projects that provide a new, continuous connection or complete a network gap receive the highest score. Projects that improve an existing connection, expanding citywide connectivity for bicycles and pedestrians, receive a slightly lower score. Points are assigned as follows:

Bicycle

- **4 Points**: Projects that provide a complete and continuous north-south or east-west, low-traffic stress backbone for the city's near-term bicycle network.
- **3 Points**: Projects that provide at least ½ mile of a north-south or east-west, low-traffic stress backbone for the city's near-term bicycle network.
- **2 Points**: Projects that connect or improve the connection between two existing facilities and/or create a new, continuous facility but do not provide a low-stress facility.
- **1 Point**: Projects that reduce the impact of a gap but do not provide a low-stress facility.

Pedestrian

- **4 Points**: Projects that connect (i.e., provide a missing connection or close a gap) two existing facilities within ⅛ mile of a transit station, school, or trail or Downtown.
- **3 Points**: Projects that connect (i.e., provide a missing connection or close a gap) two existing facilities within ¼ mile of a transit station, school, or trail or Downtown.
- **2 Points**: Projects that improve an existing connection (i.e., enhance an existing connection, as through sidewalk widening or streetscape improvements) between two existing facilities within ⅛ mile of a transit station, school, or trail or within Downtown.

- **1 Point**: Projects that improve an existing connection (i.e., sidewalk widening or streetscape improvements) between two existing facilities within ¼ mile of a transit station, school, or trail or within Downtown.

5.2 Walking and Bicycling Demand (3 Points)

This criterion evaluates the ability of a bicycle or pedestrian project to attract new walking and bicycling trips, particularly for existing destinations in Pleasanton such as Downtown, the BART stations, and schools. For bicyclists, this was determined to occur with proposed facilities that feel more comfortable and accommodate a wider range of users of all ages and abilities. For pedestrians, this addresses projects within ½ mile of key destinations. Points are assigned as follows:

Bicycle

- **3 Points**: Protected bikeways (shared-use paths and separated bikeways) and other low traffic-stress bikeways (bicycle boulevards) on a well-used existing bicycling route.
- **2 Points**: Protected bikeways (shared-use paths and separated bikeways), buffered bicycle lanes, and other low traffic-stress bikeways (bicycle boulevards and bicycle routes or bicycle lanes on lower-stress roadways).
- **1 Point**: Medium to high traffic stress bikeway on a well-used existing bicycling route.

Pedestrian

- **3 Points**: Projects within ⅛ mile of BART or ACE stations, Downtown, or schools OR within ¼ mile of this destination and the project is a well-used[5] existing walking route.
- **2 Points:** Projects within ¼ mile of BART or ACE stations, Downtown, or schools OR within ½ mile of BART or ACE stations, Downtown, or schools and the project is a well-used[4] existing walking route.

[5] Well-used is defined as a common walking route that is identified through feedback from the public, BPTC, or City staff or through observations and fieldwork.

- **1 Point:** Project is a well-used[2] existing walking route OR within ½ mile of BART or ACE stations, Downtown, or schools.

5.3 Feasibility (3 points)

Projects that do not require easements, property acquisition, or additional pavement are prioritized to focus on cost-effective improvements. Political support is defined here as expressed interest by city officials and/or members of the public. Points are assigned as follows:

- **3 Points:** Projects that are feasible, have political support, are strong-contenders for grant funding, and are cost-effective.
- **2 Points:** Projects that have at least two of the following qualities: are feasible, have political support, are strong-contenders for grant funding, or are cost-effective
- **1 Point:** Projects that have at least one of the following qualities: are feasible, have political support, are strong-contenders for grant funding, or are cost-effective.

5.4 Immediate Safety Need (4 Points)

This criterion is based on the number of reported bicycle and pedestrian collisions on the roadway over the past five years, as documented in **Chapter 3** of the Plan. For off-street projects, such as paths, the methodology is based on potential for conflicts with motor vehicles. Generally, paths are considered safest when they have infrequent crossings with roadways and auto traffic. However, paths with trail crossings and an appropriate level of traffic control relative to the intersecting roadway typically offer a high degree of safety. As a result, this criterion prioritizes paths with one or more missing or unenhanced, uncontrolled trail crossings, particularly where the crossing occurs on a multi-lane roadway. This is intended to prioritize projects that will install or enhance new trail crossings with the appropriate traffic control.

Points are assigned as follows:

On-Street Facilities

- **4 points**: Projects that improve bicycling or walking on the "safety priority" bicycling or walking networks, respectively,[6] AND provide or improve a bicycle or pedestrian facility at a location with at least one severe or fatal[7] injury collision .
- **3 Points**: Projects that provide or improve a bicycle or pedestrian facility at a location with at least one severe or fatal injury collision OR improve bicycling or walking on the "safety priority" bicycling or walking networks, respectively.
- **2 Points**: Projects that provide or improve a bicycle or pedestrian facility at a location with two or more bicycle or pedestrian collisions.
- **1 Point**: Projects that provide or improve a bicycle or pedestrian facility at a location with one bicycle or pedestrian collision.

Off-Street Facilities

- **3 points**: Trail or path with one or more uncontrolled crossings or are missing enhanced crossings of arterials.
- **2 Points**: Trail or path with one or more uncontrolled crossings or are missing enhanced crossings of multi-lane collectors.
- **1 Point**: Trail or path with one or more uncontrolled crossings or are missing enhanced crossings of major driveways OR projects with one or more uncontrolled crossings at local streets with poor sightlines.

[6] For bicyclists, 82 percent of all injury bicycle collisions occurred on one of the following nine roadways, which are therefore considered the "safety priority network" for bicycling in Pleasanton: Bernal Avenue, First Street, Hopyard Road, Las Positas Boulevard, Owens Drive, Santa Rita Road, Stoneridge Road, Valley Avenue, and Vineyard Avenue. This includes all injury collisions (fatal, severe, other visible injury, complaint of pain). Data per the Existing Conditions Chapter of the Draft Plan. For pedestrians, 74 percent of all pedestrian collisions occurred on the following 13 roadways, which are considered the "safety priority network" for walking in Pleasanton: Bernal Avenue, Chabot Drive, First Street, Gibraltar Avenue, Hacienda Drive, Hopyard Road, Las Positas Boulevard, Main Street, Owens Drive, Santa Rita Road, Stoneridge Road, Stoneridge Mall Road, and Valley Avenue.

[7] Severe and fatal injuries are defined per the California Highway Patrol Collision Investigation Manual.

5.5 Safe Routes to School (4 Points)

This criterion further prioritizes bicycle and pedestrian projects that are common walking and bicycling routes to school and in close proximity to schools. Many schools in Pleasanton have safe routes to school curricula and many students walk or bicycle to school each day. In addition to the school proximity factors in other prioritization criteria, this criterion further prioritizes safety of school-aged students on those routes by giving more points to projects located near schools. Points are assigned as follows:

- **4 points**: Projects along a school frontage.
- **3 Points**: Projects within ⅛ mile of a school.
- **2 Points**: Projects within ¼ mile of a school.
- **1 Point**: Projects within ½ mile of a school.

6. Support Programs

Infrastructural improvements are only one part of a comprehensive walking and biking program. Chapter 6 describes the existing support programs active in Pleasanton and provides targeted recommendations for continuing and enhancing those programs. Support programs consist of the so-called "E's": education, encouragement, enforcement, and evaluation programs that supplement engineering improvements. Maintenance, wayfinding, and bicycle parking also play important support roles. The support programs recommended for Pleasanton are listed below and described in more detail in the following sections:

- Safe Routes to School
- Education
- Enforcement
- Encouragement
- Evaluation
- Maintenance
- Wayfinding
- Bicycle Parking

6.1 Safe Routes to Schools

Providing safe routes for students to walk and bicycle to school has health and safety benefits in addition to reducing traffic congestion during pick-up and drop-off. Safe Routes to School programs are therefore focused on educating and encouraging children to safely walk and bicycle to school. This chapter presents information on existing safe routes to school programming and identifies potential enhancements. Engineering is also an important component to provide safe, comfortable, and convenient facilities for students to walk and bicycle. Safe Routes to School infrastructure projects are not called out separately, as many of the corridor projects in this Plan focus on school access. describes the proposed projects outlined in **Chapter 4** that benefit schools.

Table 6-1: Inventory of Projects Near Schools

School	Proposed Project	Corresponding Chapter 4 Table[1]
Alisal Elementary	• Mohr Avenue/Kolln Street • Kolln Street to Santa Rita Road • Santa Rita Road • Black Avenue & Amador Valley Community Park	Table 4-5 Table 4-8 Table 4-11 Table 4-15
Amador Valley High School	• Arroyo Dal Valle Trail • Harvest Circle and Harvest Road • Kolln Street to Santa Rita Road • Santa Rita Road • Black Avenue & Amador Valley Community Park • Amador Valley Community Park	Table 4-2 Table 4-5 Table 4-8 Table 4-11 Table 4-15 Table 4-15
Donlon (Thomas H. Donlon) Elementary	• Val Vista Park	Table 4-16
Fairlands Elementary	• Santa Rita Road at West Las Positas Boulevard • West Las Positas Boulevard near Santa Rita Road	Table 4-11 Table 4-17

Table 6-1: Inventory of Projects Near Schools		
School	**Proposed Project**	**Corresponding Chapter 4 Table[1]**
Foothill High School	• Foothill Road • Centennial Trail to Bernal • West Las Positas Boulevard from Foothill Road to Santa Rita Road	Table 4-9 Table 4-16 Table 4-17
Hart (Thomas S. Hart) Middle School	• Mohr Avenue/Arroyo Mocho Trail • Willow Road • Pleasanton Canal Trail via Sports Park	Table 4-5 Table 4-7
Harvest Park Middle School	• Harvest Circle and Harvest Road • Greenwood Road • Mohr Avenue/Arroyo Mocho Trail • Greenwood Road & Walnut Grove Park	Table 4-5 Table 4-5 Table 4-5 Table 4-15
Hearst (Phoebe Apperson Hearst) Elementary	• Sunol Boulevard at First Street	Table 4-14
Lydiksen (George C. Lydiksen) Elementary	• Foothill Road • Springdale Avenue	Table 4-9 Table 4-16
Mohr (Henry P. Mohr) Elementary	• Stoneridge Drive to Mohr • Arroyo Mocho Trail to El Charro Road	Table 4-8
Pleasanton Middle School	• Sunol Boulevard at First Street	Table 4-14
Valley View Elementary	• None identified	-
Village High School	• Sunol Boulevard at First Street	Table 4-14
Vintage Hills Elementary	• None identified	-
Walnut Grove Elementary	• Harvest Circle and Harvest Road • Hopyard Road at Hansen Drive • Hopyard Road at Walnut Avenue & Black Avenue • Greenwood Road & Walnut Drove Park	Table 4-5 Table 4-7 Table 4-7 Table 4-15

1. For more information on the proposed project, refer to the corresponding table in Chapter 4.

6.1.1 Existing Programs

The **Alameda County Safe Routes to School Program** provides education and encouragement programming for students at participating schools in Pleasanton. As of 2016, four elementary schools (Alisal, Fairlands, Mohr, and Lydiksen), and one middle school (Pleasanton) participate in the program. Schools participate in Walk and Roll to School Day and may also have other on-site programming. The city operates a Safe Routes to School traffic calming program called **Rides to School**, focused on multi-modal safety and circulation at schools. In operation for the last 15 years, it provides information on taking the bus and safe walking tips for parents and students. This includes a "school valet" program to facilitate auto circulation and student safety during pick-up and drop-off.

Rides to School has brochures with safe walking tips and information on carpooling and taking the bus to school. Walk and Roll to School Day is a major event for participating Pleasanton schools.

6.1.2 Recommended Enhancements

The following enhancements to the Safe Routes to School program are recommended for Pleasanton:

1. **Encourage all schools in Pleasanton to participate in the Alameda County Safe Routes to School program**
2. **Advertise the Routes to School Maps available on the city's website** to each school through the Rides to School program and update as needed based on input from the city and the local school community (and to be consistent with implementation efforts following this Plan) http://dev.cityofpleasantonca.gov/gov/depts/cd/traffic/maps_and_information/routes_to_school_map.asp

6.2 Educational Programs

The City, BPTC, and the community identified multi-modal education programs as a priority for future program efforts. While a wide variety of educational programs on walking, bicycling, and driving issues are available, appropriate programs should be tailored to community interests and the ability of the city to deliver such programs. In some cases, Pleasanton may be able to partner with non-profits or volunteers to deliver high-quality educational programs. Education programs can also be a collaborative effort between the city and local public health organizations.

Pleasanton hosts an annual Bicycle Safety Festival that has a variety of educational and encouragement activities.

6.2.1 Existing Programs

Pleasanton currently sponsors some educational programming primarily through the Economic Development Department, and also partners with local advocacy groups such as Bike East Bay to deliver programming.

6.2.1.1 Bicycling and Walking Skills Training

Pleasanton typically hosts an annual bicycle safety event called the **Pleasanton Bicycle Safety Festival**. The Festival is primarily focused on youth education on bicycle safety and skills training through an obstacle course. The Festival includes a pedestrian safety component as well. The Pleasanton Police Department is an important sponsor and participant in the event. More information can be found here: http://dev.cityofpleasantonca.gov/gov/depts/cd/traffic/maps_and_information/routes_to_school_map.asp

Pleasanton also works with Bike East Bay to conduct free **bicycle education and encouragement classes for people of all ages** with adult-focused and family-focused training workshops. Over 70 people attended the trainings in 2015. Bike East Bay also sponsors **bicycle rodeos** for children, which build bicycling and walking skills.

The Pleasanton **Police Department** hosts many other educational programs, including in-classroom education on traffic safety, and drinking and driving, focused on high-school aged drivers. The Police Department also has a diversion program for young bicyclists issued a vehicle code violation. Police personnel staff special event booths to distribute bicycle and pedestrian safety brochures on an ongoing basis. Events include Fairgrounds events, First Wednesdays, select Farmer's Market days, and city Open House events

Pleasanton publishes an annual bicycle map and event guide that includes bicycle safety tips, dates for City-sponsored bicycle events, and a map of bicycle facilities in the city.

6.2.1.2 Maps and Brochures

Pleasanton publishes an annual **bicycle safety brochure** that includes bicycle safety tips, dates for city-sponsored bicycle events, and a map of bicycle facilities in the city.

The city's Traffic Engineering Division provides a wide variety of other **informational brochures** for the public, available on the city's website. Issues range from walking safety tips to information on specific traffic control devices, such as flashing beacons and roundabouts, to traffic calming information. For example, the city prepared an educational brochure on flashing yellow arrows, a newer traffic control device treatment unfamiliar to some: http://www.cityofpleasantonca.gov/civicax/filebank/blobdload.aspx?BlobID=23870.

6.2.2 Recommended Programs

The following additions and enhancement to the education program are recommended:

1. **Continue to make the city's informational brochures available at civic buildings and provide to police to distribute** for pedestrian or bicycle-related infractions.

2. **Have the Pleasanton Police Department partner with the Bike East Bay educational and encouragement programs** to provide officers with bicycle-specific trainings on the law, infrastructure, and enforcement best practices. Work with Bike East Bay to secure funding for these programs.

3. **Increase and improve promotion for all bicycling programs,** and continue to partner with community organizations and nonprofits, such as Bike East Bay, to provide bicycle educational classes for adults, youths, and families. These programs could include on- or off-the-bicycle safety trainings, bicycle mechanics classes, theft prevention workshops, social rides, learn-to-ride classes, and more. A list of bicycle education classes frequently held by Bike East Bay is available at https://bikeeastbay.org/education.

4. **Consider a yearly event and/or open house focused on adult multi-modal safety education** featuring tips and tricks for roadway safety targeted at pedestrians, drivers, and bicyclists; and how they can best interact with other roadway users. This could be centered around a BPTC meeting or another city meeting or event.

5. **Encourage development of a sustained multi-modal safety education campaign** using social media, online videos, bus shelters, yard signs, bumper stickers, radio messages, and billboard ads. One of the major issues identified by the community through the public outreach process was the need to educate drivers on proper behavior with bicyclists to maximize safety for all roadway users. The ad campaign could have separate ads to appeal to people who drive, bicycle, and walk, respectively. Seattle's safety focused materials include videos and ads: http://www.seattle.gov/visionzero/materials, and the City of Fort Worth has videos that inform people of the new bicycle facilities in the community, such as separated bikeways: https://www.youtube.com/watch?v=N8k5FRloTfQ. Focal points of the campaign may include:

   - Driver safety tips for interacting with bicycles and pedestrians
   - Bicyclist safety tips for interacting with drivers and pedestrians
   - Pedestrian safety tips for interacting with drivers and bicyclists
   - Examples of the walking and/or bicycling distance and preferred route to get between popular destinations. For example, a campaign could advertise the short amount of time it takes to walk to Downtown from a nearby residential neighborhood or from BART to local employers
   - Messages specific to safety trends identified through this Plan
   - Messages related to new devices and treatment types recommended in this Plan such as pedestrian hybrid beacons, protected intersections, two stage turn boxes, and Class IV separated bikeways

Example of a safety campaign from North Carolina: http://www.watchformenc.org/

6. **Ensure residents are informed of the three-foot passing law**, AB-1371, which requires drivers stay at least three feet away when passing bicyclists.

6.3 Enforcement Programs

Enforcement tools can be very effective in improving safety for all roadway users. Successful enforcement programs rely on coordination between city staff and the Police Department.

6.3.1 Existing Programs

Current enforcement programs offered by the Pleasanton Police include the use of a **speed feedback trailer** and a **radar gun check-out** program. The radar-gun check out program is part of the Traffic Education and Monitoring (TEAM) effort to reduce speeds in neighborhoods. Residents who have a speed-related complaint collect data on alleged speeding. To become part of the TEAM three local residents must apply indicating the observed issues and their willingness to commit to collecting data on the speed issue. The Police Department is also currently involved in **school traffic enforcement** by providing resource officers, with one stationed at each school. Traffic officers monitor schools on a regular basis so they are aware of traffic safety and circulation issues. The Police Department assists the Traffic Engineering Division's annual collision review process. The Police Department also has **bicycle patrol officers** who receive some specialized training.

6.3.2 Recommended Programs

The following enhancements to existing enforcement programs are recommended:

1. **Coordinate with the Police Department** to seek funding to train all officers in bicycling and walking safety issues, and enforcement principles on rules of the road. For example, the Madison, Wisconsin Department of Transportation has developed a DVD in collaboration with the Madison Police Department to train traffic officers in pedestrian and bicycle issues (for more information see http://www.pedbikeinfo.org/cms/downloads/EDU.PedestrianSafetyEnforcementDVDs.pdf.The Bicycle Transportation Alliance in Portland, Oregon offers Pedestrian Safety Enforcement Training (for more information see https://btaoregon.org/pedestrian-safety/.
2. **Institute a Bicycle Traffic School ticket diversion program** as allowed per California Vehicle Code Section 42005.3. This would reduce or remove the cost of a bicycle traffic ticket through attendance at a free bicycle education workshop, such as those offered by Bike East

Bay. These classes could be scheduled regularly with funding from the City or the Police Department and be available to both ticketed individuals and the public.

3. **Coordinate the use of speed feedback trailer(s) between the Police Department and Community Development Department** to assist in monitoring speeds near key pedestrian and bicycle destinations.

4. **Consider increasing traffic fines**. An increase in traffic fines has been shown to discourage driver violations against pedestrians in crosswalks. For example, in Salt Lake City, Utah, fines were increased from $34 to $70 for driver violations against pedestrians in crosswalks. A lowering of fines for pedestrian violations from $70 to $10 was also implemented. Variations on this include double fines in school zones and construction zones.

5. **Consider education programs targeted at seniors who walk and drive**. For example, Walk Wise, Drive Smart is a program aimed to improve the pedestrian environment not only for the growing number of senior citizen pedestrians and for all residents and visitors. It is a community program that holds educational workshops, walking audits, and feedback surveys. Activities are aimed at senior citizens, providing exercise at a pace and location comfortable to the participants, but open to all. For more information see http://www.walk-wise.org/ and http://www.pedbikeinfo.org/cms/downloads/OTH.WalkWise,DriveSmart.pdf.

6. **Consider collaborating with the Police Department on pedestrian sting operations at areas of highest safety need**. Pedestrian stings target motorists who dangerously violate the right-of-way of pedestrians crossing the street, and especially motorists who do not stop for a pedestrian when cars in the adjacent lane have stopped. Such operations can also target pedestrians who make unsafe crossings. Stings are most effective on roadways and intersections with high pedestrian volumes such as Main Street in Downtown Pleasanton. Pedestrian stings increase drivers' awareness of pedestrians at intersections; however, as the program is not an ongoing operation, changes in motorist behavior can be short-term. The cost of the program includes police officer staffing time. The Bend, Oregon Police Department received a $3,200 "mini-grant" of federal funds to cover police officer overtime for six weeks.

7. **Consider developing an anti-bicycle theft program** similar to the City of San Francisco Police Department's Bicycle Anti-Theft Unit. The bicycle anti-theft program includes resources for bicycle owners such as a Twitter feed to post pictures of stolen bicycles, a bicycle registration, and informational videos, guides and forms for bicycle owners on security techniques. More information on the program can be found at https://twitter.com/sfpdbiketheft.

6.4 Encouragement Programs

Encouragement programs incentivize or make it easier for people to walk and bicycle, particularly those who do not do so today. These may be part of transportation demand management strategies for at-large employers.

6.4.1 Existing Programs

The city participates in many event-based encouragement programs, primarily organized by the Economic Development Department. **Bike to Work and Bike to School Day** are major events in Pleasanton, with the city sponsoring and coordinating Bike to Work Day energizer stations providing refreshments, encouragement, and bicycle information. In 2016, participants received free Bike to Work Day t-shirts and bicycle bags with items donated by local and regional sponsors. In 2015, over 300 students participated in Bike to School Day, and mini energizer stations and bicycle storage areas were provided for students. Many of the other city-sponsored educational programs also have an encouragement function in generating support and interest for bicycling, such as the **Bicycle Safety Festival**.

The city's **Commendable Commutes** program is a public/private partnership aimed at reducing drive-alone trips and promoting transit, walking and bicycling trips during peak commute hours. Services include on-site transportation information visits, free transit trips through the Try Transit Program, marketing materials, networking opportunities, local and regional transportation updates, and the guaranteed ride home program. The program also administers a survey. In 2013, the survey found approximately 1/5 of the residents and employees would be interested in bicycling to work. Among that group, approximately 25 percent cited better paths or routes for walking and bicycling as a major incentive to walk more.

6.4.2 Recommended Programs

The following additions to the encouragement programs are recommended:

1. Collaborate with employers and residential developers to **provide walking and bicycling financial incentives as part of transportation demand management (TDM) plans for new development** to encourage walking and bicycling for short-trips including commute, recreational, and utilitarian trips.
2. **Require new commercial development to include secure bicycle parking and shower/change rooms**. The 2013 Employee and Resident Transportation Survey found 11-12 percent of employees interested in bicycling more would be incentivized by those improvements.
3. **Consider other walking-focused events** such as organized walks around the city to special events, farmer's markets or similar, and continue existing events for bicycling such as **Bicycle to Market** events.
4. **Consider designating a Walk to Work Day** for residents and employees with a focus on those near BART stations, Pleasanton employers, and trails.
5. **Continue coordination with the Police Department and Bike East Bay on bicycle training and repair classes**. These are an excellent tool to increase community knowledge of bicycle maintenance issues and street riding skills. Local bicycle shops, bicycle clubs or community groups can offer a series of bicycle repair/training classes for youth and adults. Youth training classes can include a "build-a-bicycle" program, in which youth learn how to rebuild a used bicycle they may keep at the end of the program. Such classes are most helpful for beginner to intermediate bicyclists who would like to improve their understanding of bicycle maintenance and street riding skills.

6.5 Maintenance Programs

Maintaining existing bicycling and walking facilities is key to leveraging existing infrastructure and continuing to make Pleasanton a great place to walk and bicycle. Maintenance is not just addressing potholes and hazards, although those are important to good bicycling and walking facilities, but also dealing proactively with bicycling and walking infrastructure. Key to that is planning and designing for maintenance of new facilities, especially when those facility types may be new to the city, such as separated bikeways. Ongoing coordination with maintenance will also provide integration of bikeway projects into repaving projects.

6.5.1 Existing Programs

Currently, pedestrian-related signal equipment is maintained through monthly signal operation checks to ensure consistent functionality of pedestrian push buttons and countdown heads.

On-street bicycle facilities continue to be well-served by the city's high-scoring roadway pavement quality and ongoing maintenance and operations work. The city offers a See-Click-Fix program for hazard reporting.

Off-street facilities are more expensive and more difficult to maintain, particularly in terms of maintaining pavement quality. Trail maintenance, however, is often a source of comments from the public. The city does not have dedicated funding for resurfacing of trails operated by the city. On some trails with heavy use and poor pavement condition, the city must close the trails if they are considered unsafe for users. The city is currently undergoing a test of various paving treatments for Arroyo Mocho Trail to better understand a preferred trail design to maximize durability and minimize maintenance costs.

6.5.2 Recommended Programs

The following enhancements are recommended to the maintenance program:

1. **Integrate the city's high priority on-street bikeways with the existing pavement overlay program** to prioritize overlays on key bikeways through the city.
2. Work with Zone 7 Water Agency, which operates some canals and waterways in Pleasanton, and East Bay Regional Parks District to **pave and maintain trails** to accommodate the weight and needs of Zone 7 vehicles on shared maintenance/trail links.
3. **Work across city departments to secure an ongoing funding source for path and trail maintenance** and to ensure the bicycling and walking facilities are maintained as a part of ongoing operations and maintenance work.
4. **Consider lifecycle and maintenance costs** in the development and design of all bicycle and pedestrian projects.

5. **Create a program to regularly improve and repair conditions uniquely unfavorable to pedestrians** such as uneven sidewalks, broken asphalt in crosswalks, steep driveway cross-slopes, and missing or non-ADA-compliant curb ramps. Tree roots, regular use, seismic activity, and weather contribute to the deterioration of public infrastructure. This can create hazardous conditions and limit mobility for pedestrians.

6. **Include pedestrian projects in the Capital Improvements Program**.

7. **Consider using development agreements to maintain bicycling and walking facilities fronting new development**.

8. **Inform property owners about the impact of overgrown shrubbery on pedestrian and bicyclist mobility**. Overgrown vegetation limits or blocks the path of travel for pedestrians on the sidewalk or bicyclists traveling in the curb lane. Ask residents to trim any vegetation infringing on a clear travel path. Possibly organize a "Trim Your Shrubbery Day" with the help of neighborhood associations and environmental groups.

9. **Coordinate with maintenance crews to prioritize regularly sweeping and maintaining separated bikeways;** ensure that the placement of raised bikeway elements (e.g., pylons or armadillos) provides necessary clear widths for street sweepers.

6.6 Bicycle Parking Programs

Bicycle parking is needed citywide to provide safe, convenient, and secure places to leave a bicycle while shopping, going to school, getting on transit, or doing other activities. Lack of adequate, secure bicycle parking can be a major deterrent to riding a bicycle. For short trips, visible parking racks allowing bicycles to be secured with a U-lock are critical. For trips to work or other longer outings, more secure parking is needed, such as bicycle lockers or bicycle cages with limited access and typically requiring a special key or code to access them. This is important not only at civic and commercial uses but also residential uses, particularly in multi-family apartment buildings where space may be limited.

Bicycle parking facilities may be classified either as long-term (also known as Class I) or short-term (Class II). Class I parking is meant to be used for more than two hours and is typically used by employees at work, students at school, commuters at transit stations and residents at home. Class I facilities are secure and weather-protected: examples include bicycle lockers and "bicycle corrals" (fenced-in areas usually secured by lock and opened

by keys provided to users). Class II, or short-term parking, is meant for visitors, customers at stores and other users who normally park for less than two hours. The most common example of Class II parking is bicycle racks.

6.6.1 Existing Programs

Pleasanton does not currently have requirements for bicycle parking for all new development. The City of Pleasanton Housing Site Development Standards and Design Guidelines (2012) has bicycle parking requirements for secure bicycle parking at new residential development and short-term bicycle parking at retail and multi-family units; however, these requirements only apply to a limited number of development parcels in the city. The city does not maintain an inventory of locations of installed bicycle racks or lockers. There are secure bicycle lockers at both BART stations: there are 40 Bicycle Link lockers at Dublin/Pleasanton and 16 Bicycle Link lockers at West Dublin/Pleasanton. Both stations have many bicycle racks. The city has also recently installed bicycle racks in Downtown Pleasanton.

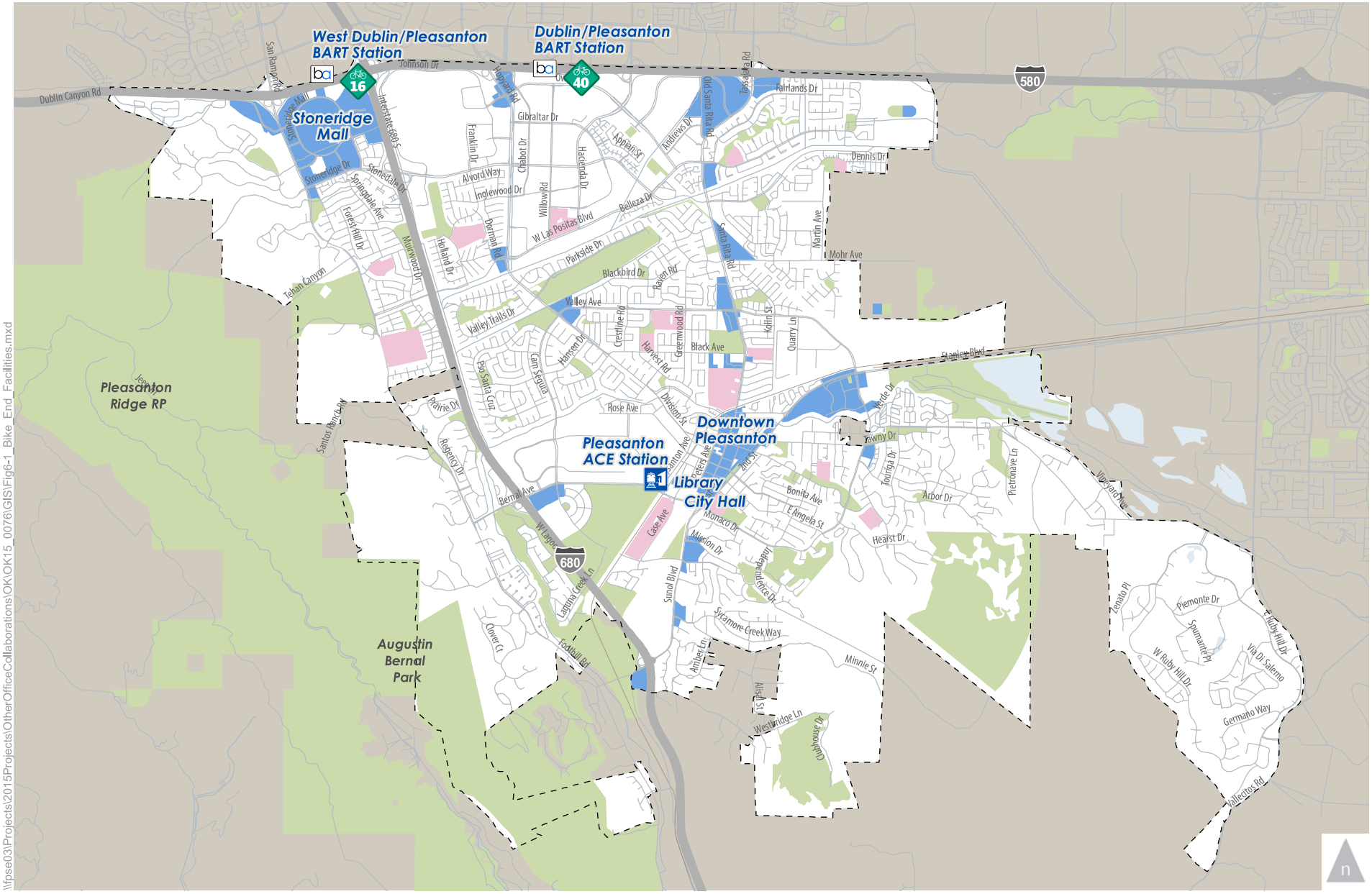
6.6.2 Recommended Programs

The following enhancements to the bicycle parking program are recommended:

1. Update the Pleasanton Municipal Code to provide citywide bicycle parking and end-of-trip facilities such as shower and lockers, requirements with all new development, using the parking generation factors from the Association of Bicycle and Pedestrian Professional's (APBP's) *Bicycle Parking Guideline,* 2nd edition.
2. Select, site, and install bicycle parking fixtures and facilities per the APBP *Bicycle Parking Guidelines*, 2nd edition.
3. Require new developments to provide the location and amount of bicycle parking to the city's Traffic Engineering Division to allow for easy tracking and mapping. Also record the location of new bicycle racks installed by the city.
4. Create a bicycle corral pilot program to install several pilot projects in locations requested and supported by the community.
5. Create a long-term bicycle pilot project to install secure bicycle parking, such as bicycle lockers using the Bicycle Link system, at major destinations in Pleasanton such as Downtown.

6. Consider working with local artists and across city departments to create decorative branded racks for Downtown.

Figure 6-1 presents the known existing bicycle parking and support facilities in Pleasanton and shows key destinations in the city where bicycle parking should be located in the future.



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Short-Term and Long-Term Bicycle Parking Recommended at:

- Schools
- Commercial Areas
- Parks
- City Boundary

- BART Station
- Existing Long-Term Bicycle Parking

Figure 6-1

Existing and Future Bicycle Parking and End of Trip Facilities

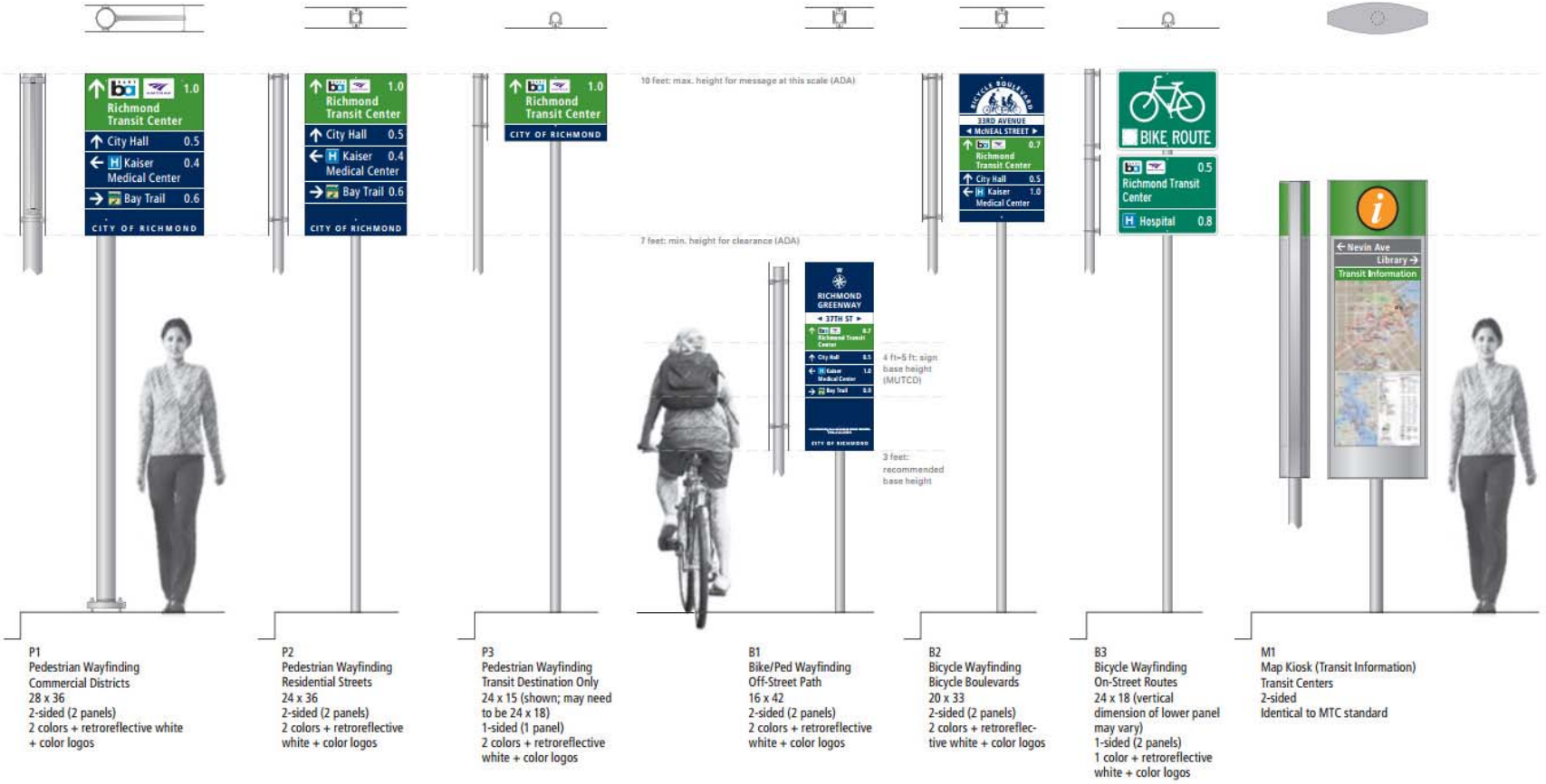
6.7 Wayfinding

Wayfinding is important to provide reinforcement and education on the preferred walking and bicycling routes to use in the city. Wayfinding is proposed as a key element of the bicycle and pedestrian projects identified in **Chapter 4**, particularly facilities such as bicycle boulevards that often snake through residential communities. Wayfinding is important on both trails and on-street bicycle networks, particularly on bicycle boulevards. Good wayfinding is at an appropriate height for bicyclists and pedestrians. Signs confirm directions to nearby destinations and typically include estimated time or distance to those destinations. Wayfinding can also serve a branding function for Pleasanton.

Sample bicycle route wayfinding.

6.7.1 Recommended Programs

Pleasanton does not currently have a wayfinding program in place; however, it is recommended that it develop a pedestrian and bicycle wayfinding program to provide information on preferred routes, facility types, and distances to key destinations.



P1
Pedestrian Wayfinding
Commercial Districts
28 x 36
2-sided (2 panels)
2 colors + retroreflective white + color logos

P2
Pedestrian Wayfinding
Residential Streets
24 x 36
2-sided (2 panels)
2 colors + retroreflective white + color logos

P3
Pedestrian Wayfinding
Transit Destination Only
24 x 15 (shown; may need to be 24 x 18)
1-sided (1 panel)
2 colors + retroreflective white + color logos

B1
Bike/Ped Wayfinding
Off-Street Path
16 x 42
2-sided (2 panels)
2 colors + retroreflective white + color logos

B2
Bicycle Wayfinding
Bicycle Boulevards
20 x 33
2-sided (2 panels)
2 colors + retroreflective white + color logos

B3
Bicycle Wayfinding
On-Street Routes
24 x 18 (vertical dimension of lower panel may vary)
1-sided (2 panels)
1 color + retroreflective white + color logos

M1
Map Kiosk (Transit Information)
Transit Centers
2-sided
Identical to MTC standard

Pleasanton could establish a branded wayfinding program similar to that developed by the West Contra Costa Transportation Advisory Committee (WCCTAC) Transit Enhancement Plan and Wayfinding Guide, shown above.

6.8 Evaluation

To target investments to the most impactful types of engineering, education, encouragement, and enforcement projects, Pleasanton intends to monitor progress on the implementation of this Plan over time. In support of this, four performance measures are presented in **Table 6-22**. Each year, the city can document performance on achieving the goals of this Plan using the metrics described in 1. These goals provide consistency with the policies established in **Chapter 2**.

Table 6-2: Performance Measures

Performance Measure	Corresponding Plan Goal(s)[1]	Metric	Key Actions
1. Construct the All Ages and Abilities network by 2030 and build out the Vision Network by 2040.	Goal 1: Provide a citywide network of bikeways, walkways, and trails that are accessible, safe, comfortable, and convenient for people of all ages and abilities who walk and bicycle. Goal 2: Use best practices and innovative but tested pedestrian and bicycle designs to build continuous, safe, and comfortable walking and bicycling facilities	Establish a construction pace of one corridor projects, including bicycle and pedestrian components, per year	• Integrate projects into routine maintenance activities, such as paving projects and intersection Capital Improvement Program (CIP) projects • Allocate staff to pursuing competitive grant funding for targeted sources, such as OBAG or HSIP (see **Chapter 7 Implementation** for more information) • Apply "80/20" rule for bicycling and walking funding, so that 80 percent of funding covers the highest needs bicycling and walking facilities, as outlined in **Chapter 5** Priority Projects, and 20 percent of funding is reserved for spot improvements/ quick response. • Review environmental documents and proposed development plans for consistency with this Plan and the ability of those projects to help fund bicycling and walking projects.

Table 6-2: Performance Measures			
Performance Measure	**Corresponding Plan Goal(s)[1]**	**Metric**	**Key Actions**
2. Enhance citywide pedestrian and bicycle safety	Goal 3: Provide support across multiple city departments for education, encouragement, and enforcement programs to improve safety for all users and to increase the number of walking and bicycling trips. Goal 5: Improve traffic safety for all modes and specifically the most vulnerable roadway users – bicyclists and pedestrians.	Reduce total number of fatal and severe bicycle and pedestrian by 50 percent in 2030 and an additional 50% in 2040	• Implement the programmatic recommendations in **Chapter 6**, particularly those focused on multi-modal adult education based on community feedback • Build out the All Ages and Abilities bicycling and walk projects, as prioritized by safety needs
		Increase participation and promotion of bicycle programs	• Improve promotion and increase attendance at bicycle education and encouragement events and classes
3. Encourage and facilitate a significant increase in active transportation mode share and trips.	Goal 1: Provide a citywide network of bikeways, walkways, and trails that are accessible, safe, comfortable, and convenient for people of all ages and abilities who walk and bicycle. Goal 3: Provide support across multiple city departments for education, encouragement, and enforcement programs to improve safety for all users and to increase the number of walking and bicycling trips.	Improve the percentage of all walking trips and bicycling trips by 2030	• Build out the All Ages and Abilities bicycling and walk projects • Require bicycle and pedestrian counts to be routinely collected with all intersection turning movement counts, such as for all environmental documents and traffic studies • Consider creating a GIS database of bicycle and pedestrian counts by location, including peak hour, weekday and weekend ADT, date, and source of data, as available • Review and monitor bicycle and pedestrian commute mode share from American Community Survey (ACS), employer data, BART Mode of Access Study, and/or the California Household Travel Survey • Survey residents, employees, and visitors to gauge if more women, children, and "interested but concerned" riders are bicycling in Pleasanton over time.

Table 6-2: Performance Measures			
Performance Measure	**Corresponding Plan Goal(s)[1]**	**Metric**	**Key Actions**
4. Encourage new walking and bicycling trips to schools and transit	Goal 4: Maximize multi-modal transportation options for people who live, work, and/or play in Pleasanton through enhancing walking and bicycling connections to transit, including BART, ACE, and bus connections, as well as parks, schools, shopping, and other key destinations.	Improve the percentage of walking and bicycling trips to school and transit by 2030	• Use the latest BART Mode of Access Study and Alameda County Safe Routes to School Program as a baseline • Work with BART and local employers to monitor the percentage of riders walking and bicycling to transit, such as through the BART Mode of Access Survey and the city's Employer and Resident Transportation Survey • Expand the number of schools participating in the Alameda County Safe Routes to School Program, as recommended in **Chapter 6** • Work with BART and local developers to develop bicycling and walking friendly development around the two area BART stations and integrate with the projects outlined in **Chapter 5** • Utilize transportation demand management (TDM) programs and the Citywide Traffic Impact Fee to support increasing the number of biking and walking trips to transit

1. The five Pedestrian and Bicycle Master Plan goals are presented in **Chapter 2**.
Source: Fehr & Peers, 2016.

6.8.1 Recommended Programs

In addition to evaluating progress using the performance measures listed above, the City of Pleasanton can have their work and successes recognized nationally. The city has already achieved the designation of a Bronze-level Bicycle Friendly Community through the League of American Bicyclists, and could aim towards recognition as a Silver-level Bicycle Friendly Community. The city could also apply for recognition as a Walk Friendly Community through the Pedestrian and Bicycle Information Center.

7. Funding and Implementation

This chapter outlines the next steps for the Plan's implementation. The implementation will require coordination within the city and stakeholders in addition to funding from a variety of sources. This chapter provides an action plan for the city to make progress on the recommendations, information on the cost of the Plan, and information about funding sources.

7.1 Implementation Plan

Table 7-1 presents the Implementation Plan for the city. Many of the Implementation Plan elements will be completed on an ongoing basis, and the table outlines which should be initiated upon plan adoption with demonstrated progress in the next five years. The table also identifies contributions required by staff, a timeline for completion, as well as the relative cost and next steps for addressing each task.

Table 7-1: Implementation Plan

Task	Task	Lead Agency/ Partners	Timeline	Relative Cost
Annual Reporting to Stakeholders on Performance Measures	• Provide annual report to the BPTC on how the city has progressed on each of the four performance measure in . Publicly notice the meeting to make sure that stakeholders citywide are informed. • Include descriptions of funding, approval, and project development process within the annual reporting to facilitate citizen engagement	City Traffic Engineering, BPTC	Annual	$

Table 7-1: Implementation Plan				
Task	**Task**	**Lead Agency/ Partners**	**Timeline**	**Relative Cost**
Apply for and Secure Funding	• Apply "80/20" rule for bicycling and walking funding, so that 80 percent of funding covers the highest need bicycling and walking facilities, as outlined in Chapter 5 Priority Projects, and 20 percent of funding are reserved for spot/ as needed improvements. • Allocate funding or staff time to develop competitive grant applications to projects that will be highly competitive for funding, such as safety and complete streets projects with strong public support. • Refer to Section 7.2 and Appendix D Funding Sources to identify available funding sources for each project in the prioritized project list.	City Traffic Engineering	Ongoing, 5 Years	$$
Build Out the Near-Term All Ages & Abilities Network	• Integrate bikeway projects into repaving programs and prioritize the highest priority bikeway projects wherever possible • Integrate pedestrian projects into the city's Capital Improvement Program based on the prioritized project list • Partner with transit agencies (e.g. BART, ACE, and LAVTA) to improve access to transit, provide seamless transitions between transit facilities and the public right-of-way and bicycle network, and provide secure bicycle parking at transit stations and major bus stops	City Traffic Engineering, BART, ACE, and LAVTA	Ongoing, 5-10 Years	$$$$
Conduct Complete Streets and Trails Studies	• Secure funding for trail feasibility studies called out in **Chapter 5** • Secure funding for Santa Rita Road complete streets study, as described in **Chapter 5** • Complete Foothill Road Bikeway Feasibility and I-580/I-680 Overcrossing Studies and look for funding to implement recommendations	City Traffic Engineering, EBRPD, Zone 7	Ongoing, 5-10 Years	$$$
Build Out the Vision All Ages & Abilities Network	• Opportunistically build out the bikeway and pedestrian projects, as adjacent parcels redevelop or as repaving or other maintenance projects occur on those roadways, insuring connections with existing facilities.	City Traffic Engineering and Engineering	Opportunistically, 10+ Years	$$-$$$$

Table 7-1: Implementation Plan				
Task	**Task**	**Lead Agency/ Partners**	**Timeline**	**Relative Cost**
Educational, Encouragement, and Enforcement Program Coordination	• Work with the city's Economic Development Department and the Alameda County Safe Routes to School Program to increase participation in safe routes to school programs • Work with the city's Economic Development Department and Police Department to enhance and further development education, encouragement, and enforcement programs • Apply for Bicycle Friendly Community Silver status and Walk Friendly Community programs with build out of the near-term All Ages & Abilities Network and investment in support programs	City Traffic Engineering and Economic Development, Alameda County Safe Routes to School Program	Ongoing, 5 Years	$$-$$$
Bicycle Parking Program	• Amend the city's Municipal Code to include bicycle parking requirements for short-term and long-term parking • Establish corral and locker bicycle parking programs at key destinations, such as Downtown	City Traffic Engineering, Pleasanton Downtown Association	Ongoing, 5 Years	$$
Bicycle and Pedestrian Signals Program	• Upgrade bicycle detection at locations where video detection is not present • Ensure that signals provide sufficient green, yellow, and red time to allow bicyclists to clear the intersection per Section 4D.105 of the California Manual on Uniform Traffic Control Devices (CA MUTCD). • Ensure that signals provide a walk speed of 3.5 feet per second or less and include pedestrian countdown signals	City Traffic Engineering	Ongoing, 5 Years	$$
Maintenance and Ongoing Operations	• Develop a maintenance plan for city-operated trails and separated bikeways • Coordinate with Operations Services to provide a well maintained bicycle and pedestrian network	City Traffic Engineering and Operations Services	Ongoing, 5 Years	$$

7.2 Potential Funding Sources

To fund the projects and programs outlined in this Plan, the following funding strategies should be considered:

- Use Measure BB as a funding source through the Alameda County Transportation Commission (Alameda CTC) Capital Investment Plan (CIP), One Bay Area Grant (OBAG) program, and local allocations
- Include bikeway and pedestrian projects in the city's Traffic Impact Fee program(s)
- Require construction of bicycle and pedestrian facilities as part of new development
- Continue to include proposed bikeways and pedestrian improvements as part of roadway projects involving widening, overlays, or other improvements
- Where projects will be competitive, reserve staff time or funding resources to complete competitive grant applications, such as the Caltrans Highway Safety Improvement Program (HSIP) or Alameda CTC applications
- Use existing funding sources as matching funds for regional or state funding
- Consider joint applications with other local and regional agencies such as the City of Dublin or Livermore, Alameda CTC, BART, and the East Bay Regional Park District for competitive statewide funding programs

Appendix E presents summaries of potential funding sources available to the city.

7.3 Cost of the Plan

summarizes the cost to complete the Plan. These are planning-level cost estimates that include contingencies. The city will develop detailed estimates during the preliminary engineering stage as individual projects advance toward implementation.

For purposes of this Plan, conceptual construction costs for the proposed system were based on the following assumptions:

- New Class I facilities would be constructed on generally flat right-of-way with no grade separation and minimal grading needed given the existing topography within the city; cost of right-of-way acquisition is not included.
- Most new Class II bikeways would require minimal or no roadway improvements, such as roadway widening, unless otherwise called out in the project description
- New Class III bikeways would require sharrows and striping. Bicycle boulevards assume traffic calming measures would also be installed.
- New Class IV separated bikeways can vary substantially in cost, due to the wide variety of treatment types and materials used. It is assumed the city will primarily use striped buffers with plastic pylons

Table 7-2: Estimated Cost of the Plan

Description	Cost
Bicycle Network	$50,656,000
Trail Network	$18,019,000
Pedestrian Improvements	$1,270,000
Total Cost	*$69,945,000*

Costs are in 2016 dollars, excluding right-of-way costs.

7.4 Past and Future Expenditures

Over the past five years, the City of Pleasanton has spent approximately $2.8 million on walking and bicycling facilities, and anticipates spending $3 million on walking and bicycling facilities over the next five years. Anticipate funding sources including Measure B and BB, Vehicle Registration Fee (VRF), and Transportation Development Act (TDA).

7.5 Maintenance Costs

Signals and on-street pedestrian facilities are maintained by the city on a regular basis. Property owners are responsible for sidewalk maintenance. Multi-use path maintenance includes cleaning, resurfacing, and re-striping an asphalt path, repairing bridges and other structures, cleaning drainage systems, removing trash, and landscaping. While this maintenance effort may not be incrementally major, it does have the potential to accrue heavy expenses if it is not done periodically. presents the estimate maintenance costs for bicycling infrastructure.

Table 7-3: Citywide Conceptual Annual Maintenance Costs for Near-Term Buildout

Facility Type	Description	Length of Existing Plus Proposed Near-Term Segments	Estimated Cost (2016 $)
Class I	Bicycle Path	21.5 miles	*$280,000*
Class II	Bicycle Lane	54.2 miles	*$25,000*
Class III	Bicycle Route/Boulevard	7.2 miles	*Sign Replacement (Every 10 Years)*
Class IV	Separated Bikeway	7.3 miles	*$95,000*
		Total Annual Maintenance Costs	*$400,000*

Costs are in 2016 dollars, excluding right-of-way costs. Cost do not include sign replacement and other maintenance that does not occur annually.

The estimated annual maintenance expenses for Class I bicycle paths is approximately $13,000 per mile for landscaping work, including monthly trash collection, biannual weeding and asphalt cleaning, and annual tree pruning. If all of the proposed bicycle paths were implemented, there would be a total of nearly 22 miles of Class I facilities in the near-term. Thus, the annual maintenance cost for Class I facilities is estimated at about $280,000.

For Class II bicycle lanes, the cost consists of maintaining pavement markings and striping. The estimated annual cost is $25,000 for a near-term full build-out of nearly 55 miles of Class II facilities based on an annual cost of $455 per mile in restriping (including the cost to restripe bicycle lanes and refresh stencils). This annual expense is in addition to sign replacement costs of about $2,000 per sign. Signs need to be replaced roughly once every ten years.

The annual maintenance cost for Class I facilities is estimated at about $280,000.

Class III facilities will require maintenance of bicycle signs located along the bicycle route every ten years.

The cost for maintaining Class IV facilities depends on the type of bikeway constructed. For grade-separated bikeways, maintenance costs are similar to sidewalk maintenance costs of approximately $132,000 per mile every ten years. For bikeways separated by planter, cement, or bollard, the maintenance costs are similar to those of bicycle lanes ($13,500/year).

Appendix A. Design Guidelines

New and enhanced bicycle and pedestrian facilities in Pleasanton should follow the latest best practice documents on active transportation. These include:

- NACTO Urban Streets Design Guide
- NACTO Urban Bikeway Guide
- Federal Highway Administration (FHWA) Separated Bicycle Lane Planning and Design Guide
- MassDOT Separated Bike Lane Planning and Design Guide
- Association of Bicycle and Pedestrian Professionals' (APBP) Bicycle Parking Guidelines, 2nd Edition

In addition to those guidelines, this chapter includes clarifying policies and preferred and minimum dimensions for select active transportation facilities. This includes a **Citywide Crosswalk Policy** (see **Section A.2**) to guide the installation, enhancement, and removal of crosswalks.

A.1 Travel Lane Widths

The City of Pleasanton uses 11 foot travel lane width as a minimum standard on roadways over 30 MPH. At turn pockets, the city will consider 10 foot pocket width.

A.2 Crosswalk Policy

A.2.1 Introduction

The Crosswalk Policy prescribes a formal, transparent, and consistent process for crosswalk implementation and improvement citywide. The city regularly receives requests to install marked crosswalks from residents, businesses, and institutions. However, designing a safe roadway crossing for pedestrians is a complex process; the installation of crosswalk striping alone does not necessarily constitute a safe pedestrian crossing.

A comprehensive pedestrian safety strategy contains a three-pronged approach including engineering, enforcement, and education programs**.** Site-specific engineering improvements are included in **Chapter 4**, and enforcement and education program recommendations are housed in **Chapter 6**. This appendix provides more detailed guidance on when and how to mark, enhance, or remove crosswalks in order to create a clear, consistent, and citywide basis for making those decisions.

The Crosswalk Policy includes a toolbox of elements to improve crosswalk visibility and safety and provides guidance about the type of treatments appropriate on different kinds of roadways and under various conditions. The toolbox uses simple inputs that can be derived from a field survey, such as number of lanes, posted speed, and average daily traffic, to provide a candidate crosswalk treatment at mid-block and uncontrolled locations. While these treatments represent best practice, engineering judgment should be exercised in all cases.

The Crosswalk Policy should guide the city in making decisions about all types of crosswalks and should be consulted each time a crosswalk is considered for installation, enhancement, or removal. These include basic crosswalks (i.e., two stripes); crosswalks with special treatments, such as high visibility crosswalks, flashing beacons, and other special features; and crosswalks that remain unmarked due to safety concerns resulting from volume, speed, or sight distance issues.

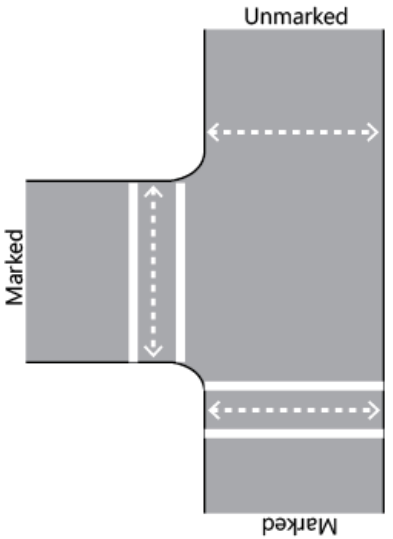
A.3 Crosswalk Fundamentals

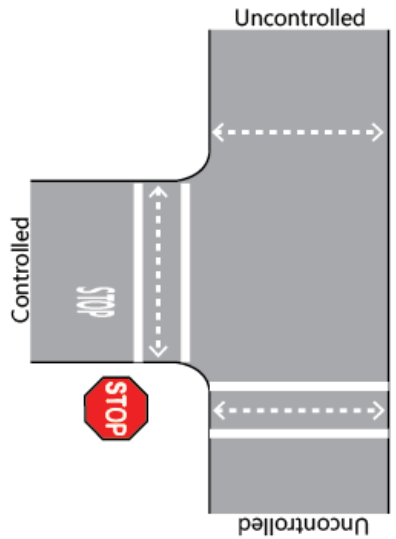
This section outlines the types of crosswalks, where crossing the street is legal in California per the California Vehicle Code, and the steps the city should take in identifying locations for marked crosswalks.

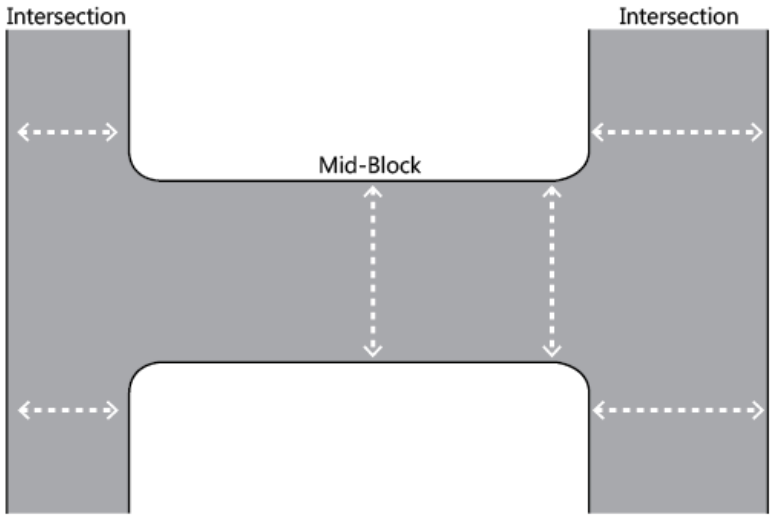
A.3.1 Types of Crosswalks

Crosswalks are primarily classified by three characteristics:

1) Whether they are marked (demarcated with striping on the street) or unmarked (no striping). Marked crosswalks reinforce the location and legitimacy of a pedestrian crossing, but roadway characteristics and safety factors guide whether or not a crosswalk should be marked.
2) Whether they are controlled (by a traffic signal or stop-sign) or uncontrolled (with no intersection control). Controlled crosswalks typically provide maximum safety benefit in requiring vehicles to stop for pedestrians; however, these treatments are not appropriate on all roadways. On some roadways, uncontrolled crosswalks can be safe and the most appropriate treatment.
3) Whether they are located at an intersection (where two streets meet) or mid-block (between intersections). Mid-block crosswalks typically require additional considerations, as drivers may not expect to see pedestrians crossing in the middle of the block.







A.3.2 Legal Crosswalks

The California Vehicle Code defines where and how crossing the street is legal in California. In California, a legal crosswalk exists where a sidewalk meets a street at an intersection, regardless of whether the crosswalk is marked (i.e., with or without striping to denote the crosswalk). Motorists must yield the right-of-way in these scenarios. Pedestrians may legally cross any street, except at unmarked locations between immediately adjacent signalized crossings, or where crossing is expressly prohibited. Away from intersections and designated mid-block locations, pedestrians must yield the right-of-way to motorists.

These legal statutes are contained in the California Vehicle Code (CVC) as follows:

- Section 275 defines a legal crosswalk as:
    - That portion of a roadway included within the prolongation or connection of the boundary lines of sidewalks at intersections where the intersecting roadways meet at approximately right angles, except the prolongation of such lines from an alley across a street.
    - Any portion of a roadway distinctly indicated for pedestrian crossing by lines or other markings on the surface (such as a marked midblock crossing).
- Section 21950 describes right-of-way at a crosswalk:
    - The driver of a marked vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at an intersection.
- Section 21955 describes where pedestrians may *not* cross a street:
    - Between adjacent intersections controlled by traffic control signal devices or by police officers, pedestrians shall not cross the roadway at any place except in a crosswalk.

A.3.3 Advantages of Marked Crosswalks

Sidewalks and crosswalks are essential links within a pedestrian network. Whether commuting, running an errand, exercising, or wandering, pedestrians need safe and convenient crossing opportunities to reach their destinations. A marked crosswalk has three (3) primary functions:

1. To create reasonable expectations where pedestrians may cross a roadway
2. To improve predictability of pedestrian actions and movement
3. To channel pedestrians to designated crossing locations (often selected for their optimal sight distance)

Marked crosswalks can beneficial in their ability to:

- Help pedestrians find their way across complex intersections
- Typically designate the shortest crossing path
- Direct pedestrians to locations with the best driver-pedestrian visibility
- Assure pedestrians of their legal right to cross a roadway

Reinforcing the legitimacy of pedestrian crossings is particularly important function, as drivers often fail to yield the right-of-way without the visual cue of a marked crosswalk. Though the *California Vehicle Code* gives the right-of-way to pedestrians at any marked or unmarked crosswalk (as noted in **Section A.3.2**), drivers and pedestrian may not be aware of the law or may not always obey it. This can result in drivers failing to yield to pedestrians or pedestrians either waiting for a gap in traffic or asserting their right-of-way by stepping into the roadway.

A.3.4 Identifying Candidate Locations for Crosswalk Enhancements in Pleasanton

Identifying candidate locations for marked crosswalks involves two steps:

1. Identify locations where people would like to cross the street, known as "desire lines". Where members of the public request crosswalks or city plans and projects uncover possible crosswalk installations or enhancements, **Figure A-1** should be consulted to determine if marking

a crosswalk is appropriate. This Plan also recommends new crosswalk installations and enhancement projects, as shown on Figure 4-2. As these projects are further developed, These potential crosswalk locations should be consulted again this Policy for consistency and also incorporate engineering judgment to determine the final crosswalk design and level of enhancement.

2. Identify where people can cross safely. The primary consideration in this step is adequate stopping sight distance. Of all road users, pedestrians have the highest risk of injury in a collision because they are the least protected. The crosswalk safety treatment toolboxes are presented in **Section A.4** provide numerous options for enhancing pedestrian safety at uncontrolled crossings, with treatment selection based on the overall context of the crosswalk – including surrounding land uses, roadway characteristics, and user characteristics.

A.3.5 When to Install Marked Crosswalks

Once candidate locations are identified (either through the recommendations contained in this Plan, through studies, or through citizen requests), an engineering evaluation should be conducted to determine if a marked crosswalk should be installed at an uncontrolled or mid-block location, and if so, what visibility enhancements should be included in the design. Crossings should be marked where all of the following occur:

- Sufficient demand exists to justify the installation of a marked crosswalk
- Sufficient sight distance as measured by stopping sight distance calculations exists and/or sight distance will be improved prior to crosswalk marking
- Safety considerations do not preclude a marked crosswalk

Figures A-1 and **A-2** describe the overall procedures from the moment city staff receives a request for a new marked crosswalk (or considers removing an existing marked crosswalk) to the installation of the treatment. As described, the first steps to determine the appropriate location and treatment for the marked crosswalk include a staff field visit.

Figure A-1: Marked Crosswalk Placement Flowchart

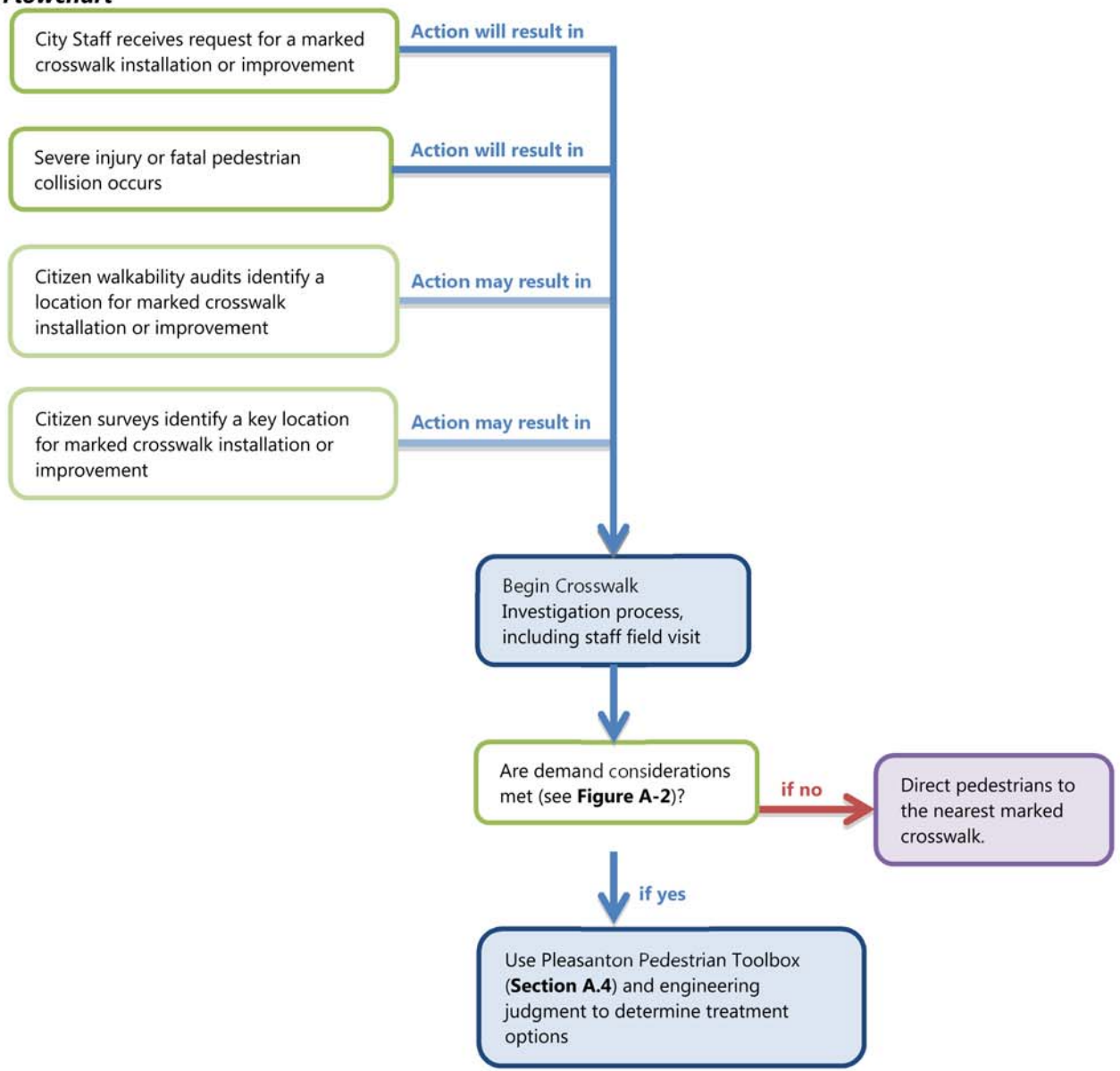
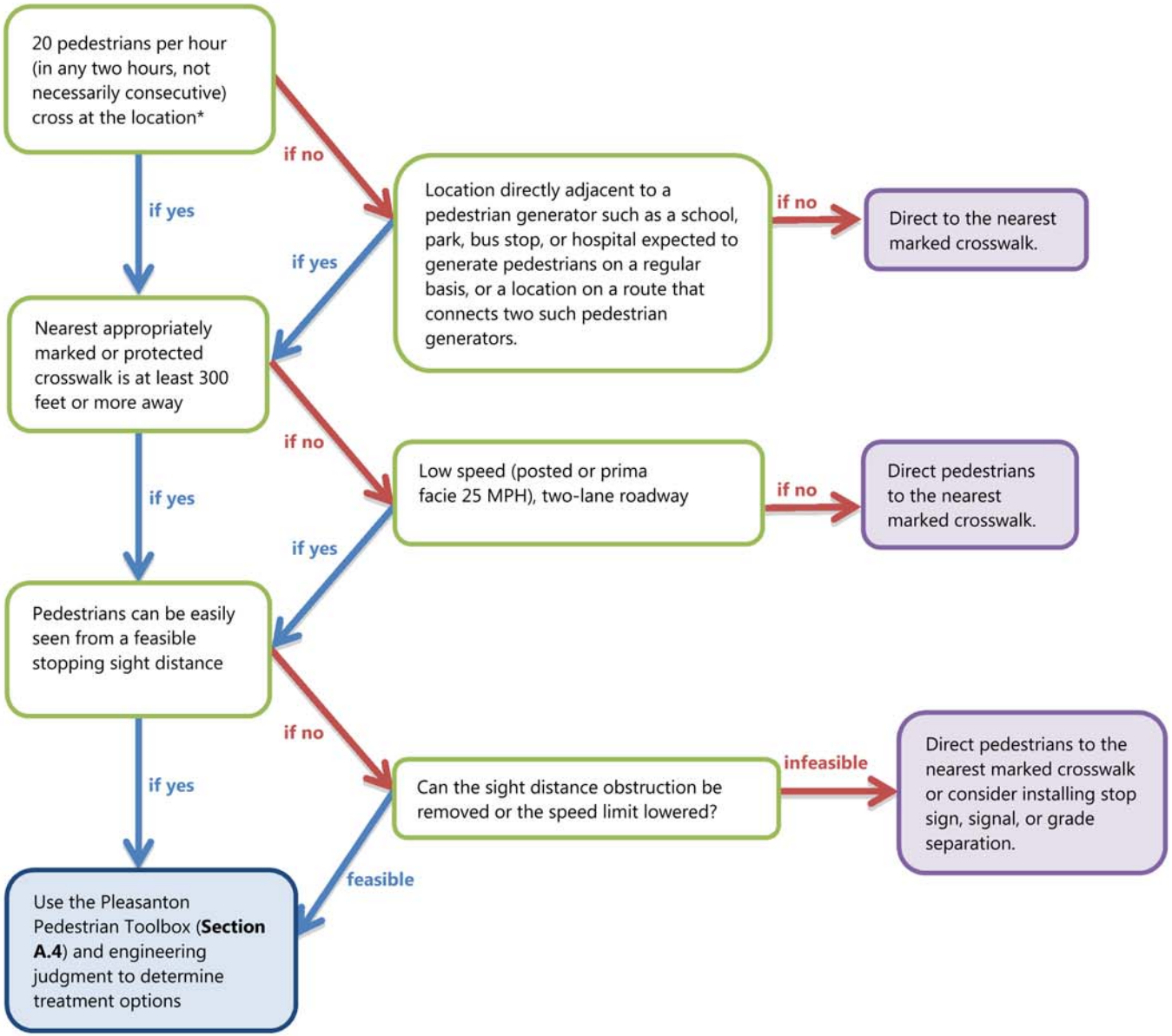


Figure A-2: Feasibility Analysis for Treatments at Uncontrolled Locations



*Note: Where it is determined that a marked crosswalk is not necessary based on **Figure A-2**, other treatment options are available. These include traffic calming measures, such as speeds tables and speed humps; curb extensions and refuges to narrow the roadway, speed feedback signs, and similar treatments to help reducing crossing distances and slow speeds. These engineering treatments are described in **Section A.4**. In addition to engineering treatments, education and enforcement programs should also be considered.*

For locations without pedestrian counts, consider whether location is directly adjacent to a pedestrian generator such as a school, park, bus stop, or hospital and is expected to generate pedestrians on a regular basis, or is located on a route that connects two such pedestrian generators.

*For more information see: Zeeger, C., et al. *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines*. Publication FHWA-RD-04-100, FHWA, U.S. Department of Transportation, 2005.

A.4 Uncontrolled Crossing Enhancement Toolbox

This section presents best practices for the installation of marked crosswalks at uncontrolled intersections and mid-block locations. Uncontrolled crossings require additional consideration during planning and design since traffic signals and stop signs are not provided, meaning that motorists must be able to recognize the pedestrian and yield accordingly. Thus, providing appropriate enhancements to improve the visibility and safety of pedestrians crossing the street at an uncontrolled location is critical for pedestrian safety.

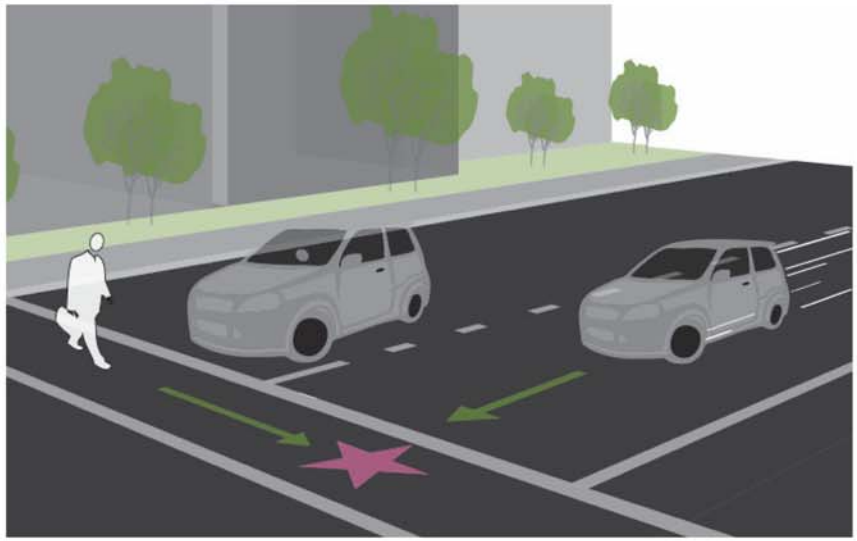
A.4.1 Crosswalk Safety Research

Numerous studies of pedestrian safety at uncontrolled crossings establish safety guidelines for crosswalk design and placement. In the past, conflicting research led to a reluctance to mark crosswalks at locations that have since shown to be safe. For example, studies conducted in San Diego in the 1970s showed that pedestrian collision risk at marked, uncontrolled crosswalks was greater than at unmarked crossings. This led many cities to remove marked crosswalks, as they were suspected of providing a false sense of security that drivers would yield to pedestrians in the crosswalk. However, a more recent and comprehensive study[8] by the Federal Highway Administration (FHWA) comprehensively reviewed crossing safety at 1,000 marked and 1,000 unmarked crosswalks in 30 U.S. cities, controlling for site context factors. The study concluded that site factors related to pedestrian-involved collisions included pedestrian average daily traffic (ADT), vehicle ADT, number of lanes, median type, and the region of the U.S. At uncontrolled locations on two-lane roads and multi-lane roads with ADT below 12,000 vehicles, FHWA found that the presence of a marked crosswalk alone, compared with an unmarked crosswalk, made no statistically significant difference in the pedestrian crash rate. However, on multi-lane roads with an ADT of greater than 12,000 vehicles (without a raised median) and 15,000 vehicles (with a raised median), the presence of a marked crosswalk was associated with a statistically significant higher rate of pedestrian collisions compared to sites with an unmarked crosswalk. The findings of this study have since been incorporated into the California Manual on Uniform Traffic Control Devices (MUTCD).

[8] Zeeger, C., J. Stewart, and H. Huang. *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations*. Publication FHWA-RD-01-142, FHWA, U.S. Department of Transportation, 2001.

The FHWA Study and MUTCD guidelines should not encourage city officials to simply remove (or fail to install) marked crosswalks. Rather, they suggest adding crosswalk enhancements to the marked crosswalks to balance mobility needs with safety needs. These improvements include high-visibility striping, advanced yield signs, raised medians, traffic and pedestrian signals where warranted, curb extensions, adequate lighting, and tighter turn radii.

In the FHWA study, about 70 percent of the pedestrian crashes occurred at marked crosswalks on multi-lane roads. Of the pedestrian crashes at marked crosswalks, 17.6 percent were classified as multiple-threat collisions. Multiple-threat collisions occur as one car slows down to allow pedestrians to cross, but a second car approaching from behind in the adjacent lane may not see the pedestrian. The slowing vehicle blocks the sight line of both the pedestrian and the second motorist, leading to the pedestrian-vehicle collision. Multi-lane roadways are therefore not well-served by unmarked or marked crosswalks alone. At these sites, the study concluded, engineers should consider countermeasures that provide additional safety to pedestrians and alert motorists to upcoming crosswalks. These countermeasures include advanced yield lines with corresponding signs informing motorists where to yield. Other more substantial measures may also be considered, such as signalization, illumination, or raised medians.



Multiple threat conflicts on multi-lane roadways occur where a vehicle yielding to a pedestrian inhibits sight lines to another oncoming vehicle.

These studies support the decisions presented in this plan, which proposes new marked crosswalks at single-lane crossings only. This plan also proposes appropriate additional treatments, including PHBs and RRFBs, at specific multi-lane crossings with higher levels of ADT.

A.4.2 Treatment Selection

At uncontrolled locations, a marked crosswalk with striping only may not provide adequate visibility between pedestrians and drivers, especially at high volume, high speed, or multi-lane crossing locations. At those locations, appropriate additional enhancements should be based on:

- **Site characteristics**: presence of pedestrian desire lines, available sight distance and visibility, lighting
- **Travel data**: 85th percentile speeds, posted speed limits, and average daily traffic (ADT) volumes.
- **Roadway geometrics**: presence of median refuge islands

Geometric enhancements, such as median refuges and curb extensions, and traffic calming should always be considered.

Marked crosswalks alone should not be installed without enhancements on multi-lane streets (two or more lanes per direction) or any location that meets the following conditions[9]:

- Speeds equal to or greater than 40 miles per hour
- Average daily traffic volumes (ADT) greater than 12,000 without a raised median or pedestrian refuge island
- Average daily traffic volumes (ADT) greater than 15,000 with a raised median or pedestrian refuge island

The **Section A.4** Uncontrolled Treatment Toolbox outlines considerations for the use of enhancements in various contexts as summarized in the remainder of this section. This Toolbox may be used to identify potential treatments at a candidate uncontrolled crosswalk locations.

[9] California MUTCD, Section 3B. 18.

A.4.3 Pedestrian Level of Service and Treatment Selection

A calculation of Pedestrian Level of Service (LOS)[10] forms the basis for the treatment identification. Pedestrian LOS is the average delay experienced by pedestrians as they are waiting to cross the street. Expected motorist compliance is another other key variable for treatment identification. Compliance is based on field observations and engineering judgment. Expected motorist compliance is meant to estimate typical motorist responses to pedestrians attempting to cross the street. If drivers are likely to stop for a pedestrian, the compliance is rated "high." If drivers rarely stop for pedestrians, compliance is "low." The compliance rate should be assumed to be low for all locations where the speed limit is greater than 30 MPH. **Tables A-2 – A-4** summarizes the appropriate treatments based on level of enhancement needed (with the most significant enhancement required with the worst LOS and compliance rates).

Table A-1 presents the tiered pedestrian enhancements that should be considered based on the pedestrian LOS calculation. The table should be applied after the possibility for a road diet and/or installation of a median have been considered. Road diets and median islands should always be considered before crosswalk enhancements, as research shows that the number of travel lanes and the presence of the median are the primary drivers of whether or lighted enhancements are needed. Where there is excess capacity, a lane reduction may be appropriate and may eliminate the need for other enhancements to safely mark a crosswalk. Where there is excess roadway width to provide a median refuge at a proposed crosswalk location, the presence of a median may mean that no additional enhancements are needed to safely mark a crosswalk. Level 1 enhancements both represent minor interventions - appropriate as standalone enhancements for situations with lower speeds and traffic volumes and high driver yielding rates - and interventions that are beneficial at every uncontrolled crosswalk where feasibility analysis determines that a crossing should be marked. Higher levels represent more significant interventions, as may be needed on higher speed or volume roadways, wider roadways, and roadways where motorists are less likely to yield to pedestrians. Treatments may be combined with higher level treatments added to lower level treatments (i.e., flashing beacons with curb extensions).

[10] Methodology from NCHRP 562.

Table A-1: Application of Enhanced Treatments for Uncontrolled Locations			
Pedestrian Level of Service	**Expected Motorist Compliance**		
	Low (or Speed >=30 mph)	**Moderate**	**High**
LOS A-D (average delay up to 30 seconds)	***LEVEL 3*** 2 lane road: RRFB Multi-lane road: RRFB, PHB *Plus LEVELS 1 and 2*	***LEVEL 2*** Curb Extensions, Bus Bulb, Reduced Curb Radii, Staggered Pedestrian Refuge *Plus LEVEL 1*	***LEVEL 1*** High Visibility Crosswalk Markings[1], Advanced Yield Lines, Advance Signage
LOS E-F (average delay greater than 30 seconds)	***LEVEL 4*** Pedestrian Hybrid Beacon, RRFB, or Direct Pedestrians to Nearest Safe Crossing *Plus LEVELS 1 and 2*	***LEVEL 3*** RRFB, PHB *Plus LEVELS 1 and 2*	***LEVEL 2*** Curb Extensions, Reduced Curb Radii, Staggered Pedestrian Refuge *Plus LEVEL 1*

1. High-visibility crosswalk markings, such as ladder markings, are recommended at all uncontrolled locations, such that these locations "pop" and are easily visible to drivers. Research by Fitzpatrick, et al (2011) suggests that high-visibility crosswalk markings should for crosswalks at all uncontrolled approaches based on average driver detection distance. For more information see: http://www.pedbikeinfo.org/cms/downloads/PBIC_WhitePaper_Crosswalks.pdf.

Notes: A pedestrian refuge island (median) is recommended for consideration in all scenarios with more than 2 lanes of traffic with suitable right-of-way.

A.4.4 Uncontrolled Crosswalk Treatment Options

The following tables provide additional information on the preferred pedestrian safety treatments associated with each level of enhancement. These treatments are grouped into three categories, as follows:

- **Table A-2: Geometric Treatments**
- **Table A-3: Striping and Signage**
- **Table A-4: Lighted Enhancements**

Within each table, treatments are categorized into three levels based on the level of safety concern they are meant to address: Level 1 (all cases), Level 2 (enhancements), and Level 3 (advanced enhancements). Categories of improvements are cumulative; for example, a Level 2 device should also include appropriate Level 1 devices. Not all of these treatments are recommended for application at the locations identified in this document.

Table A-2: Uncontrolled Crossings – Geometric Treatments			
Treatment	**Description**	**Level**	**Estimated Cost**
2-1. Road Diet (i.e., fewer lanes)  *Image Source: Fehr & Peers*	Fewer travel lanes decrease roadway width and crosswalk length, reduce speeds, reduce left-turn and rear-end collisions, and often eliminate the multiple-threat collision. It takes an average pedestrian almost four seconds to cross each additional travel lane. More travel lanes than necessary can also increase vehicle travel speeds; research has shown that the severity of pedestrian collisions increases with vehicle travel speed.	**Level 1**	$20/LF[11]

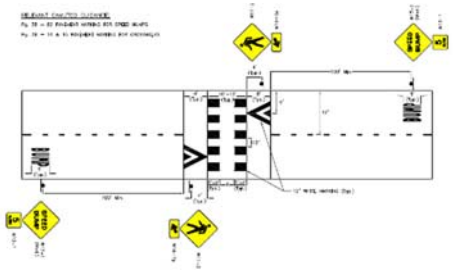
[11] Cost includes removal of existing pavement markings and repainting.

Table A-2: Uncontrolled Crossings – Geometric Treatments			
Treatment	**Description**	**Level**	**Estimated Cost**
2-2. Removal of Sight-Distance Obstructions  *Image Source: Fehr & Peers*	If objects impede sight-distance, this may result in an unsafe condition where motorists and pedestrians are unable to see each other. Items such as parked cars, signage, landscaping, fencing, and street furniture should be placed in a location that will not obstruct sight distance.	**Level 1**	Varies[12]
2-3. Pedestrian Refuge Island  *Image Source: Fehr & Peers*	Raised islands are placed in the center of the roadway separating opposing lanes of traffic with cutouts or ramps for accessibility along the pedestrian path. Median refuge islands are recommended where right-of-way allows and conditions warrant. Studies show medians are one of the most important safety enhancements available for crosswalks. They simplify complicated multi-lane crossings by breaking the crossings/conflicts into two stages. The minimum width for a median refuge island is six feet, which is wide enough for a parent with a stroller or bicycles.	**Level 1**	$130/LF[13]

[12] Items may be as low as $250 (relocating a street sign) or as high as $800 (relocating a tree).
[13] Cost includes new curb and concrete barrier. Assumes a 6 foot median.

Table A-2: Uncontrolled Crossings – Geometric Treatments			
Treatment	**Description**	**Level**	**Estimated Cost**
2-4. Curb Extensions  *Image Source: FHWA*	Curb extensions extend the curb and sidewalks further into the roadway, shortening the length of the crosswalk. They act as a traffic calming device by narrowing the effective width of the roadway and slowing turning speeds. Because they extend into the roadway, often past parallel-parked vehicles, they improve visibility for pedestrians. They also provide space for street furniture, landscaping, bicycle parking, and signs and signal poles. Curb extensions can be constructed with reduced curb radii and to accommodate ADA improvements, such as directional curb ramps.	**Level 1**	$140/LF[14]
2-5. Split Pedestrian Crossover (SPXO)  *Image Source: Fehr & Peers*	This measure is similar to traditional median refuge islands; the difference is that the crosswalks in the roadway are staggered such that a pedestrian crosses half of the street and then walks toward traffic to reach the second half of the crosswalk. This measure must be designed for accessibility by including rails and truncated domes to direct sight-impaired pedestrians along the path of travel.	**Level 1**	$130/LF

[14] Cost includes removal of existing curb, new curb, new sidewalk, and new bollards. Cost does not include curb ramps.

Table A-2: Uncontrolled Crossings – Geometric Treatments			
Treatment	**Description**	**Level**	**Estimated Cost**
2-6. Raised Crosswalk  *Image Source: Fehr & Peers*	Raised crosswalks are speed tables (flat-topped speed humps) outfitted with crosswalk markings and signage, providing pedestrians with a level street crossing. By raising the level of the crossing, vehicles drive more slowly through the crosswalk and pedestrians are more visible to approaching motorists.	**Level 2**	$4,000/EA
2-7. Pedestrian Overpass/Underpass  *Image Source: Fehr & Peers*	This measure consists of a pedestrian or pedestrian/bicycle overpass or underpass of a roadway. It provides complete separation from motor vehicle traffic, normally where no other pedestrian facility is available, and connects off-road trails and paths across major barriers. Overpasses and underpasses should be used as a measure of last resort because of their cost and barriers to their effective/efficient use, with topographical and desire line considerations influencing their design. Personal security concerns must also be addressed in the design of these facilities.	**Level 3**	$150/SF

Source: Fehr & Peers, 2016.

Table A-3: Uncontrolled Crossings – Striping and Signage			
Treatment	**Description**	**Level**	**Estimated Cost**
3-1. High Visibility Markings  *Image Source: Fehr & Peers*	All uncontrolled marked crosswalks should feature high-visibility markings.[15] Various striping patterns are available, such as triple four striping, as shown in the photo to the left, is recommended for use in future installations. The smooth space in the middle of triple four striping is more comfortable for pedestrians with spinal pain and reduces the need to walk on slippery surfaces in wet weather compared to the ladder design.	**Level 1**	$3500/Crosswalk
3-2. Advanced Yield Line  *Image Source: Fehr & Peers*	Advanced yield lines, often referred to as "sharks teeth", should be striped at all marked, uncontrolled crosswalks on multi-lane roadways. They should be placed 20-30 feet in front of the crosswalk. Their intention is to identify where vehicles should stop when yielding to a pedestrian to maintain adequate sight lines. These should be implemented in conjunction with "Yield Here to Pedestrian" signs.	**Level 1**	$1,500/Crosswalk

[15] For more information on high-visibility crosswalk research and marking, see the Pedestrian and Bicycle Information Center, "An Overview and Recommendations of High-Visibility Crosswalk Marking Styles" (2013). http://www.pedbikeinfo.org/cms/downloads/PBIC_WhitePaper_Crosswalks.pdf

Table A-3: Uncontrolled Crossings – Striping and Signage			
Treatment	**Description**	**Level**	**Estimated Cost**
3-3. Advanced Warning Signs  *Image Source: FHWA*	Fluorescent-yellow-green signs can be posted in advance of crosswalks to increase driver awareness of an approaching pedestrian crossing.	**Level 1**	$1,000/EA
3-4. In-Street Pedestrian Crossing Sign  *Image Source: FHWA*	This measure involves posting regulatory pedestrian signage on lane edge lines and/or road centerlines. The in-street pedestrian crossing sign may be used to remind road users of laws regarding right-of-way at an uncontrolled pedestrian crossing. They can be installed on medians and may also be temporary signs, placed by school crossing guards during school hours.	**Level 1**	$400/EA

Source: Fehr & Peers, 2016.

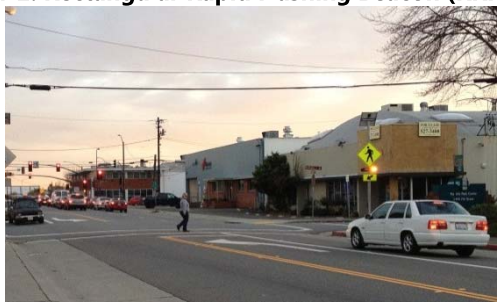
Table A-4: Uncontrolled Crossings – Beacon, Lighting, And Signal Treatments			
Treatment	**Description**	**Level**	**Estimated Cost**
4-1. Pedestrian-Scale Lighting  *Image source: www.ci.mil.wi.us*	Pedestrian-scale lighting improves visibility along a pedestrian's path and across driveways. It also improves visibility at pedestrian/vehicle conflict points in crosswalks.	**Level 1**	$315/LF
4-2. Rectangular Rapid Flashing Beacon (RRFB)  *Image Source: Fehr & Peers*	The RRFB is an enhancement of the older flashing beacon that replaced the traditional slow flashing incandescent lamps with rapid flashing LED lamps. The RRFB may be push-button activated or activated with passive detection. This treatment was approved for use in California via Interim Approval IA-7-83 in 2011. Any installations should be reported to Caltrans for documentation, but do not require pre-approval for experimentation.	**Level 2**	$25,000/EA

Table A-4: Uncontrolled Crossings – Beacon, Lighting, And Signal Treatments			
Treatment	**Description**	**Level**	**Estimated Cost**
4-3. Pedestrian Hybrid Beacon (PHB)  *Image Source: FHWA*	The PHB is a pedestrian-activated beacon that is a combination of a beacon flasher and a traffic control signal. When actuated, the PHB displays a yellow (warning) indication followed by a solid red indication. During the pedestrian clearance interval, the driver sees a flashing red "wig-wag" pattern until the clearance interval has ended and the beacon goes dark. The device is included in the 2014 California MUTCD for use at midblock locations.[16] See Chapter 4F of the 2014 California MUTCD for the appropriate warrants.	**Level 3**	$80,000/EA

[16] Use of the device at side-street stop control locations currently requires separate permission from the California CTCDC (though this is under review).

Table A-4: Uncontrolled Crossings – Beacon, Lighting, And Signal Treatments			
Treatment	**Description**	**Level**	**Estimated Cost**
4-4. Pedestrian Signal  *Image Source: Fehr & Peers*	A pedestrian signal is a conventional traffic control device with warrants for use based on the MUTCD. The pedestrian warrants were revised with the 2009 Federal and 2012 California MUTCD.	**Level 4**	$450,000/EA

Source: Fehr & Peers, 2016.

A.5 Controlled Crosswalk Treatment Toolbox

Controlled crosswalks are ones where vehicles are required to come to a complete stop, typically at location with a stop sign or traffic signal. These crossings may not need enhancements beyond standard crosswalk markings (two parallel lines), as stop and signal control allocate right-of-way between roadway users and are generally considered to have the highest effectiveness. However, even with strong traffic control, crosswalk enhancements can be considered, particularly at locations with skewed intersections, with frequent pedestrian collisions, near schools, or with demonstrated low rates of compliance. This section presents pedestrian treatments at controlled locations to:

- Improve visibility between pedestrians and drivers
- Clarify right-of-way to drivers and pedestrians
- Provide additional safety measures for vulnerable populations such as the disabled, children, and the elderly

- Reduce conflicts between pedestrians and vehicles
- Reduce vehicular speeds at locations with potential pedestrian conflicts

All treatments identified in this chapter are required or allowed by the standards and specifications in the *California Manual on Uniform Traffic Control Devices* (CA MUTCD).

A.5.1 Citywide Crossing Enhancements

As described in **Chapter 4**, this plan identifies several recommendations that the city can apply across Pleasanton to improve the safety and comfort of pedestrians at controlled crosswalks. These recommendations include:

- Ensure pedestrian walk speed of 3.5 feet/second at signalized crossings citywide with walk speeds as low 2.5 feet/second at select locations, such as near schools, parks and senior centers).
- Adding countdown signals at signalized intersections where they are missing.
- Enhance accessibility through installing directional curb ramps (two per corner) instead of diagonal ramps and ensuring that all are ADA compliant.
- Additional treatments , as described in **Section A.5.2**.

A.5.2 Preferred Crossing Treatments at Controlled Crosswalks

Preferred crossing treatments are those that should be provided at all stop-controlled and signalized intersections in Pleasanton where feasible and are based on best practices in pedestrian safety:[17] New controlled intersections should be designed with these treatments included. Existing controlled intersections may require retrofits, which can be phased in over time. Preferred crossing treatments at controlled locations include:

[17] See America Walks *Signalized Intersection Enhancements that Benefit Pedestrians* http://americawalks.org/wp-content/upload/America-Walks-Signalized-Intersection-Enhancement-Report-Updated-8.16.2012.pdf (2012).

- Marked crosswalks on all legs of the intersection that serve a key desire line
- Advanced stop bars in advance of each crosswalk
- Median refuge islands and thumbnails, as width and path of turn maneuvers allow
- Good and unobstructed sightlines
- Directional curb ramps for each crosswalk (e.g. two per corner)
- Slip lane removal, where feasible, and mitigation for pedestrian safety where they remain with a raised crosswalk or protected right-turns
- Far-side bus stops, instead of locations on the near-side of the intersection or in front of mid-block crossings
- Minimized cycle lengths at signalized intersections
- Protected turn phasing instead of permitted across marked crosswalks
- Minimized number of vehicle traffic lanes at crosswalks, which can be achieved through lane reductions where feasible

These improvements are further described in **Section A.5.3**.

A.5.3 Enhanced Crossing Treatments at Controlled Locations

This plan recommends additional crosswalk enhancements per **Chapter 4**. These treatments improve drivers' awareness of pedestrians by slowing traffic through geometric changes, providing signal timing or phasing modifications, or enhancing striping or signing to improve visibility.

The following tables describe the preferred and optional enhanced pedestrian safety treatments that may be used at the city's discretion for controlled locations:

- **Table A-5:** Geometric Treatments
- **Table A-6**: Striping and Signage
- **Table A-7**: Signal Hardware and Operational Measures

Table A-5: Controlled Intersections – Geometric Treatments			
Treatment	**Description**	**Level**	**Cost**
5-1. Fewer Travel Lanes ("Road Diet")  *Image Source: Fehr & Peers*	Fewer travel lanes decrease roadway width and crosswalk length, reduce speeds, reduce left-turn and rear-end collisions, and often eliminate the multiple-threat collision. An average pedestrian takes almost four seconds to cross each additional travel lane. Therefore, reducing the number of travel lanes minimizes the amount of time that pedestrians are in the crosswalk. More travel lanes than necessary can also increase vehicle travel speeds; research has shown that the severity of pedestrian collisions increases with vehicle travel speed. Where fewer travel lanes are not possible, travel lanes can be narrowed to as little as nine feet, especially left- and right-turn pockets.	Preferred	$20/LF[18]
5-2. Pedestrian Refuge Island with "Thumbnail"  *Image Source: Fehr & Peers*	Median pedestrian islands provide a refuge for pedestrians to stand if they do not have sufficient time to cross a street. They can be enhanced with median pedestrian push buttons at signalized crossings. Median islands can be installed throughout a corridor or only at specific crosswalks.	Preferred	$130/LF[19]

[18] Cost includes removal of existing pavement markings and repainting.
[19] Cost assumes 6 foot median and includes new curb and concrete barrier.

Table A-5: Controlled Intersections – Geometric Treatments			
Treatment	**Description**	**Level**	**Cost**
5-3. Removal of Sight-Distance Obstructions  *Image Source: Fehr & Peers*	If objects impede sight-distance, an unsafe condition may arise where motorists and pedestrians are unable to see each other. Items such as parked cars, signage, landscaping, fencing, and street furniture should be placed in a location that will not obstruct sight-distance.	Preferred	Varies[20]
5-4. Directional Curb Ramps with Truncated Domes  *Image Source: Fehr & Peers*	Curb ramps offer wheelchair access to/from the sidewalk and crosswalk. Truncated domes, or tactile strips, warn blind pedestrians that they are about to enter a crosswalk. The best practice for curb ramps is to install two per corner so that each ramp points directly into the crosswalk and to the curb ramp at the other side of the street. Corner bulb-outs can be used to increase the amount of space available for directional curb ramps.	Preferred	$4,000/ea

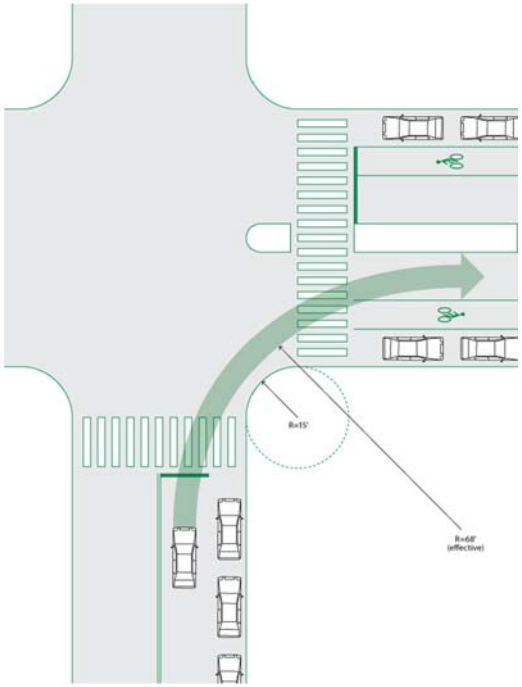
[20] Items may be as low as $250 (relocating a street sign) or as high as $800 (relocating a tree).

Table A-5: Controlled Intersections – Geometric Treatments			
Treatment	**Description**	**Level**	**Cost**
5-5. Right-Turn Lane Design  *Image Source: Fehr & Peers*	Free right-turns allow vehicles to turn right at high speeds. Since the vehicles are not typically controlled by the traffic signal in this circumstance, crosswalks across the turn lanes are usually uncontrolled crosswalks. Controlled right-turn movements are preferable for pedestrians because they require a vehicle to stop on red before turning right. Where "pork-chop" islands that channelize right-turns are necessary to provide acceptable turning radii, raised crosswalks are a pedestrian enhancement. Other options include signalizing the crossing (especially if it is multi-lane) and designing the "pork-chop" for slower speeds and better visibility of pedestrians.	Preferred	$25,000/EA[21]
5-6. Far-Side Bus Stops  *Image Source: Fehr & Peers*	Far-side bus stops allow pedestrians to cross behind the bus, improving pedestrian visibility. Far side bus stops also enhance transit operations by providing a guaranteed merging opportunity for buses. Exceptions for far-side bus stops include considerations for bus routing, sufficient sidewalk area, and conflicts with parking, land uses, or driveways.	Preferred	$1,000/EA[22]

[21] Assuming no electrical costs
[22] Cost assumes no sidewalk or paving work

Table A-5: Controlled Intersections – Geometric Treatments			
Treatment	**Description**	**Level**	**Cost**
5-7. Curb Extensions  *Image Source: Fehr & Peers*	Curb extensions extend the curb and sidewalks farther into the roadway, shortening the length of the crosswalk. They act as a traffic calming device by narrowing the effective width of the roadway and slowing turning speeds. Because they extend into the roadway, often past parallel-parked vehicles, they improve visibility for pedestrians. They also provide space for street furniture, landscaping, bicycle parking, and signs and signal poles. Curb extensions can be constructed to accommodate ADA improvements, such as directional curb ramps.	Enhanced	$140/LF[23]

[23] Cost includes removal of existing curb, new bollards, curb, and sidewalk. Cost does not include curb ramps.

Table A-5: Controlled Intersections – Geometric Treatments			
Treatment	**Description**	**Level**	**Cost**
5-8. Reduced Turn Radius  *Image Source: NACTO*	Vehicles travel faster through turns with a large radius. Reducing the radius of a corner is an effective way of reducing vehicle speeds (particularly on non-truck routes where there is less of a need for wide radii). In suburban environments, turn radii generally do not need to exceed 30 feet. In urban environments turn radii can be 10 feet or less. Where on-street parking is permitted and/or bicycle lanes are present on one or both streets, consideration for further reductions of radii should occur, acknowledging that the effective radius is increased with on-street parking. Corner curb radii on multi-lane streets should acknowledge that trucks turning right can turn into two lanes.	Enhanced	$175/LF[24]

Source: Fehr & Peers, 2016

[24] Cost includes removal of existing curb, new bollards, curb, and sidewalk. Cost does not include curb ramps.

Table A-6: Controlled Intersections – Striping and Signage			
Treatment	**Description**	**Level**	**Cost**
6-1. Marked Crosswalks  *Image Source: Google Maps*	Signalized intersections do not necessarily have marked crosswalks. Marking a crosswalk across all approaches of an intersection improves pedestrian accessibility. At a four-way intersection, a closed crosswalk forces pedestrians to cross via three crosswalks instead of one. Crosswalks on all approaches can often be accommodated without a significant impact to traffic signal operations.	Preferred	$15/LF[25]
6-2. Advanced Stop Bar  *Image Source: Fehr & Peers*	Advanced stop bars are placed five to seven feet in front of crosswalks. They keep vehicles from encroaching into the crosswalk when stopped at a red signal or stop sign.	Preferred	$7.50/LF

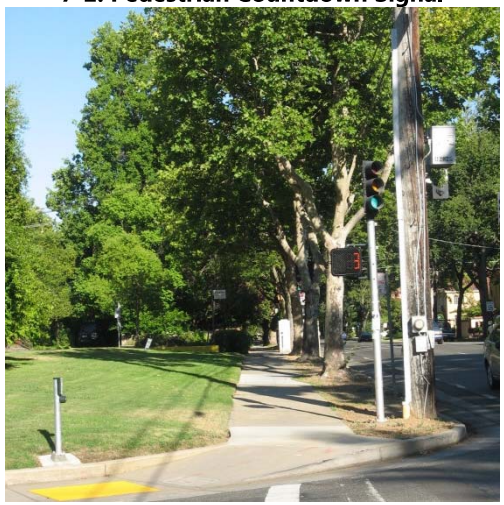
[25] Cost includes both lines of crossing.

Table A-6: Controlled Intersections – Striping and Signage			
Treatment	**Description**	**Level**	**Cost**
6-3. High Visibility Markings  *Image Source: Fehr & Peers*	High-visibility crosswalks at controlled locations are appropriate in areas with high pedestrian volumes, at crosswalks with skewed geometries, or near sensitive land uses (such as schools).	Enhanced	$3500/Crosswalk
6-4. Textured Pavement or Colored Crosswalks  *Image Source: Fehr & Peers*	Textured pavement can be used in crosswalks or in intersections as an aesthetic enhancement. Because of its texture, it may also calm traffic by slowing vehicles before they cross an intersection. It can also make crosswalks more visible. Textured pavement can be made of brick or, alternatively, both concrete and asphalt can be stamped to look like brick or stone. At controlled locations, standard crosswalk striping should be provided in addition to the textured pavement. A smooth, non-slip surface is preferable.	Enhanced	$15/SF

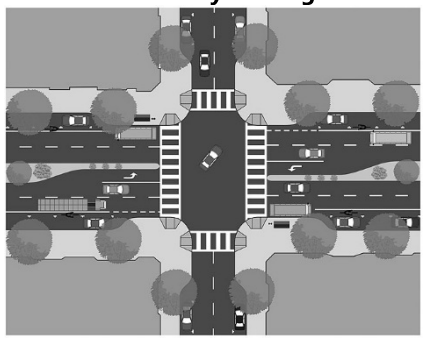
Source: Fehr & Peers, 2016

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-1. Adequate Crossing Times  *Image Source: Fehr & Peers*	The 2014 California MUTCD requires a walking speed of 3.5 feet per second be assumed to determine crossing times as a default minimum (4.0 feet per second was previously the guidance). A speed slower than 3.5 feet per second can be used where slower pedestrians routinely use the crosswalk, such as locations near schools, parks, or senior centers.	Preferred	N/A[26]

[26] No construction costs associated with measure. Only preparation and implementation costs

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-2. Pedestrian Countdown Signal  *Image Source: Fehr & Peers*	Pedestrian countdown signals give pedestrians "Walk" and "Don't Walk" signals with a second-by-second countdown for each phase. Research suggests that pedestrians are more likely to obey the "Don't Walk" signal when delivered using a countdown signal. The device has been shown to enhance safety for all road users. The 2014 California MUTCD requires that all pedestrian signals where the pedestrian change interval is more than seven seconds be countdown signals.	Preferred	$500/EA
7-3. Pedestrian Signals and Push Buttons  Image Source: Fehr & Peers	Mounting push buttons for different crosswalks on one pole can be confusing for blind pedestrians. Push buttons should be separated by ten feet and placed within five feet of each curb ramp, one per crosswalk. At long crosswalks (≥60 feet) with a median refuge island, push buttons can be placed in the median for pedestrians who may not be able to cross the entire crosswalk in one cycle length. In areas with high pedestrian volumes, eliminating pedestrian push buttons and providing a pedestrian phase in every cycle, can enhance walkability (and signal compliance).	Preferred	$1,000/EA[27]

[27] Cost includes pole

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-4. Short Cycle Lengths  *Image Source: Institute of Transportation Engineers*	Long cycle lengths at signalized intersections result in long pedestrian wait times to cross a street. By shortening an intersection's cycle length, pedestrians do not have to wait as long to cross after pushing the button to request a "Walk" signal.	Preferred	N/A[28]
7-5. Protected Left-Turns  Image Source: Fehr & Peers	Where permitted left-turns are allowed, denoted by a "Left Turn Yield on Green" sign, left-turning vehicles can conflict with pedestrians in the crosswalk. By making the left-turn protected, so that it is allowed only with a green arrow, the "Walk" signal at a crosswalk occurs at the same time that through- and right-turning vehicles in the same direction receive a green light. This reduces the risk of left-turning vehicle conflicts with the opposing crosswalk; since left-turns typically occur at a higher speed than right-turns, collisions of increased severity can be avoided by protecting left-turns. **Figure A-4** presents a decision flowchart to installing protected left-turns.	Preferred	$20,000-50,000/EA[29]

[28] No construction costs associated with measure. Only preparation and implementation costs
[29] Assumes left turn lane is existing, so no roadway work is necessary. Only signal work.

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-6. Protected Right-Turns  Image Source: Fehr & Peers	Protected right turns give vehicles that are turning right an exclusive phase that does not coincide with the pedestrian walk phase. This eliminates the pedestrian-vehicle conflict between permissive rights and pedestrians in a crosswalk. **Figure A-4** presents a decision flowchart to installing protected right-turns.	Enhanced	$20,000-50,000/EA[30]
7-7. Turning Vehicle Yield to Pedestrian Signs  Image Source: Fehr & Peers	Motorist-prompting signs communicate variations of the basic message of "Yield to Pedestrians", including "Yield to Pedestrians in Crosswalk", which are sometimes supplemented by signs with strong language, such as "State Law" or "It's the Law"; and "Turning Traffic Must Yield to Pedestrians." **Figure A-4** presents a decision flowchart to installing yield to pedestrian signs.	Enhanced	$700/EA

[30] Assumes right turn lane is existing, so no roadway work is necessary. Only signal work.

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-8. Pedestrian Scramble  Image Source: Fehr & Peers	Provides an all red phase for vehicles while providing pedestrians with a walk indication. Pedestrians may cross the street orthogonally or diagonally. **Figure A-4** presents a decision flowchart to installing pedestrian scrambles.	Enhanced	$4,000/EA
7-9. Flashing Yellow  Image Source: Fehr & Peers	Provides pedestrians with a walk indication while all vehicle indicators display a red ball (LPI). This allows pedestrians to get a head start crossing the street before vehicles get the green indication. After the LPI, a flashing yellow turn arrow allows permissive turns but warns motorists of potential conflicts with pedestrians in the crosswalk. **Figure A-4** presents a decision flowchart to installing flashing yellow arrows.	Enhanced	$20,000-50,000/EA[31]

[31] Assumes left turn lane is existing, so no roadway work is necessary. Only signal work.

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-10. Accessible Pedestrian Signals  Image Source: Fehr & Peers	Accessible pedestrian signals (APS) and detectors provide information, such as "Walk" indications and direction of crossing, in non-visual formats to improve accessibility for blind pedestrians. Audible options for accessible pedestrian signals include audible tones and speech messages. Vibrotactile push-buttons are effective options that alleviate the impacts of noise created by audible pedestrian signals. They are also accessible to deaf pedestrians. APS should always be provided when two push buttons are located on one pole and where persons with disabilities are expected frequently at a crossing.	Enhanced	$2,500/EA

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-11. Pedestrian Recall  Image Source: Fehr & Peers	Pedestrian recall gives pedestrians a "Walk" signal at every cycle. No push-button or detection is necessary since a "Walk" signal will always be given. Pedestrian recalls are useful in areas with high levels of pedestrian activity. They demonstrate that an intersection is meant to serve both vehicles and pedestrians. In general, pedestrian recall should be used if pedestrians actuate a "Walk" signal 75 percent of the time during three or more hours per day. Recall can be used 24-hours a day or during peak hours for pedestrians (in which case push buttons should continue to be provided). **Figure A-3** presents a decision flowchart for when to install pedestrian recall based.	Enhanced	N/A[32]
7-12. No Right Turn on Red  *Image Source: FHWA*	When attempting to turn right on red, motorists must look left to see if the road is clear; motorists often do not look right before turning and may not see pedestrians to their right. Restricting right turns on red can reduce conflicts between vehicles and pedestrians. "Blank out" turn restriction signs (see 7-9 below) are more effective than conventional "No Right Turn on Red" signs. "No Right Turn on Red" signs that specify time-of-day restrictions or "When Pedestrians are Present" are confusing to motorists and are often disregarded.	Enhanced	$1,500/EA[33]

[32] No construction costs associated with measure. Only preparation and implementation costs
[33] Cost includes 2 signs: one on mast arm and other on pole nearby

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-13. Blank-Out Turn Restriction LED Sign  *Image Source: Fehr & Peers*	The ubiquity of conventional turn restriction signs, usually for no right turn on red, contributes to their disregard by motorists. Blank out turn restriction signs activate only when the specified movement is prohibited. The LED sign is also very visible.	Enhanced	$2,000[34]
7-14. Animated Eyes  *Image Source: Fehr & Peers*	Animated eyes pedestrian signals feature eyes that move from side to side when a "Walk" signal is given. The signals remind pedestrians to look for turning vehicles before proceeding into the crosswalk. Research has indicated that animated eyes pedestrian signals reduce conflicts between vehicles and pedestrians. Source: http://www.cers-safety.com/pedestriansignals.pdf	Enhanced	$2,000[35]

[34] Cost includes installation
[35] Cost includes installation

Table A-7: Controlled Intersections – Signal Hardware and Operational Measures			
Treatment	**Description**	**Level**	**Cost**
7-15. Leading Pedestrian Interval (LPI)  *Image Source: Fehr & Peers*	A leading pedestrian interval (LPI) advances the "Walk" signal for a few seconds while through-vehicles continue to receive a red indication. By allowing pedestrians to get a head start into the crosswalk, it can reduce conflicts between pedestrians and turning vehicles. The 2014 California MUTCD recommends that LPIs be at least three seconds in duration. Right-turn on red restrictions may be needed with LPIs are installed in locations with lower pedestrian volumes. **Figure A-5** presents a decision flowchart on when to install LPIs. LPIs in Pleasanton should prohibit right turn on red (RTOR)	Enhanced	No construction costs only preparation and implementation costs
7-16. Push Button for Extended Crossing Time  *Image Source: FHWA*	Some pedestrians may need extra time to safely cross a street. Traffic signals can be retrofitted to provide pedestrians with increased crossing time by extending the duration of a pushbutton press.	Enhanced	$1,000/EA[36]

Source: Fehr & Peers, 2016.

[36] Cost includes pole

A.5.4 Selection Process for Enhancements at Signalized Locations

The following flow charts can be used for assessing the best signalized intersection treatment based on any remaining pedestrian/vehicle conflicts.

- **Figure A-3: Actuated Signals Pedestrian Option Flow Chart:** Use this flow chart at all actuated traffic signals. Chart A recommends different signal timing pedestrian recall treatments based on whether or not the signal is located in Downtown.
- **Figure A-4: Left-Turns on Two-Way Streets Pedestrian Options Flow Chart:** The first part of this flow chart is to determine if the pedestrian to vehicle conflict volume levels meet minimum pedestrian scramble considerations. If so, **Figure A-6** should be used instead. If a pedestrian scramble is not warranted, this flow chart can be used to identify additional enhancements where there are conflicts between pedestrians and left turning vehicles is observed/ apparent from collision data.
- **Figure A-5: Right Turns on Two-Way Streets or Left Turns on One-Way Streets Pedestrian Options Flow Chart:** The first part of this flow chart is to determine if the pedestrian to vehicle conflict volume levels meet minimum pedestrian scramble considerations. If so, Chart D should be used instead. If not, use this flow chart for new and retrofit signal installations, and where a conflict between pedestrians and right turning vehicles (or left turning on one-way streets) is observed/ apparent from collision data.
- **Figure A-6: Pedestrian Scramble Flow Chart:** Use this flow chart to supplement **Figure A-4** and **Figure A-5** if the pedestrian to vehicle conflict volume levels meet minimum pedestrian scramble considerations.

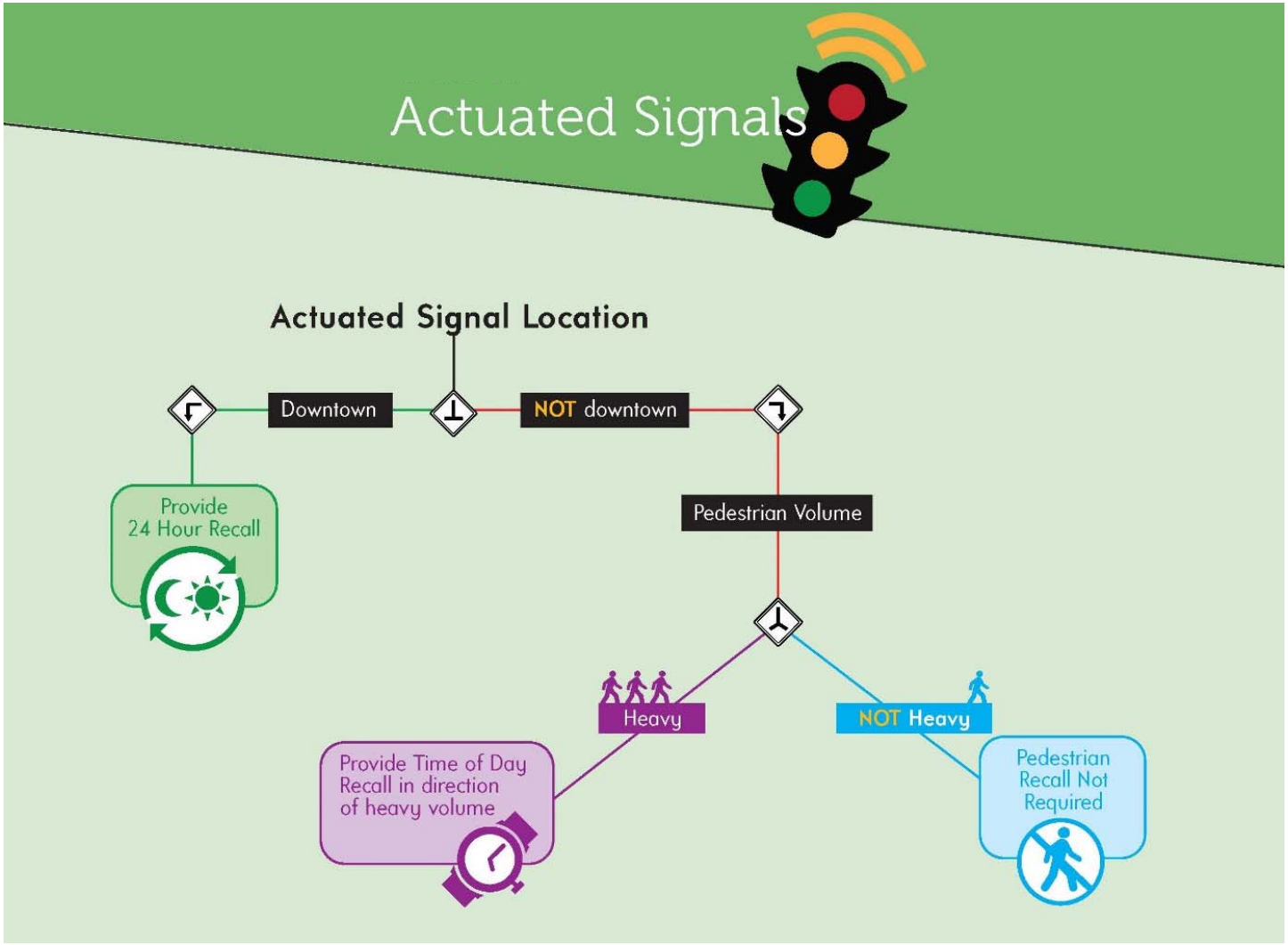


Figure A-3: Actuated Signals Pedestrian Option Flow Chart

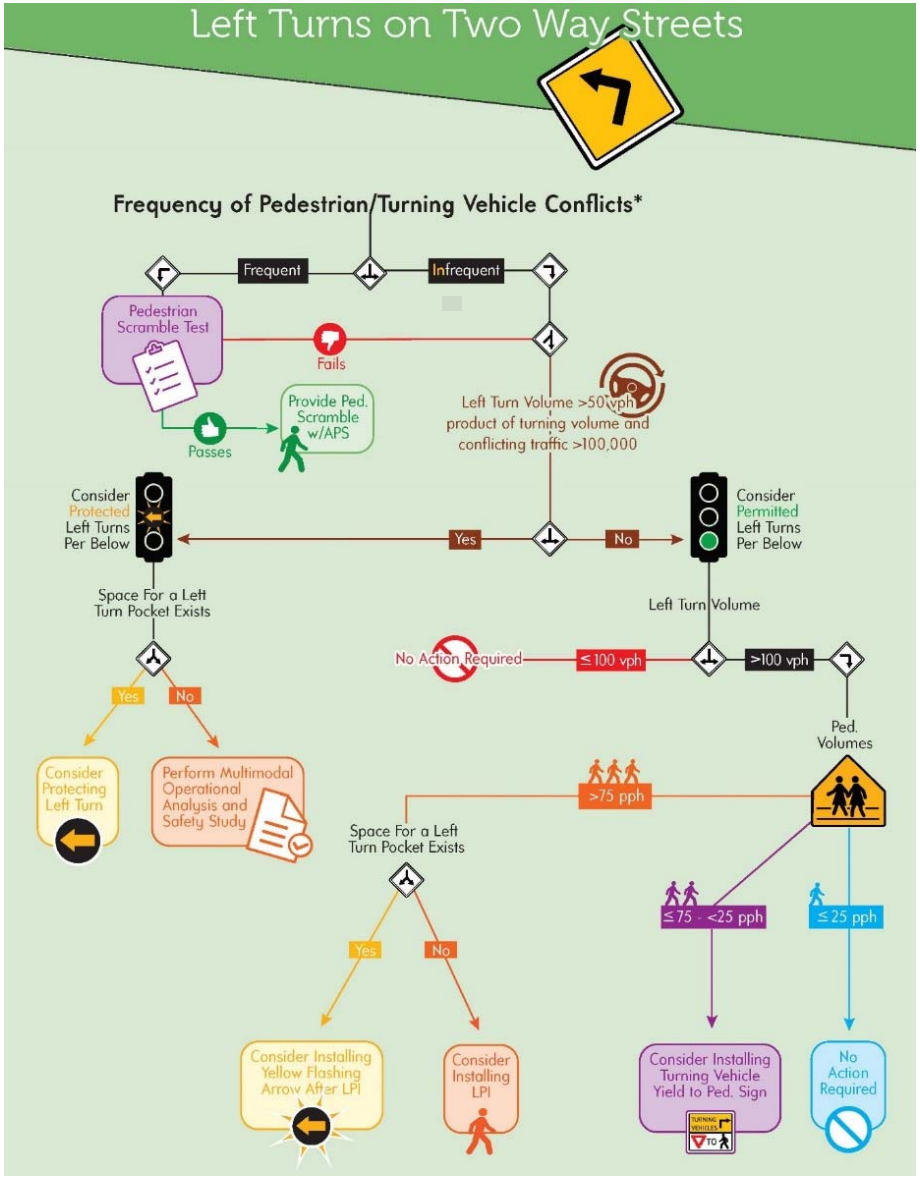


Figure A-4: Left-Turns on Two-Way Streets Pedestrian Options Flow Chart

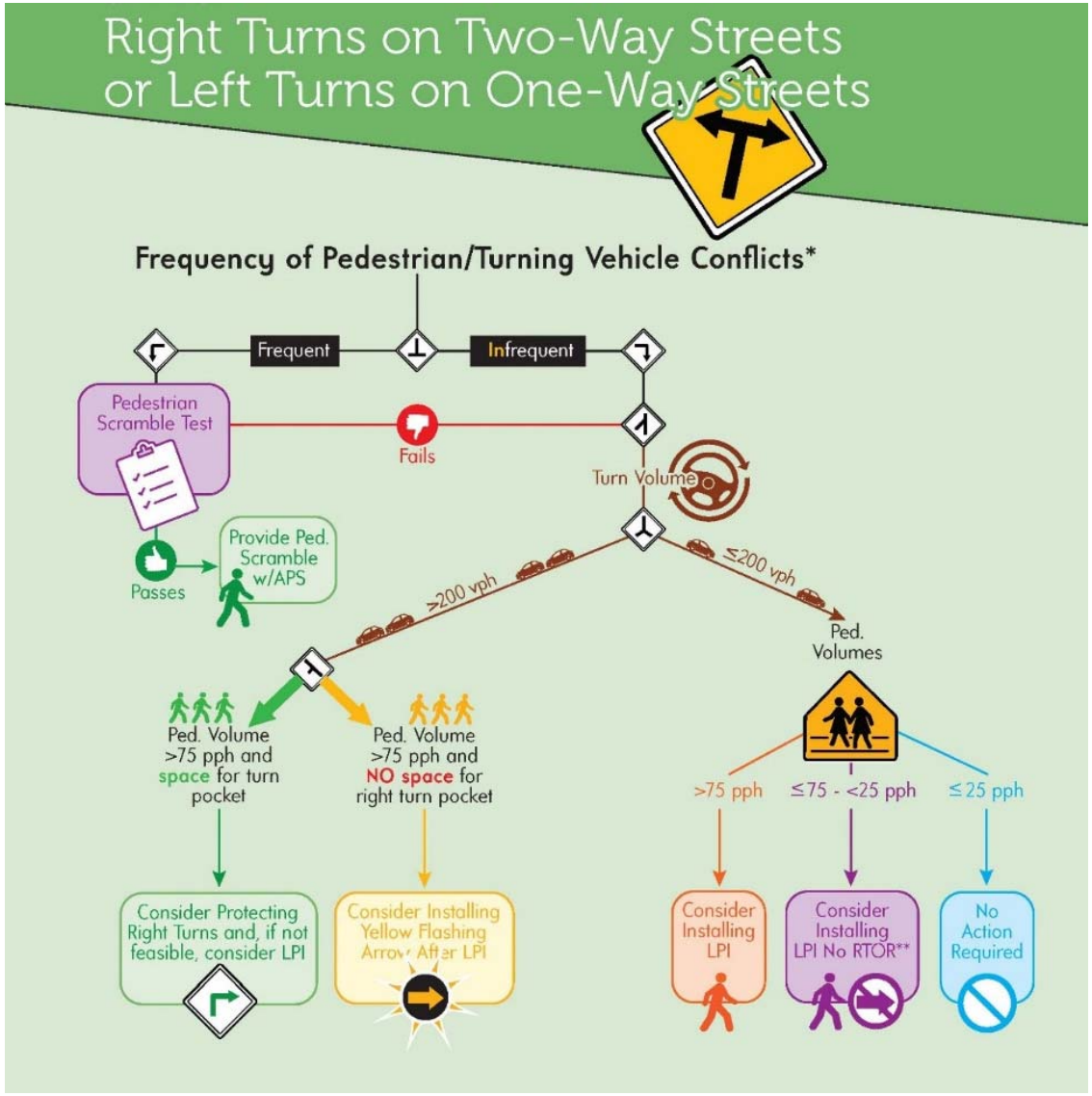


Figure A-5: Right Turns on Two-Way Streets or Left Turns on One-Way Streets Pedestrian Options Flow Chart

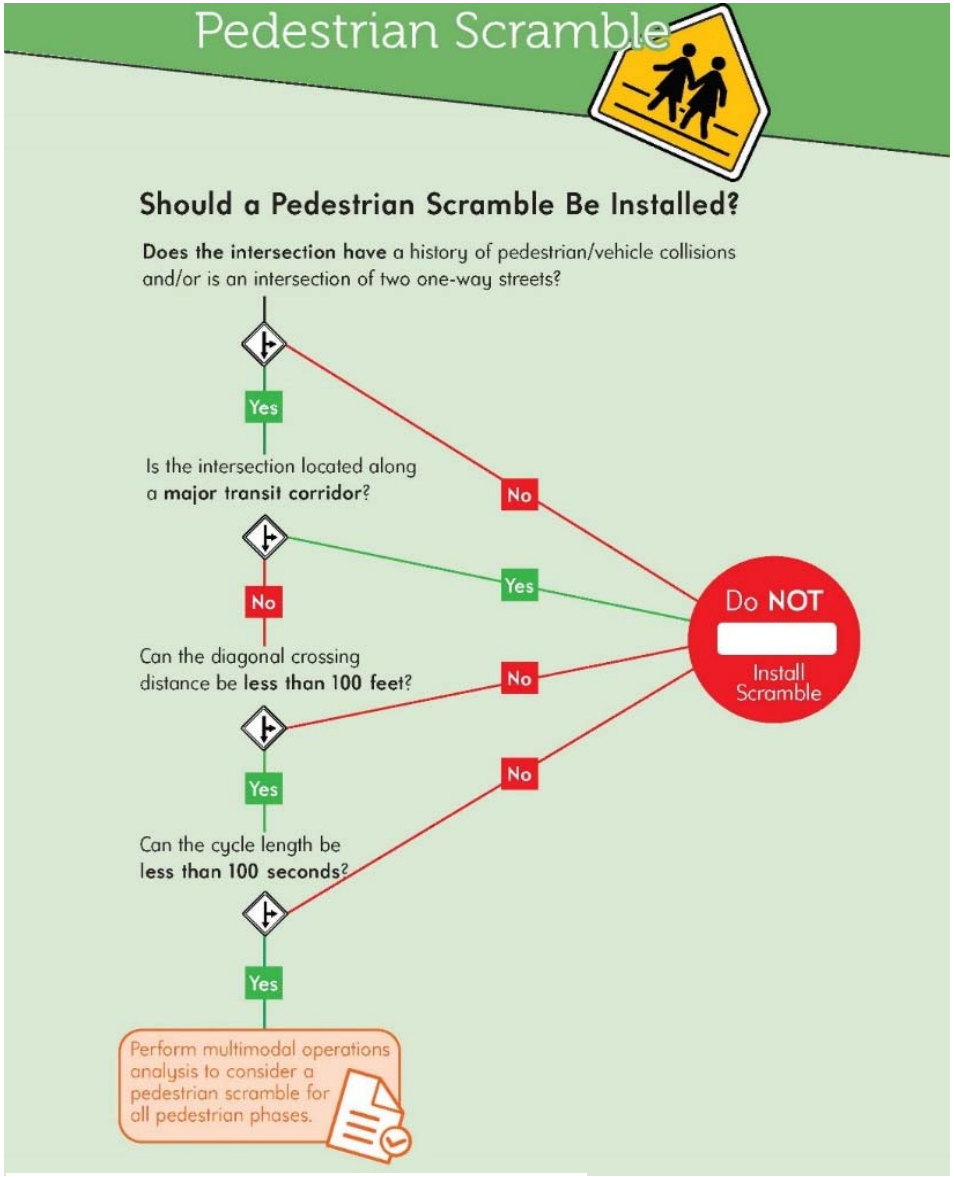


Figure A-6: Pedestrian Scramble Flow Chart

A.6 Sidewalk Zones and Preferred Dimensions

The NACTO Urban Street Guide should be consulted when designing sidewalk, streetscape, and intersection improvements for pedestrians Pleasanton. Preferred treatments include tighten curb radii to reduce speeds at crosswalks, reduce pedestrian crossing distances, and allow for two curb ramps per corner.

Table A-8 presents the standard sidewalk dimensions in Pleasanton.

Table A-8: Preferred Sidewalk Dimensions

Location	Width
Arterial	6 feet
High pedestrian areas: for example near BART, Fairground Complex, Stoneridge Mall, Downtown	8 feet
All Other Locations	5 feet
Typical Sidewalk Dimension in Residential Areas Adjacent to Parking[1]	6′ minimum
Typical Sidewalk Dimension in Commercial Areas Adjacent to Parking[1]	8′ Minimum

1. Typical parking stalls are 9′ x 19′, alternatively a 9′ x 17′ space with a 2′ overhang over planted areas or curbs where applicable

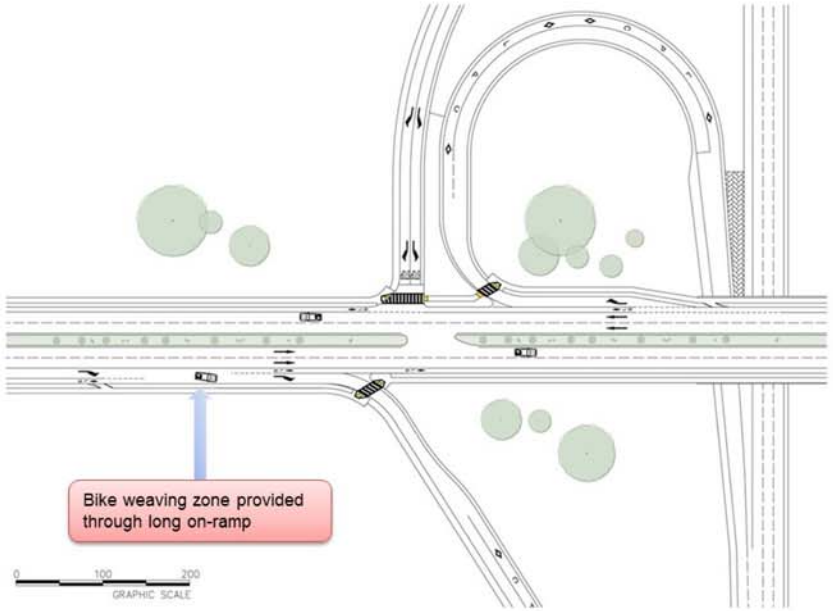
A.7 Pedestrians and Bicyclists at Interchanges

Interchanges are difficult to navigate and stressful for bicyclists and pedestrians due to the high speeds and volume of vehicles. New techniques have been developed for improved interchange design to better accommodate pedestrians and bicyclists with respect to safety and accessibility that prioritize pedestrian and bicyclist accommodation while effectively moving auto traffic. ITE's *Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges* presents preferred concepts for providing safe, comfortable connections for bicyclists and pedestrians

through a variety of highway ramp geometries that are fully compliant with national design standards. The report should be consulted when considering enhancements at interchanges.

A.8 Bicycle Design Guidelines

The bicycle facility designs included in this guide are important for creating an all ages and abilities network in Pleasanton. Creating a network of facilities that are comfortable for users of all ages is a key step in encouraging the interested but concerned bicyclists to ride on the new bicycle routes. These design guidelines supplement the bicycle network recommendations presented in **Chapter 4** of the Plan and inform the development of all new and enhanced bikeway projects in Pleasanton.



Recommended bicycle and pedestrian improvements at an on ramp entered from long, single right lane

This section presents preferred treatments and preferred and minimum dimensions for the bikeways that comprise the network, All Ages and Abilities network, which includes two new facilities for Pleasanton: separated bikeways and bicycle boulevards.

A.8.1 Bicycle Facility Selection

Selection of the most appropriate type of bicycle facility requires consideration of a variety of factors. On the All Ages and Abilities Network, this decision is critical, as the facility must be comfortable enough for bicyclists of a wide range of experience levels. Characteristics of the roadway, such as auto volumes, number of travel lanes, typical auto speeds, and available roadway width, are all important considerations that significantly influence bicyclist safety and comfort. While other engineering and feasibility considerations also influence the type of bicycle facility proposed, **Table A-9**

presents the key bicycle facility selection criteria for the All Ages and Abilities Network. If the bikeway type does not meet these criteria, it likely is not comfortable enough to be considered part of the All Ages and Abilities Network.

Table A-9: All Ages and Abilities Bicycle Facility Select Based on Speed and Number of Travel Lanes

Typical Speed	Bicycle Facility Type	Number of Travel Lanes		
		2	3	4 or more
25MPH or less	Path[1]			
	Separated Bikeway			
	Bicycle Lanes or Buffered Bicycle Lanes[2]	■	■	■
	Bicycle Boulevards[3]	■	■	
	Bicycle Routes	■	■	
26-30 MPH	Path[1]		■	■
	Separated Bikeway		■	■
	Bicycle Lanes or Buffered Bicycle Lanes[2]	■	■	■
	Bicycle Boulevards			
	Bicycle Routes[4]			
31-34 MPH	Path[1]		■	■
	Separated Bikeway		■	■
	Bicycle Lanes or Buffered Bicycle Lanes[2]	■	■	■
	Bicycle Boulevards			
	Bicycle Routes[4]			

Table A-9: All Ages and Abilities Bicycle Facility Select Based on Speed and Number of Travel Lanes				
Typical Speed	**Bicycle Facility Type**	**Number of Travel Lanes**		
		2	**3**	**4 or more**
35 MPH or more	Path[1]			
	Separated Bikeway			
	Bicycle Lanes or Buffered Bicycle Lanes[2]			
	Bicycle Boulevards[3]			
	Bicycle Routes[4]			

Suggested treatment to accommodate people of all ages and abilities

1. According to the MassDOT Separated Bike Lane Planning & Design Guide, paths could be considered instead of dedicated bicycle facilities (e.g. separated bikeway) only where walking and biking demand is low and expected to remain low.
2. Assumes bicycle lane blockages are rare and that bicycle lanes are a minimum of six feet. If parking is present, assumes bicycle lane width and parking width is greater or equal to 14 feet. When there are four or more travel lanes, a median must be present.
3. Per NACTO Urban Bikeway Guide, 1,500 vehicles per day (VPD) is preferred with a maximum of 3,000 VPD. Above 3,000 VPD, bicycle lanes, separated bikeway, or volume-control traffic calming measures should be considered.
4. If the street is classified as residential or does not have a marked centerline, speed can be up to or equal to 30MPH.

Note: Additional roadway characteristics and engineering study should always be considered, particularly for separated bikeways. Facilities should be designed to preferred dimensions and best practices per the PBMP Design Guidelines. Guidance is based on Level of Traffic Stress criteria.

A.8.2 Separated Bikeways

This section defines the preferred cross-section and materials for separated bikeways in Pleasanton. The NACTO *Urban Bikeway Guide, 2nd Edition,* FHWA *Protected Bicycle Lane Planning and Design Guide*, and *MassDOT Separated Bike Lane Planning and Design Guide* should also be consulted when planning for and designing separated bikeways in Pleasanton.

A.8.2.1 Preferred Design

A Class IV Separated Bikeway is an on-street bicycle facility that is physically separated from automobile traffic and also distinct from the sidewalk. These facilities offer a higher level of safety and comfort than bicycle lanes. While all Class IV facilities separate bicyclists from motor vehicle travel lanes, there are many different designs for these facilities. They may be at street level ("in roadway"), sidewalk level, or intermediate level. They are always separated from auto traffic by a raised element, such as plastic delineators, median islands, on-street parking, and/or landscaping. Pavement material, streetscape elements, or landscape may separate the facility from the sidewalk. Typically separated bikeways are located with the direction of traffic, one in each direction. Directional or "one-way" separated bikeways are usually preferred. However, two-way separated bikeways, where both separated bikeways are located side-by-side, can be appropriate depending on the street context. For example, two-way separated bikeways may be preferred to provide trail connections or along a canal, park, or similarly long frontage with limited or no access across it, as it can reduce or remove conflicts with other vehicles or pedestrians.

The minimum width of the buffer is dependent on the type of buffer used. In Pleasanton, the preferred design of the separated bikeway is typically a striped buffer with flexible delineator posts. As additional funding becomes available, these can be replaced with concrete islands or landscape islands to provide high-quality streetscapes.

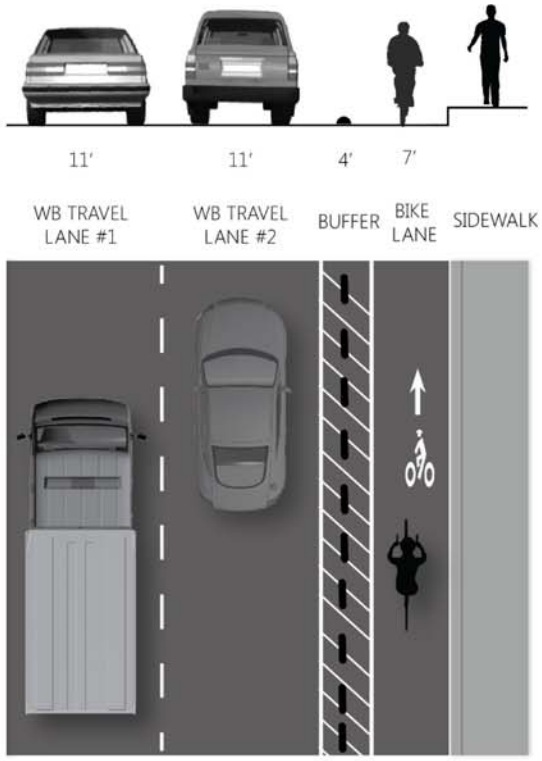


Figure A-7 Preferred Separated Bikeways Dimensions

The preferred separated bikeway design has a three to four feet striped buffer, with vertical barriers, and a 7 foot bicycle lane. The minimum striped buffer width is two feet with a five foot bicycle lane. A minimum of four feet of rideable surface must be clear of gutter pans. Posts are recommended to be placed consistently every 20 feet, on center and require low initial capital cost at $8 per linear foot. As grant funding or developer funding is available, raised concrete buffers with decorative stamped pavement can be phased in with available funding. The separated bikeway must remain wide enough to allow for traditional street sweepers to routinely maintain the area.

A.8.2.2 Preferred Barrier Separation: Interim Design

The preferred interim design is a "paint and plastic" that will allow Pleasanton to build out its separated bikeway network sooner. Near-term design elements may include visually attractive free-standing landscape planter boxes. As larger funding sources become available, high-quality improvements, such as median islands and, where feasible, landscape islands, can replace the striped buffer and plastic posts.

"Armadillo" or "zebra" traffic separators

Rubber curb traffic separator

Flexible Delineator Posts

A.8.2.3 Preferred Barrier Separation: Long-Term or Grant-Funded Design

Reconfiguring streetscapes to use raised medians, on-street parking, curbs, bollards, planters, or other features to separate the bikeway is more expensive and labor-intensive. As such, these design options are considered for long-term or grant-funded implementation.

Bikeway separated by landscaping and raised concrete curb

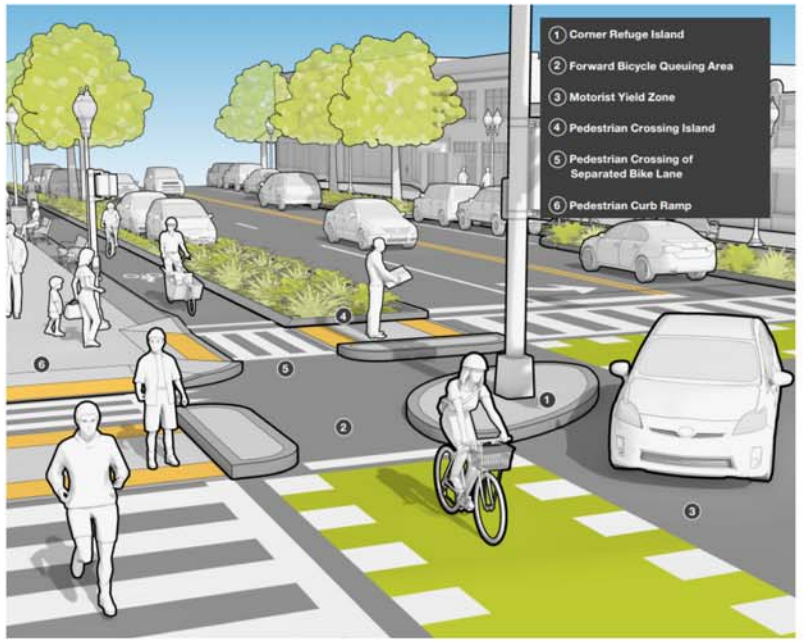
A.8.2.4 Intersection Control

Separated bikeways require special design consideration at intersections to ensure that the facility is safe and comfortable for bicyclists. Signalized intersections require additional design treatment to ensure the turning automobiles do not conflict with bicycle traffic, as the separated bikeway places bicyclists to the right of turning vehicles. Preferred solutions include protected intersections or protected right and left turns to remove the right-hook conflict between bicyclists and autos. Separated bicycle lanes should continue up to an intersection to maximize protection for bicyclists and to truly be considered an "All Ages and Abilities" facility. A variety of design solutions are available at both signalized and unsignalized locations. For more information see, the FHWA *Separated Bike Lane Planning and Design Guide*, MassDOT *Separated Bike Lane Planning and Design Guide*, and the NACTO *Urban Bikeway Guide*, 2nd edition.

A.8.3 Protected Intersections

Protected intersections give bicyclists a head start at intersections, improve sight lines between drivers and bicyclists, and reduce pedestrian exposures to automobiles. They also facilitate left-turns for bicyclists. Protected intersections continue the separated bikeway all the way to the intersection and include additional islands that provide queuing space for turning bicyclists and refuge islands for pedestrians. They create predictability of movement, making them comfortable and intuitive.

For more information see, the FHWA *Separated Bike Lane Planning and Design Guide* and MassDOT *Separated Bike Lane Planning and Design Guide*.



Source: MassDOT Separated Bikeway Guide

A.8.4 Multi-Use Paths

The AASHTO Guide for the Development of Bicyclists, 4th Edition and the Bay Trail Design Guidelines (draft, 2016) should be consulted when planning for and designing trails in Pleasanton. The following section provide general information and focuses on trail crossing design guidance.

A.8.4.1 Typical Design

Class I Paths or Multi-Use Paths provide a completely separate right-of-way for bicyclists and pedestrians. In most cases, paths provide the most comfortable option for people walking and bicycling as paths are separated from the roadway and typically have few intersections with autos. Where paths intersect the roadway network, trail crossings are critical. An unsafe trail crossing can diminish the value to the trail itself and has the highest collision rate. For these reasons, it is important to minimize vehicle and pedestrian cross-flow at crossings to improve the safety of path users. Paths that intersect many driveways and roadways have a high collision potential for cyclists, because drivers exiting driveways or traveling on intersecting roads often do not look for cyclists approaching in the opposite direction of traffic. Thus the city should consider warning signs and pavement markings wherever driveways and side-streets must cross Class I Paths, such as the intersection of the Bay Trail and Morton Avenue. The preferred dimension for multi-use paths is 10 to 14 feet wide. The minimum dimension for a path to be considered multi-use is 8 feet wide with shoulders.

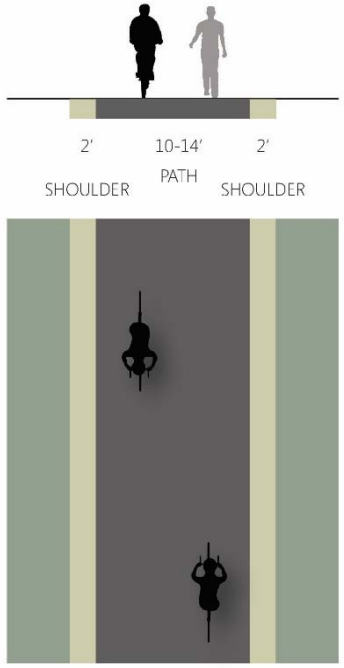


Figure A-8 Preferred Path Dimensions

A.8.4.2 Preferred Crossing Design

Providing a consistent trail crossing design in Pleasanton will provide a consistent message to drivers, pedestrians, and bicyclists alike. The preferred crossing design consists of high-visibility ladder striping or "triple-four" striping, which consists of three 4' segments, two dashed lines on the outside, with a clear space in the center to direct pedestrian traffic. Where the volume of trail users is high, the crosswalk should be widened. A bicyclist and pedestrian pavement legends with arrows may be placed within the triple-four striping to indicate to bicyclists and pedestrians that they share the space, indicate the preferred directional path of travel ,and reinforce the validity of bicyclists riding through the crossing. The preferred trail crossing

design also includes wide curb ramps oriented parallel to the crosswalk, to orient those with mobility impairments as well as bicyclists directly into the marked crossing. Trail crossing enhancements, such as signals and lighted enhancements, should be considered in accordance with the Citywide Crosswalk Policy contained in **Section A.2**.

Trail Crossing Signage

Modified triple-four striping with bicycle legends

A.8.5 Buffered and Standard Bicycle Lanes

The NACTO *Urban Bikeway Guide*, 2nd Edition should be consulted whenever designing bicycle lanes or buffered bicycle lanes in Pleasanton. The following section provides general guidance, definition of terms, and preferred dimensions and practices for Pleasanton.

A.8.5.1 Typical Design

A Class II bicycle lane is typically a six foot dedicated area for bicyclists designated by striping, signage, and pavement markings for the use of bicyclists. Bicycle lanes improve bicyclist safety by reducing interactions between cyclists and traffic, and by facilitating predictable behavior. Unlike Class IV Separated Bikeways, bicycle lanes have no physical barrier between bicyclists and motorized traffic. Bicycle lanes and buffered bicycle lanes are not necessarily All Ages and Abilities bikeways. They can be when speeds are 30MPH or less and on multi-lane roadway separated with a median. On wider and higher speed roadways, separated bikeways are needed to provide All Ages and Abilities bicycle facilities.

A striped buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane distinguishes buffered bicycle lanes. Buffered bicycle lanes feature painted buffers of typically 2 feet or more in width, marked with two solid white lines and interior diagonal cross hatching. The buffers do not include a raised separation, but that can be phased in with special consideration at intersections to provide separated bikeways. The recommended striped buffer width is 3 feet next to a 6 foot bicycle lane. The minimum striped buffer width is 1.5 feet next to a 5 foot bicycle lane.

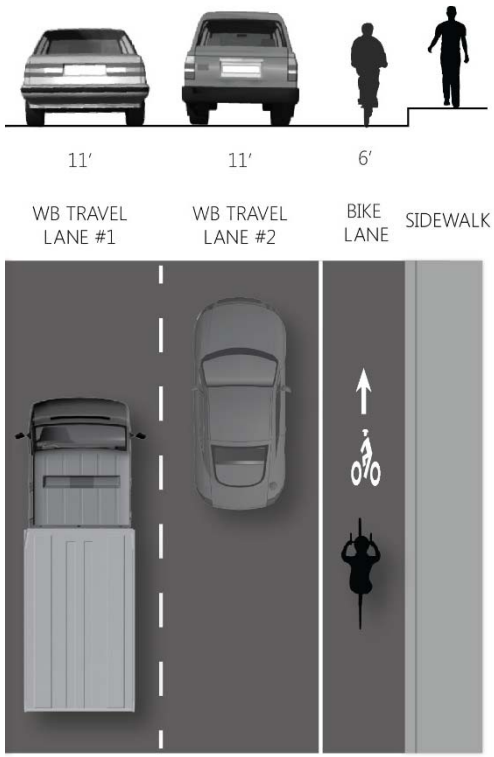


Figure A-9 Bicycle Lanes Preferred Width

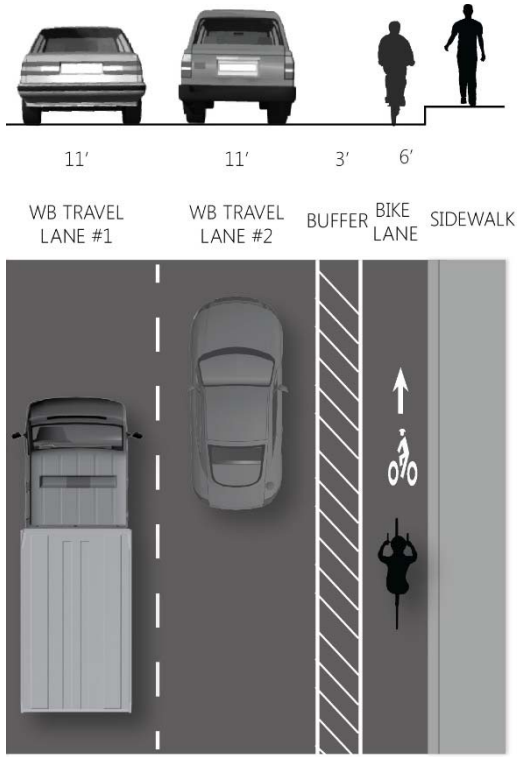


Figure A-10 Buffered Bicycle Lanes Preferred Width

A.8.5.2 Typical Design Elements

In addition to those described above, green "skip" striping should be applied at conflict zones and major driveways where cars will frequently turn or merge across the bicycle lane. This includes slip lanes, right-turn pockets, and large commercial driveways with heavy turnover. Where right-turn lanes or pockets are added, such as at signalized intersections or at freeway ramps, the bicycle lane should remain adjacent to the curb until approximately 200 feet or less before the intersection, at which point, the bicycle lane should transition with colorized green markings to between the through and right travel lanes. Bicycle lanes should always be striped up to the stop bar/crosswalk and should not drop to allow for turn pockets to be added.

Buffered bicycle lane with wayfinding signage

Green skip-striping at intersection where cars may merge across or into the bicycle lane

A.8.5.3 Design Issues to Consider

The minimum width of a bicycle lane should be five feet against a curb or adjacent to a parking lane, with six feet as the preferred standard with. The NACTO Urban Bikeway Guide recommends a minimum four-foot riding surface against a longitudinal seam, and a three-foot minimum rideable surface against a gutter is required per the CA MUTCD. Poor pavement quality and inconsistent striping or disappearing lanes are also design issues of concern for bicycle lanes and other on-street facilities.

Bicycle lane painted over gutter pan

Poor pavement quality ahead of a bicycle lane

A.8.6 Bicycle Boulevards

The NACTO *Urban Bikeway Guide*, 2nd Edition should be consulted whenever planning for or designing bicycle boulevards in Pleasanton. This section provides general guidance on bicycle boulevards and discusses opportunities to enhance the city's existing Traffic Calming Program to accommodate bicycle boulevards.

A.8.6.1 Typical Design

Bicycle boulevards are low-volume, low-speed streets that are shared between bicyclists and autos. These are comfortable for bicyclists due to the low number of interactions with automobile traffic. Typically, these are located as alternative routes to higher speed collector and arterial roadways. Bicycle boulevards have sharrows, wayfinding signage, enhanced facilities at crossings of major arterials, and traffic calming measures where appropriate. Bicycle boulevards are intended for local/residential streets with low speeds and volumes. Maintaining low volumes and speeds on these streets is critical, as many

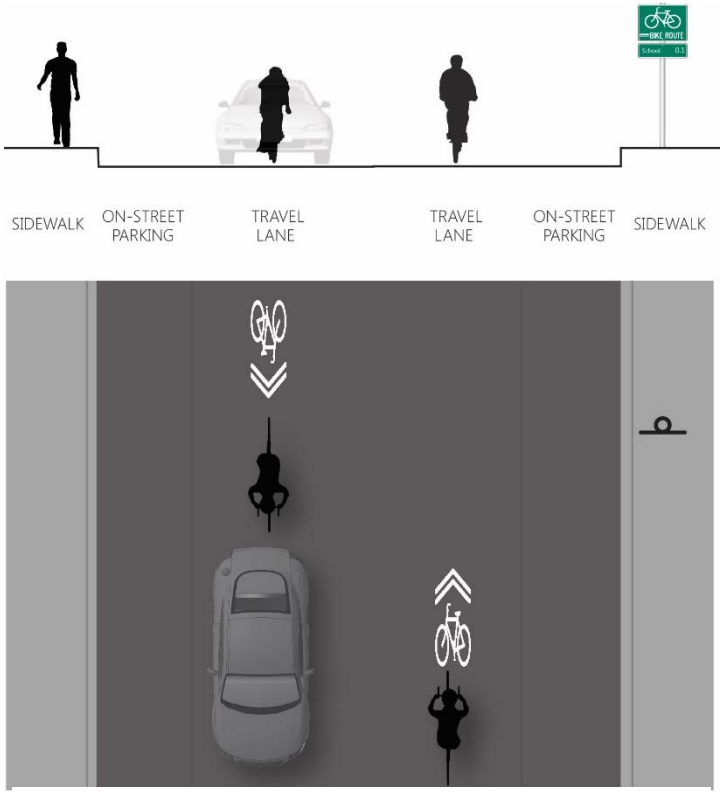


Figure A-11 Bicycle Boulevard Typical Design

of these routes serve children, who have less experience riding, as bicycle routes to school. Bicycle boulevards should have the right-of-way at intersections with residential or local streets, and stop signs should be minimized along bicycle boulevards.

A.8.6.2 Standard Bicycle Boulevard Elements

In addition to the elements described above, wayfinding is an important element of bicycle boulevards. This is because in taking advantage of quieter streets, bicycle boulevards often involve some turns. Wayfinding confirms that bicyclists are on the preferred path and provide information about how to get to nearby destinations that may be a few blocks away on the major street. Wayfinding signs also help brand the city's bicycle network, and inform cyclists by identifying intersecting bikeways and travel times to nearby destinations.

Bicycle route wayfinding with destinations and distances

Enhanced crossing of arterial via median refuge traffic diverter

A.8.6.3 Potential Traffic Calming Enhancements

Consideration of enhancing bicycle boulevard streets should be based on roadway volumes and speeds. To be an All Ages and Abilities bikeway, speeds and volumes should be low. The NACTO *Urban Bikeway Guide* establishes volume and speed thresholds for bicycle boulevards. These treatments benefit bicyclists while also helping to create "quiet" streets for residents and other road users.

Speed hump

Chicane

Traffic circle on bicycle boulevard

A.8.6.4 Potential Intersection Treatments

Where bicycle boulevards intersect major roadways, crossing can be difficult, depending on the type of traffic control provided. At most locations along Pleasanton's proposed bicycle boulevard network, traffic signals are already in place, which make crossing easy and comfortable. At intersections with minor streets or where the bicycle boulevard turns, it may be appropriate to consider neighborhood traffic circles or to give traffic control priority to the bicycle boulevard (assuming this does not increase speed of auto traffic or induce cut-through traffic). Consideration should be given to the overall spacing of stop signs along the route to avoid bicyclists having to stop every few blocks.

A.8.7 Bicycle Routes

Bicycle routes may be appropriate where no dedicated bicycle facility can be provided or on low-volume roadways. When implemented, they should include sharrow markings to indicate that it is a bicycle route and the preferred bicycle positioning in the roadway. The use of Bicyclists May Use Full Lane signs are recommended.

A.8.8 Other Intersection Treatments

Other treatments that can be implemented at intersections include bicycle boxes and two stage turn boxes. Two-stage turn boxes facilitate bicyclist left turns, allowing them to cross the intersection in two stages, making an "L" through the intersection. First the bicyclist proceeds straight with traffic, and a green box provides them a space to queue ahead of opposing traffic that has a red signal. When the cross-street receives a green signal, the bicyclists proceeds straight with traffic. Bike boxes are similar to advanced stop bars and provide a designated space for bicyclists to queue ahead of traffic. This discourages right-hook collisions between drivers and bicyclists, and can also provide a space for bicyclists to make two stage turns. Both should be implemented with no right turn on red restrictions to avoid motorists encroaching into the bike space.

Bicycle box

Two stage turn boxes

A.8.9 Bicycle Parking

Bicycle parking fixtures should be purchased, installed, and sited per the design guidelines in the APBP *Bicycle Parking Guidelines*, 2nd Edition.

Appendix B. Alameda CTC Checklist

Table B-1 Alameda CTC Bicycle Master Plan Guidelines Addressed in this Plan	
Requirement	**Chapter**
Introduction which summarizes plan's purpose or vision and goals.	Chapter 2
A description of how the plan has been coordinated with the Countywide Transportation Plan and its component modal plans.	Chapter 1
Designate and map an "all ages and abilities" bikeway network.	Chapter 4
A map and description of major barrier/gap closure projects (bridges, freeway crossings, major arterial crossings, etc.).	Chapter 4
A description of which design guidelines the jurisdiction uses for bikeway geometry, striping, and traffic control devices.	Appendix A
A description of which design guidelines the jurisdiction uses for the development of bicycle parking and wayfinding.	Chapter 6
Infrastructure cost estimates developed for individual projects or network segments (planning-level cost estimates acceptable).	Chapter 7
Estimates of maintenance (including repaving of bikeway and trail network) and staffing costs over life of plan.	Chapter 7
Description of ongoing data collection plans such as counts, facility inventory, etc.	Chapter 6
The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.	Chapter 3
The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	Chapter 3
A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.	Chapter 3, Figure 3-1
A map and description of existing and proposed bicycle transportation facilities.	Chapter 3, Chapter 4 Figure 3-6 Figure 4-2 Figure 4-3

Table B-1 Alameda CTC Bicycle Master Plan Guidelines Addressed in this Plan	
Requirement	**Chapter**
A map and description of existing and proposed end-of-trip bicycle parking facilities.	Chapter 6, Figure 6-1
A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	Chapter 3
A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.	Chapter 3, Chapter 6 Figure 6-1
A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.	Chapter 6
A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, street sweeping, maintenance of traffic control devices including striping and other pavement markings, and lighting.	Chapter 6
A description of bicycle and pedestrian safety, education, and encouragement programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the law impacting bicycle and pedestrian safety, and the resulting effect on accidents involving bicyclists and pedestrians.	Chapter 6
A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.	Chapter 1
A description of how the active transportation plan has been coordinated with neighboring jurisdictions, including school districts within the plan area, and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	Chapter 1
A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	Chapter 4, Chapter 5, Chapter 6, Chapter 7
A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.	Chapter 7
A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	Chapters 7

Appendix C. Prioritized Project List and Scoring

TABLE C-1 PLEASANTON PBMP NEAR-TERM AND VISION PRIORITIZED PROJECT LIST

Project Title	Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Connectivity	Demand	Safety	Feasibility	Safe Routes to School	Project Score	Grouping Score	Mileage	Estimated Costs*
Arroyo de Laguna and Iron Horse Trails Connection Feasibility Study	Arroyo Del Valle Trail	Division Street/Arroyo Del Valle Parkway Intersection	Shadow Cliffs Regional Park	Bicycle, Pedestrian, Safe Routes to School	Study feasibility of paving trail and providing connections to the biking and walking networks. Study opportunity for bridge between Arroyo Del Valle Parkway and the Downtown roadway network	Implement improvements and crossing identified in Study	4	3	0	2	2	11	11.00		$0
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Greenwood Road	Intersection with Valley Avenue		Bicycle, Pedestrian, Safe Routes to School	Reduce curb radii at Valley. Complete with Greenwood bicycle boulevard treatment.	-	3	3	2	2	3	13	9.60		$18,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Greenwood Road	Mohr Avenue	Harvest Road	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment; Install wayfinding to destinations and routes such as Downtown, Alameda Drive/Northway Road bicycle boulevard, BART, Arroyo Mocho, and Iron Horse Trail.	-	3	3	2	2	3	13	9.60	0.9	$322,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Greenwood Road	Intersection with Canary Drive		Bicycle, Pedestrian, Safe Routes to School	Consider traffic circle at Canary Drive. Complete with Greenwood bicycle boulevard treatment.	-	3	3	0	2	3	11	9.60		$22,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Greenwood Road	Intersection with Harvest Road		Bicycle, Pedestrian, Safe Routes to School	Evaluate need to modify traffic control, as none exists today. Evaluate traffic circle and addition of yield/stop control to facilitate bicyclist turning movements between Greenwood and Harvest Roads. If traffic control is added, evaluate converting the all-way stop at Ridgewood Road to side-street stop only to reduce the need for bikes to stop on the bicycle boulevard.	-	3	3	0	2	3	11	9.60		$22,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Greenwood Road	Intersection with Alameda Drive		Bicycle, Pedestrian, Safe Routes to School	Reduce crossing distances of school crosswalks at Alameda Drive through curb extensions and reduced curb radii	-	2	3	0	2	3	10	9.60		$168,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Greenwood Road	Intersection with Mohr Avenue		Bicycle, Pedestrian, Safe Routes to School	Consider installing traffic circle or all-way stop control at Mohr. Complete with Greenwood bicycle boulevard treatment.	-	3	3	0	2	1	9	9.60		$22,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Harvest Circle	Intersection with Arroyo Del Valle Trail		Bicycle, Pedestrian, Safe Routes to School	Install raised crosswalk across Harvest Circle aligning to daylight the trail and provide access	-	3	2	0	1	3	9	9.60		$31,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Harvest Circle and Harvest Road	Greenwood Road	Arroyo Del Valle Trail	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment. Complete with Greenwood bicycle boulevard treatment.	-	2	3	0	2	3	10	9.60	0.3	$107,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Harvest Circle and Harvest Road	Intersection with Del Valle Parkway		Bicycle, Pedestrian, Safe Routes to School	Reduce crossing distances at Del Valle Parkway intersection with bulb-outs and median refuge	-	3	3	0	1	3	10	9.60		$121,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Laramie Gate Circle and Iron Horse Trail			Pedestrian	Improve trail Wayfinding (Arroyo Mocho and Iron Horse Trails) and widen curb ramp	Connect to Iron Horse Trail	2	2	0	2	0	6	9.60		$15,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Mohr Avenue	Intersection with Iron Horse Trail		Pedestrian	Restripe existing trail crossing as high-visibility trail crossing. Complete with Mohr Avenue bicycle boulevard.	-	2	1	1	2	0	6	9.60		$4,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Mohr Avenue	Santa Rita Road	Kolln Street	Bicycle, Pedestrian, Safe Routes to School	Stripe bicycle lanes between Santa Rita Road and Kolln Street. Complete with Mohr Avenue bicycle boulevard.	-	2	2	1	2	0	7	9.60	0.2	$88,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Mohr Avenue	Kolln Street	Iron Horse Trail	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment OR remove existing on-street parking and stripe buffered bicycle lanes (to Kamp Drive); install median refuge at IHT Crossing. Complete with Mohr Avenue bicycle boulevard.	-	3	3	0	2	3	11	9.60	0.2	$62,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Mohr Avenue	Sutter Gate Avenue Gate to Arroyo Mocho Trail	Santa Rita Road	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment; improve gate/access at Sutter Gate for bicyclists including those with trailers	-	3	3	1	2	1	10	9.60	0.7	$261,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Ross Gate Way/Laramie Gate Circle	Mohr Avenue	Arroyo Mocho Trail Connection	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment to Arroyo Mocho Trail connector entrance. Install wide trail curb ramp onto sidewalk at opening in wall with wayfinding signage	-	3	2	0	2	1	8	9.60	0.2	$82,000
Arroyo Mocho Trail to Downtown Bicycle Boulevards	Sutter Gate Avenue and Arroyo Mocho Trail			Pedestrian	Improve trail Wayfinding (Arroyo Mocho and Iron Horse Trails) and widen curb ramp	-	3	3	0	2	1	9	9.60		$15,000
Bernal Avenue	Bernal Avenue	I-680 Interchange	Stanley Avenue	Bicycle	Buffered bicycle lanes. Transition bicycle lanes from curbside to between through and right lane no further than 150' back from the intersection	Separated bikeways with raised islands	4	2	3	3	4	16	12.00	3.7	$907,000
Bernal Avenue	Bernal Avenue	Intersection with Main Street		Pedestrian	Install traffic signal	-	2	3	3	2	3	13	12.00		$450,000
Bernal Avenue	Bernal Avenue	Intersection with Kottinger Drive		Pedestrian	Enhance or modify slip lanes	-	2	3	3	2	2	12	12.00		$25,000
Bernal Avenue	Bernal Avenue	Intersection with Kottinger Community Park Path		Bicycle, Pedestrian	Enhance crosswalk with RRFBs; Widen sidewalk on east side to improve path connection	-	2	3	3	1	2	11	12.00		$194,000
Bernal Avenue	Tawny Drive	Norton Way	Touriga Drive	Bicycle		Bicycle boulevard treatment	2	2	1	3	0	8	12.00	0.1	$36,000
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Hopyard Road	Ithaca Way	Bicycle	Separated bikeways with lane width reduction; gateway treatments at BART entrance	-	4	3	4	2	0	13	9.60	1.6	$685,000
Centennial Trail to Iron Horse Trail via BART	Ithaca Way	Owens Drive	Iron Horse Trail	Bicycle, Pedestrian, Safe Routes to Transit	Bicycle boulevard treatment, wayfinding to Iron Horse Trail	-	2	2	2	2	1	9	9.60	0.1	$36,000
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Intersection with W Las Positas Boulevard/Ithaca Way		Bicycle, Pedestrian, Safe Routes to Transit	Install cut through to provide access between Owens Drive/W Las Positas Boulevard and the Iron Horse Trail. Complete with Ithaca Way improvements. Coordinate with W. Las Positas Boulevard separated bikeway project	-	2	1	3	2	1	9	9.60		$15,000
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Intersection with Iron Horse Trail		Bicycle, Pedestrian, Safe Routes to Transit	Improve trail wayfinding and widen curb ramp	-	2	2	3	2	0	9	9.60		$15,000
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Intersection with Willow Road		Bicycle, Pedestrian, Safe Routes to Transit	-	Reduce curb radius and remove acceleration lane. Install protected intersection at Owens Drive/Willow Road.	2	3	4	1	0	10	9.60		$65,000
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Between Owens Court and Willow Road		Bicycle, Pedestrian, Safe Routes to Transit	Mark crosswalk with signal or PHB	-	1	3	4	2	0	10	9.60		$148,000
Centennial Trail to Iron Horse Trail via BART	Johnson Drive	Centennial Trail	Owens Drive	Bicycle, Safe Routes to Transit	Stripe buffered bicycle lanes	Separated bikeways	3	2	1	2	0	8	9.60	0.8	$196,000
Centennial Trail to Iron Horse Trail via BART	Johnson Drive	Centennial Trail		Bicycle, Pedestrian, Safe Routes to Transit	Install new bicycle ramp to sidewalk at the western Club Sport/Double Tree driveway, mark high visibility crosswalk to new ramp on west side of driveway intersection; install wayfinding to Centennial trail	-	4	1	1	2	0	8	9.60		$19,000

TABLE C-1 PLEASANTON PBMP NEAR-TERM AND VISION PRIORITIZED PROJECT LIST

Project Title	Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Connectivity	Demand	Safety	Feasibility	Safe Routes to School	Project Score	Grouping Score	Mileage	Estimated Costs*
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Intersection with Hacienda Drive		Bicycle, Pedestrian, Safe Routes to Transit	Enhance or modify slip lanes	-	2	3	3	2	0	10	9.60		$25,000
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Intersection with W Las Positas Boulevard		Bicycle, Pedestrian, Safe Routes to Transit	Install crosswalks across W Last Positas Boulevard and modify signal to allow pedestrian crossing. Complete with Ithaca Way improvements.	-	3	2	3	2	1	11	9.60		$3,000
Centennial Trail to Iron Horse Trail via BART	Owens Drive	Johnson Drive	Hopyard Road	Bicycle	Separated bikeways with road diet reduction. If a road diet is infeasible, stripe sharrows and sign as bicycle route. Consider widening sidewalk to provide directional paths on either side of this short segment if lane reduction is infeasible.	Separated bikeways or shared-use path	2	2	3	2	0	9	9.60	0.2	$85,000
Downtown Access	Angela Street	Pleasanton Avenue	Bernal Avenue	Bicycle, Pedestrian, Safe Routes to Transit	Bicycle boulevard treatment	-	3	3	2	3	1	12	11.30	1.2	$430,000
Downtown Access	Angela Street	Intersection with Pleasanton Avenue		Bicycle, Pedestrian, Safe Routes to Transit	Evaluate traffic circle or all-way stop control to facilitate bicycle turning movements and pedestrian access to the ACE Station and Downtown	-	2	3	2	3	1	11	11.30		$22,000
Downtown Access	Old Bernal Avenue	Bernal Avenue	Bernal Court	Bicycle, Pedestrian, Safe Routes to Transit	Stripe bicycle lanes. Close 500' sidewalk gap on west side. Compete with Peters Avenue bicycle boulevard treatment.	-	4	3	3	2	4	16	11.30	0.1	$198,000
Downtown Access	Old Bernal Avenue	Bernal Court	Main Street	Bicycle, Pedestrian, Safe Routes to Transit	Stripe sharrows and sign as bicycle route. Compete with Peters Avenue bicycle boulevard treatment.	-	2	2	2	3	4	13	11.30	0.4	$59,000
Downtown Access	Peters Avenue	St. John Street	Old Bernal Avenue	Bicycle, Pedestrian, Safe Routes to Transit	Bicycle boulevard treatment. Complete in tandem with Peters Avenue crosswalk improvements.	-	2	3	0	3	3	11	11.30	0.4	$143,000
Downtown Access	Peters Avenue	Intersection with Old Bernal Avenue		Bicycle, Pedestrian, Safe Routes to Transit	Narrow intersection with curb extension/pocket park, mark high-visibility crosswalks	-	2	3	0	2	3	10	11.30		$119,000
Downtown Access	Peters Avenue	Intersection with St. Marys Street		Bicycle, Pedestrian, Safe Routes to Transit	Mark new high-visibility crosswalk and install curb extensions	-	2	3	3	2	0	10	11.30		$237,000
Downtown Access	Peters Avenue	Intersection with W Angela Street		Bicycle, Pedestrian, Safe Routes to Transit	Mark new high-visibility crosswalk	-	2	3	0	3	2	10	11.30		$4,000
Downtown Access	Peters Avenue	Intersection with Rose Avenue		Bicycle, Pedestrian, Safe Routes to Transit	Mark new high-visibility crosswalk	-	2	3	0	3	1	9	11.30		$14,000
Downtown Access	Southern Pacific Railroad/Alameda County Transportation Corridor	Castlewood Drive	Bernal Avenue	Bicycle, Pedestrian, Safe Routes to Transit	Trail Feasibility Study to convert old railroad right-of-way to shared-use path	Install 10' concrete pedestrian/bike path with 6' decomposed granite multi-use path. Install intersection and trail crossing improvements. Provides route avoiding the Sunol Boulevard crossing of I-680.	4	3	3	2	3	15	11.30	1.0	$1,847,000
Downtown Access	St John Street	Peters Avenue	Main Street	Bicycle, Pedestrian, Safe Routes to Transit	Bicycle boulevard treatment. Complete in tandem with Peters Avenue bicycle boulevard treatment.	-	2	2	0	3	0	7	11.30	0.1	$36,000
Downtown Access Vision Projects	First Street	Vineyard Avenue	Bernal Avenue	Bicycle, Pedestrian	-	Install buffered bicycle lanes or separated bikeway through lane reduction, conversion of two way left turn lane, or parking removal	3	3	4	2	4	16	8.50	0.8	$338,000
Downtown Access Vision Projects	Second Street	Spring Street/ Kottinger Drive	Abbie Street	Bicycle	-	Bicycle boulevard treatment	2	3	1	2	1	9	8.50	0.4	$143,000
Dublin/Pleasanton BART to Downtown	Division Street	Del Valle Parkway	St. Mary Street	Bicycle	Stripe sharrows and install bicycle route signage; install wayfinding to Downtown; work with neighbors to not place trash cans in roadway shoulder. Consider Rose Avenue/Fair Street as an alternative bicycle boulevard route to Downtown.	-	2	2	2	2	0	8	11.70	0.4	$27,000
Dublin/Pleasanton BART to Downtown	Hopyard Road	W Las Positas Boulevard	Black Avenue	Bicycle, Pedestrian	Convert existing bicycle lanes to separated bikeways	Enhance uncontrolled crosswalks across Willow with high visibility striping and median refuges	4	3	4	2	3	16	11.70	1.1	$465,000
Dublin/Pleasanton BART to Downtown	Hopyard Road	Black Avenue	Del Valle Parkway	Bicycle	Improve existing shared-use path on west side of street. Remove bollards, install with wide curb ramps, wayfinding and improved crossings. Spot improve pavement quality.	-	2	3	2	2	2	11	11.70	0.5	$112,000
Dublin/Pleasanton BART to Downtown	Hopyard Road	Intersection with Hansen Drive		Pedestrian, Safe Routes to School	Mark high-visibility crosswalk with median refuge and utilize Appendix A Crosswalk Policy to determine if volumes warrant RRFBs. Provide cut through to Hopyard Road frontage on the east side.	-	2	2	4	3	0	11	11.70		$73,000
Dublin/Pleasanton BART to Downtown	Hopyard Road	Intersection with Black Avenue		Bicycle, Pedestrian, Safe Routes to School	Enhance or modify slip lanes at stop controlled crosswalks, high visibility striping, installing median refuges, transition cycle track from curbside to between through and right lane no further than 150' back from the intersection.	-	2	3	3	2	1	11	11.70		$45,000
Dublin/Pleasanton BART to Downtown	Hopyard Road	Intersection with Del Valle Parkway/Division Street		Pedestrian	Modify westbound approach. Enhance or modify slip lane; modify intersection to allow right turns at the intersection. Install curb extension on southeast corner of intersection. Rebuild northeast corner and refuge on east crosswalk to improve accessibility for pedestrians and bicyclists. Improve connection to the Arroyo Valle Trail	-	2	3	3	2	1	11	11.70		$94,000
Dublin/Pleasanton BART to Downtown	Hopyard Road	Intersection with Valley Avenue		Pedestrian, Bicycle, Safe Routes to School	Modify or enhance slip lanes or install upgrades to allow for improved bike/pedestrian circulation. Improve connection to the Sports Park, Tennis Park, and the Pleasanton Canal Trail, including wayfinding.	-	2	3	3	3	0	11	11.70		$113,000
Dublin/Pleasanton BART to Downtown	Hopyard Road	Intersection with Golden Road		Pedestrian	Restripe existing crosswalk as high visibility crosswalk	-	2	2	3	2	0	9	11.70		$4,000
Dublin/Pleasanton BART to Downtown	St. Mary Street	Division Street	Main Street	Bicycle	Stripe sharrows and sign as bicycle route. Complete with Division Street bicycle route.	-	2	2	2	2	0	8	11.70	0.4	$27,000

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Project Title	Location	Cross Street 1	Cross Street 2	Project Type	Near-Term Proposal	Long-Term Proposal	Connectivity	Demand	Safety	Feasibility	Safe Routes to School	Project Score	Grouping Score	Mileage	Estimated Costs*
Dublin/Pleasanton BART to Downtown	W Las Positas Road	Hopyard Road	Willow Road	Bicycle	Convert existing bicycle lanes to separated bikeways, including intersection improvements. See West Las Positas project.	-	4	3	4	3	4	18	11.70	0.4	$180,000
Dublin/Pleasanton BART to Downtown	Willow Road	Owens Drive	W Las Positas Boulevard	Bicycle, Safe Routes to Transit	Consider designating east sidewalk as a path and provide wayfinding directing less-experienced bicyclists to use the path. Maintain existing bicycle lanes.	Remove a travel lane in each direction, and add dedicated left-turn pockets for autos at each intersection; use remaining space to add raised buffer to existing bicycle lanes to create separated bikeways	4	3	4	2	3	16	11.70	1.2	$101,000
Dublin/Pleasanton BART to Downtown	Willow Road	Intersection with Gibraltar Drive		Pedestrian, Safe Routes to School	Reduce curb radius	-	2	2	2	2	4	12	11.70		$27,000
Dublin/Pleasanton BART to Downtown	Willow Road	Intersection with Inglewood Drive		Pedestrian, Safe Routes to School	Install new high-visibility crosswalk with RRFB or PHB and median refuge	-	2	3	0	2	3	10	11.70		$58,000
Dublin/Pleasanton BART to Downtown	Willow Road	Intersection with W Las Positas Boulevard		Bicycle, Pedestrian, Safe Routes to School	Reduce curb radii and install improvements to support bicyclists turning onto/off-of Willow	-	2	3	1	2	4	12	11.70		$27,000
East Side Bicycle Boulevards	Dennis Drive	Intersection with Carrisa Court		Pedestrian, Safe Routes to School	Restripe existing crosswalk as high-visibility	-	3	3	0	2	4	12	10.10		$4,000
East Side Bicycle Boulevards	Martin Avenue	At Amaral Park		Bicycle, Pedestrian, Safe Routes to School	Install wayfinding between Martin Avenue Path, Amaral Park, Mohr Elementary School, and Arroyo Mocho Trail	-	2	3	0	2	3	10	10.10	0.1	$8,000
East Side Bicycle Boulevards	Guzman Parkway	Amaral Park/Dennis Drive	Arroyo Mocho Trail /Stoneridge Drive	Bicycle, Pedestrian, Safe Routes to School	Install separated bikeways between Amaral Park/Dennis Drive and Stoneridge Drive/Arroyo Mocho Trail;	-	3	3	0	1	3	10	10.10	0.1	$46,000
East Side Bicycle Boulevards	Kolln Street	Mohr Avenue	School Street	Bicycle, Safe Routes to School	Bicycle boulevard treatment. Add wayfinding to Downtown (southbound) and access to BART, Arroyo Mocho Trail, and Iron Horse Trail (northbound).	-	3	2	1	2	4	12	10.10	1.0	$358,000
East Side Bicycle Boulevards	Kolln Street	Intersection with Valley Avenue		Bicycle, Safe Routes to School	Add bicycle cut through with signal detection at Valley Avenue. Complete with Kolln Street bicycle boulevard treatments.	-	2	2	0	2	3	9	10.10		$45,000
East Side Bicycle Boulevards	School Street	Kolln Street	Santa Rita Road	Bicycle, Safe Routes to School	Bicycle boulevard treatment with wayfinding to Amador Valley High School . Use sharrows and wayfinding signs to identify the preferred route between the School Street intersection and the signal at Santa Rita Road, which are offset.	-	2	2	0	2	4	10	10.10	0.3	$107,000
East Side Bicycle Boulevards	Mohr Avenue	Iron Horse Trail	Martin Avenue	Bicycle, Safe Routes to School	Extend existing Class I path on north side of the street; Stripe trail crossing at all cross-streets: Kamp Drive, Courtney Avenue, and Martin Avenue; Install wayfinding between Iron Horse Trail and Martin Avenue path	-	3	3	0	2	0	8	10.10	0.5	$934,000
East-West Access Vision Projects	Spring Street/ Kottinger Drive/ Concord Street	Main Street	Hearst Drive	Bicycle	-	Provide bicycle boulevard treatment	3	2	1	1	1	8	8.50	1.6	$572,000
East-West Access Vision Projects	Neal Street	Main Street	Mirador Drive	Bicycle	-	Provide bicycle boulevard treatment	3	2	1	1	1	8	8.50	0.7	$250,000
East-West Access Vision Projects	Valley Avenue	Santa Rita Road	Stanley Boulevard	Bicycle	-	Close bicycle lane gaps	2	2	4	2	2	12	8.50	1.1	$235,000
East-West Access Vision Projects	Arroyo Mocho Trail	Hopyard Road	City Limit near Busch Road	Bicycle, Pedestrian	Install 10' paved path on south bank with compacted soil / decomposed granite side path for pedestrian/runner/equestrian use. Provides connection to future trails to the east in Livermore.	-	2	2	0	1	2	7	8.50	2.8	$6,080,000
East-West Access Vision Projects	Arroyo Mocho Trail - Fairlands connector	W. Las Positas	Arroyo Mocho trail	Bicycle, Pedestrian	-	In coordination with any future major redevelopment of the Walmart Neighborhood Market shopping center site at the southeast corner of West Las Positas and Santa Rita Road, provide a multi-use trail connecting from Fairlands Elementary School to the Arroyo Mocho trail. Consider new bicycle/pedestrian bridge for this connection.	2	3	0	1	2	8	8.50	0.2	$369,000
East-West Access Vision Projects	Dublin Canyon Road	Pleasanton Marriot Driveway	Canyon Meadow Circle	Bicycle	-	Improve/widen shoulder where necessary. Stripe buffered bike lanes	2	2	0	2	0	6	8.50	1.0	$213,000
East-West Access Vision Projects	Arroyo Mocho Trail Continuation	Stoneridge Drive	El Charro Road	Bicycle, Pedestrian, Safe Routes to School	Continue paving of Arroyo Mocho Trail to El Charro Road	-	3	3	0	2	0	8	8.50	0.6	$1,049,000
East-West Access Vision Projects	Pleasanton Canal Trail	Arroyo de la Laguna	Hopyard Road	Bicycle, Pedestrian, Safe Routes to School	-	North bank: 10' paved bikeway, Compacted soil / decomposed granite side path for pedestrian/runner/equestrian use, Provides connection Tennis & Community Park and Pleasanton Sports & Recreation Park; Improve bike/pedestrian signage to/from access points Haleakala Road, Tennis & Community Park, Hopyard Road	3	2	0	0	0	5	8.50	0.7	$1,293,000
East-West Access Vision Projects	Pleasanton Canal Trail via Pleasanton Sports & Recreation Park	Hopyard Road	Omega Circle	Bicycle, Pedestrian, Safe Routes to School	Improve bike/pedestrian signage to/from Arroyo Mocho Trail, Pleasanton Canal Trail, Woodthrush Park Neighborhood	-	2	1	0	1	0	4	8.50		$84,000
Foothill Road Complete Streets	Foothill Road	I-580	Castlewood Drive	Bicycle	Prepare bikeway feasibility study focused on providing continuous, protected bikeways. Coordinate with County to address portions outside of Pleasanton.	Separated bikeways	4	3	3	3	4	17	13.00	4.9	$12,907,000
Foothill Road Complete Streets	Foothill Road	Intersection with Highland Oaks Drive		Pedestrian, Safe Routes to School	Assess demand to enhance existing crosswalk with ladder striping and PHB per Appendix A Crosswalk Policy.	-	2	3	0	3	3	11	13.00		$151,000
Foothill Road Complete Streets	Foothill Road	Lydiksen Elementary School Safe Routes to School Projects		Pedestrian, Safe Routes to School, Bicycle	Crossings, bike rack, and access improvements on Highland Oaks Drive and Driftwood Way. Coordinate with Muirwood Drive and West Las Positas Boulevard Improvements	-	2	3	0	3	4	12	13.00		$99,000
Foothill Road Complete Streets	Foothill Road	Intersection with Oak Creek Drive		Pedestrian, Safe Routes to School	Enhance existing crosswalk with ladder striping and RRFB	-	2	3	0	3	4	12	13.00		$155,000

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I-580 and I-680 Overcrossing Improvements	All I-580 and I-680 Overcrossings	-	-	Bicycle, Pedestrian, Safe Routes to Transit	Prepare bicycle and pedestrian improvements feasibility study	Implement Feasibility Study recommendations	3	3	3	3	1	13	13.00		$150,000
Iron Horse Trail	Intersection with the Iron Horse Trail (south segment)			Pedestrian, Bicycle, Safe Routes to Transit	Install new trail crossing with ladder striping and PHB or signal	-	4	1	3	3	0	11	8.50		$148,000
Iron Horse Trail	Dublin/Pleasanton BART Station Area and Parking Lot			Pedestrian, Bicycle, Safe Routes to Transit	Implement the wayfinding, trail enhancements, and bicycle and pedestrian BART and Iron Horse Trail access improvements in the draft Iron Horse Trail Feasibility Study. Requires coordination with East Bay Regional Park District, BART, and the City of Dublin	-	4	3	0	2	0	9	8.50	0.2	$1,000,000
Iron Horse Trail	Iron Horse Trail Extension	Busch Road/Iron Horse Trail Terminus	Stanley Boulevard/Iron Horse Trail Path	Pedestrian, Bicycle, Safe Routes to Transit	Study the gap closure of the Iron Horse Trail between Busch Road and Stanley Avenue, including finalizing preferred alignment, cost estimates, and phasing/funding strategy	Install 10' paved bikeway with compacted soil / decomposed granite side path for pedestrian/runner/equestrian use from Busch Road to Stanley Boulevard, including at Shadow Cliffs Regional Park Entrance. Provide intersection / trail crossing improvements at Busch Road and Valley/Stanley intersection, and railroad crossing. Coordinate with EBRPD and railroad.	3	3	3	2	0	11	8.50	0.5	$923,000
Iron Horse Trail	Intersections with the Iron Horse Trail and Arroyo Mocho Trail			Pedestrian, Bicycle, Safe Routes to Transit	Prepare trail feasibility study to improve the connection between the two Iron Horse Trail segments and the Arroyo Mocho Trail, considering grade-separated crossing(s).	Provide continuous connections between the two segments of Iron Horse Trail and the Arroyo Mocho Trail	2	2	3	2	0	9	8.50		$250,000
North-South Access Vision Projects	Adams Way/Mirador Drive	Vineyard Avenue	Bernal Avenue	Bicycle	-	Provide bicycle boulevard treatment	3	2	0	1	4	10	8.50	0.8	$286,000
North-South Access Vision Projects	Hopyard Road	I-580 Ramps	W Las Positas Boulevard	Bicycle	-	Install buffered bicycle lanes or separated bikeways	3	3	4	2	2	14	8.50	0.6	$254,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Arroyo de la Laguna Trail - South Extension	Arroyo Del Valle	Near south end of Laguna Creek Lane	Bicycle, Pedestrian	-	Install 10' paved bikeway with compacted soil/decomposed granite side path for pedestrian/runner use. Install intersection improvements at Bernal Avenue. Install new access points at Lylewood Drive, Bernal Avenue, and along Laguna Creek Lane.	3	2	2	1	0	8	8.50	1.8	$3,909,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Arroyo de la Laguna Trail - South Extension	Intersection with Arroyo Del Valle		Bicycle, Pedestrian	-	Study and install a new bicycle/pedestrian bridge.	2	3	0	1	1	7	8.50	0.1	$500,000
North-South Access Vision Projects	Chabot Canal	Owens Drive / Dublin/Pleasanton BART Station	W. Las Positas Boulevard / Arroyo Mocho Trail	Pedestrian, Bicycle, Safe Routes to Transit	-	Install 10' paved path with compacted soil / decomposed granite side path for pedestrian/runner use. Install intersection Improvements at West Las Positas, Inglewood, Stoneridge, Gibraltar, Owens. Requires bridge at Arroyo Mocho. Provides access between Arroyo Mocho Trail and Dublin/Pleasanton BART, and Hart Middle School. Will require multiple mid-block crossings.	3	3	2	1	0	9	8.50	1.4	$3,040,000
North-South Access Vision Projects	Tassajara Canal	Rosewood Drive / Interstate 580	W. Las Positas Boulevard / Arroyo Mocho Trail	Bicycle, Pedestrian	-	Install 10' paved bikeway with compacted soil / decomposed granite side path for pedestrian/runner use. Install intersection improvements at Rosewood, Owens, Stoneridge, West Las Positas. Requires bridge at Arroyo Mocho. Study potential for crossing at I-580 to connect with Tassajara Creek Trail (EBRPD, regional trail) in Dublin. (Constraints, multiple mid-block crossings, current adjacent land uses are commercial office / industrial parks which turn backs to canal with no access points.)	3	3	2	2	0	10	8.50	1.3	$2,823,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Val Vista Community Park Trail	Johnson Drive / Stoneridge Drive	Johnson Drive North / Interstate 580	Bicycle, Pedestrian	-	Install 10' paved path on south and east banks with compacted soil / decomposed granite side path for pedestrian/runner use, Intersection / trail crossing at Hopyard Road	3	3	2	2	1	11	8.50	1.0	$1,847,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Arroyo de la Laguna	Arroyo Mocho	Arroyo Del Valle	Bicycle, Pedestrian	-	Install 10' paved path on east bank with compacted soil / decomposed granite side path for pedestrian/runner/equestrian use	3	3	0	2	0	8	8.50	1.1	$2,389,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Pleasanton Canal Bridge Improvements	Alamo Canal Trail	Pleasanton Canal	Bicycle, Pedestrian	Change bridge railings to meet Caltrans standards, 55" height. (Coordinate with Zone 7)	-	2	2	0	2	0	6	8.50		$44,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: W. Las Positas / Arroyo de la Laguna Trail Access Point	Arroyo de la Laguna	W. Las Positas	Bicycle, Pedestrian	Access gate and pathway from north side of W. Las Positas Road.	-	2	2	0	2	0	6	8.50	0.1	$115,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Val Vista Bridge Improvements	Val Vista Community Park Trail & Arroyo de la Laguna	--	Bicycle, Pedestrian	-	Update bridge railings to meet Caltrans standards. Coordinate with Zone 7.	2	2	0	1	0	5	8.50		$44,000
North-South Access Vision Projects	Centennial/Arroyo de Laguna Corridor: Val Vista Community Park Trail	Arroyo de la Laguna	Johnson Drive / Stoneridge Drive	Bicycle, Pedestrian	-	Install 10' paved path on east bank with compacted soil / decomposed granite side path for pedestrian/runner/equestrian use	2	2	0	1	0	5	8.50	0.4	$739,000

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Santa Rita Road	Santa Rita Road/Main Street	I-580	Del Valle Parkway	Bicycle	• Close gaps in existing bicycle facility with bicycle lane or sharrows where dedicated spaces cannot be provided. Stripe bicycle lanes between Old Santa Rita Road and Stoneridge Drive and Valley Avenue and Francisco Street NB. Stripe sharrows centered on the travel lane or remove parking where there is not enough space for a bicycle lane between Sutter Gate Avenue and Mohr Avenue and Mohr Avenue to Valley Avenue NB; . • At intersections, transition bicycle lanes from curbside to between through and right lane no further than 150' back from the intersection. • Install a bicycle boulevard on the Santa Rita Frontage Road between Francisco Street and Stanley Avenue; direct bicyclists traveling on Santa Rita Road north of Stanley Avenue and south of Francisco Street to use bicycle boulevard through wayfinding • Install wayfinding encouraging use of sidewalk between the end of the Santa Rita Road frontage road near Jensen Street to Stanley Boulevard. • Prepare complete streets study to provide continuous, protected bicycle facilities and pedestrian safety and comfort improvements, including parking inventory and utilization to understand where parking can be removed; closing the existing gap in the Iron Horse Trail in the most direct way; improving the I-580 interchange biking and walking improvements; improving pedestrian environment and crosswalks; and addressing safe routes to school considerations. Coordinate with the Iron Horse Trail improvements project	Separated Bikeway; streetscape and crosswalk improvements	4	3	4	3	3	17	13.90	3.3	$1,396,000
Santa Rita Road	Santa Rita Road/Main Street	South end of Santa Rita frontage Road	Stanley Boulevard	Bicycle, Pedestrian, Safe Routes to School	-	Realign existing path on east side of Main Street and south side of the railroad. Add bike/pedestrian crossing gate at the railroad crossing from Santa Rita frontage road southbound.	2	3	3	3	4	15	13.90	0.1	$188,000
Santa Rita Road	Santa Rita Road	Intersection with W Las Positas Boulevard		Bicycle, Pedestrian, Safe Routes to School	Enhance or modify slip lanes	-	2	2	3	3	3	13	13.90		$4,000
Santa Rita Road	Intersection with Francisco Street			Pedestrian, Bicycle, Safe Routes to School	Enhance existing crosswalk with PHB or signal	-	1	2	3	3	2	11	13.90		$144,000
Santa Rita Road	Intersection with Valley Avenue			Pedestrian, Bicycle, Safe Routes to School	Enhance or modify slip lanes to improved pedestrian safety and support bicyclists turning onto/off of Santa Rita Road.	-	2	2	3	2	2	11	13.90		$25,000
Santa Rita Road	Santa Rita Road	Alisal Elementary		Bicycle, Pedestrian, Safe Routes to School	Provide crosswalk, bicycle rack, accessibility, and pathway improvements near Santa Rita Road frontage road and Nevis Street.	-	1	2	3	3	4	13	13.90		$283,000
Santa Rita Road	Del Valle Parkway	I-580		Bicycle	Close bicycle lane gaps wherever feasible, which may include some segments of bicycle route with sharrows in the near-term. Include frontage road as a bicycle boulevard, and provide bike crossings to access both ends of the frontage road.	Install Separated Bikeway	4	3	3	3	4	17	13.90		$369,000
Stanley Boulevard	Stanley Boulevard	Valley Avenue	First Street	Bicycle	Separated bikeway and transition bicycle lanes from curbside to between through and right lane no further than 150' back from the intersection	-	3	3	4	3	0	13	12.00	0.6	$243,000
Stanley Boulevard	Valley Avenue/Bernal Avenue	Intersection with Stanley Boulevard		Bicycle, Pedestrian, Safe Routes to Transit	• Near-term improvements include: install trail wayfinding and shared path markings; enhance or modify slip lane; install upgrades to allow for improved bicycle/pedestrian circulation; stripe crosswalks as trail crossings and stripe green bicycle lanes on approaches and through the intersection; Install two stage bicycle turn boxes and install cyclist detection from sidewalk/paths • Medium-term improvement is to construct a protected intersection	Close 200' sidewalk gap on east side of Valley Avenue and install east crosswalk at Valley Avenue/Stanley Boulevard; Remove NB slip lane or install upgrades to allow for improved bike/pedestrian circulation; Construct a protected intersection and widen underpass to provide protected bike lanes on Valley Avenue	2	2	4	3	0	11	12.00		$154,000
Stoneridge Drive	Stoneridge Drive	Foothill Road	Santa Rita Road	Bicycle	Medium-term improvement is to construct a protected intersection	Separated bikeways with raised islands	4	2	3	2	1	12	12.00	3.1	$760,000
Sunol Boulevard	Sunol Boulevard	Intersection with Bernal Avenue/First Street		Bicycle, Pedestrian, Safe Routes to Transit, Safe Routes to School	Enhance or modify slip lane , stripe bicycle lane and right-turn pocket on southbound approach; continue northbound Bicycle lane to the intersection; stripe bicycle boxes and/or two stage left turns to support bicycle turning movement	Separated bikeway on northbound approach	2	2	0	3	4	11	9.30	0.10	$61,000
Sunol Boulevard	Sunol Boulevard	Sycamore Road	Bernal Avenue	Bicycle, Safe Routes to Transit	Buffered bicycle lanes	Separated bikeways	3	2	1	3	0	9	9.30	0.9	$221,000
Sunol Boulevard	Sunol Boulevard	Castlewood Drive	Sycamore Road	Bicycle, Pedestrian, Safe Routes to Transit	Close gap with buffered Class II Bicycle Lanes; restripe existing bicycle lanes as buffered bicycle lanes; transition bicycle lane from curbside to between through and right lane no further than 150' back from the NB and SB On-Ramps	Install sidewalk/path on the north and south sides of Sunol Boulevard for us by bicyclists and stripe high-visibility crosswalks across all on-ramps. Convert buffered bicycle lanes to separated bikeways with raised islands through interchange. Remove both high-speed slip lanes westbound and bring right-turns into the intersection. Coordinate with recommendations of I-580/I-680 Improvements Feasibility Study	3	2	0	3	0	8	9.30	0.6	$147,000
Valley Avenue Alternatives	Alameda Drive	Harvest Park Middle School Path/Greenwood Road	Amador Valley Community Park Path	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment with wayfinding to trails, parks, and schools. Complete in tandem with Northway Road and Walnut Grove Park/Harvest Park improvements.	-	2	3	0	2	3	10	10.50	0.2	$72,000

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Valley Avenue Alternatives	Alameda Drive	Intersection with Greenwood Road		Bicycle, Pedestrian, Safe Routes to School	Part of Central Pleasanton Bicycle Boulevard project: improve connection between Harvest Park Path and Alameda Drive; reduce crossing distances of school crosswalks through curb extensions and reduced curb radii	-	2	3	0	2	3	10	10.50		$120,000
Valley Avenue Alternatives	Amador Valley Community Park Path	Alameda Drive	Santa Rita Road	Bicycle, Pedestrian, Safe Routes to School	Install wayfinding to trails, parks, and schools and Kolln Street bicycle boulevard and widen path	-	2	3	1	2	4	12	10.50	0.3	$169,000
Valley Avenue Alternatives	Amador Valley Community Park Path	Intersection at Francisco Street/Santa Rita Road		Bicycle, Pedestrian, Safe Routes to School	Widen sidewalk on west side of Santa Rita Road to improve connection between the Park and the proposed PHB/signal at Francisco Street.	-	2	3	1	1	2	9	10.50		$20,000
Valley Avenue Alternatives	Arroyo Mocho Trail Access Improvements from Parkside Drive	Hopyard Road	Omega Circle	Pedestrian	Work with community and EBRPD to provide access at Marilyn Court, Anastacia Court, and/or Glenda Court	-	0	2	0	2	3	7	10.50		$15,000
Valley Avenue Alternatives	Black Avenue	Amador Valley Community Park	Santa Rita Road	Bicycle, Pedestrian, Safe Routes to School	-	Widen sidewalk on northside of Black Avenue to create Class I Path next to Amador Valley Community Park	4	3	0	2	3	12	10.50		$211,000
Valley Avenue Alternatives	Black Avenue	Intersection with Loganberry Way		Bicycle, Pedestrian, Safe Routes to School	Evaluate installation of new marked crosswalk on east side of intersection per the Appendix A Crosswalk Policy.	-	4	3	0	2	3	12	10.50		$13,000
Valley Avenue Alternatives	Canary Drive - Raven Road - Crestline Road - Woodthrush Road - Skylark Way - Existing Path on south side of the Sports Park	Greenwood Road	Hopyard Road	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment with wayfinding to trails, parks, and schools	-	3	3	0	2	3	11	10.50	1.0	$358,000
Valley Avenue Alternatives	Northway Road	Valley Avenue	Walnut Grove Park Path	Bicycle, Pedestrian, Safe Routes to School	Bicycle boulevard treatment with wayfinding to trails, parks, and schools. Complete in tandem with Alameda Drive and Walnut Grove Park/Harvest Park improvements.	-	2	3	1	2	3	11	10.50	0.1	$36,000
Valley Avenue Alternatives	Northway Road (at both West and East intersections)	Intersection with Valley Avenue		Bicycle, Pedestrian, Safe Routes to School	Enhance or modify slip lanes for pedestrian and bicycle boulevard safety at both intersections with Northway Road/Valley Avenue.	-	2	3	0	3	4	12	10.50		$25,000
Valley Avenue Alternatives	Omega Circle	Parkside Drive	Arroyo Mocho Trail Connection	Bicycle, Pedestrian, Safe Routes to School, Safe Routes to Transit	Install bicycle/pedestrian cut through and wayfinding at end of Parkside Drive connecting to the Sports Park and at the path spur to the Arroyo Mocho Trail.	-	4	1	0	3	0	8	10.50		$28,000
Valley Avenue Alternatives	Sports Park Drive	Parkside Drive	Omega Circle	Bicycle, Pedestrian, Safe Routes to School, Safe Routes to Transit	Consider bicycle boulevard on Parkside Drive or two-way separated bikeway on Sports Park Drive	-	3	1	0	3	0	7	10.50	0.9	$322,000
Valley Avenue Alternatives	Valley Avenue	Bernal Avenue	Sunol Boulevard	Bicycle, Pedestrian	Restripe existing NB bicycle lane as buffered bicycle lane and close gaps: (1) at signals, bring bicycle lane up to intersection, and (2) at roundabouts, continue striping to within 50' of intersection and install bicycle ramps up to sidewalk; stripe sharrows through roundabouts; mark all crosswalk at roundabouts. Close bicycle lane gaps westbound between Case and Sunol.	Install buffered bicycle lanes or separated bikeways	4	2	4	2	3	15	10.50	1.2	$294,000
Valley Avenue Alternatives	Valley Avenue	Hopyard Road	Koll Center Parkway/ Road 12	Bicycle	Review ability to reduce auto travel lanes to provide minimum 6' bicycle lanes; Stripe bicycle lanes continuously up to intersections	Separated bikeways	3	2	3	2	0	10	10.50	1.0	$213,000
Valley Avenue Alternatives	Valley Avenue	Intersection with Busch Road		Bicycle, Pedestrian, Safe Routes to Transit	Install stripe crossbike/trail crossing and wide curb ramps for path extension. Install wayfinding and utilize the existing sidewalks on Valley Avenue to direct north/westbound bicyclists to Quarry Lane intersection and south/eastbound bicyclists to Boulder Street.	Install missing crosswalks across Valley Avenue. Add crosswalk(s) across Valley Avenue at existing signal when Iron Horse Trail extension.	2	2	2	2	0	8	10.50		$39,000
Valley Avenue Alternatives	Valley Avenue	Koll Center Parkway/ Road 12	Bernal Avenue	Bicycle	Separated bikeway to 500' north of Koll Center; buffered bicycle lanes SB; stripe sharrows northbound	Install separated bikeways and separated bikeway intersection improvements	3	2	3	2	0	10	10.50	0.4	$245,000
Valley Avenue Alternatives	Walnut Grove Elementary School Safe Routes to School Project	Harvest Road, Black Avenue, Northway Road		Bicycle, Pedestrian, Safe Routes to School	Improve accessibility, bike racks, pathways, and access around Walnut Grove Elementary School.	-	2	3	1	3	4	13	10.50		$196,000
Valley Avenue Alternatives	Walnut Grove Park Path/Harvest Park Middle School Path	Northway Road	Greenwood Road	Bicycle, Pedestrian, Safe Routes to School	Wayfinding to trails, parks, and schools. Complete in tandem with Alameda Drive and Northway Road.	-	2	3	1	2	4	12	10.50	0.4	$34,000
West Las Positas Boulevard	W. Las Positas Boulevard	Foothill Road	Santa Rita Road	Bicycle, Safe Routes to School	Install Separated bikeway. Coordinate with intersection improvements at Willow Road	-	4	3	4	3	4	18	13.70	2.7	$7,007,000
West Las Positas Boulevard	W. Las Positas Boulevard	Intersection with Montpelier Court		Pedestrian, Safe Routes to School	Install new marked crosswalk with median refuge and curb extensions	-	2	3	2	3	4	14	13.70		$124,000
West Las Positas Boulevard	W. Las Positas Boulevard	Santa Rita Road	North Pimlico Drive Intersection	Bicycle, Safe Routes to School	Improve consistency of existing bicycle lane and shoulder striping between Santa Rita Road and Boardwalk Street. Provide bicycle boulevard treatment with wayfinding to trails, parks, and schools east of Boardwalk Street	-	2	2	3	3	4	14	13.70	1.7	$601,000
West Las Positas Boulevard	W. Las Positas Boulevard	Intersection with Fairlands Drive		Pedestrian	Enhance existing crosswalk with high-visibility striping	-	2	3	2	3	3	13	13.70		$52,000
West Las Positas Boulevard	W. Las Positas Boulevard	Intersection with Santa Rita Road		Bicycle, Pedestrian, Safe Routes to School	Enhance or modify slip lanes	-	2	2	2	3	2	11	13.70		$25,000
West Las Positas Boulevard	W. Las Positas Boulevard	Intersection with Hopyard Road		Bicycle, Pedestrian, Safe Routes to Transit	Modify or enhance slip lanes or install upgrades to allow for bicyclists turning between W. Las Positas and Hopyard Road		2	2	3	3	2	12	13.70		$25,000
West Dublin/Pleasanton BART to Downtown	W Lagoon Road	Bernal Avenue	Marilyn Kane Trail Head	Bicycle, Pedestrian, Safe Routes to School	Extend existing bicycle lanes to intersection with Bernal Avenue. Mark sharrows through Marilyn Murphy Kane Trail Head parking lot.	-	2	2	0	2	0	6	8.50	0.1	$21,000
West Dublin/Pleasanton BART to Downtown	Arroyo de Laguna/Centennial Trail Connection	Centennial Trail	Bernal Avenue	Bicycle, Pedestrian, Safe Routes to School	Connect Centennial Trail to Meadowlark Park/Minton Court bicycle boulevard/paths.	Path connecting Muirwood Drive and Foothill Knolls Drive Path	3	2	0	1	0	6	8.50		$60,000
West Dublin/Pleasanton BART to Downtown	Foothill Road	Dublin Canyon Road	Stoneridge Drive	Bicycle, Pedestrian, Safe Routes to Transit	Repair/repave asphalt sidewalk/path	-	2	3	2	2	0	9	8.50	0.5	$883,000

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West Dublin/Pleasanton BART to Downtown	Connection over Arroyo de Laguna	End of Minton Court	Meadowlark Park Path	Bicycle, Pedestrian, Safe Routes to School	Connect Meadowlark Park/Minton Court connection with Centennial Trail and Arroyo Valley Trail via I-680 grade separation. Complete in tandem with Val Vista Park/Muirwood Park I-680 Crossing Feasibility Study	Shared-use path with overcrossing of Arroyo de la Laguna to connect Bicycle boulevards	4	2	0	1	0	7	8.50	0.19	$411,000
West Dublin/Pleasanton BART to Downtown	Stoneridge Mall Road	Intersection with BART Driveway		Bicycle, Pedestrian, Safe Routes to Transit	Improve BART path and wayfinding to BART and the West Dublin/Pleasanton BART to Downtown bikeway	-	2	3	3	2	0	10	8.50		$4,000
West Dublin/Pleasanton BART to Downtown	Stoneridge Drive	Intersection with Stoneridge Mall Drive		Bicycle, Pedestrian, Safe Routes to Transit	Review ability to install east leg marked crosswalk at signal	-	2	3	1	2	0	8	8.50		$4,000
West Dublin/Pleasanton BART to Downtown	Meadowlark Drive	Minton Court	Bernal Avenue	Bicycle, Pedestrian, Safe Routes to School	Install bicycle boulevard treatment.	-	2	2	0	2	0	6	8.50	0.4	$143,000
West Dublin/Pleasanton BART to Downtown	Val Vista Park/Muirwood Park I-680 Overcrossing	Muirwood Drive	Denker Drive	Bicycle, Pedestrian, Safe Routes to Transit, Safe Routes to School	Conduct Feasibility Study of a grade-separated I-680 crossing connecting Val Vista Park and Muirwood Park. Complete in tandem with Arroyo de Laguna Trail Feasibility Study	Install grade-separated I-680 crossing	4	3	0	2	3	12	8.50		$150,000
West Dublin/Pleasanton BART to Downtown	County Parcel Trail Connection	Muirwood Drive	Meadowlark Drive	Bicycle, Pedestrian, Safe Routes to School	Trail Feasibility Study and/or coordination with Alameda County and property owner	Shared-use path to connect Bicycle boulevard treatments	3	2	0	1	0	6	8.50	0.28	$608,000
West Dublin/Pleasanton BART to Downtown	Muirwood Avenue	Springdale Avenue	Eastwood Way	Bicycle, Pedestrian, Safe Routes to Transit, Safe Routes to School	Provide bicycle boulevard treatment.	-	3	3	1	2	4	13	8.50	1.2	$430,000
West Dublin/Pleasanton BART to Downtown	Springdale Avenue	Stonedale Drive	Muirwood Drive	Bicycle, Pedestrian, Safe Routes to Transit, Safe Routes to School	Bicycle boulevard treatment. Install enhanced crosswalk with RRFB and extend median to provide a refuge wide enough for bicyclists at Stonedale Drive/Springdale Avenue.	-	3	2	0	2	2	9	8.50	0.5	$237,000
West Dublin/Pleasanton BART to Downtown	Stonedale Drive	Stoneridge Mall Road/Stoneridge Drive Intersection	Springdale Avenue	Bicycle, Pedestrian, Safe Routes to Transit	Install bicycle boulevard treatment. Install cut through between Stoneridge Drive/Stoneridge Mall Road intersection and Stonedale Drive for bicyclists and pedestrians. Stripe ladder crosswalk across Stonedale Drive to provide access to Stoneridge Drive/Stoneridge Mall Road intersection.	-	4	3	0	2	0	9	8.50	0.2	$77,000
West Dublin/Pleasanton BART to Downtown	Stoneridge Mall Road	West Dublin/Pleasanton BART Driveway	Stoneridge Drive	Bicycle, Safe Routes to Transit	Designate east sidewalk as Class I path, widen path as feasible with concrete sidewalk or decomposed granite, particularly at intersections.	-	2	3	3	2	0	10	8.50	0.6	$51,000

*Estimated costs are planning-level estimates that include soft costs, contingencies, design, and environmental.

Appendix D. Funding Sources

There are numerous funding sources at the federal, state, regional, county and local levels that are potentially available to the City of Pleasanton to implement the projects and programs in the *Pedestrian and Bicycle Master Plan*. Below is a description of the most promising funding programs available for the proposed projects.

D.1.1 Federal Funding Sources

D.1.1.1 Fixing America's Surface Transportation Act (FAST Act)

The FAST Act provides funding for roads, transit, safety, and environmental enhancements. The FAST Act, signed into law in December 2015, supplanted the Moving Ahead for Progress in the 21st Century Act (MAP-21). Relative to MAP-21, the FAST Act makes more federal-aid highway funding available to locally-owned transportation infrastructure and also increases overall spending for the Surface Transportation Block Grant (STBG) program. This legislation also preserved the Safe Routes to School program, with funding for projects that improve pedestrian and bicycle access and safety around primary and middle schools.

Cities, counties, and transit operators can apply for FAST Act funds, although a local match is required for these funds. There are several bicycle-related programs funded through the FAST Act. These include the following:

- *Surface Transportation Block Grant (STBG) Program* – The STBG, formerly known as the Surface Transportation Program, provides block grant funds that are used for roads, bridges, transit capital, and bicycle projects. Eligible bicycle projects include bicycle transportation facilities, bicycle-parking facilities, equipment for transporting bicycles on mass transit facilities, bicycle activated traffic control devices, preservation of abandoned railway corridors for bicycle trails, and improvements for highways and bridges. Cities, counties, metropolitan planning organizations (MPO), and transit operators can apply for STBG funds. An 11.5 percent local match is required for these funds when used for bicycle projects.
- *Transportation Alternatives Program (TAP)* – MAP-21 bundled three funding programs – Transportation Enhancements program, the Safe Routes to School program, and the Recreational Trails Program – into one Transportation Alternatives Program. The FAST Act preserved

TAP, slightly increased its annual funding through 2019 (up to $850 million/year) and made it a set-aside program within the STBG program. TAP is the most prominent funding source for bicycling and walking infrastructure projects. However, up to half of TAP grants can be diverted to other purposes by state and local governments. Within TAP, funding for the Recreational Trails Program is preserved at the 2009 level and is effectively a set-aside of the TAP.

- *Congestion Mitigation and Air Quality Improvement Program (CMAQ)* – CMAQ funds are available for projects that will help attain National Ambient Air Quality Standards (NAAQS) identified in the 1990 Federal Clean Air Act Amendments. Projects must be located within jurisdictions in non-attainment areas. Eligible projects include bicycle facilities intended for transportation purposes, bicycle route maps, bicycle-activated traffic control devices, bicycle safety and education programs, and bicycle promotional programs. Cities, counties, MPO, state, and transit operators can apply for CMAQ funds. A 20 percent local or state match is required for these funds.

- *Highway Safety Improvement Program (HSIP)* – HSIP was created by MAP-21 and preserved in the FAST Act. While walking and cycling projects are eligible activities for HSIP funding, the FAST Act does prohibit using HSIP funding for non-construction activities, such as education and enforcement. The Caltrans Division of Local Assistance (DLA) manages California's local agency share of HSIP funds. Local HSIP projects must be identified on the basis of crash experience, crash potential, crash rate, or other data-supported means.

- *Section 405 National Priority Safety Programs* – The National Highway Traffic Safety Administration (NHTSA) administers a new non-motorized safety funding program. Of the $280 million allocated to the program, approximately $14 million will be awarded to States on an annual basis to decrease bicycle and pedestrian crashes with motor vehicles. Eligible states must have bicycle and pedestrian fatalities that constitute more than 15 percent of all fatal crashes, including California. Unlike HSIP, funding may be used for training law enforcement officials, organizing enforcement campaigns, or increasing awareness of bicycle and pedestrian laws.

- *National Highway Performance Program (NHPP)* – NHPP funding provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS. A 20 percent local or state match is required for these funds. States may transfer up to 50% of NHPP funding to the STBG program, TAP, CMAQ, or other programs each year.

- *Transportation Infrastructure Finance and Innovation Act (TIFIA)* – The TIFIA program allows Congress to provide credit assistance to large-scale surface transportation projects. Under MAP-21, most projects needed to meet a minimum cost of $50 million to be eligible for credit assistance. Under the FAST Act, this threshold is reduced to $10 million for projects involving local governments. This change may allow active transportation projects to more easily take advantage of these credit and innovative financing mechanisms.

- *Highway Research and Development (HRD) Program* – The HRD program funding, continued under the FAST Act, funds strategic investment in research activities that address current and emerging highway transportation needs. As such, HRD funding can be used to

improve bicycle safety through education, police enforcement, and traffic engineering. Cities, counties, and state agencies can apply for these funds. A 20 percent state or local match is required for these funds.

D.1.1.2 Land and Water Conservation Fund (LWCF)

The Land and Water Conservation Fund (LWCF) uses offshore drilling royalties paid by energy companies to provide matching grants for state and local parks and recreation projects, among other uses. The LWCF state assistance program provides matching grants to help states and local communities protect parks and recreation resources, including off-street bicycle paths.

- California Department of Parks and Recreation LWCF application webpage: http://www.parks.ca.gov/?page_id=21360

D.1.2 Statewide Funding Sources

D.1.2.1 Active Transportation Program (ATP), including Safe Routes to School

California's Active Transportation Program (ATP) was created in 2013 by Senate Bill 99 and Assembly Bill 101. Its purpose is to encourage increased use of active modes of transportation, including bicycling and walking. The ATP consolidated previously-existing funding programs, including the federal Transportation Alternatives Program (TAP), state Bicycle Transportation Account (BTA), and the federal and state Safe Routes to School programs. Program funding is divided into three components. Half of ATP funding is awarded through a statewide competitive program. Ten percent of funding is awarded through the small urban and rural area competitive program. Forty percent of funding is awarded to Metropolitan Planning Organizations, such as MTC, through the large urbanized area competitive program. The ATP Cycle 3 call-for-projects closed in June 2016.

- California ATP Webpage: http://www.catc.ca.gov/programs/ATP.htm

D.1.2.2 Transportation Development Act (TDA), Article 3

TDA Article 3 is perhaps the most readily available source of local funding for bicycle projects. TDA funds are derived from a statewide quarter-cent retail sales tax. This tax is returned to the county of origin and distributed to the cities and county on a population basis. Under TDA Article 3, two percent of each entity's TDA allocation is set aside for pedestrian and bicycle projects; this generates approximately $3 million in the Bay Area

annually. Eligible projects include the design and construction of walkways, bicycle paths and bicycle lanes, and safety education programs. According to MTC Resolution 875, these projects must be included in an adopted general plan or bicycle plan and must have been reviewed by the relevant city or county bicycle advisory committee.

- MTC's Procedures for the TDA Article 3 program: http://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/transit-21st-century/funding-sales-tax-and-0

D.1.2.3 Caltrans Sustainable Transportation Planning Grant Program

The Caltrans Division of Transportation Planning offers Sustainable Transportation Planning Grants to provide funding to support transportation planning (not construction or environmental review). The grants are intended to strengthen the economy, promote equity, and protect the environment. Eligible projects include safe routes to school plans, streetscape plans, complete street plans, and safety enhancement plans. The program requires a 20% local match. Grants are available in amounts from $100,000 to $500,000.

- Caltrans Sustainable Transportation Planning Grant Program: http://www.dot.ca.gov/hq/tpp/grants.html

D.1.2.4 California State Parks Recreational Trails Program (RTP)

The Recreational Trails Program (RTP) provides funds for recreational trails and trails-related projects, including Class I Bicycle Paths. The program is administered at the state level by the California Department of Parks and Recreation (DPR) and the Caltrans Active Transportation Program (ATP). While DPR does not anticipate conducting another cycle before 2018, the agency does intend to create a new application guide in 2017 to incorporate updated information based on the FAST Act. Applicant, including cities and towns, are responsible for obtaining a match amount that is at least 12% of the total project cost.

- PR RTP application site: http://www.parks.ca.gov/?page_id=24324

D.1.2.5 California Cap-and-Trade Funding

The Global Warming Solutions Act of 2006 (AB 32) directed the California Air Resources Board (ARB) to institute programs to reduce greenhouse gas (GHG) emissions. The Cap-and-Trade Program, a key element of the ARB's plan to reduce emissions, funds several programs that support the goals

of AB 32. Several of these programs relate to transportation and mode shift. The Affordable Housing and Sustainable Communities Program (AHSC), for one, provides funding to support active transportation and complete streets initiatives, among other project types. Applications for FY 2015-2016 AHSC funding were due in June 2016.

- Cap-and-trade auction proceed-funded programs, including AHSC: http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ggrfprogrampage.htm#Transportation

D.1.2.6 Highway Safety Improvement Program

The Caltrans Highway Safety Improvement Program (HSIP) focus on funding countermeasures applied at locations with documented collisions and safety issues. HSIP uses a cost-benefit ratio as a primary factor in the awarding of applications. Because both of these programs focus on roadway safety, projects with documented collision history – through frequency of collision but particularly collision severity – are typically ranked higher. Roadways with documented bicycle and pedestrian collision history, as discussed in **Chapter 3** of this Plan, may be well-qualified for HSIP applications, particularly since many of the proposed projects would improve bicyclist and pedestrian safety at a lower cost than many of the highway projects also eligible for HSIP.

Successful projects have included:

- Separated bikeways
- Median refuges and curb extensions
- Curb, gutter, and sidewalk
- Paved shoulders
- Upgraded traffic signals with pedestrian countdown signals and pedestrian-scale lighting
- Bicycle lane striping
- Crosswalk striping
- In-pavement flashers and rectangular rapid flashing beacon (RRFB) at crossings

More information is available online: http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm

D.1.3 Regional Funding Sources

D.1.3.1 Transportation for Livable Communities

MTC created the Transportation for Livable Communities (TLC) program in 1998. MTC uses this program to finance pedestrian, bicycle and streetscape improvements near public transit in cities around the Bay Area. The purpose of TLC is to support community-based transportation projects that bring new vibrancy to downtown areas, commercial cores, neighborhoods and transit corridors, making them places where people want to live, work and visit. Pedestrian- and transit-friendly developments are hallmarks of the program. MTC awarded the most recent round of TLC capital grants in July 2010.

- MTC's TLC program: http://mtc.ca.gov/whats-happening/news/mtc-awards-44-million-new-grants-promote-livable-communities

D.1.3.2 Bay Trail Grants

The San Francisco Bay Trail Project—a non-profit organization administered by the Association of Bay Area Governments—provides grants to plan, design, and construct segments of the Bay Trail. The amount, and even availability, of Bay Trail grants vary from year to year, depending on whether the Bay Trail Project has identified a source of funds for the program. As of 2016, the Bay Trail Project is not currently offering grants, but may in the future.

D.1.3.3 One Bay Area Grants (OBAG)

Currently in its second funding round, OBAG uses federal funds to maintain MTC's commitments to regional transportation priorities while also advancing the Bay Area's land-use and housing goals. Cities and counties can use these OBAG funds to invest in bicycle and pedestrian improvements and Safe Routes to School projects, among other uses. MTC distributes OBAG funds to county Congestion Management Agencies in each Bay Area county. The CMAs are then responsible for selecting eligible projects within each county.

- MTC's OBAG program: http://mtc.ca.gov/our-work/invest-protect/focused-growth/one-bay-area-grants

D.1.3.4 Transportation Fund for Clean Air (TFCA)

TFCA is a grant program administered by the Bay Area Air Quality Management District (BAAQMD) and funded through a surcharge on motor vehicles registered in the Bay Area. The Air District offers funding to public agencies for trip reduction, bicycle parking and bikeway, and clean air vehicle projects. A sub-program of the TFCA is the Bikeways, Roads, Lanes and Paths program, which offers funding for bicycle parking and bikeway projects (Class I-IV). Funding will be offered on a first-come, first-served basis until the funds (total: $3.84) are spent.

Funding for bicycle projects is also available through the TFCA's County Program Manager Fund. Under that sub-program, 40 percent of TFCA revenues collected in each Bay Area county is returned to that county's congestion management agency (CMA) for allocation (the Alameda County CMA in Alameda County's case). Applications are made directly to the CMAs, but must also be approved by the BAAQMD.

- TFCA Bikeways, Roads, Lanes and Paths: http://www.baaqmd.gov/grant-funding/public-agencies/bikeways-roads-lanes-paths
- TFCA County Program Manager Fund: http://www.baaqmd.gov/grant-funding/public-agencies/county-program-manager-fund

D.1.4 Countywide Funding Sources

D.1.4.1 Measure WW

In 2008, Contra Costa and Alameda County voters approved EBRPD's Measure WW, the "Regional Open Space, Wildlife, Shoreline and Parks Bond." This extension of a similar 1988 bond measure allocates $33 million specifically to trail projects in the county. In addition, the measure will provide $48 million directly to cities, the county and special park and recreation districts for their park and recreation needs, including trails and other non-motorized transportation projects.

- Measure WW: http://www.ebparks.org/about/planning/ww

D.1.4.2 Alameda County Measure BB Bicycle and Pedestrian Program

Measure BB is a special sales tax that was passed with 70 percent approval in 2014, building on the original Measure B half-cent tax passed in 1986. Measure BB provides $8 billion in funding (from 2015 to 2045) to support the 2014 Transportation Expenditure Plan of the Alameda County

Transportation Commission. Among other goals, the 2014 plan aims to provide clean transportation by expanding bicycle and pedestrian paths. As part of the 2014 plan, local agencies and transit jurisdictions receive Measure BB direct local distributions to support local transportation investments.

Eight percent of net revenues from Measure BB are set aside for bicycle and pedestrian improvements through the Alameda CTC Bicycle and Pedestrian Program. Three percent of overall revenues are set aside for regional trail gap closure projects (including the Bay Trail), three percent of net revenues are allocated to local jurisdictions as direct local funding, and two percent of net revenues are allocated to the Measure BB Bicycle and Pedestrian Countywide Discretionary Fund (CDF), which supports planning, projects and programs, including a competitive grant program. The CDF has funded 41 projects, totaling $9.5 million to date, and Alameda CTC has completed four funding cycles.

- Alameda County Measure BB: http://www.alamedactc.org/app_pages/view/17260
- Alameda County Bicycle and Pedestrian Program: http://www.alamedactc.org/app_pages/view/3429

D.1.5 Local Funding Sources

A variety of local sources may be available for funding bikeway improvements; however, their use is often dependent on political support.

D.1.5.1 Roadway Construction and New Development

As development and roadway projects occur, changes to walking and bicycling facilities should always be considered. This may include closing sidewalk gaps, providing enhanced streetscape, and installing bicycle facilities. To ensure that development projects and roadway construction projects include the recommendations in this Plan, it is important that the review process includes a designated bicycle and pedestrian coordinator or city staff familiar with walking and bicycling issues. Planned roadway improvements in Pleasanton should always consult this Plan to assist in building out the bicycling and walking network in the city.

D.1.5.2 Impact Fees

Cities across the country charge developer impact fees, typically tied to trip generation and traffic impacts as a result of proposed projects. The city of Pleasanton's Impact Fee Program is being developed to achieve the city's objectives to fund important transportation infrastructure throughout the city. The impact fee program in its current draft contains a number of bicycle and pedestrian improvement projects.

D.1.5.3 Open Space District

Local Open Space Districts may float bonds that go to acquiring land or open space easements, which may also provide for some improvements to the local trail and bikeway system.

D.1.5.4 Capital Improvement Plan

The Capital Improvement Plan synthesizes the information for the entire network: cost estimates, funding sources, and rankings, into a plan for the next 10 years. The Capital Improvement Program is a planning document that the city may use to formulate its budget, but it does not preclude "opportunistic projects." Opportunistic projects are unanticipated projects where the city may incorporate bicycle and pedestrian facilities, even if the projects occur out of sequence. Examples include street resurfacing to include bicycle lanes, signal upgrades for pedestrians, or install a new pedestrian hybrid beacon and crosswalk.

D.1.5.5 Other Funding Sources

Local sales taxes, developer or public agency land dedications, private donations, and fund-raising events are other local options to generate funding for bikeway projects. Creation of these potential sources usually requires substantial local support.

Appendix E. Related Plan Documents

The PBMP Update should be consistent with local or regional transportation, air quality, or energy conservations plans. Bicycle network maps for Alameda County and the cities of Dublin and Livermore were reviewed and considered in developing Pleasanton's recommended network, in order to promote a coordinated regional bicycle system. A summary of adopted planning documents, and their relationship to this Plan, is below.

E.1.1.1 Regional Bicycle Plan for the San Francisco Bay Area

MTC updated the *Regional Bicycle Plan for the San Francisco Bay Area* in 2009. The purpose of the plan is to direct MTC's regional transportation funds for high-priority facilities that serve regional bicycle trips and update the regional bicycle network. The MTC Plan details the length and completion cost of the regional bikeways by county.

E.1.1.2 Plan Bay Area Regional Transportation Plan

The Association of Bay Area Governments (ABAG) is the comprehensive regional planning agency and Council of Governments for the nine counties and 101 cities of the San Francisco Bay region. Motivated by the California Sustainable Communities and Climate Protection Act of 2008, ABAG developed Plan Bay Area in July 2013, as regional transportation plan that guides the Bay Area in a long-range plan to significantly reduce greenhouse gases by 2040. The focus of this plan is to devote most (87%) of funding to operate and maintain the existing transportation network, with the remaining budget aimed at next-generation transit projects and other programs that support reducing GHG emissions.

E.1.1.3 BART Bicycle Plan

The goal of the BART Bicycle Plan (2012) is to attract more bicycle users and fewer cars to the system. The Plan outlines the specific strategies needed to encourage passengers to bicycle and creates a Bicycle Investment Tool that BART staff and other transit agencies can use to select the most effective improvements. With a singular goal to double the share of BART riders that bicycle by 2022, the recommended strategies include better cyclist circulation, plentiful bicycle parking, improved bicycle access beyond BART; optimized bicycle accommodations on the train, and more bicycle-supportive policies and programs.

E.1.1.4 Alameda Countywide Bicycle and Pedestrian Master Plans

The Alameda County Transportation Commissions (Alameda CTC) adopted the *Countywide Bicycle Plan and Countywide Pedestrian Plan* in 2012. The bicycle network map shows proposed Class I, II, and III facilities in Pleasanton, including key countywide routes. The Pedestrian Plan creates a Pedestrian Vision System that focuses on areas to prioritize access to transit, access to central business districts and other commercial areas, and the trails network.

E.1.1.5 Alameda County Multi-Modal Arterials Plan

Alameda CTC is leading the Alameda County Multi-Modal Arterials Plan (MAP, draft 2016) to reexamine all arterials in the county from a complete streets perspective. The MAP develops complete streets typologies and priority networks for each travel mode on arterials countywide, and then makes recommendations for complete streets improvements based on the highest priority modes for each corridor, as established through the typologies and priority networks. Example improvements include dedicated transit facilities, Class IV separated bikeways, and pedestrian streetscape improvements.

E.1.1.6 City of Livermore General Plan

The City of Livermore's Proposed Bikeways and Trails Network map in their General Plan shows existing Class II bicycle lanes and proposed Class I bikeway along Vineyard Avenue into Pleasanton as well as existing bicycle lanes and proposed trails to Pleasanton along Jack London Boulevard.

E.1.1.7 Dublin Bicycle Master Plan

The Dublin Bicycle Master Plan, adopted in 2014, sets forth several recommendations for trail and on-street facilities that directly connect to Pleasanton. The Dublin Bikeways Master Plan identifies the need for pedestrian and bicycle links connecting to Pleasanton at Foothill Blvd, the Dublin/Pleasanton Bart Station, and the Fallon Rd interchange.

E.1.1.8 Livermore Area Recreation and Parks District Master Plan

The 2015 Livermore Area Recreation and Parks District Master Plan identifies a proposed multi-use trail connection with the city of Pleasanton at the Arroyo Mocho near El Charro and Busch Roads. The "Local Plans" section summarizes planning documents that discuss existing conditions and/or future infrastructure improvements for bicycling and walking in the city of Pleasanton and adjacent planning areas such as Happy Valley. Specifically, goals, policies and programs from existing city plans and code regulations that relate to non-motorized transportation are listed to inform the policies for the initial Pleasanton Pedestrian and Bicycle Master Plan.

E.1.1.9 Pleasanton General Plan 2005-2025

The 2005 Pleasanton Plan 2025 (the General Plan) provides a blueprint for conservation and development of the city. Most recently amended in January 2015, the Alternative Transportation Modes section has a goal of providing a multi-modal transportation system which creates alternatives to the single occupancy automobile.

E.1.1.10 Downtown Specific Plan

The 2002 Downtown Specific Plan, recently updated in 2013, is the primary regulatory guide for the preservation and development of Pleasanton's Central Business District. Many of the Plan's objectives, such as the creation of mini public plazas and traffic calming improvements, encourage pedestrian access and a vibrant public life in the downtown area.

E.1.1.11 Downtown Design Guidelines

The City of Pleasanton's Downtown Design Guidelines, updated in 2014, offer design standards for projects in the commercial and residential area to complement the existing and historic built environment. This set of guidelines encourage pedestrian-oriented activity throughout the downtown district by addressing architectural styles, parking area designations, signage and the general appearance of the area. General criteria include building facades and entrances that meet the sidewalk, the continuity of commercial storefronts and other pedestrian-scaled elements.

E.1.1.12 City of Pleasanton Community Trails Master Plan

The July 1993 Pleasanton Community Trails Plan was developed as a long-ranging planning tool to guide future trail development and to assist the city in review of new development. The objective of the Pleasanton Community Trails Master Plan is to "Provide the citizens of Pleasanton with a city-wide network of trails and routes that are, as much as possible, accessible to a variety of users, including, but not limited to, pedestrian, bicyclists, equestrians, and the physically disabled." It was revised in April 2002.

E.1.1.13 Downtown Parks and Trails System Master Plan

The goal of the 2002 Master Plan for the Downtown Parks and Trails Plan is to provide a coordinated set of recommendations for community facilities including public parks and trails sites in the area between Bernal Ave, Stanley Blvd, Main St, and First St. The trails focus of the plan is on the Alameda Transportation Corridor (the former Southern Pacific Railroad Right of Way, also referred to as the Regional Trail Corridor).

The Master Plan recommends developing the 75-100' Regional Trail Corridor so that it can become an amenity with a park-like character, capable of supporting a variety of uses. The Master plan proposes accommodating users on separate paths – a paved path for pedestrian, bicycle, and skate use and an unpaved trail suitable for joggers and equestrians. The plan provides detailed design guidelines covering dimensions, materials and facilities.

E.1.1.14 Specific Plans

E.1.1.14.1 Happy Valley Specific Plan

Adopted in 1998, This document sets forth the planning policies for the Happy Valley area, a community of rural housing and a residential golf course development located partially in the southern area of Pleasanton and in an unincorporated section of Alameda County. This document serves as an extension of the Pleasanton General Plan.

E.1.1.14.2 Vineyard Avenue Corridor Specific Plan

Adopted in 1999, the Specific Plan for the Vineyard Avenue Corridor serves as a regulatory guide for the vineyard and residential area in southeast Pleasanton, south of the Shadow Cliffs Recreation Area. The Circulation Element includes an objective of providing alternatives to motor vehicle travel through the Plan area through an integrated system of pedestrian, bicycle and equestrian trails. Vineyard Avenue, the main artery for the area, is planned as a 36-foot rural road consisting of two 12-foot travel lanes, two six-foot bicycle lanes/shoulders, and a six-foot separated pedestrian/equestrian trail along the north side of the street. The *Vineyard Avenue Specific Plan* also references the City Traffic Calming Program to mitigate the impacts of cut-through traffic on the residential streets. Multiple trails are also part of the area Plan.

E.1.1.14.3 Downtown Specific Plan

Last amended in 2014, the Downtown Specific Plan and Design Guidelines for preserving and enhancing the character of Downtown Pleasanton. The two stated transportation goals for Downtown are to improve access for autos while maintaining the pedestrian and economic vitality of Downtown and to encourage the use of bicycling, trails, and other non-auto modes to alleviate congestion in Downtown. The Plan specifically calls out enhancing sidewalks, controlling crosswalks with stop-control, and installing curb extension to improve pedestrian access. Bicycling is seen as an important alternative to automobile trips to Downtown, and trails connections to and through Downtown are supported.

E.1.1.14.4 Stoneridge Drive Specific Plan

Last amended in 2010, the amendment deals with the Staples Ranch development, which is the last undeveloped site in the Specific Plan area. The site is located east of El Charro Road, south of I-580, and north of West Las Positas Boulevard, near the Dublin, Pleasanton, and Livermore city limits. This area is adjacent to the Arroyo Mocho waterway is planned to have a neighborhood park, community park, an auto mall, and a continuing care community.

E.1.1.14.5 East Pleasanton Specific Plan

The draft 2016 East Pleasanton Specific Plan plans for the areas generally bounded by Valley Avenue, Stanley Boulevard, and Stoneridge Drive on the eastern city limit. Trails are envisioned throughout the area, including an extension of the Iron Horse Trail south parallel to Valley Avenue, east on Busch Road, and south on El Charro Road, connecting to Stanley Boulevard. Bicycle lanes and enhanced pedestrian streetscape are planned for El Charro Road where it will be widened.

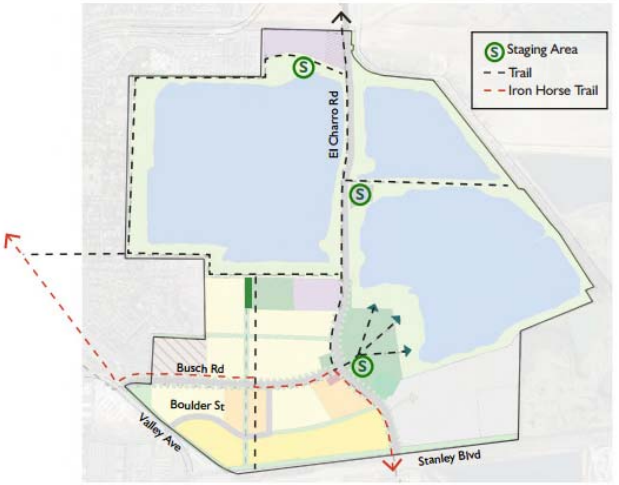


Figure 6.4 - Trails Plan

E.1.1.14.6 Bernal Property Specific Plan

Adopted in 2006, the Plan spells outs a vision for developing a 318 acre public land portion of the larger 516 acre Bernal Property for public and quasi public uses. The area is bordered by Arroyo de Laguna to the west, Bernal Avenue to the north, and the railroad tracks to the south, and extends on either side of I-680. Some of these improvements have already been built in Phase 1, such as portions of Laguna Creek Lane (aligns with Pleasanton Avenue) and the Marilyn Murphy Kane Trail. Phase II focuses on the development of remaining open space into parks and pathway network.

E.1.1.14.7 North Sycamore Specific Plan

This Plan addressed development in annexed portion of Pleasanton on Sycamore Creek Way, near Sunol Boulevard. The build out of the Specific Plan is largely complete as of 2014, with residential mostly complete and commercial development yet to be constructed.

Appendix F. Safe Routes to School Projects from 2010 Plan

Existing Conditions

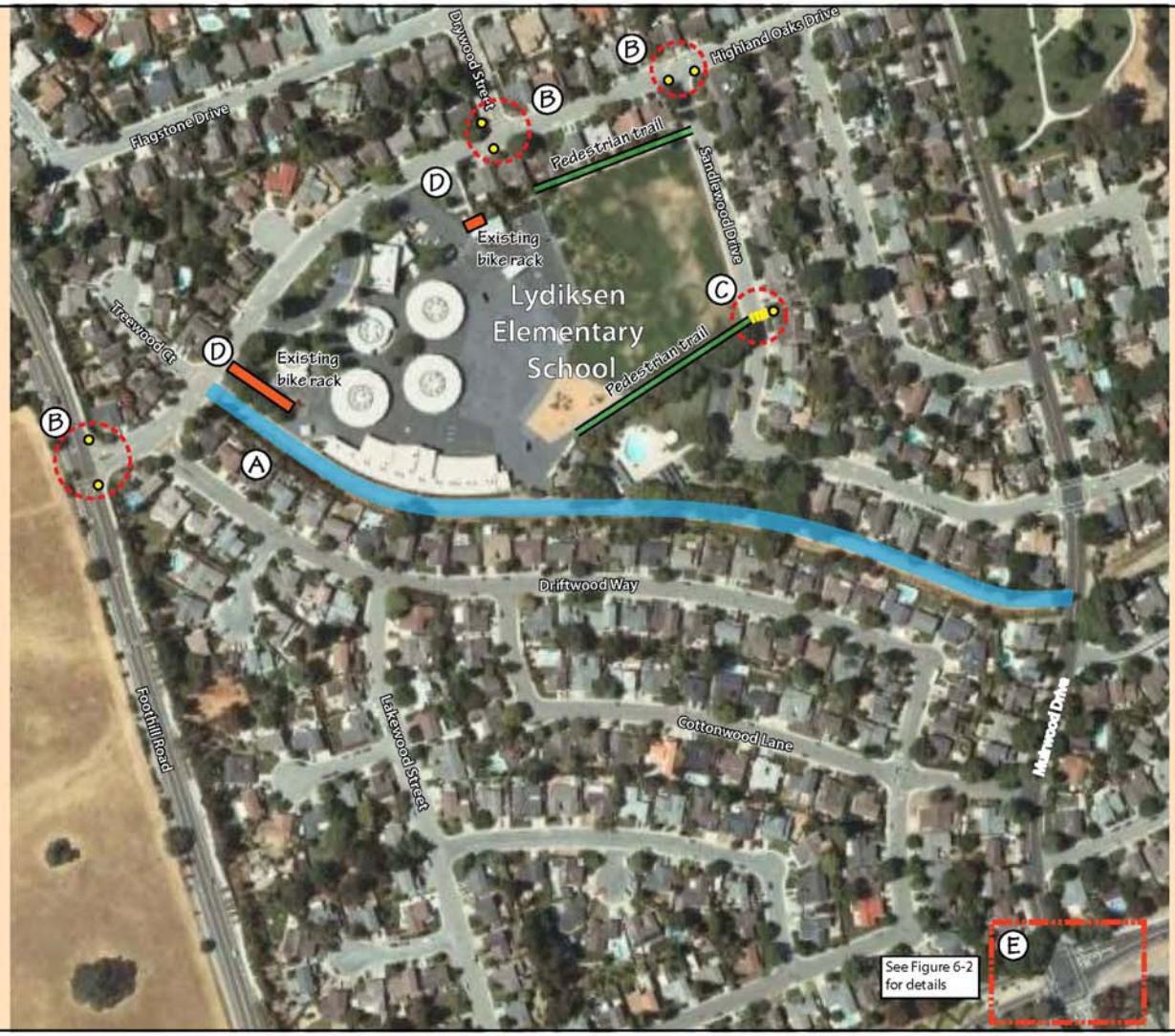
A. Canal trail adjacent to school property is locked.

B. Adjacent intersections have marked crosswalks, curb-cuts, MUTCD school signage. Some curbs lack truncatd domes and are not ADA-accessible.

C. Mid-block crossing on Sandalwood Drive is not ADA-accessible.

D. Bike racks on west side entrance of school are underutilized, while bike racks on east side entrance are at full capacity.

E. The intersection of West Las Positas Blvd and Muirwood Drive is difficult for pedestrians to cross and has fast vehicular traffic.



Recommendations

A. Provide pedestrian and bicycle access to adjacent canal trail. Long-term improvement : pave canal trail

B. Install ADA-accessible truncated domes.

C. Stripe high-visiblity crosswalk. Install ADA-accessible curb-cut with truncated dome.

D. Add an additional bicycle rack to northeast entrance to school.

E. Refer to traffic calming improvements in Figure 6-2

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NOT TO SCALE

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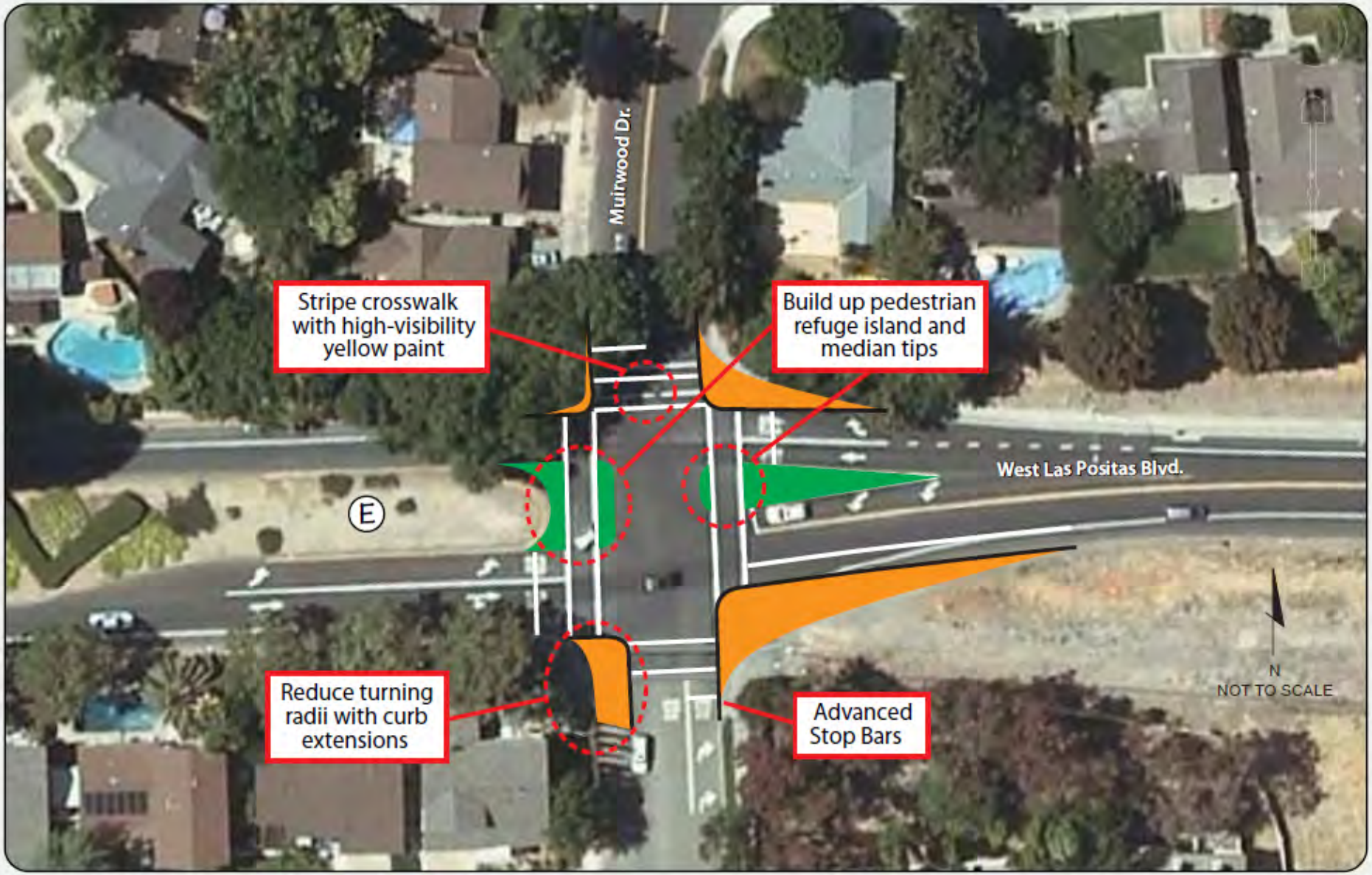
SF 08-0373\graphics\SR 2S\0373-1 Lydiksen

LYDIKSEN ELEMENTARY SCHOOL
Bicycle and Pedestrian Issues and Opportunities

Figure 6-1

SAFE ROUTES TO SCHOOL
LYDIKSEN ELEMENTARY SCHOOL



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SF08-0373\graphics\SR2S\0373-5 ped improvements

RECOMMENDED PEDESTRIAN IMPROVEMENTS FOR
WEST LAS POSITAS BOULEVARD AND MUIRWOOD DRIVE

FIGURE 6-2

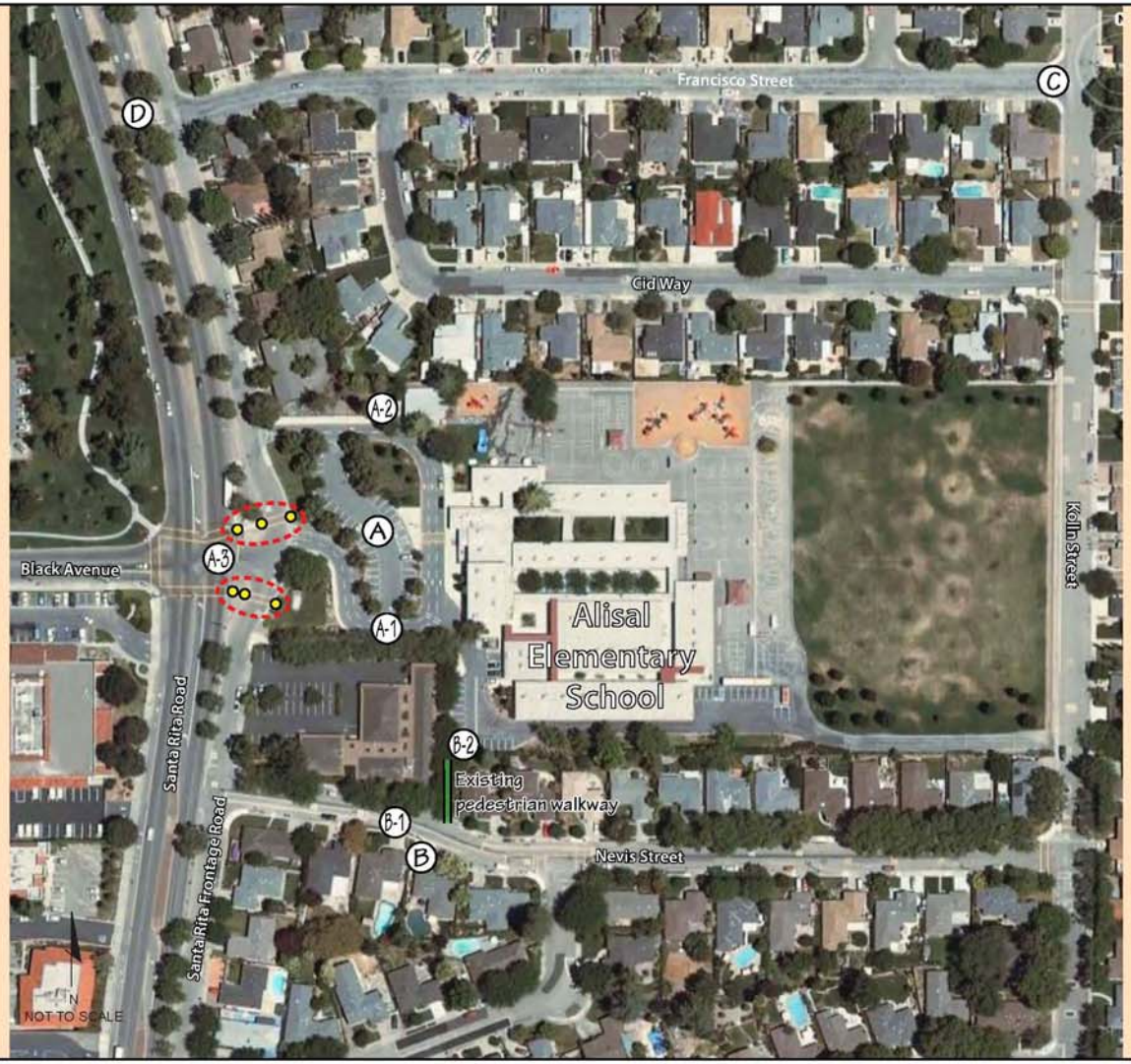
Existing Conditions

A. Main School Entrance, Santa Rita Frontage Rd

A-1. The main driveway reaches full capacity during peak times.

A-2. Students lock their bicycles to a chain link fence in the front of school.

A-3. Sidewalk curbs in front of school are not ADA-accessible.



B. Nevis Street Side Entrance

B-1. Nevis Street entrance lacks ADA-accessible curb ramps, and sidewalk is uneven in sections. No marked crosswalk.

B-2. Pedestrian pathway connects Nevis Street entrance to school. The pathway currently ends at a side parking lot on school property.

C. Intersection of Francisco Street and Kolln Street:

Motorists heading east on Francisco Street frequently turn right on to Kolln Street without yielding to pedestrians. Only the crosswalk across Francisco Street is marked. Curbs are not ADA-accessible.

D Intersection of Francisco Street and Santa Rita Road:

This intersection is not signalized but has in-pavement flashers that are activated when a pedestrian crosses the street. Vehicular traffic through this intersection is heavy, making it difficult for drivers to exit Francisco Street on to Santa Rita Road.

Proposed Improvements

A.1 Install a loop detector on Santa Rita Frontage Road at the main driveway exit from the school that will prompt a signal change at Santa Rita Road and Black Avenue when cars are backed up on Frontage Road

To ease congestion during drop-off and pick-up times, a second unloading area can be designated in the center travel lane.

A.2 A potential secure bicycle rack location in the front of the school

A.3 Install ADA-accessible truncated domes at curbs in front of the school at Black Avenue and Santa Rita Frontage Road

B By moving parking spaces 5' out from the chain-link fence, the pedestrian pathway to Nevis Street can be extended along length of parking lot to connect with the school's main entrance

C Intersection of Francisco Street and Kolln Street:
Crosswalks should be marked with high-visibility yellow paint. Curb ramps should be installed on the east side of Kolln Street, and truncated domes should be installed at all curbs to be ADA-accessible.

D Intersection of Francisco Street and Santa Rita Road:
Install a traffic signal to ease congestion along Santa Rita Frontage Road and surrounding area.

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S:\08-0373\graphics\SR2S\0373-3 Alisal_Improve

ALISAL ELEMENTARY SCHOOL
Proposed Bicycle and Pedestrian Improvements

Figure 6-4

Existing Conditions

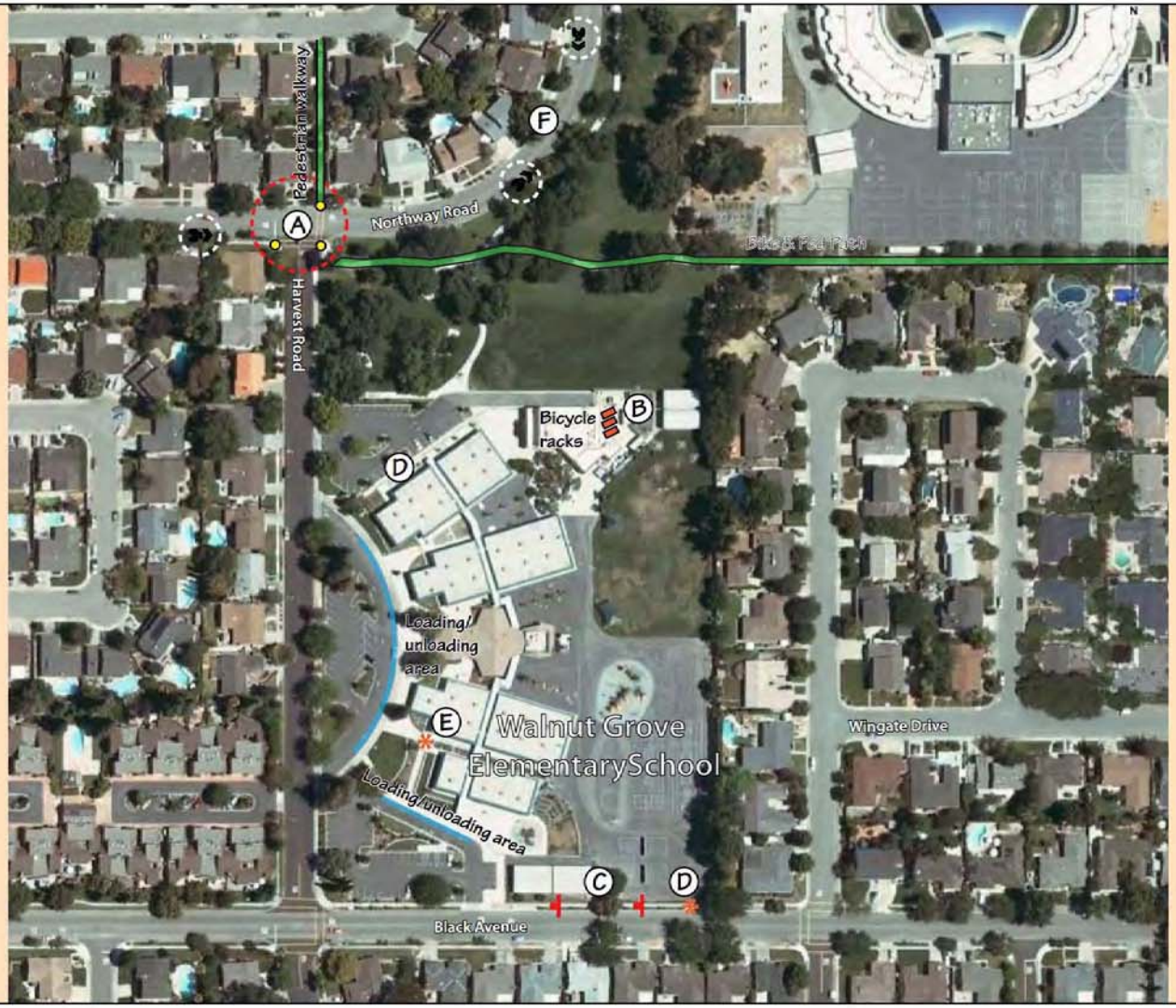
A. Curb ramps at the intersection of Harvest Road and Northway Road are not ADA-accessible.

B. Bicycle racks located behind school with dumpsters are heavily used, but access and visibility is constrained.

C. Parking signs on north side of Black Avenue adjacent to school are outdated.

D. Side gate entrance to school is locked.

E. Pedestrian pathway blocked by gate.



Proposed Improvements

A. Install ADA-accessible truncated domes at curb ramps at the intersection of Harvest Road and Northway Road.

B. Current bike rack location may discourage students from bicycling to school. Add racks to other locations that are more accessible and visible to the street and/or Walnut Grove Park.

C. Old street signs should be removed.

D. Side gate entrance could be unlocked during drop-off and pick-up hours to improve pedestrian access along Black Avenue.

E. Construct 4'-5' concrete path around gate to connect pathway to front entrance of school.

F. Designate Northway Road a Class III bike route and install sharrows and signage. Continue bike route through Harvest Park and on to Alameda Drive to provide connection to Amador Valle Park and points east.

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SF08-0373\graphics\SR2SI\0373-4 Walnut Grove

WALNUT GROVE ELEMENTARY SCHOOL
Bicycle and Pedestrian Issues and Opportunities
Figure 6-5